

THE
EDUCATIONAL REVIEW

A Monthly Record for India.

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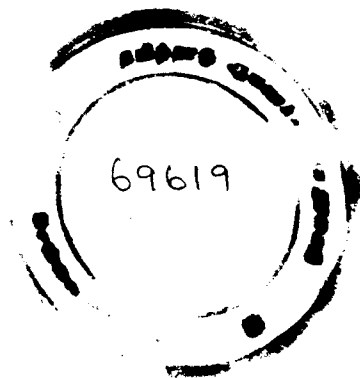
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The Educational Review

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JANUARY 1910.

No. 1.

CAMBRIDGE LOCAL EXAMINATIONS.

FIVE years ago these examinations, which had ceased to be held in the Madras Presidency, were re-commenced by Mr. W.M. Theobald, who came from Home in the autumn of 1904 as Principal of Stanes European High School, Coimbatore. A local committee was formed and arrangements were made with Cambridge for Coimbatore to be the local centre and for Mr. Theobald to be the Honorary Secretary. At first the examinees were chiefly the students from the European schools at Coimbatore and on the Nilgiris, but each year there has been a growing interest in these Cambridge tests and, as in the beginning of 1909 it was learnt that the Madras University accepted the Senior Examination as equivalent to their Matriculation test, such an impetus was given that the Hon. Secretary was quite unable to cope with the demands for Syllabuses, etc., that poured in from all parts of the peninsula. Had the old regulations continued there is no doubt the number entering for the Senior Cambridge Examination would soon have become very large, but the Syndicate suddenly withdrew their recognition to the great disappointment of many candidates, who had already started their preparation for the December tests. Many candidates at once withdrew, but sixty-five—mostly Hindu students, took the Examination

which lasted from December 13th to 18th inclusive. There were last December three centres:—Coonoor, Erode and Tinnevely. The papers were forwarded to England immediately after the Examination, and the results should be known in India during the first or second week in March.

As there are now so many students interested in this work, an article devoted to the Cambridge Local Examinations will appear in each issue of "The Educational Review." As many will be anxious to start work at once—the Syllabus for the Senior Examination next December is appended.

Students should remember that although the Syllabus may appear somewhat simple, the standard, especially in English, is high and no candidate can hope to pass who does not express himself in good English or who has not thoroughly mastered the subject for which he enters.

It will be seen that there is only one compulsory subject—arithmetic, which is generally well done by Indian students. Of the optional subjects there are seventeen sections and all students are supposed, unless their guardians sign a paper stating conscientious objections to the candidate taking this subject, to take religious knowledge as one of their optional subjects. There is also the restriction that "English language and literature" or one of the languages—Latin, Greek, French,

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German, Spanish, Dutch be included in the candidate's selection of optionals. With these points attended to there is free choice as to the other optional or optionals. All candidates passing in arithmetic and three optionals receive a pass certificate, but it must be clearly understood that there is passing and passing in this Examination. Although the candidate credited with passing in arithmetic and three optionals, receives his certificate, not many professional bodies will accept such a certificate in lieu of their Entrance Examination, and so candidates who wish the certificate to be accepted by the Home Universities as equivalent to their Matriculation test, or by the medical and engineering, law, chemists or veterinary, etc., societies as equivalent to their Entrance tests, should carefully study the special optional subjects such societies require and include them among their examination subjects.

Syllabus for Cambridge Senior Local Examination, 1910 :—

EXAMINATION OF SENIOR STUDENTS.

No one born before 15th July 1891 can be admitted to the July Examination for Senior students under the ordinary conditions, and no one born before 15th December 1891 can be admitted to the December Examination for Senior students under the ordinary conditions. Those born before 15th July 1891 may be admitted to the July Examination, and those born before 15th December 1891 to the December Examination, but they can obtain a Pass Certificate only and are not eligible for marks of distinction.

PART I. COMPULSORY.

Every student will be required to satisfy the Examiners in Arithmetic.

PART II.

The Examination will comprise the subjects mentioned in the following seventeen sections. Every student will be required to satisfy the Examiners in at least three of the sections 1 to 14* (one at least

* Subject to the condition that every candidate must satisfy the Examiners in section 2 or one of the sections 4-9, two subjects out of any two of the sections 1-14, or one subject out of sections 1-14 together with one of the sections 15-17, or two of the sections 15-17, will be accepted in lieu of one complete section 1-14.

of the three being section 2 or one of the sections 4 to 9). No student may enter for more than seven sections, together with one subject from an eighth section, subject to the condition that this additional subject does not suffice for a pass in the section. One at least of the five subjects of section 1 must be taken by all students, unless their parents or guardians object to their examination in that section.

N.B.—No student can take two papers set at the same time in the Time Table.

SECTION 1. Religious Knowledge.

The Examination will consist of questions on (a) the Gospel of *St. Mark*, credit being given for a satisfactory knowledge of the original Greek [or, for Jewish students only, *Genesis* xii—xxiv, xvii—xxxv, xxxvii, xxxix—end, *Exodus* i—xx, credit being given for a satisfactory knowledge of the original Hebrew]; (b) the *Acts of the Apostles*, xiii—xxviii; (c) *1 Kings*; (d) *Hebrews*; (e) The Litany and the Offices for Communion, Baptism, and Confirmation in the Book of Common Prayer; questions will be set on the history of these portions of the Prayer Book; special attention should be paid to the Nicene Creed. In Douay version is used will be prepared for candidates who have been accustomed to the use of that version.

To pass in this Section students must satisfy the Examiners in two of the five subjects. No student will be examined in more than one of the two subjects (a), (b), or in more than one of the three subjects (c), (d), (e). Credit will be given for a knowledge of the Revised Version.

SECTION 2. English Language and Literature.

(a) English Composition. Exercises, including the composition of an essay, will be set with the object of testing the power of the candidates to write clear and grammatical English.

(b) *Shakespeare, Twelfth Night*.

(c) *Chaucer, The Prologue to the Canterbury Tales*.

(d) A paper of questions of a general, not a detailed, character, on *Spenser, Puerio Queene, Book II* (Clarendon Press), *Shakespeare, Macbeth*, and *Scott, Kenilworth*.

† For 1911 and 1912, the subjects will be as follows: 1911: (a) *St. Luke*; (b) *Acts of the Apostles* i—xv; (c) *Ezra, Nehemiah*, and *Haggai*; (d) *Galatians* and *St. James*; (e) The Preface to the Book of Common Prayer, concerning the Service of the Church, of Ceremonies, and Morning and Evening Prayer; questions will be set on the history of these portions of the Prayer Book; special attention should be paid to the Apostles' Creed.

1912: (a) *St. Matthew* [or, for Jewish students only, *1 Samuel*]; (b) *Acts of the Apostles* xiii—xxviii; (c) *1 Corinthians*; (d) *1 Corinthians*; (e) The Litany and the Offices for Communion, Baptism, and Confirmation in the Book of Common Prayer; questions will be set on the history of these portions of the Prayer Book; special attention should be paid to the Nicene Creed.

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(e) A paper of easy questions testing the candidates' general knowledge of English literature not earlier than 1579 A.D. Candidates may consult *Stopford Brooke's English Literature* or some similar work. They will not be expected to show acquaintance with minor authors or biographical details. The questions will not be limited to text-book knowledge.

To pass in the Section candidates must satisfy the Examiners in two of these five subjects. They cannot gain the mark of distinction unless they satisfy the Examiners in three. They may not take both (b) and (c), or both (d) and (e).

Throughout the Section importance will be attached to clearness and correctness of style.

SECTION 3. History, Geography, &c.

(a) History of England. The paper will consist of three divisions on the periods (i) 55 B.C. to 1500 A.D., (ii) 1500 to 1714, (iii) 1714 to 1907 respectively. Candidates may if they wish select questions from all three of the divisions, or may confine themselves to two or one of them.

(b) History of the British Empire, A.D. 1492 to A.D. 1784.*

(c) Roman History, B.C. 153 to B.C. 44.

(d) Geography. The paper will consist of four divisions on (i) *Great Britain and Ireland*, (ii) *Asia*, (iii) *Africa*, (iv) *North America and the West Indies*, respectively. Candidates may select questions from all four of the divisions, or may confine themselves to any three or any two.

(e) The Elements of Political Economy.

(f) The Elements of Logic.

To pass in this Section students must satisfy the Examiners in two of the subjects, they may not take more than one of the three (a), (b), (c), or of the two (e), (f).

SECTION 4. Latin

The papers will include (1) questions on grammar; (2a) passages for translation from selected books, with questions; and (2b), as an alternative, unprepared passages for translation into English, with questions; (3) one or more easy unprepared passages for translation into English, a vocabulary of unfamiliar words being given; (4) one or more unprepared passages of ordinary difficulty for translation into English; (5) easy sentences for translation into Latin; (6) one or more continuous passages for translation into Latin. The unprepared passages set under (2b) will be for those candidates only who do not take any selected book. Higher marks will be assigned to (2b) than to (2a).

* The paper will be on the topics treated of in *Jose's Growth of the Empire* (Murray) or *Woodward's Expansion of the British Empire* (Cambridge University Press) or any similar work.

The selected books for 1910 are,—either *Livy* I 1—41, or *Cicero, pro Murena*; and either *Virgil, Aeneid VI*, or *Horace, Odes I*.

In order to pass in Latin, candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in (1), and either in (3) or in (4). In order to gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in (4) and in (6).

SECTION 5. Greek.

The papers will include (1) questions on grammar; (2a) passages for translation from selected books, with questions; and (2b), as an alternative, unprepared passages for translation into English, with questions; (3) one or more easy unprepared passages for translation into English, a vocabulary of unfamiliar words being given; (4) one or more unprepared passages of ordinary difficulty for translation into English; (5) easy sentences for translation into Greek. The unprepared passages set under (2b) will be for those candidates only who do not take any selected book. Higher marks will be assigned to (2b) than to (2a).

The selected books for 1910 are,—either *Thucydides VII* 1—54, or *Xenophon, Oeconomicus*, i—x; and either *Homer, Odyssey XI, XII*, or *Aeschylus, Prometheus Vinculus*.

In order to pass in Greek, candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in (1) and either in (3) or in (4). In order to gain the mark of distinction, they must reach a higher standard in the subject as a whole, and must also reach a certain standard in (4).

SECTION 6. French. SECTION 7. German.

The paper will include (1) questions on grammar; (2a) passages for translation into English from selected books, and (2b), as an alternative, unprepared passages for translation into English; (3) one or more easy unprepared passages for translation into English, a vocabulary of unfamiliar words being given; (4) one or more unprepared passages of ordinary difficulty for translation into English; (5) easy sentences for translation into the language; and (6b), as an alternative, subjects on one of which candidates are to write a short composition in the language.

The unprepared passages set under (2b) will be for those candidates only who do not take selected books. Higher marks will be assigned to (2b) than to (2a). For those who take selected books, questions may be set on the language and subject-matter, and upon the metre of verse subjects. The selected books for 1910 are as follows:—in French, *Michelet, Louis XI et Charles le Téméraire*; *Sandeau, Mademoiselle de la Seiglière* (Comédie); in German, *Goethe, Iphigenie*; *Kohlrausch, Das Jahr* 1813.

No candidate may take both (6a) and (6b).

In order to pass in French or German, candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in (1) and either in (3) or in (4). In order to gain the mark of distinction, they must reach a higher standard in the subject as a whole, and must also reach a certain standard in (4) and in (6).

SECTION 8. Spanish. SECTION 9. Dutch.

The paper will include (1) questions on grammar, (2) passages for translation into English, (3) passages for translation into the language.

SECTION 10. Mathematics.

(a) Geometry.

(b) **Algebra**, including definitions and explanations of algebraical signs and terms, addition, subtraction, multiplication and division, highest common factor and lowest common multiple, extraction of the square root, the solution of simple and quadratic equations and of problems producing such equations, graphs,* theory of indices, including the nature and use of logarithms, the elementary rules of ratio and proportion, arithmetical, geometrical and harmonical progressions, scales of notation, permutations, combinations, and the binomial theorem with positive integral exponents. For candidates for Honours, easy questions will also be set on the more advanced parts of Algebra. Candidates will be provided in the examination-room with four-figure tables of logarithms. They should bring with them graduated rulers.

(c) **Plane Trigonometry** up to the solution of triangles. For candidates for Honours, questions will also be set on De Moivre's Theorem and its applications to the expansion of trigonometrical functions. Candidates will be provided in the examination-room with four-figure tables of logarithms, natural sines, natural tangents, logarithmic sines, and logarithmic tangents. They must bring with them a graduated ruler and a protractor.

(d) Elements of Analytical Geometry.†

(e) **Elements of the Differential Calculus**,† including the differentiation of simple functions, simple applications of Taylor's and Maclaurin's theorems, maxima and minima of functions of one variable, and tangents and normals.

(f) **Applied Mathematics**, including the equilibrium of forces acting in one plane and simple graphical methods; the properties of the centre of gravity; friction; the lever, the common balance, the inclined plane, and the pulley; the screw; the composition and resolution of velocities and accelerations in one plane; rectilinear motion with uniform acceleration; motion, momentum, force, mass;

* When questions are set on graphs, squared paper will be provided.

† These subjects will be included in the same paper, but candidates may take one of the subjects without also taking the other.

work, energy, power; projectiles; direct impact of spherical bodies. Candidates must bring with them a graduated ruler and a protractor.

To pass in this Section, students must satisfy the Examiners in (a) and in (b).

SECTION 11. Chemistry.*

(a) Theoretical Chemistry.*

(b) Practical Chemistry.*

To pass in this Section, students must satisfy the Examiners in both (a) and (b).

SECTION 12. Physics.

(a) The elementary principles of **Experimental Mechanics**, including Statics, Dynamics, and Hydrostatics, as illustrated by simple experiments, common observation, or the action of well-known machines.*

(b) **Heat**. *Alternative papers are set in this subject, one on Tuesday, the other on Saturday, candidates must state in their forms of entry which paper they will take.*

(c) Sound and Light.*

(d) Electricity and Magnetism.*

In (b), (c), (d) questions will be set on fundamental laws and the experiments that illustrate them.

To pass in this Section, students must satisfy the Examiners in two of the four subjects (a), (b), (c), (d). They may not take more than three of the four subjects.

SECTION 13. Biology and Physical Geography.

(a) Botany.

(b) Natural History of Animals.

(c) **Physiology and Hygiene**. *Alternative papers are set in this subject, one on Wednesday, the other on Saturday; candidates must state in their forms of entry which paper they will take.*

(d) **Physical Geography**. Questions will be set on the present physical condition of the earth, and the physical agencies modifying it or affecting the conditions of life upon it.

To pass in this Section, students must satisfy the Examiners in one of the four subjects. They may not take more than two of the four subjects.

SECTION 14. Agricultural Science. Two papers will be set. Students entering for the Section must take both the papers.

* Detailed Schedules can be obtained on application to the General Secretary. The Schedules for Theoretical Chemistry and Physics are the same for 1910 as for 1909. Some changes have been made in the Practical Chemistry Schedule. The Examination in Practical Chemistry can be held only at Centres at which a properly-equipped Laboratory is available for the purpose. A special local fee may be charged.

SECTION 15. (a) **Book-keeping**. Questions will be set on Book-keeping by double entry. Ruled forms will be provided for the candidates. *Alternative papers are set in this subject, one on Friday, the other on Saturday; candidates must state in their forms of entry which paper they will take.*

(b) **Mensuration and Surveying**. Questions will be set on Mensuration and on the Elements of Land Surveying and Levelling. Candidates will be provided in the examination-room with tables of logarithms. They should provide themselves with rulers, scales, &c.

(c) **Shorthand**. Students will be required to take down passages read aloud, and afterwards to transcribe them. Passages will be dictated at the rates of seventy words and ninety words per minute.

To pass in this Section, students must satisfy the Examiners in (a), and also in (b) or (c). No student may take both (b) and (c).

SECTION 16. Drawing.

(a) **Freehand Drawing**, from a photograph or print. The examination will be designed to test the power of the candidates to draw accurately and intelligently in outline. The drawings are to be executed in pencil.

(b) **Model Drawing**, from a group of objects in which there may be included one or more of the following, namely, the cube, cone, cylinder, square pyramid, hexagonal prism, and skeleton cube: the group to be drawn in outline with pencil, and shaded with pencil, chalk, or wash of any one colour.

(c) Perspective Drawing.

(d) **Design**. Candidates will be supplied with a photograph or print of some characteristic portion of a plant, and will be required to fill a given space with a coloured design based thereon.

(e) **Memory Drawing**. Candidates will be required to draw simple objects from memory, the drawing to be executed in pen and ink.

To pass in this Section, candidates will be required to satisfy the Examiners in two subjects, of which one must be (a) or (b). They may not take more than one of the three subjects (c), (d), (e).

SECTION 17. Music. Questions will be set on Notation; on Scales, Clefs, Keys, Intervals, Time; on the Marks and Terms generally employed in Music; on Cadences; on Triads and Chords of the Dominant Seventh and their Inversions; Single Suspensions. On the above Chords exercises (in not more than four parts) will be set, in which the highest or the lowest part will be given, the latter being either figured or unfigured. Questions will also be set on Parry's *Studies of the Great Composers* (Routledge), Chapters 5-7.

Requirements of various Boards that are prepared to recognise the Senior Cambridge Local Examination in lieu of their own Entrance tests:—

EXEMPTIONS FROM VARIOUS EXAMINATIONS, &c.

[The Syndicate do not hold themselves responsible for any error caused by changes in requirements with which they have not been made acquainted. Students are referred to the published regulations of the respective institutions.]

A. THE UNIVERSITY OF CAMBRIDGE: PREVIOUS EXAMINATION. The following are the conditions under which a candidate in the Senior Local Examination is entitled to exemption from parts or the whole of the Previous Examination:

(1) from the Classical papers in Part I, if the candidate has at one and the same examination satisfied the Examiners in Latin and in Greek*; and, in addition, from the paper on the Greek Gospel*, if the candidate has at the same or some subsequent Examination satisfied the Examiners in the Gospel (including the Greek Text);

(2) from the papers on Mathematics in Part II, if the candidate has at one and the same examination satisfied the Examiners in Arithmetic, in Geometry, and in Algebra; and, in addition, (a) from the English Essay if the candidate has at the same or some subsequent Examination satisfied the Examiners in English Composition, (b) from the paper on Paley's *Evidences* and its substitutes if the candidate has at the same or some subsequent Examination satisfied the Examiners in Religious Knowledge or in Logic or in Chemistry or in Physics;

(3) from the Additional Subjects if the candidate has shewn a sufficient degree of merit either in Applied Mathematics or in French or in German.

* Exemption from the Classical Papers in Part I is granted to a candidate who, being a native of Asia and not of European parentage, has at one and the same examination satisfied the Examiners in Latin, and in English Language and Literature (including English Composition); and, in addition, from the paper on the Greek Gospel if the candidate has at the same or some subsequent examination satisfied the Examiners either in the Gospel or in English History; provided that it has been stated in the form of entry that the candidate claims exemption under this clause, and provided further that evidence satisfactory to the Syndicate is offered shewing that the required conditions as to birth and parentage are fulfilled.

A native of Asia or Africa not of European parentage, who in one and the same examination has satisfied the examiners in English Language and Literature (including English Composition) and either in the Gospel or in English History, is entitled to exemption from all the papers of Part I with the exception of the papers in Arabic, Chinese, or Sanskrit.

Students desirous of obtaining exemption from Part I, Part II, or the Additional Subjects of the Previous Examination may, whether they already hold the Certificate of the Syndicate or not, enter for those subjects alone that are required for the purpose.

B. THE UNIVERSITY OF OXFORD. The holder of a Senior Certificate is entitled to exemption from the Examination in Stated Subjects in Responsions, provided (i) that in the Senior Local Examination he has shewn sufficient merit in Latin and in Greek to be qualified in these subjects for exemption from Part I of the Previous Examination of the University of Cambridge, (ii) that the Certificate includes Arithmetic and either Geometry or Algebra, (iii) that the candidate has shewn sufficient merit in Latin Prose. If the holder of the Certificate has satisfied conditions (i) and (ii), but not condition (iii), he is entitled to exemption from the Examination in Stated Subjects contingently on his passing a further Examination in Latin Prose at Oxford.

The holder of a Senior Certificate is entitled to be exempted from the Examination in an Additional Subject at Responsions, provided that in the Senior Local Examination he has shewn sufficient merit in French or in German to be entitled to exemption from the Additional Subjects of the Previous Examination or has shewn sufficient merit in Logic to be qualified in that subject for exemption from Part II of the Previous Examination.

Students entitled to exemption from any part of Responsions should apply to the General Secretary, Syndicate Buildings, Cambridge, for a special form of Certificate.

C. THE UNIVERSITY OF LONDON. The holder of a Senior Certificate is entitled to exemption from the Matriculation Examination of the University of London, if the candidate has at one and the same examination passed (1) in English Language and Literature including English Composition, or History together with English Composition, or Geography together with English Composition, (2) in Arithmetic, Geometry, and Algebra, and (3) in three of the following subjects or combinations of subjects, not counted under (1) above:—Latin, Greek, French, German, Spanish, Greek or Roman History, English History or History of the British Empire, Physical Geography, Logic, two subjects in Mathematics other than those mentioned above, Chemistry, and Light, Electricity and Magnetism, Botany, provided that either Latin, or Mechanics, or Heat, Sound and Light, or Chemistry, or Botany is included, and provided further that one Language is included.

D. THE UNIVERSITIES OF MANCHESTER, LIVERPOOL, LEEDS, AND SHEFFIELD. The holder of a Senior Certificate is entitled to exemption from the Matriculation Examination of the Universities of Manchester, Liverpool, Leeds, and Sheffield, conducted by their Joint Matriculation Board, provided that the candidate has passed at one and the same examination in (1) English Language and Literature,

including Composition, (2) Arithmetic, Geometry, and Algebra, and (3) either History or Geography, and two of the following eight sections or parts of sections, one at least being a language, namely, (4) Latin, (5) Greek, (6) French, (7) German, (8) Spanish, (9) an additional subject in Mathematics, (10) Chemistry, (11) one subject in Physics.

E. THE UNIVERSITY OF BIRMINGHAM. The holder of a Senior Certificate is under certain conditions entitled to exemption from the Matriculation Examination of the University of Birmingham.

F. THE UNIVERSITY OF WALES. The holder of a Senior Certificate is exempted from the Matriculation Examination of the University of Wales provided that the Certificate includes English, English History, Latin, Mathematics, and two of the following subjects, chosen from different groups: (a) Greek; (b) French, German; (c) Applied Mathematics, Physics (Experimental Mechanics and Heat); (d) Chemistry, Botany. The subjects need not be all taken at the same examination. A student who has passed in four of the requisite subjects in the Senior Local Examination may matriculate on Examination of the University of Wales. Candidates for degrees in Science and Music may under certain conditions substitute French or German for Latin.

G. THE SCOTTISH UNIVERSITIES. The holder of a Senior Certificate is under certain conditions entitled to exemption from portions of the Preliminary Examinations in Arts and Science and in Medicine of the Scottish Universities.

H. THE BOARD OF EDUCATION. (i) Holders of the Senior Certificate not less than 18 years of age may be recognised as Uncertificated Teachers, provided that the Certificate includes English Language and Literature (Section 2.)

(ii) The Senior Certificate qualifies for admission to a Training College for a course of two years, provided that it includes English Language and Literature, History or Geography, and either Mathematics or Chemistry or Physics or Botany. A certificate including these subjects will also be accepted as one of the qualifications of those who desire to become Student-Teachers.

(iii) The Senior Certificate will be accepted as qualifying students admitted to a Training College to be prepared for an Examination forming a recognised stage towards a University Degree, provided that it includes English Language and Literature (Section 2), History and Geography (Section 3), Mathematics (Section 10), and two more subjects (one being a language) selected from Sections 4—9 and Sections 11—13 inclusive. Candidates examined after 1st August, 1910, will be required to pass in (a) English Language and Literature, (b) English History, (c) Geography, (d) Mathematics, (e) one Language, selected from Latin, Greek, French and German, (f) either a second Language or an approved Science subject. In case of (a) and (b) a standard of attainment higher than that indicated by a mere pass will be required.

The subjects required under (ii) and (iii) need not all be taken at the same examination; but, whether they are so taken or not, candidates must as a rule have passed in all of them within two and a half years preceding August 1st in the year of entering the Training College. Subjects in which candidates may have passed in examinations prior to that in which they first gained a Senior Certificate will not be counted.

I. ARMY COUNCIL. The Regulations for the award of Army Leaving Certificates can be obtained from the General Secretary, Syndicate Buildings, Cambridge.

J. THE GENERAL MEDICAL COUNCIL. The holder of a Senior Certificate is qualified for registration as a Medical or Dental student provided either (1) that the student has at one or at two Examinations passed in (a) English Composition, (b) Latin, (c) Mathematics, and either (d) Greek or (e) French or (f) German or (g) Spanish, or (h) Dutch; or (2) that the student has at more than two Examinations passed in the abovementioned subjects, reaching the standard for distinction either in English Language and Literature or in one of the subjects (b) to (h).

The holder of a junior Certificate* is qualified for registration as a Medical or Dental student provided that the student (1) has at one and the same Examination passed in (a) English Language and Literature, (b) Latin, (c) Geometry and Algebra, and either (d) Greek or (e) French or (f) German or (g) Spanish; and (2) has either (i) reached the standard for distinction in one of the subjects (a) to (g), or (ii) reached an Honours standard on the whole examination or in two of the subjects (a) to (g).

K. THE LAW SOCIETY. Persons who have obtained a Senior or a Junior Certificate are excused the Preliminary Examination before entering into Articles of Clerkship with Solicitors.

L. THE INSTITUTION OF CIVIL ENGINEERS. A Senior Certificate exempts the holder from the Studentship Examination, provided that it includes Section 2; Section 3, (a) or (b), and (d); one of the Sections 4 to 8 inclusive; Section 10 (including Trigonometry;) and either Section 11 or Section 12.

M. THE ROYAL INSTITUTE OF BRITISH ARCHITECTS. A Senior Certificate or a Junior Honours Certificate exempts the holder from such of the following subjects of the Preliminary Examination as are included in the Certificate:—English Composition, Arithmetic, Geometry, Algebra, Geography, English History, Latin, French, German, Applied Mathematics.

N. THE SURVEYORS' INSTITUTION. A Senior Certificate or a Junior Honours Certificate exempts the holder from the Preliminary Examination of the Institution.

O. THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN. A Senior or Junior Certificate qualifies the holder for registration as a Pharmaceutical student, provided that it includes English Composition or

English Grammar, Latin, French or German or Spanish, Geometry, and Algebra, passed at the same or at not more than two examinations.

P. THE ROYAL COLLEGE OF VETERINARY SURGEONS. The Senior or the Junior* Certificate qualifies the holder to admission to the Professional Examination under the same conditions as those set forth in paragraph J (General Medical Council).

Q. THE INSTITUTE OF CHARTERED ACCOUNTANTS. A Senior Certificate exempts the holder from the Preliminary Examination if it includes certain subjects, of which Dictation is one, prescribed in the regulations of the Institute. A third Optional Subject will be accepted instead of Latin. Senior candidates may be examined in Dictation if they indicate in their forms of entry that they desire to be so examined. A syllabus and further information can be obtained from the Secretary of the Institute of Chartered Accountants, Moorgate Place, London, E. C.

R. THE INSTITUTE OF CHEMISTRY. The Senior Examination is accepted as an approved Preliminary Examination provided that the candidate has obtained a Certificate including English, Geometry, Algebra, and two of the languages, Latin, Greek, French, German, Spanish, or one of these languages and a further subject approved by the Institute.

S. THE AUCTIONEERS' INSTITUTE. A Senior Certificate exempts the holder from the Preliminary Examination. Exemption from the same examination is conferred by a Junior Honours Certificate, provided that it includes English Composition, Geography, History, Geometry, Algebra, Book-keeping, Mensuration, and two of the following: Latin, French, German, Shorthand.

T. THE LONDON COUNTY COUNCIL. (a) The Junior Certificate in first or second class honours exempts from the preliminary examinations for Intermediate County Scholarships. (b) Holders of the Senior Certificate are qualified for the award of Pupil Teacherships, and, provided the certificate includes English Language and Literature, History or Geography, and Mathematics or Science, for the award of Student Teacherships, subject to their otherwise satisfying the Council's requirements. (c) The Senior Certificate exempts from the preliminary examination for Domestic Economy Training Scholarships.

* * Students who already hold a Junior (or Senior) Certificate and desire to add some one or more subjects may enter at a subsequent Junior (or Senior) Examination for less than the minimum number of subjects necessary for a Certificate. If such students are successful, their names will not

* Junior candidates, whether above the age of sixteen or not, who desire to qualify for registration as Medical or Dental Students or to be admitted to the Professional Examination of the Royal College of Veterinary Surgeons, should make a statement to that effect in their Forms of Entry. They will then be informed in due course as to whether they have satisfied the prescribed conditions.

appear in the Class Lists, but they will receive supplementary certificates.* The ordinary fee for entrance must be paid.

Students who do not already hold a Junior (or Senior) Certificate may enter for less than the minimum number of subjects necessary for a Junior (or Senior) Certificate with the object of satisfying the requirements of a recognised Public Body. If such students are successful, their names will not appear in the Class Lists, and they will not receive formal certificates, but information will be furnished for the use of the Public Body concerned. Students entering under this paragraph must state full particulars in their forms of entry, and the ordinary fee for entrance must be paid.

W. M. THEOBALD.

* It should be observed that in certain cases it is made a condition for exemption from a Preliminary Examination that all the required subjects shall be taken at one and the same time.

THE SCHOOL FINAL SCHEME, ITS DEFECTS AND REMEDIES.

IT is now perhaps too late in the day to take up for discussion a scheme that has already been passed and that is to come into operation a few days hence. Too, late, indeed, would it be, should my intention be to move for the subversion of the scheme as a whole or even to propose material alterations in its provisions. My purpose is merely to submit certain suggestions regarding the precautionary measures to be taken to save the scheme from the failure that has attended the Matriculation examination whose place the scheme is intended to take with greater efficiency and usefulness. Such suggestions would be impossible without subjecting the scheme itself to a close scrutiny both as regards its provisions and as regards the working of it by the members of the School Final Board, by the officers of the Educational Department and by the members of the teaching profession. If in the course of the paper I point out what appear to me as defects in the scheme, it is not to be inferred

therefrom that I take alarming views of the scheme but only that I am anxious that it should be worked with credit to those by whom it is to be worked and in the best interests of the school-going population for whose benefit it is intended.

It is anticipated, not without reason, that while the scheme is in actual operation, a lot of confusions and difficulties may arise necessitating the passing of regulations and counter-regulations of various kinds. But it should be borne in mind that no scheme, however wisely devised, could come out in its initial stages rounded and polished to perfection. It has to be improved upon only in the light of subsequent experience but with regard to the present scheme which provides a freedom hitherto unexperienced, one might naturally apprehend unusual difficulties which must arise in the absence of effective control and wholesome restrictions which are so necessary in matters affecting the interests of tens of thousands of youths of a variety of creeds and denominations who will come under the operation of the scheme in this part of India. It is needless to state that provisions are contemplated for precautionary measures by control and restrictions, the details of which are shortly to be published. It is the purpose of this paper to submit certain suggestions in regard to the exercise of healthy control in the hope that they may, if found useful, facilitate the work of the School Final Board in the framing of regulations in which work they are probably at this moment actively engaged.

It has been accepted by all competent educationists that the examination tyranny has been the curse of our educational system hitherto. In the words of Dr. Bourne "the Matriculation examination has hitherto domi-

nated the school course There have been most earnest efforts on the part of every one, ever since the University came into existence to improve it and at the same time every one has turned round and attacked it and condemned, but it has proved well nigh impossible apparently, to make it much better than it has been." It is apprehended by some that from the curse of the examination system dominating the secondary-school-course we are taking too long a jump into freedom that may be fraught with dangerous consequences. But it is forgotten by those that take pessimistic views that we have hitherto suffered for want of some amount of elasticity and freedom in the absence of which Matriculation has hitherto failed to serve the purpose for which it was intended.

So far as I have been able to gauge the feeling of the public, it seems to be the general view that we should have moved on gradually so as to reach in a few years the full scope of the aim that the School Final Scheme has set forth before itself. This is the view that I advocated in a paper that I was asked to read on behalf of the South Indian Association under the presidency of the Hon'ble Mr. P. S. Sivaswami Aiyar. I apprehended that a long jump might interpose unanticipated difficulties and might cause temporary evil. I share the apprehension even now and I am only anxious that it should prove groundless. I am sure that the School Final Board will fully realise their responsibility and pilot the scheme in the best interests of all concerned avoiding shoals and rocks and quicksands.

Gentlemen, it has been pointed out that the Senate of the Madras University should not have given up its own test for the selection

of the proper materials for University course in favour of one conducted by a body over which it can have no control. It has also been urged that the aim of Government examinations is to meet the needs of the public service, whereas the examinations conducted by the University have a higher and nobler aim and that it is therefore undesirable to couple in one scheme both the aims. We have been asked to remember that nowhere in the world, the government of a country selects, by an examination conducted by itself, students for the University course; the University ought to have its own entrance-test to find out the suitable materials to enter her portals and on principle at least, if not on other grounds, ought not to abdicate her rights in favour of another body, however competent that body might be: but it must be admitted that the Matriculation examination as hitherto conducted by the Madras University did not prove an unmixed blessing. The Syndicate which is the executive of the University felt it its bounden duty to obey to the very letter the bye-laws regulating the Matriculation examination, which, by the mechanical obedience to them by the operatives of the Senate, exercised its tyranny too unwholesomely. Dr. Bourne himself admitted that a paper however wisely set often proved the very reverse of a good paper after the examination, so that provision for elasticity should have been made by the Senate for the guidance of the Syndicate. Some of the chief examiners in whose hands the passing of candidates lay did not take stock of the peculiar circumstances of each year's examination, such as, the difficulty of the papers, the unusual nature of some of the questions, the over strictness in marking and so forth, with a view to make allowances, but stood by the

minimum fixed in the bye-laws. A little more of elasticity and freedom, for the provision of which, the privilege lay in the hands of the Senate and the Syndicate would have effectively avoided the evils we have hitherto experienced. I have thought it necessary to lay stress on this point here because of my anxiety for the exercise of the privilege with which the governing body of the Senate is furnished by the scheme to guard against the probable abuse of the powers which Headmasters and Principals are permitted to possess with respect to the scheme.

In what follows I shall speak (1) of the grouping of subjects and the sort of organisation which the scheme may necessitate; (2) of the constitution of the Board; (3) of the precautionary measures to be taken—(a) by Government (b) by the Board and (c) by the University; and (4) of the duties of Principals and Headmasters in regard to the working of the scheme and then shall close the paper with some general remarks that may be needed in the closing review.

I. I hope I may presume that you know the details of the scheme; you may be aware that in the first group are included compulsory subjects in which there is to be a final examination for the moderation of school-marks. In the second group are placed certain subjects in which there is to be no public examination. The third group consists of optional subjects any one or more of which may be studied by pupils and are treated like the subjects included in the first group. By running your eye through the groups you will find that vernacular translation and composition, which together form one subject, are placed in the first group. It means that this subject must be brought up by all candi-

dates. Vernacular languages of a literary character and classical languages come in the third group and therefore may be ignored, if one does not want them. From this arrangement it is not impossible to anticipate what the result will be. It is sure to deal a death-blow to the study of Sanskrit in this presidency as well as to the study of vernacular languages in their literary character. While, in the other presidencies, Sanskrit is studied as a compulsory subject for the University examinations and while, in Europe and America, Latin and Greek take a prominent place in the curricula of University studies, it would be deplorable to see a language, so common to all Indians, in which is enshrined all that is great and glorious and by which alone the Indian nation is qualified to take a place in the front rank of the world's nations should quit the field that it has hitherto occupied in this part of India. It is unnecessary for me, I believe, to take up much of your precious time by dwelling upon this point at length. You know the value of classical languages in the system of University education and particularly of Sanskrit in the system of University education in our country. It is as much the language of the Brahman as of the non-Brahman. The religion, the philosophy and the sciences of the ancient Indians are contained in it. To the Hindu, the Buddhist, the Jain and the Sikh, it is a language of primary importance. To the European, the Indian-Christian, and the Mahomedan, a study of it is valuable as they can know the traditions of the vast population of this country only by a study of that language, not to speak of its importance in the field of philology and history. What importance Sanskrit has to the Indian nation as a whole that importance literary vernaculars

have to the Dravidian inhabitants in this presidency. It is an irony of fate that, while an institution for the study of Indian languages is arranged to be founded in London, the same languages receive a rude shock in the scheme now before us and in the reformed courses of our University now in force. It should be regarded as unstatesman-like to relegate to the Indian languages an unimportant place in the group of optional subjects. I would therefore suggest that the classical and vernacular languages be transferred to the second group wherein there will be only school studies but no public examination. It should be ruled that these languages form compulsory optional subjects of study one of which should be studied by every school pupil. I advisedly put the languages in the second group to restore to them the importance they have hitherto had, but at the same time to avoid adding to the number of examination-subjects. This transference of subjects would save the vernacular languages but not Sanskrit to the extent to which it would save the vernaculars. The reason is that acquisition of knowledge for the vernacular translation and composition in the first group would be facilitated by the study of vernaculars but not of Sanskrit: hence the tendency would naturally be to take up the literary study of vernaculars in preference to that of Sanskrit. This is a valid objection. The only way to meet it would be, to make vernacular composition compulsory only on those who do not take up a classical language. Those who take up a classical language may be made to undergo an examination in translation from and into that language. This arrangement may be made with regard to those who intend to go up for the University. But for purposes of Government service, vernacular translation

and composition may be made compulsory on all, some relaxation being made with regard to pupils who study a classical language by provision being made that they may appear for an examination in vernacular translation and composition, should they desire to enter public service. If this arrangement cannot be accepted, another suggestion that I would offer is that vernacular translation and composition also may be included in the second group. This would be a means of taking away the dread of an examination from translation and composition and consequently might not interfere with the choice of classical languages by pupils who may prefer them. The study of vernaculars too will not suffer as it will receive its due share of attention in schools as vernacular composition will become a compulsory subject of study though not for the purpose of examination. I would request that the executive council will see to the importance of this subject being moved as a proposition before the Conference. If the proposition happens to be unanimously voted for, as I hope it will be, I am sure the School Final Board will rectify the existing defect.

The sort of organisation that may have to be made in schools for the teaching of a number of subjects included in the scheme is very difficult to suggest. It is likely that detailed instructions may be published shortly by the Board now being constituted. Previous to the work of the preparation of instructions by the Board, the Conference may submit suggestions to help the Board in their work.

Some teachers have asked me whether they are to prepare pupils for the Matriculation course or for the School Final course or whether they are to have both the courses side by side. It appears to me that neither

will the Educational Department leave us the choice nor the parents of pupils. As there is a greater likelihood of a pupil finding admission into the Intermediate Class, even though he may happen to be weak in certain subjects, if he should do well in certain others, the School Final course is clearly more advantageous to him than the Matriculation course. The first blunder that we should guard against is the retention of the Matriculation course also in addition to the School Final.

In the enforcement of the new scheme the first difficulty that the teachers and the taught have both to face is the selection of suitable subjects for individual pupils from amongst a variety of optional subjects. It is true that the capacity and the inclination of a pupil is not so easily determined as soon as he comes up to the fourth form. Indeed no one's taste and aptitude can be known before one is made to study the subject which is under consideration for choice. This objection will be valid with regard to the pupils who have given proofs of a general aptitude for University course even in lower classes. In our experience we may have come across many pupils who are pronounced incapables for higher studies. Such pupils may be sectioned out for technical subjects alone such as can be conveniently taught in a school. It is the duty of teachers and Headmasters to advise parents as to the course they should choose on behalf of their boys and girls.

It is much more difficult to dispose of the question of choice in the case of more capable pupils. As already stated, such pupils must be tried in all subjects now included in the Matriculation curriculum and after sufficient trial such subjects may be advised in which

there is pronounced aptitude. It appears to me that one year will be enough for a fair trial. I therefore suggest that all such subjects as are taught in High Schools now may be taught in the Fourth Form hereafter, and choice may be made in the V Form after a year's trial.

In the arrangement of the school time-table, after the choice of subjects has been made, there may arise special difficulties such as the following:—For pupils who wish to specialise so as to take up the first group for the Intermediate examination, the subjects to be selected are too many, as many as five, viz., Physics, Chemistry, Geometry and Algebra, Trigonometry, and Practical Mathematics. If the second group is intended to be taken, the choice can fall on only two subjects viz., Physics and Chemistry. To those who may prefer to take up the third group there is only one subject for specialisation, viz., English History. Some have suggested that for equal distribution of subjects Elementary Botany, Elementary Zoology, Elementary Biology, Elementary Physiology, and Elementary Logic may be included in the third group. The scheme, no doubt, makes provision for the inclusion of any number of subjects without reference to Government to obtain their sanction for the inclusion. Elementary knowledge in these subjects would assuredly be very useful and conducive to future specialisation but the cost to make efficient provision for so many subjects may be prohibitively high, not to be thought of in the present state of finance of many average High Schools in the presidency. What I would suggest is that those who intend to take up the second or the third group for the Intermediate Course may be taught one or more technical subjects such as Commercial

Correspondence, Commercial Arithmetic, Commercial Geography, Book-keeping and so forth, in addition to the subject or subjects provided in the scheme leading up to the group to be selected. This would make the distribution of subjects even and may not add much to the cost of the organisation. To avoid the cost of additional establishment, the existing members of the staff may be made to qualify themselves in technical subjects by passing Government examinations in them and substantial addition may be made to the salary of such teachers as have specialised themselves in one or more technical subjects.

Gentlemen, one word more before I pass on to the next subject in the plan of this paper. Our High School teachers must bear in mind that the scheme before us is intended to make the High School course really educative, not at all a work of memorising for the purpose of examinations. The more conservative of us are apt to fall into the old method of stuffing in and memorising. This will be to defeat the aim of the scheme and to make the secondary course a hardship, as bad as ever. The following suggestion may be of use to you to get out of the old routine:—As Indian History and Geography are placed in the second group in which there is to be no public examination, teach them well without too much taxing the memory and without going into unnecessary details. At the end of each term hold an examination on the portion done during the term but for the examination to be conducted at the end of the succeeding term, do not burden the work of the pupils by the inclusion for the examination the portions done in the previous term. Much depends also upon the nature of the questions proposed in the question-papers you

set. They should be such as not to require details but such as to be answered by one who has a general idea of the leading features of the subject. This will give much time for a special study of English and Elementary Mathematics. Hereafter a pupil's admission for the Intermediate course will largely depend upon his knowledge of English. Much more will be expected in this subject hereafter than hitherto. Consequently too much time cannot be spent in the teaching of this subject and too much of attention cannot be paid to it. This work will become easier when, as it is proposed, Elementary Science is pushed down to the second group. In the best interests of Secondary education we must move Government to take early steps for the transference of Elementary Science to the second group.

(To be continued.)

A. PANCHAPAKASA Aiyar.

THE THEORIES OF LIGHT.

SIMPLE as it may appear to us to regard a luminous body as the source of some influence which acting on the eye excites the sense of light, much doubt appears to have existed amongst persons who first investigated the subject as to whether objects become visible by means of something emitted by them or by means of something issuing from the eye of the spectator. According to the opinion of Pythagoras and his followers, vision was caused by the particles continuously projected from the surface of the objects into the pupil of the eye, while the Platonic School maintained that vision was effected by means of something emitted by the eye itself which after meeting something else proceeding from the object excited the sense of light. In the theory of Plato three elements appear to have been necessary to cause vision. First a

visual stream of light or divine fire emitted by the eye itself. These visual rays entered into union with the rays of the sun and the two together meeting with a third emanation from the object seem to complete the act of vision.

The doctrine of visual rays and emission theories in general was combated by Aristotle as early as 350 B. C. He maintained that light is not a material emission from any source but a mere quality or action of a medium which he called the pellucid. Although the reasoning of Aristotle was very superficial, yet he is entitled to considerable credit for his sagacious though vague speculations regarding the nature of light and various optical phenomena. He may, to some extent, be regarded as having in a haphazard manner anticipated the undulatory theory of light which was established two thousand years afterwards by the labours of Hnygens, Young and Fresnel.

Notwithstanding the absurdity of the doctrine of ocular beams as it was called, the geometers of the Platonic School were acquainted with two very fundamental points in the science of optics. They taught first the rectilinear propagation of light and secondly the law of reflection. Epicurus and Lucretius and their followers had a confused notion that as we may feel bodies at a distance by means of a rod, so the eye may perceive them by the intervention of light. It is very remarkable that this strange hypothesis held ground for many centuries and little or no progress was made in the subject until it was established on the authority of Alhazen, an Arabian astronomer, in the eleventh century A. D. that the cause of vision proceeds from the object and not from the eye. Descartes imagined light to be due to a pressure transmitted instantaneously through an infinitely elastic medium filling all space and colours he attributed to a rotatory motion of the

particles of this medium. It having been proved by Romer that light travels with a definite velocity and it being accepted that a luminous body as such is the source of some mechanical influence which we call light and which is necessary to vision and above all that the phenomena of heat and light are manifestations of energy the question arises as to how and where this energy exists during the interval between the instant it leaves the luminous body and the instant it reaches the observer. Thus light requires about eight minutes to travel from the sun to the earth. How and where is this energy stored during the transit and by what means is it transmitted from the sun to us? Direct action at a distance is out of question. We cannot conceive of energy disappearing at the sun and reappearing at the earth after an interval of eight minutes without having been propagated continuously in the interval through the intervening space. In the present state of knowledge we are acquainted with energy only as associated with matter, so much so, that matter has been defined as the vehicle of energy. Consequently two distinct and intelligent methods of representing the propagation and nature of light have been conceived. The first, the emission theory which was elaborated by Newton, assumes that a luminous body continuously emits small particles or luminous corpuscles of extreme minuteness in all directions. These particles are projected from the body and travel through space with the velocity of light carrying with them their kinetic energy, i.e., their energy of motion. This theory accounts for such general phenomena as the rectilinear propagation of light and laws of reflection but some of its consequences are quite inconsistent with observed facts.

For instance the doctrine as ordinarily expounded has led to the conclusion that light

travels faster in denser media, while experiments prove the reverse. This and other facts which it has failed to explain have been satisfactorily accounted for by the wave theory which supposes light to be due to a periodic disturbance in the medium between the luminous body and the eye which permeates all space. The hypothetical medium is called the ether. According to this theory a luminous body is the source of a disturbance in the ether which is propagated in the form of waves through all space. These waves falling upon the eye excite the sense of vision. They travel with the velocity of light and carry energy from the body which produces them to that by which they are absorbed.

They hypothesis of the emission theory assumes that the sensation produced by light is due to a mechanical influence on the retina. When the corpuscles travelling with an enormous velocity strike the retina, they will have an enormous impulse, strong enough to destroy the retina.

Reflection. According to the theory of emission each luminous corpuscle travels in a straight line through a homogeneous and isotropic medium. As soon as the particle comes within a short distance of the reflecting surface, it begins to experience its repulsive or reflecting action. The velocity of the particle may be resolved into two components, one parallel to the reflecting surface and the other perpendicular to it. The former component is altered by the action of the surface while the latter is at first diminished and then reversed in direction so that the molecule retires from the reflector with the same speed as it approached it. As soon as the perpendicular component begins to diminish under the reflecting action of the surface the path of the molecule begins to curve and when this component is reduced to zero, it becomes parallel to the surface.

Beyond this point the repulsive action of the surface is the same as it was before, and the route of the molecule is along a curved path, while at the point of emergence from the reflector it retires with its velocity perpendicular to the surface reversed in direction and the velocity parallel to it unaltered. Therefore the particle being free from the influence of the surface bounds out making an angle with the surface equal to that made with it at the point of incidence. Thus this theory easily accounts for the law of reflection.

The laws of refraction also can be easily made out from the emission theory. The evidence in favour of the emission theory is very considerable. It readily accounts for the rectilinear propagation of light which at the outset looks more like the motion of projectiles than the propagation of undulations which have a tendency to spread out. It lends itself at once to the explanation of rays and shadows while the aberration of light is an immediate deduction. The so-called rectilinear propagation of light was a stumbling block which perplexed the supporters of the wave-theory and defied any satisfactory explanation till the time of Young a hundred years after the time of Huygens, who sought for its explanation in certain speculations regarding the constitution of ether. That no further progress was made until the time of Young has been attributed to the great impulse given to the study of the motion of particles by the grand discoveries of Newton, who diverted the attention of men of science into that channel rather than to the study of the propagation of undulations.

The existence of both reflection and refraction at the surface of a transparent substance presents at first sight a great difficulty in the understanding of the emission theory, for it is not easy to conceive how the same surface may at one time reflect and at

another refract an impinging molecule. To explain these phenomena, Newton was led from his observations on the colours of thin plates to endow the luminous corpuscles with phases or fits of easy reflection and easy transmission so that sometimes they are in a condition to be reflected and sometimes in a condition to be refracted at a transparent surface. To communicate these fits to the luminous corpuscles he imagined all space to be filled with an all-pervading medium, viz., ether. The luminous corpuscles on striking a reflecting or refracting surface excite waves in the ether which overtake them at regular intervals and assist or oppose their motion periodically so that at any new surface they are refracted or reflected according as the wave assists or opposes the corpuscle. The element of periodicity thus so ingeniously introduced and which is so fundamentally involved in a wave-motion we should naturally expect to be independent of the angle of incidence. However to reconcile this theory with his observations on thin plates, Newton found it necessary to suppose the length of a fit to vary as the secant of the angle of incidence and it does not appear easy to account for such a law. Boscovich attributed the fits to a polarity of the luminous molecules which by rotating presented alternately their different sides to the reflecting or refracting surface, and Biot expounded the same theory. In conclusion, we may state that we may follow the ingenious exponents of the emission theory and by suitably framing their fundamental postulates we might fairly meet all the objections that have been raised against it. It will be found, however, on an examination of the whole, that these necessary postulates endow the corpuscles with the periodic

characteristic of a wave-motion and when this is introduced the corpuscles themselves may be eliminated for the wave-motion alone sufficiently explains the phenomena. Hence the one remaining argument against the supposition of corpuscles is that they are superfluous, for we believe that no direct test as has been supposed to be given by the law of refraction in regard to the velocity of light or interference phenomena, can decide between the rival hypotheses.

Let us now discuss the wave-theory in full. The true founder of the wave-theory is undoubtedly Huygens, who in 1678 first stated it in a definite form and in 1690 published a satisfactory explanation of reflection and refraction on the supposition that light is due to a wave motion in the ether. He also accounted for double refraction in uniaxial crystals a phenomenon which has been observed and described by Bartholinus about 1670. Having failed to account satisfactorily for the rectilinear propagation of light or the theory of shadows to which the corpuscular theory lent itself easily, the wave-theory so well-initiated by Huygens fell into disrepute and remained lifeless for almost a century. It was then revived by Doctor Young's discovery of the celebrated principle of interference. Although Huygens discovered what is known as the polarisation of light he was unable to account for it on the wave-theory, neither could Young, for these philosophers supposed the wave disturbance in the ether to be longitudinal as in the case of sound. It was not until Fresnel introduced with brilliant success a happy guess of Hooke's in 1672, viz., that the light vibrations are transverse, that is perpendicular to the direction of the ray, that the great

difficulties besetting this theory were removed and the known-phenomena not only satisfactorily explained but others not yet discovered were anticipated. It was the phenomenon of polarisation of light that led to the final abandonment of the wave-theory by Newton. Having before his mind the longitudinal or sound vibrations he could not conceive how a ray could have different properties on its different sides. He therefore fell back upon the emission theory and developed it with a genius more than human.

About 150 years before the time of Young, Grimaldi remarked that in certain cases when two lights were superposed, they can partially destroy each other and thus showed that light is not a material substance. In dealing with interference experiments, Fresnel observed a series of dark and bright bands. On the whole there is no annihilation of light. The deficient illumination of the dark bands is accounted for by the excessive brilliancy of the bright bands. The dark points do not consequently point to the annihilation of any portion of the light but merely to a redistribution of it on the screen. It is sometimes asserted that the mutual interference and consequent production of fringes by two similar sources of light, completely overthrow the material or emission theory of light for we cannot conceive of two substances destroying each other. But it should be remembered that here we have no destruction of light, the total quantity remaining the same just as in the case of sand or dust strewn on a vibrating plate or in a sounding tube. If the dust be uniformly distributed on the plate before the vibration starts, it will, when the plate is drawn with a bow, collect in certain lines leaving the other

parts naked. The total quantity of dust however remains unaltered and the same fact holds good in Young's interference experiment. This experiment would consequently not overthrow the emission theory but rather force us to adopt some new hypothesis concerning the corpuscles and their mode of interaction just as Newton invented his theory of fits to explain the production of coloured rings by thin plates.

The principle of interference explains several phenomena fertile in physical science. What is our reply then to the objection of the followers of the emission theory: "If light consists of undulations in an elastic medium it should diverge in every direction from each new centre of disturbance and so like sound bend round interposed obstacles and obliterate all shadow." The reply of the wave-theory is that light does bend round obstacles but to a very small extent on account of the extreme shortness of its wavelength and shadows exist because the several portions of the laterally diverging light destroy each other's effect by interference.

It seems possible to conceive of more than two modes by which anybody as a source of mechanical influence travelling with a finite velocity can ultimately affect and communicate energy to another body situated at a distance. A mechanical influence implies the intervention of a substance of some kind and this substance may be either projected forth from the influencing to the influenced body like bullets from a gun, each particle travelling with a certain velocity and carrying a certain amount of energy with it or it may exist as a continuous medium filling the space between the two bodies and, being disturbed by one the disturbance may be propagated

from portion to portion of the medium (each part being agitated by its predecessor and in turn yielding to the succeeding element the energy it received) till it finally reaches the second body. The waves excited by casting a stone into water or by a sounding bell illustrate the latter method of propagating energy, and this is the right picture of the wave-theory of light. Young's discovery of the so-called destructive interference of two lights suggests that light in itself is not a substance emitted by the luminous body. In addition the emission theory has failed (or requires interminable patching) to account for the observed facts. Scientists have consequently been compelled to have recourse to the wave-theory and to assume that all space is filled with some medium or substance if we may so call it, differing in its properties from visible material bodies and that a luminous body as such is the source of a periodic disturbance of some kind which is propagated in all directions by means of this medium or as it is called the *ether*.

The theory which promises most favourably at present is that which regards the ether as a turbulent fluid and light as an electromagnetic phenomenon arising from very rapidly alternating electric polarisations or displacements as Maxwell termed them. When a body is electrified energy has been spent in producing the electrification and this energy is stored in the ether around the body. To indicate this we may say that the ether is polarised, meaning thereby, that its elements have suffered some direct transformation in properties or change of state by the storing of energy. Electric phenomena are the manifestations of the energy in transformation

and when it is discharged the ether is released from the strain and the consequent polarisation. Similar remarks apply to an electric current.

If a body be rapidly charged and discharged or a current be passed rapidly in opposite directions the ether around will be as rapidly thrown alternately into opposite states of polarisation and when this becomes periodic, the vibration of the ether is then spoken of as the wave-motion of light. When the rapidity of these vibrations lies within certain limits, they affect the eye with the sense of sight; below the red we detect them by their thermal and above the violet by their chemical action.

S. K. RAMASWAMI AYYANGAR.

EXTRACTS FROM MISS KOFEL'S PAPER ON 'KINDERGARTEN METHODS IN TEACHING THE YOUNG'

Read at the Nellore Educational Exhibition.

What is meant by Kindergarten methods? In order to answer this question we will have to go back more than one hundred years to Switzerland and Germany.

Pestalozzi, the forerunner of the Kindergarten, was born on January 12, 1746 in Zurich, Switzerland and was brought up there by his mother, as his father died when the boy was quite young. The mother sacrificed herself for her children and renounced everything which might have been attractive to her at her age. Thus love, self-denial, renunciation and great self-sacrifice with which Pestalozzi was daily surrounded were implanted in his tender, plastic soul—qualities which made him so great and worthy to be loved.

He was therefore of opinion that all children before entering school ought to receive a certain training and as he had been brought up by his mother, he thought that the mother was the proper person to give this training in the home. Of great importance in the formation of his character were the boy Pestalozzi's visits to his grandfather who was a clergyman in a village not far from Zurich. The grandfather's real piety and true Christian care for his parishioners' welfare made a deep impression on the boy, while the visits they paid to the poor and sick roused in him a feeling of sympathy for the misery of his fellow-creatures and the care which his grandfather bestowed on the village school, his endeavour to truly correlate and connect it with the moral and home life of his parish, roused already in those early years Pestalozzi's interest in education and gave it a decided turn.

Froebel, who as a young man was for two years a pupil of Pestalozzi, had not had a happy childhood, as he had lost his mother when quite a little child. His father devoted himself more to his parish than to his children. Unlike Pestalozzi, Froebel did not think it sufficient that the young children should receive their preparation for school only in the home and from their mothers. According to him society or the State had as much claim on the child as had the family. Therefore he thought that at the age of three till they were six children ought to be brought together to spend a few hours a day in a common life and in well-organized common employments. For these assemblies he invented the name 'Kindergarten.' As the gardener who expects his seeds to grow into strong healthy plants is careful to put them into good soil

adapted to the quickening warmth of the sun's rays and sees to it that there shall be no lack of moisture to prevent the full expansion of the germ which contains the future plant, so the true teacher knows that the surroundings affect the characteristics and germs latent in the child, that the child needs the warmth of the sun of love to bring out and quicken his various innate powers and the heartfelt sympathy of his elders in all he does.

Pestalozzi and Froebel were both religious men with broad views—not dogmatic. It was their conviction that 'All education not founded on religion is unproductive.' They had recognized the unity of all things, a unity due to the original Unity from whom all proceed and in whom all 'live and move and have their being.' The function of education is according to them to develop the faculties by arousing voluntary activity.

'Man is at once the child of nature, the child of humanity and the child of God and the aim of education is to bring him, while he is a child, into harmonious relations with all the three.' This was Froebel's idea. Froebel assures us that education in instruction and training, originally and in its first principles, should necessarily be passive, following, guarding and protecting, not prescriptive, categorical and interfering. He was a great knower and lover of children and it was his study of child-nature that led him to organise his system. He knew that the child gains his first knowledge through the senses and that he is delighted to use them, if allowed to do so. In order to train and co-educate these undeveloped senses Froebel introduced the various 'gifts.' No description of the 'gifts' is here attempted. Suffice it to say

that through each one of these Froebel wanted to teach something definite and to lead on the child step by step.

Froebel gave *action* a prominent place. In order therefore to satisfy the craving of the child he introduced various occupations such as perforating, sewing, drawing, paper-interlacing, weaving, paper-cutting and mounting, peas-work, clay-modelling, &c. Some of these occupations are rejected on the ground of their putting too great a strain on the little child's undeveloped muscles and on the eyesight. Others, however, must have their place in the Kindergarten school.

Froebel advocated that each child should have his little garden to cultivate, giving him something to do as well as leading him to the study of nature, for nature is the book which every child soonest learns to read, because he earliest comes into contact with it through the senses. At first this study must be only observational, the material must be taken from the immediate neighbourhood of the child, he must be so guided that he will take an interest in the plants and animals around the home and the school and note such as he passes on his way to and fro. He must be so led that he will wish to discover things for himself, in order that he may understand the workings of nature and love it, not ruthlessly destroy plant and animal life. Froebel had the children taught to love and care for animals, "their little brothers and sisters, lower down," as some one has called them. The keeping of pets at school and in the home is therefore to be encouraged. In studying nature, as in everything else, familiar objects must first be taken and the home and school-life become interwoven. Nor should the study be confined to organic

nature. The child must be guided by continually interesting its attention, for attention is the very life of concentration and will. Often, however, the lessons are most uninteresting and really of no value, because a teacher every day asks the same formal questions as: How many eyes has the cat? How many legs has the dog? etc.

Already in these early years the child can learn something of practical hygiene through the nature lesson by being made to observe the effects which the light and heat of the sun, of pure air and also the supply of water, have on plant and animal life and by pointing out to him in what manner they also affect man. No harm is done if even the small child is taught to understand the value of personal cleanliness and the effect of plenty of sun and fresh air on the body.

What lover of children does not know the almost magical effect on them of the words "I will tell you a story?" And who having observed them at play is not aware of the fact that they always like to 'make-believe'? It is therefore right and proper that hand in hand with lessons on nature there should go at least in the early years, the telling of stories, dramatizing them and interspersing them with songs. The children must at first be allowed to reproduce the stories in their own ways, only guided and corrected when necessary. These stories may be about plants and animals, about people the children know, or taken from history, present or past; whatever the subject, the children will always be interested if the story is properly told, the teacher making the children feel that he enjoys it as much as they do. They may often be asked to relate any stories they know on any event in which they themselves have taken part.

It is sometimes objected that it is not a good plan to encourage the acting or 'let us pretend' instinct in children, that it is like encouraging untruthfulness. This however is not the case. While they are acting out stories they do not *pretend* to be the animals or persons or things they represent, they *are* such for the time, with so much life do they enter into the play and so great is their imagination.

The three typical activities of childhood are those related to talking, playing and drawing or picturing. So, side by side with the story and the nature talks we must have drawing, painting and modelling or construction. The child must *do* things with his hands, build sand castles, bake mud cakes and make pictures of the real or the fancied world. One must study the child's taste and tendencies and give it tools and materials wherewith to express his original idea. It would be unnatural if the child's first reproductions were perfect. Froebel said: "The child, the boy, indeed should know no other endeavour but to be at every stage of development wholly what this stage calls for." He, a knower of children and child nature, did not expect the child to be able to do the work of the boy or the boy that of the man. Many of these activities besides calling forth self-expression and the creative powers of the child also inculcate a spirit of co-operation. Each child ought to construct in his own way and do his own planning, the teacher only directing and guiding and through suggestion or correction constantly leading the child to clearer observing and thinking and therefore to better expression in work, whatever this may be. "Learn through doing," says Froebel "but it must be a *doing* which blossoms

into *being*, for it is character building which has to go on in the Kindergarten." Drawing, painting and modelling often help the child to express himself more clearly on various subjects than he could do either in spoken or written words. The form or colour which he gives to a flower or an insect or the way in which he models a geographical slope are generally more precise than his verbal description of the same subject would be.

While the little ones study nature they are insensibly led to imbibe the first elements of geography which correlates man to nature. In this study also the work must be made as real as possible, so that each child can contribute his bit of experience to the general cause. He must begin with what is nearest to his interest. Out of the sand or clay at his disposal he must himself shape the river-bed or the island.

Through story-telling and acting, the child, without knowing it, becomes acquainted with the twin sister of geography, history, the study of man in his various relations to his fellows. For many of these stories, as before suggested, may be about good and noble men and women who really existed, which fact as a rule, makes the stories more interesting to the children.

In the presentation of arithmetic concrete objects must at first be used. Word and object should not be separated, the child must see what he learns about. The little ones must become interested—interest is the great thing in all study—then gradually they will get an insight into the practical value and the abstract aspect of the work.

Froebel full well knew the value of play as such, therefore he gave great prominence to games. They must not be looked at only

from the point of recreation and from the salutary effect they have in forming character. Play is a form of social preparation, each child effaces himself for the sake of the class or his side in a game and thus learns unselfishness.

If properly trained according to Kindergarten methods the child ought to carry from the Kindergarten into the school: "(1) A habit of joyous but orderly activity and liking for employment; (2) Habits of obedience and promptness; (3) A little mental content of well-chosen stories, songs and good descriptive words and phrases; (4) An aroused or stimulated appreciation of home and family life; (5) A habit of good-humoured, kindly co-operation with the activities of others and acceptance of 'community' regulations; (6) A little skill in planning combination and invention of materials; (7) The beginning of a habit of comparison and power of discrimination of likenesses and differences, which, if continued in school, should be the basis of good generalizations."

The individuality of the child is continually becoming more recognized in the school. In some instances perhaps too much liberty is given, the pendulum has swung too far but that probably was necessary in order that the child should be treated more like a human being, "a fresh creation demanding modified methods in each case." Methods should not be rejected because teachers do not know how to apply them. Nor must one follow blindly what somebody else does—one must consider the times and the circumstances.

It has become a trite saying that the smallest children ought to have the best teachers. The best teacher however is not always the one who passed the highest examination.

Such a teacher is often so full of his learning that he cannot bring himself down to the level of the child, he pays no attention to the notions of which the little one may be full, he only plans for the sake of his own ideas, allows no room for the child's own suggestions and thus chokes the creative instinct of the child. The ideal Kindergarten is "one who has strength and delicacy, a child's heart, a woman's heart and a mother's heart in one, who has clear judgment and ready sympathy, strength of will, keen insight and oversight, the buoyancy of hope, the serenity of faith and the tenderness of patience." He is also one who has fully grasped the importance of his calling, the mainspring of whose whole work is love.

If it is true that the welfare of nations depends on what the *man* is and the welfare of the man on what the *child* is, then it can easily be seen how all-important is the training of the young, how all that is in latency, noble, good and pure in them should be fostered and developed, for the hope of the world lies in the children.

M. SUBRAHMANYAM.

INSPECTION OF SCHOOLS

BY A TEACHER OF EXPERIENCE.

1. The object of inspection is evident to any ordinary person. It is to exercise checks on any tendency to deterioration in methods of teaching, in the quality of the staff and in the appliances. It has also the constructive effect of setting models of improved methods and securing grants or other helps to increase efficiency in course of time. Equally with the importance of the object is the nature of the inspecting staff. It must be such as to fulfil its end.

Indigenous or Missionary bodies rarely have inspecting agencies of their own. Only the Government, in their watchfulness, maintain a staff. It has therefore, to be seen what amount of success has actually been achieved.

2. Whatever might have the actual condition prior to the first edition of the Madras Educational Rules, sanctioned by the Government, experience of affairs since then has not led to the conclusion that the achievement is either marvellous or noteworthy in Secondary schools. Teachers of a higher grade are employed in them. A good number consists of those trained at the Teachers' College. This class has had enough of drill in methods. Even those who have not undergone training have vivid memories of the teachers and professors through whose hands they might have had the good fortune to pass in their school and college days. These early impressions are even more effective than those derived from the training college. To a class of people of this description, inspection is of use only if the Inspectors give proofs of such experience and general culture as to be their guides. If young men from the Universities of Cambridge or Oxford are appointed, they are not of much value for purposes of guidance. As for general culture, it is not known how far they have supplied examples.

3. It may be said that remarks like these are easily passed by men who are not in charge of administration and in possession of the knowledge of practical limitations to the working out of any scheme. To such an objection the answer is not too difficult to be given. The working out of the Educational Rules and the part that the Inspectors play therein may be admitted. But, is it not at the same time noticeable that when sufficiently capable men have framed the rules of recog-

nition, the mere power to check a list of the staff, the furniture and appliances requires not much effort beyond a mechanical routine? It is not to be taken that the latter has no value; for the natural tendency of managers is to neglect unless there is an inspecting agency armed with the power that the State gives. What has to be noted is not the system of rules but the efficiency of those working it out. Looked at from this point of view, teachers of experience know very well that, in private schools, native or missionary, they cannot interfere with the internal management and that the status of teachers is, except in a few cases, not improved by them.

4. As regards model lessons, they are a rarity. Before the recent changes, Inspectors used to examine the boys. Since the recent curriculum of studies for the University, they have begun either wholly to examine the teaching of teachers or partly to do so and partly to examine the boys. There has been, of late, a good deal of talk about direct methods of teaching. Whether there have been instances of Inspectors setting examples themselves and whether they have gone beyond a pious resolution to see teachers improve of their own accord, while they are left to struggle in their daily work without any assistance worth mentioning are matters too well-known to the school-world and to the public to need comment.

5. The class of Assistant Inspectors next in rank to the Inspectors serves as the intermediate means of communication between the Inspectors and the Sub-Assistants. The Department of Public Instruction had even an idea of abolishing the office of Assistant Inspector and replacing them by a class of superior Sub-Assistants. It has been slightly modified and they are now in charge of primary education in the districts.

They help the Inspectors in the inspection of the Secondary schools. Hitherto the Sub-Assistants used to assist the Inspectors especially with respect to lower forms and the optional languages of the higher ones. While willing to admit that this class has supplied Inspectors, some of whom are able, the facts have to be stated that they are not like the Inspectors able to do inspection work of the higher forms and that they are not as well-informed of the primary schools as the Sub-Assistants. So, when asked to help the Inspectors, they make suggestions of a more or less unimportant character in such a manner as to excite the pity of the schoolmaster.

6. Then, there is the next class of Sub-Assistants. They inspect village schools. One thing must be said in their favour. In intellectual attainments, they are head and shoulders above the village teachers and so command respect. But the number of occasions in which they can visit each school is so limited that they do not exert any perceptible influence on primary education. So, there has been the recent provincialisation of inspecting schoolmasters that is calculated to encourage them to a more detailed and accurate fulfilment of sound methods in primary schools.

7. There are exigencies of public service that render frequent transfers necessary. This vitiates even the possible amount of success. What, to one Inspector is important, is to another the reverse. At any rate, there is no continuity sufficient to ensure the managers that, if they consecutively follow a settled plan, they can please. Schoolmasters are also placed under the necessity of adjusting themselves to the individual tastes of different Inspectors. The pity of it is apparent when a young man from a British

University, having little or no acquaintance with Indian schools, can pronounce an opinion on the qualification or the disqualification of particular teachers to teach particular subjects. For the purpose of the Inspector's authority, it does not matter what experience teachers have had and what they are capable of doing. It is not contended that such instances occur; but, when they are invested with such a discretionary power, it is but natural to expect them to belong to an order worthy of it.

8. It is not deemed possible to get, in India, the equals of His Majesty's Inspectors of Schools in Britain like Messrs. Fitch and Arnold; for, it is acknowledged on all hands that they are chosen out of a class by no means first-rate in their own land. Even recognising practical difficulties in the way of securing the best men, arrangements should be made to let them gain Indian experience before they are assigned an important executive function in the Educational Department. One way is to give them appointments in training colleges to begin with. Here, it must not be the work of passing criticisms on the lessons of students under training, but must be one of attempting to set models before them. Otherwise, there will be a vague desire to see realised, things not possible in daily work. The Indian Civilian from Great Britain is first placed under one of Indian experience before he is placed in charge of revenue work. The same method may be reasonably adopted in the Educational service also.

9. While judging Inspectors and their work, critics should not be too hard on them for defects for which they are not responsible. As they gain experience, they see that their remarks on the work of teachers are not enough and that even appreciation does not

go a great way. It is clear to them that, only when the ways and means of improving the condition of teachers are within their power, their encouragement to teachers to follow the best methods is of any avail. Questions of this nature pertain to financial considerations of the State, not meant to be treated of here. All that is intended is that, when a serious difficulty lies in their way, there should be sufficient allowance made before we find fault with them for not achieving more.

10. But, before the public are assured that many-sided financial considerations have had their weight with the Government fresh appointments are made to increase the number. The Indian delegate to the Imperial Press Conference laid it before the British public that, when there is an attempt at reform in education, new Inspectors are appointed as if that would do everything. Whether it is the best method consistent with economy and efficiency may be left to be decided by impartial and noble souls.

MATHEMATICS.

[Conducted by B. KRISHNAMACHARI, M.A.]

83. [M. BHIMASENA RAO.] Solve:—

$$x^2 + xy + y^2 = c^2 \quad (i)$$

$$y^2 + yz + z^2 = a^2 \quad (ii)$$

$$z^2 + zx + x^2 = b^2 \quad (iii).$$

Solution BY K. S. SRINIVASACHARI.

$$(i)-(ii). \quad x^2 - z^2 + y(x-z) = c^2 - a^2$$

$$(x+y+z)(x-z) = c^2 - a^2 \quad (iv)$$

$$\text{Similarly } (x+y+z)(y-x) = a^2 - b^2 \quad (v)$$

$$(x+y+z)(z-y) = b^2 - c^2 \quad (vi)$$

$$\text{Dividing (iv) by (v), } \frac{x-z}{y-x} = \frac{c^2 - a^2}{a^2 - b^2}$$

$$\text{or } (x-z)(a^2 - b^2) - (y-x)(c^2 - a^2) = 0$$

$$\text{or } x(c^2 - b^2) - y(c^2 - a^2) - z(a^2 - b^2) = 0$$

XVI

$$\text{i.e. } x(b^2 - c^2) + y(c^2 - a^2) + z(a^2 - b^2) = 0.$$

$$\therefore \frac{x}{b^2 - c^2} = \frac{y}{c^2 - a^2} = \frac{z}{a^2 - b^2} = k \text{ (say)} \quad (vii)$$

$$\therefore (x+y+z)(x-z) = 2k^2(a^2 + b^2 + c^2)(c^2 - a^2) = c^2 - a^2 \text{ from (iv).}$$

$$\therefore 2k^2(a^2 + b^2 + c^2) = 1$$

$$k^2 = \frac{1}{2(a^2 + b^2 + c^2)} \therefore k = \pm \frac{1}{\sqrt{2(a^2 + b^2 + c^2)}}$$

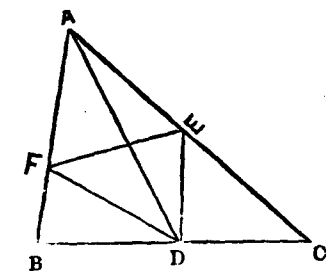
whence and from (vii)

$$x = \pm \frac{b^2 - c^2}{\sqrt{2(a^2 + b^2 + c^2)}} \text{ and similar values for } y \text{ and } z.$$

84. [M. BHIMASENA RAO.] The sides of a triangle ABC are divided in the ratios $l:m$, $m:n$, $n:l$. Show that the area of the triangle formed by joining the points of division is equal to

$$\frac{2lmn \Delta}{(l+m)(m+n)(n+l)} \text{ where } \Delta \text{ is the area of ABC.}$$

Solution BY K. S. SRINIVASACHARI.



Let the sides of the ΔABC be divided in the given ratios at D, E, F.

$$\text{Since } BD:DC = l:m$$

$$\Delta ADB:\Delta ADC = l:m.$$

$$\therefore \Delta ADB = \frac{l}{l+m} \Delta, \text{ where } \Delta \text{ is the area of the } \Delta ABC.$$

Again since $AF:FB = n:l$
area of the triangle BFD

$$= \frac{l}{n+l} \Delta ABD = \frac{l}{n+l} \times \frac{l}{l+m} \Delta$$

$$= \frac{l^2}{(l+m)(l+n)} \Delta.$$

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$$\text{Similarly area of } \triangle AFE = \frac{n^2}{(n+l)(n+m)}$$

$$\triangle CDE = \frac{m^2}{(m+l)(m+n)}$$

$$\therefore \text{ area of } \triangle DFE = \triangle - \triangle \Sigma \frac{l^2}{(l+m)(l+n)}$$

$$= \triangle \left\{ 1 - \Sigma \frac{l^2}{(l+m)(l+n)} \right\}$$

$$= \triangle \left\{ \frac{\pi(l+m) - \Sigma l^2(m+n)}{\pi(l+m)} \right\}$$

$$= \frac{\Delta \cdot 2lmn}{(l+m)(m+n)(n+l)}$$

91. [M. M. VENKATACHARIAR.] Assuming that sound travels at the rate of 1100 feet per second and that a person walking towards a gun fired once a minute hears the fourteenth report $12\frac{27}{29}$ minutes after hearing the first report, find the rate at which the man is walking.

Solution by K. S. SRINIVASACHARI.

We shall call for convenience the points where the man hears the 1st and the 14th reports, A and B.

If the man had been staying at A he would have heard the 14th report 13 min. later. So since the report reaches B $\frac{2}{29}$ previously, sound takes $\frac{2}{29}$ to travel the distance AB.

$$\therefore \text{ Distance AB} = \frac{2}{29} \times 60 \times 1100 \text{ ft.}$$

Also the man takes $12\frac{27}{29}$ to travel AB.

Hence his rate per hour

$$= \frac{2}{29} \times \frac{60 \times 1100 \times 29 \times 60}{3 \times 375 \times 1760} \text{ miles}$$

$$= 4 \text{ miles.}$$

MADRAS STUDENTS ADVISORY COMMITTEE.

INDIAN STUDENTS IN ENGLAND.

Circular No. I.

The following Circulars have been issued:—

The attention of Indians who are contemplating going to England for the purpose of study and of parents and others interested in such persons, whether now going or already gone, is drawn to the measures that have recently been taken by the Government of India to ensure assistance in the way of friendly information and guidance.

In the past young Indians before leaving this country have frequently not been able to gather sufficient information about educational facilities and social conditions in England, and on arriving in a new and strange land they have too often been at a loss to find their friends, competent and willing to advise them in their difficulties. Moreover the parents and guardians of these young men have naturally felt a very great anxiety about the welfare of those for whom they are responsible, but over whom they are no longer able to exercise a direct control and as to whom they are often insufficiently informed.

In future it is hoped that as far as competent information and advice and friendly supervision can ensure such a result, nothing may be wanting to make an Indian student's career in England the source of the greatest profit to himself and the least anxiety to his relatives at home.

With these objects in view a Bureau of information and an Advisory Committee have been established in London working in close relation with one another.

In the words of a Resolution of the Government of India "the functions of the Bureau will be to answer inquiries in regard to educational facilities, to keep a list of lodgings and boarding-houses suitable for Indian students and of private families willing to receive them on such terms as may be arranged to furnish students with references, to bring to the notice of the Advisory Committee any cases in which the regulation of educational institutions bears hardly on Indian students, and generally to give all possible assistance either to students themselves or to their parents in India. The Bureau will be in close touch with the Board of Education, with its correspondents at the leading Universities, and with local Committees in India.

"The Advisory Committee will be available for consultation by students or their parents, by

the Educational Advisor, and by the Secretary of State, and will bring to the latter's notice any matter in regard to which it may desire to suggest action on his part for improving the position of Indian students. It will stand, as far as possible in *loco parentis* to students whose parents are unable themselves to supervise their education. In particular, its members will be ready to assist students in social matters. It is hoped that in this way they may be able to do much towards removing any feeling of friendlessness, and towards providing for young Indians social opportunities which would not otherwise be open to them."

Lord Ampthill whose sympathy with Indians is so well-known, especially in the Presidency of which he was once the Governor, is Chairman of the Advisory Committee and Mr. T. W. Arnold, formerly of the Indian Educational Service, is Secretary to the Committee and head of the Bureau.

To supplement the activities of the Central Bureau and the Advisory Committee in England, local Committees, which are in constant communication with Mr. Arnold, have been established in each Province, and that for the Madras Presidency, Mysore and Coorg consists of the following gentlemen:—

PRESIDENT.

1. The Vice-Chancellor of the University of Madras (*ex-officio*.)

VICE-PRESIDENT.

2. The Director of Public Instruction, Madras (*ex-officio*.)

MEMBERS.

3. The Resident in Mysore (*ex-officio*.)
4. The Hon'ble Raja, Vasudeva Raja, Valia Nambidi of Kollengode.

5. Raja Venkata Kumara Mahipathi Surya Rao, Raja of Pithapuram.

6. M.R.Ry. P. T. Srinivasa Iyengar Avergal, M.A., Principal, Mrs. A. V. Narasinga Rao's College, Vizagapatam.

7. The Hon'ble Mr. P. S. Sivaswami Iyer, B.A., B.L., Advocate-General.

8. Mr. F. S. Davies, B.A., Principal, Ernaku-lam College, Cochin.

9. Mr. A. C. Mitchell, D.Sc., Director of Public Instruction, Travancore State.

10. Muhamad Qadir Navaz Khan Sahib, Khan Bahadur, Acting Collector of Nellore.

11. M.R.Ry. Vengail Kunhi Raman Nayanar Avergal, Cannanore.

12. M.R. Ry. K. Narayana Rao Avergal, B.A., B.L., High Court Vakil, Madras.

13. Mr. J. H. Stone, M.A., Principal, Presidency College, Madras.

14. The Rev. William Skinner, M.A., Principal, Madras Christian College.

15. M. R. Ry. K. Ramunni Menon Avergal, B.A., Senior Assistant Professor, Presidency College, Madras.

SECRETARY.

16. Mr. A. Davies, Deputy Registrar, High Court, Madras.

The main functions of the Madras Students Advisory Committee are:—

- (1) To furnish information and advice to Indians who contemplate going to England.
- (2) To circulate in India to Colleges and other institutions the education, financial and social information collected by the Central Bureau in London.
- (3) To communicate with the Central Bureau on behalf of students before they start or on behalf of their parents when they are in England.

All students of the Madras Presidency, Mysore and Coorg, who contemplate going to England and the relatives and friends of those who are going or are already gone, are therefore invited to correspond on any point upon which they require information or advice with any member of the Committee or with Mr. Arthur Davies, Secretary to the Madras Students Advisory Committee, at Smith's Gardens, Poonamalle Road, Madras, W. In the first place a letter should be written, though later in most cases it will probably be found most useful that a personal interview should be held. The Secretary has in his possession copies of the Regulations for most of the examinations and other means of entering the higher grades of the various public services in India, and also the Calendars and Syllabuses of the principal Universities and Colleges and other similar educational institutions of Great Britain; and where he cannot himself give the required information at once, he can always obtain it by communication with Mr. Arnold.

Students are also strongly advised to purchase for themselves the "Handbook of Information for Indian Students" published by the

National Indian Association. This book may be obtained from Messrs. G. A. Natesan and Co., Esplanade, Madras, for one Rupee. A twelfth edition has recently been issued and it contains a large amount of most useful information on Educational and Social matters.

It will be noticed that the Advisory Committee in England offer to stand, as far as possible, *in loco parentis* to the students whose parents are unable themselves to supervise their education. It is expected that Indian parents will be quick to take advantage of this offer; but it must be pointed out that ordinarily Mr. Arnold possesses no power of control, and if any student chooses to disregard his advice, he is quite at liberty to do so. If parents wish their sons to live under guardianship and wish the Advisory Committee in England to undertake any responsibility, it is necessary that their remittances should pass through the hands of Mr. Arnold. This should be quite clearly understood as otherwise parents supposing that their sons are acting under the guidance of Mr. Arnold may naturally feel disappointed if they find that they have got out of touch with him altogether.

One of the most useful functions of the Advisory Committee in England and one which they are often asked to exercise is the Meeting of Students and the making of arrangements for their accommodation on their first arrival in England. As there are several ways of arriving in England, it is very important that exact information should be given, through the Secretary, to Mr. Arnold, as to the proposed route and the time and place of arrival, and students should carry out their plans to the letter.

It is proposed to publish from time to time circulars supplementary to this containing information for all students going to England or for some particular class of them.

(Signed) ARTHUR DAVIES,

Secretary,
Madras Students Advisory Committee.

January, 1910.

INDIAN STUDENTS WHO PROPOSE TO ENTER THE UNIVERSITIES OF OXFORD AND CAMBRIDGE.

Circular No. II.

With regard to the Students who wish to enter the Universities of either Oxford or Cambridge, it is important that they should recognise that an early application must be made in order to secure admittance for the Michaelmas Term (commencing

in October). For example, there is no vacancy in Balliol College until October 1912 and it appears that the President of Magdalen College, Oxford, refused as many as 40 applications from English students last year. Many English parents make application to the Tutor of a College two, or even three years, before they wish their sons to enter. As Indian parents can hardly be expected to give such an early notice, most of the Colleges at Cambridge have agreed to keep a vacancy for at least one Indian Student a year, but the Tutors wish that applications should be sent in not later than the December of the year preceding the October in which the student will commence residence. Unless applications giving full details of the educational qualifications, social position, financial status, etc., of Indian applicants are sent in at this early date, there is very little chance of admission being secured in a College at Cambridge. This early application is asked for in order to allow time for full enquiries to be made. Most of the Colleges fill up their entries at a College meeting held either in the month of May or June, and this College meeting considers applications that have been received from parents and Headmasters during the course of the preceding winter or spring, and most Colleges give preference to those applications which have first been received. The Colleges at Oxford have not yet come to a similar arrangement, but it is hoped that they will soon be persuaded to follow the example of Cambridge in this matter and early applications should be made at Oxford also, but only a small number of the Colleges in this University are willing to admit Indian students.

Most of the Tutors of Colleges complain that few of the Indian students whom they have admitted in the past are fit to enter upon University studies. The Tutors ask that Indian students who apply shall have already passed some University Examination in India that will exempt them from the previous Examination in Cambridge or Responsions in Oxford—see Handbook of Information, pages 25 and 30-1. If a parent wishes to send his son to either Oxford or Cambridge before he has passed such an examination in an Indian University, he should be prepared to place the young man in the charge of a private Tutor who will prepare him for the Previous or Responsions as the case may be in order that he may pass either of these Examinations before entering the College. In such a case the young man's name would be entered provisionally on the books of the College, and the Tutor of the College would be able to judge of his qualifications in other subjects.

Mr. Arnold understands that there is a rather widespread belief that the Universities of Oxford and Cambridge wish to exclude Indian students. This is not the case; but Tutors of Colleges are unwilling to admit students whose educational qualifications are inadequate and who are not likely to profit from residence in either of these Universities. They also generally ask for some financial guarantee as in the past they have on several occasions found difficulty in getting College bills paid, and in some cases, when students had returned to India, no money could be recovered from them.

(Signed) ARTHUR DAVIES,

Secretary,

Madras Students Advisory Committee.

January, 1910.

OUR ENGLISH LETTER.

LIVERPOOL, January, 1910.

The best of years to you. We here are under the impression that some good is to come to India from the reforms just put into operation. We hope you think so too, because then we may be right. Things look very different at a distance, and we allow that there is more than a bare possibility of our being mistaken. And at the moment we can see nothing clearly: we are all wearing highly-coloured spectacles. We are in the throes of a General Election: that, we believe, is the correct phrase. And most certainly some vivid language would be needed to describe the turmoil and excitement that prevail. Both sides have taken their gloves off, and the fight is furious. But it will not be long protracted. In ten days' time we shall have some indication of the probable issue. Manchester polls on the first day, and what Manchester says then, England will repeat. What will Manchester say? We think we are clever enough to know, but we are certainly wise enough not to reveal that knowledge. Time will tell much more truly. But we are in for great days whichever party is returned. If the Liberals go back to power, they will have to grapple with the difficult task of altering constitutionally the Constitution, and from the Conservatives we can expect two Budgets in the course of a few weeks, the second of them setting up the momentous Tariff.

The second issue of the 1906 election was Education, the Tariff question being first. But hardly a word is being heard of it this year. And for this we are thankful. It is a hopeful sign. It means

that the Settlement Committee is still going on with its work, negotiations are proceeding between leaders on both sides, and there is reasonable hope of a concordat being arrived at. But in his manifesto at the Albert Hall, Mr. Asquith made a pointed reference to the Government's position. It was something of a coincidence, by the way, that, almost four years to a day after his predecessor's great Albert Hall meeting which initiated the Liberals' campaign of 1906, Mr. Asquith should follow his example in delivering from the same platform a manifesto to his followers. He said the Government took the same stand as in 1906. The anomalies of the 1902 Act were to be set right. Popular control and freedom from sectarian tests were the bare necessity. When "that right is established and made universally available, we shall be ready, as we have shown ourselves ready before, to deal liberally with the cause of minorities in populous areas." And no doubt if the Liberals are returned and can grapple with the House of Lords, this question will be settled rather on Runciman lines than McKenna or Birrel.

A pretty dispute has been proceeding at Liverpool. The Roman Catholic School of St. Sebastian, Fairfield, needed furniture. The Education Committee of the City Council generously ordered it. They then took steps to ascertain whether this course was legal. Counsel's opinion was rather against the legality of the purchase, which was really a charge on the managers. Yesterday the Education Committee succeeded in persuading the Council to ratify its decision. So, as far as that goes, the affair is over. But there is a fear in their minds that the Local Government Board Auditor will surcharge the amount. One of the points which they tried to ascertain in the debate was whether those who voted against the proposal would be equally liable to be surcharged with those who supported it. Their fears on this matter seem to have been allayed, because only three members voted against the payment. It remains with the auditor to take the next step.

The vacancy at Clifton has been filled by the appointment of Mr. King of Bedford. Mr. King, has done well both at Bedford and Manchester without achieving any astonishing success. He can be depended on to maintain the position of Clifton, without perhaps raising it so much as Mr. David would have done or as Mr. Paton has raised Manchester.

The *Journal of Education* has raised again the question of American honorary degrees, and has suggested to Dr. Clifford that he should abandon his, as Mr. Aked did, and so set a salutary example.

The degree was conferred by Bates College, which has only conferred degrees on two Englishmen, Dr. Dawson Burns and Dr. Clifford. It appears that Dr. Clifford's degree was solicited (not by Clifford himself, but by his co-religionists—Bates being a Baptist College), and that the degree has a sectarian rather than an academic flavour. But the reason for mentioning this matter is not to discredit Dr. Clifford who is an M.A. and B.Sc. of London, but to notice the interesting fact stated in a letter from the President of Bates: "I receive every year requests from men in England for honorary degrees from Bates; and I invariably reply that, whatever the merits of the applicant may be, we cannot grant such recognition without some natural and appropriate relations with the candidates." Would-be doctors, we salute you. (What an unfortunate language English is! how can we make sure that no one will misread that sentence?) The writer in the *Journal* computes that there are now 18,000 honorary doctors who owe their exalted position in the academic world to the kindly feeling manifested towards them by one of the thousand Universities or Colleges to be found in the United States and Canada. Long may they live to enrich the world with the fruits of their learning, and may these so severely rebuffed by the men of Bates take heart and persevere till they find others to take them more on their merits.

The Head Masters' Conference met, as usual, immediately after the schools had broken up for their Christmas holidays. A novel resolution was moved by Dr. Gray of Bradfield. He proposed that "this Conference welcomes the development of the Public Schools' League for Imperial Land Settlement in the Overseas Dominions, and recommends to the governing bodies of the schools the desirability of helping by annual financial grants the establishment of a central office in London for the permanent work of the League." It appears that local advisory committees have already been established in Montreal and Winnipeg to act as courts of appeal and protect young colonizers from ill-treatment. Among other things, Dr. Gray said: "It was not only the wastrels who had failed as colonists, but the good, respectable boys, and these attributed their ill-success to the atmosphere of school. The English public-school boy was lacking in three respects—self-reliance, purposiveness, and adaptability. He had learned to handle the willow and kick the bladder, but he had never been taught by manual training the intimate connexion of hand and brain. The public-school system might take credit for fitting its pupils to take posts in countries like India, that had been under continuous rule, but in new and independent settle-

ments it bended to produce airs of superiority and swagger. Times had changed since Burke, and other links were needed than "the ties light as air to bind the Empire together." The resolution was cordially adopted with the exception of the clause which requested subscriptions from the governing bodies; one headmaster went so far as to say that he would prefer to subscribe himself rather than ask his governors, but this sentiment was not reiterated by succeeding speakers.

Distinctly interesting was the discussion on the study of Greek—that hardy annual. Mr. Gibson of Birmingham moved—"That this Conference approves the principle that a boy should not be allowed to begin Greek until the foundations of Latin and French have been securely laid, and until he has received systematic training in English." The aim of the motion was to put Greek into its proper place. Rightly, as we take it, the desire is to retain and to postpone Greek, to keep it in the curriculum but to place it in order of time after the other languages. Dr. Rouse insisted on the rotation of languages: his ideal is French at 10, Latin at 12, Greek at 14. The resolution was adopted *nem con.* But, as was pointed out, the big schools have the matter in their own hands, and what they demand for their entrance scholarships will still be provided by the preparatory schools. *Quicquid delirant reges plectuntur Achiivi* was aptly quoted. After all, which is the true position? Must the genius be sacrificed to the average boy, or the average boy to the genius? This fundamental question was differently answered at the Conference. For ourselves, we should say that it is doubtful whether you can sacrifice the genius, it is certain that you can sacrifice the average boy. Some day he will be properly catered for, and that same day it will be seen that the genius will not starve.

Reviews and Notices.

THE PRONUNCIATION OF ENGLISH: BY DANIEL JONES, M.A. (CAMBRIDGE UNIVERSITY PRESS, 2s. 6d. net).

The Pronunciation of English, is among the most trying subjects of teaching in Indian schools and colleges. The unfamiliarity of a large class of teachers with the subject and the absence of any efficient text-books seem to be responsible for the inadequate treatment meted out to it. The pressing need in this direction has been supplied by a recent addition from the Cambridge University Press by Mr. Daniel Jones.

The first part of the book is devoted to an elaborate and scientific account of the organs of speech, a classification of English Sounds and a clear presentation of Phonetics. An excellent feature of the book is the phonetic transcriptions of illustrative passages from eminent writers. Its practical advantages to the student is heightened by the addition of guiding phonetic representations of the pronunciation of distinguished authorities in the Science.

A consideration of the difficulties that are usually encountered in all attempts at the acquirement of the correct pronunciation of a foreign language renders the existence of such a book highly desirable. Any effort to teach this difficult subject to a class must be all the easier by the guidance and help afforded by such an important contribution to the Faculty literature on this branch of linguistic training.

We cannot recommend the book sufficiently for the use of teachers of English in Southern India.

MASON'S SENIOR ENGLISH GRAMMAR: REVISED BY A. J. ASHTON M.A. (GEORGE BELL AND SONS, 3s. 6d.).

The Classical English Grammar of Mason, whose former popularity, though well-deserved is now on the wane, must receive an additional base of life by the revised edition presented by Mr. Ashton. *The Senior English Grammar* of Mason has been revised and brought up-to-date by large additions based on recent researches in English Philology. A clear knowledge of Historical English Grammar is provided in a short compass, while important details like dialectal varieties and their characteristic features are not omitted.

The exercises in the book are rendered specially valuable by the inclusion of extracts from writers in recent English Literature. They serve the double purpose of suggesting questions for solution and familiarising the reader with choice passages from literary masterpieces.

The high authority attaching to Mason, as a writer of treatises on English Grammar coupled with the improvements of Mr. Ashton, must make the work a valuable handbook in the higher forms.

PHILIPS' NEW SCHOOL ATLAS OF COMPARATIVE GEOGRAPHY. A SERIES OF 72 COLOURED PHYSICAL, POLITICAL AND COMMERCIAL MAPS AND DIAGRAMS WITH A CONSULTING INDEX. GEORGE PHILIP AND SON, LTD.

We are glad to bring this atlas to the notice of our readers. Different maps are given of the physical, commercial and political aspects of the several continents and countries. Though coloured some of the maps are given in outline and would prove serviceable to the student in locating towns, rivers, &c. by memory. In all respects the atlas deserves the patronage of our students and teachers.

THE NEW INDIAN ALGEBRA: BY B. KRISHNAMACHARI, M.A. (CROWN OCTAVO, 444 pages) SRINIVASA VARADACHARI & CO., MOUNT ROAD. RE. 1.

The author has tried to write a book suitable to the needs of the New Matric. Curriculum. He has wisely amplified the earlier portions, making them less of a task for the beginner. Graphic work is also largely introduced throughout, thus bringing the work up to modern requirements, besides making it more intelligible. Perhaps it has one fault and that is that of having a plethora of examples. This is about the best book available for the New Curriculum. The book is well got-up and moderately priced, and we recommend it unhesitatingly to all schools.

THE EDUCATIONAL POLICY OF THE STATE IN INDIA, being a Reprint of the Halifax Despatch of 1854, of portions of the Report of the Education Commission, and of the Orders of the Government of India on the Commission's Report, and the Quinquennial Report on Education up to 1897, with an Introduction. RE. 1-8-0.

Indian Educational Notes.

MADRAS.

MISS A. M. C. Arnold, Inspectress of Girls' Schools, Central Circle, has combined privilege leave and furlough for seven months with effect from the 10th of March 1910 or such later date as she may avail herself of it.

The furlough granted to Mr. H. J. Allen, Professor of History, Presidency College, has been extended by one day.

The following appointments have been made:—

Mr. H. S. Duncan, Inspector of Schools, Fourth Circle, to act as Inspector of European and Training Schools, Madras, during the absence of Mr. E. W. Middlemast on leave or until further orders.

[JAN. 1910.]

Mr. R. G. Grieve, Vice-Principal, Teachers' College, Saidapet, to act as Inspector of Schools, Fourth Circle, vice Mr. H. S. Duncan.

Mr. H. Dodwell, Acting Professor of History, Presidency College, Madras, to act as Vice-Principal, Teachers' College, Saidapet, vice Mr. R. G. Grieve.

The above arrangements to have effect from 23rd December 1909, the date of Mr. Mayhew's transfer to the service of His Highness the Nizam's Government.

Mr. R. G. Grieve, Vice-Principal, Teachers' College, Saidapet, to be Inspector of Schools, Third Circle, vice Mr. T. T. Logan retired, without prejudice to his present acting appointment.

Mr. H. Champion to be Vice-Principal, Teachers' College, Saidapet, vice Mr. Grieve, without prejudice to his present acting appointment.

The above appointments to have effect from 3rd January 1910, the date of retirement from service of Mr. T. T. Logan.

Mr. G. V. Subbarayudu Sastri, Assistant Inspector of Schools, Guntur District and Acting Inspector of Schools, Second Circle, is confirmed in the latter appointment from 1st January 1910, the date of retirement from service of Mr. L. C. Williams Pillai.

Mr. K. Sundararama Iyer, M.A., Principal of the Hindu College, having tendered his resignation, Mr. Srinivasa Iyer, of the Tellicherry College, has been appointed to succeed him.

Miss P. F. Parsons, Second Assistant Inspectress of Girls' Schools, is to act as First Assistant Inspectress, vice Miss J. Patterson on leave or until further orders, but to continue in the Madras Girls' Range.

Miss M. A. Jupe, Sub-Assistant Inspectress, Trichinopoly—Madura Girls' Range, is to act as Second Assistant Inspectress, vice Miss P. F. Parsons in the West Coast Girls' Range.

The leave without allowances granted to Miss T. M. Mergler, Sub-Assistant Inspectress, North Arcot—Salem Girls' Range, is extended by two months.

The Director of Public Instruction is pleased to sanction the following promotion of a Sub-Assistant Inspector of Schools:—

Mr. T. Nagabushanam, Sub-Assistant Inspector of Schools, Puddupur Range, from the Probationary Class to Class IV acting vice Mr. K. S. Appaswami Aiyar promoted—to have effect from 1st December 1909.

The promotion of Mr. T. Achuta Rau is cancelled with effect from the above date.

Mr. A. C. Pranatartibara Aiyar, Inspector of Schools, II Circle, to be Inspector of Schools, VII Circle, without prejudice to his present acting appointment vice Mr. L. C. Williams Pillai Avargal retired.

The Chancellor of the University of Madras is pleased to nominate the following gentlemen to be Ordinary Fellows of the University:—

The Rev. E. M. Macphail, M. A.
Nawab Mohamed Raza Khan, Khan Bahadur.
Lt.-Col. C. M. Thompson, M. D., I. M. S.
The Hon'ble Dewan Bahadur Subrahmaniam, B.A., B.L., Bar-at-Law.
Mr. A. A. Hall, M.A.
The Rev. G. Pittendrigh, M.A.
The Rev. D. Downie, M.A., D.D.
Mohd. Azizuddin Hussain Sahib Bahadur, Khan Bahadur.

Mr. W. E. Hoare, M.A.
Rao Bahadur S. Mangesh Rau, B.A.
Mr. S. Subramaniya Aiyar, B.A.
Mr. J. M. Velu Pillai.
Mr. P. Ramarayanagar.
Mr. Justice V. Krishnaswami Aiyar.

Mr. P. P. Braithwaite, Inspector of Schools, VIII Circle, privilege leave for four days with effect from the 6th December 1909.

The furlough granted to Mr. A. Govindarajulu Mudali, Sub-Assistant Inspector of Schools, Kumbakonam Range, is extended by three months.

The leave on medical certificate granted to Mr. S. T. Kallapiran Pillai, Assistant Inspector of Schools, South Arcot District, is extended by six months.

The Director of Public Instruction is pleased to grant Miss A. deRozario, Sub-Assistant Inspectress, Ganjam—Vizagapatam Girls' Range, privilege leave for a month with effect from the date of relief, and to appoint Mr. P. Virraju Pantulu, Sub-Assistant Inspector of Schools, Vizagapatam Range, to act for her in the third class during her absence on leave or until further orders.

The Director of Public Instruction is pleased to grant Mrs. M. Engler, Sub-Assistant Inspectress, Ceded Districts Girls' Range, acting sub privilege leave for six weeks from the date of her absence and to make the following appointments during her absence or until further orders:—

(1) Mr. A. Visvanatha Aiyar, Sub-Assistant Inspector of Schools, Chittoor Range to act in the

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North Arcot—Salem Girls' Range, in the third class.
(2) Mr. K. Amrita Rau to act as Sub-Assistant Inspector of Schools, Chittoor Range, in the probationary class, vice No. (1)—to draw Rs. 75 per mensem.

The Director of Public Instruction is pleased to appoint Mr. K. S. Vaidhyanatha Aiyar, Headmaster, Government Training School, Tinnevely and acting Sub-Assistant Inspector of Schools, Conjeevaram Range, to act as Sub-Assistant Inspector of Schools, Kumbakonam Range, in the probationary class, during the absence of Mr. A. Govindarajulu Mudali on leave or until further orders—to join on relief.

The undermentioned officers will be considered as holding their officiating appointments *sub pro tem*, with effect from the 18th October 1909, the date of deputation of Mr. B. C. Ramaswami Aiyar to the Pudukkottai State:—

(1) Mr. S. Swaminatha Aiyer, Sub-Assistant Inspector of Schools, Trichinopoly Range, and acting Assistant Inspector of Schools, Kistna District.

(2) Mr. M. Parthasaradhi Aiyangar, Sub Assistant Inspector of Schools, Ambasamudram Range, acting in the Trichinopoly Range.

(3) Mr. P. N. Ramaaswami Sastri, Sub-Assistant Inspector of Schools, Kanigiri Range, acting in the Ambasamudram Range.

(4) Mr. S. K. Venkatarama Aiyar, Headmaster, Government Training School, Chittoor, and acting Probationary Sub-Assistant Inspector of Schools, Kanigiri Range.

Mr. H. W. Callaghan, Assistant Inspector of Schools, Trichinopoly District, and acting Headmaster, Central High School, Mercara, to act on relief as Assistant Inspector of Schools, South Arcot District.

The following transfers of Sub-Assistant Inspectors of Schools, are ordered:—

(1) Mr. K. Narasimham, Sub-Assistant Inspector of Schools, Ellore Range, and acting 1st Assistant, Practising Section, Training College, Rajahmundry, to be Sub-Assistant Inspector of Schools, Gudivada Range—to join on relief by Mr. S. Kameswara Rau.

(2) Mr. T. Hanumanta Rau Sub-Assistant Inspector of Schools, Gudivada Range, to be Sub-Assistant Inspector of Schools, Ellore Range to join on relief.

TUESDAY, the 21st ultimo was a festive day in the Taylor High School, Narsapur, the occasion being the celebration of its 59th anniversary. The school was tastefully decorated. There was a large audience, which consisted of the leading pleaders and officials of the place. The chair was occupied by Mr. Guppy, I. C. S. The proceedings commenced with the reading of the annual report by the Secretary and the Headmaster, which showed

that the school was in a prosperous condition. A few recitations were gone through after which Mrs. Guppy gave away the prizes. The President made a very interesting speech in which he congratulated the members of the School Committee and the Headmaster and the teaching staff on the excellent condition in which the school was maintained. He was agreeably surprised to find such a flourishing institution in such a small place like Narsapur. He suggested means for the improvement of the Science apparatus and other appliances. A school-garden was a necessity in these days of educational reform. He exhorted the students to apply themselves closely to their studies and to prepare for the battle of life. Mr. and Mrs. Guppy were then garlanded and the proceedings closed with the usual vote of thanks.

It is notified that the Government have appointed the following gentlemen to be members of the Board for the award of Secondary School Leaving Certificates:—

Officials.

Mr. H. S. Duncan, Inspector of Schools.
Mr. A. C. Pranatartibara Aiyar, Acting Deputy Director of Public Instruction.
Mr. J. A. Yates, Inspector of Schools.
Mr. H. O. Kershaw, Inspector of Schools.

Non-Officials.

The Rev. W. Meston, Professor, Madras Christian College.
Mr. P. T. Srinivasa Aiyangar, Principal, Mrs. A. V. N. College, Vizagapatam.
Mr. V. S. Srinivasa Sastri, late Headmaster, Hindu High School, Triplicane.
The Rev. A. H. Davey, Principal, Findlay College, Mannargudi.

All communications should be addressed to the Secretary to the Commissioner for Government Examinations, Old College, Nungambakum, Madras. Replies will not ordinarily be sent to letters from individual pupils; the latter should apply for information to the Headmaster of their school.

The Government of Madras have sanctioned a grant not exceeding one-third of the actual expenditure, nor exceeding Rs. 10,000 towards the cost of constructing a building for the Sylvanus Stall Memorial School for girls at Guntur, subject to the following conditions:—(1) That in carrying out the work the suggestions of the Chief Engineer in his note are adopted; (2) that the work is completed before the 31st March 1911; (3) that a certificate of the actual expenditure incurred on the work is submitted before the 31st May 1911; (4) that all other conditions prescribed in the Grant-in-Aid Code have been duly complied with.

The Government of Madras have accepted the offer of the students of the Presidency College to endow a prize in the name of the late Mr. T. B. Scott, formerly Junior Professor of English in that College,

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and has ordered the Fund to be vested in the Treasurer of Charitable Endowments. The prize is to be called the Scott Elocution Prize.

THE Hon'ble Mr. Justice Abdur Rahim will deliver the Convocation Address of the Madras University in March next.

UNDER the direction of Mr. A. Mayhew, Inspector of European and Training Schools, Madras, Christmas vacation classes for teachers in Training and European Schools of this Presidency were opened on Monday, the 27th ultimo, at the Government Training School, Saidapet, and were continued till the 14th January. These classes had brought together about 350 teachers of both sexes, European, Eurasian and Indian, from all parts of the Presidency. Amongst those assembled were three Mother Superiors of Convents and a few Brothers of the Roman Catholic Colleges at Coonoor and Bangalore.

Mr. Mayhew, in declaring the classes open on the 27th ultimo, made a few remarks, and Brother Ford, Director of Education, Coonoor, also spoke, wishing Mr. Mayhew the compliments of the season and congratulating him on his successful efforts and great personal trouble in arranging the classes. He said it was with deep regret that they heard that Mr. Mayhew was about to leave them for Hyderabad, to enter the Nizam's service in the Educational Department, and wished him every success and prosperity in his new sphere of work.

The subjects of the course included Surveying and Levelling, Elementary Physics and Chemistry, Drawing, Singing and voice production, teaching of foreign languages, Botany, etc. The lectures were open to all teachers, but there were some for European teachers only and some for Training School teachers only.

There were two Conferences of Training School teachers on the 12th and 13th January, but the presence of European School teachers was welcomed. The subjects discussed were moral instruction in elementary schools, instruction in hygiene principles in schools and the adaptation of work in elementary schools to the needs of an agricultural community.

MYSORE.

MESSRS. T. G. Rama Iyer, B.A. and B.T. Kesava Iyengar, B.A., head the list of successful candidates in the Mysore Civil Service examination held in November 1909, and the Maharajah of Mysore has sanctioned their appointments as Probationary Assistant Commissioners, fifth class, schedule A of the Mysore Civil Service. Both these gentlemen are old students of the Madras Christian College. His Highness has appointed Messrs. Abdul Wajid, B.A. and H. V. Ramaswamy, M.A., B.L., to the same service, schedule B.

MR. J. H. Bhabha, M.A., Director of Public Instruction, Mysore, having resigned his office as an

Ordinary Fellow of the Madras University, becomes an Honorary Fellow.

MR. J. Weir, M.A., is nominated to be an Ordinary Fellow of the University of Madras.

TRAVANCORE.

THE Primary Teachers' Conference was opened in the M. G. M. High School Hall on Thursday, the 16th ultimo and continued for a week. The Rt. Rev. Dr. C. H. Gill, Bishop of Travancore and Cochin, presided, and nearly 300 teachers from various parts of the State attended. Various graduate teachers, officials, landlords, merchants, etc., besides a few female teachers were also present. His Lordship Titus Mar Thoma, Mr. A. R. Raja Raju Varma Koil Thampuran, M.A., and the Senior Rajah of Mariapalli occupied the platform.

Mr. R. C. Eappen, B.A., the corresponding Secretary of the Conference, in a short speech welcomed the delegates and visitors, and requested the Bishop to formally open the Conference.

THE BISHOP'S SPEECH.

The Bishop congratulated the promoters of the Conference upon their enterprise. They had persistently and courageously faced many difficulties and had apparently overcome them. They were actuated by motives of sympathy. They felt deeply for their brethren, the Primary School teachers in the neighbourhood, many of whom carried on their work in isolated places, under depressing conditions, with very little assistance to encourage them. The happy idea of a Conference for their benefit was a very help thus extended to them. After expressing gratitude for the strenuous efforts which the Director of Public Instruction, Dr. Mitchell, was making on behalf of education in Travancore, the Bishop then remarked upon the nobleness of the vocation of a teacher. He besought them to realise what magnificent opportunities they possessed, and to strive to fulfil their high calling. He supposed that he had been invited to give the inaugural address because the promoters desired to lay emphasis upon the moral side of a teacher's work. They were convinced that all true education must be based upon moral principles, for education is not simply a cramming of the memory, or a mechanical use of the intellect, in order to gain a livelihood, but it also involves the formation of character, the moulding of individuality, the guiding of the will, the training of the affections, the educating of the conscience, the right use of the imagination, and the dignity and sanctity of the human body. Therefore school teachers could not take too high a view of their profession. This high ideal could best be fulfilled by personal example. The teacher's personality counted for more than anything else. As was the master, so was the school. A teacher was imitated by the pupils. He was multiplied in their lives; his work lives on after he is gone; in mature age his pupils

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acted as they had seen him acting. Therefore every teacher should subject himself to strict self-examination. This Conference presented a good opportunity for this purpose. Their own life and conduct should be purged of all that was unworthy of their high calling. They should sacrifice themselves for the good of their pupils, that is for the good of the community. But such moral progress, to be effective, depended upon the power of religion. The Bishop of Madras had lately reminded them that religion was the driving power of moral progress. Unless reinforced by the power of religion, their resolutions and determinations would be comparatively ineffective. The Bishop observed that he might have addressed them on many other subjects of minor importance connected with a school-master's work; but at such a time he had felt constrained to speak of what seemed to be the most important matter. After some concluding remarks upon Female Education, habits of thrift, the brotherhood of man, the dignity of labour, industrial pursuits, habits of observation, and the power exercised by poetry and music on the lives and aspirations of the people, the Bishop wished the Conference all success, and expressed the hope that it might become an annual institution.

A series of lectures on subjects of special interest to Primary teachers were delivered by several teachers and other gentlemen, among whom may be mentioned Mr. A. R. Raja Raju Varma Koil Thampuran, M.A., the Rev. J. J. B. Palmer, M.A., and Messrs. V. N. Krishna Iyer, B.A., L.T., C.P. Thomas, B.A., P. V. Varghese, B.A., L.T., P. K. Narayana Pillay, B.A., B.L., O. M. Cherian, B.A., L.T., W. J. Chako, B.A., L.T., K. Kuruvilla, L.M. & S., O. E. Varghese, B.A., V. P. Mammen, B.A., and K. C. Eappen, B.A. All the lectures were very instructive and much appreciated, especially the lecture on "Female Education" by Miss K. Lakshmi Amma, Assistant Inspectress of Schools.

There were sports, magic lantern exhibition, etc.

A public meeting was held on the closing day. In the report of the Conference read at this meeting special mention was made of the financial help rendered by the three heads of the Christian community, viz., Dr. C. H. Gill, Mar Dionysius, and Mar Thoma. Letters and telegrams wishing success to the Conference were received from H. H. Kerala Varma, C.S.I., Valiakoil Thampuran, Dr. William Skinner, M.A., Principal, Madras Christian College, Professor B. V. Rengaswami Iyengar, M.A., Mr. Raja Raju Varma Thampuran, M.A., Dr. N. Kunjan Pillay, M.A., Messrs. O. Krishna Pillay, B.A., R. Easura Pillay, B.A., S. Subramania Sastri, M.A., K. M. Mammen Mapillai, K. V. Chacko, K. Kuruvilla, Ramakrishna Iyer, A. J. John and several others.

Some of the Primary teachers made short speeches thanking the promoters of the Conference. Speeches were also made by some representatives of the public. Prizes were then given away to those teachers who had won in the Sports competitions. Mr. K. Palpo Pillay, B.A., the local Tahsildar, who presided on the occasion, made a very interesting speech on the

advantages of such Conferences. The meeting was brought to a close by the singing of the National Anthem.

BOMBAY.

THE Chancellor of the Bombay University has nominated Mr. Hari Narayan Apte to be Ordinary Fellow of the Bombay University vice Mr. A. M. T. Jackson, I.C.S. deceased.

THE Government has appointed the following members to the Bombay Advisory Committee for Indian students going to England:—The Vice-Chancellor of the University, the Director of Public Instruction, the Principals of the Elphinstone, Wilson, Xavier's, Deccan, Ferguson and Gujerat Colleges, and the following gentlemen: Sir Pherozeshah Mehta, Dr. Temulji Nariman, Sir Bhalchandra Krishna, Messrs. Chimanlal Setalvad, Ibrahim Rahimtoola, Khan Bahadur Syed Shumsuddin Kadri, Ba Mirza Ali Mahommed Khan, Narayan Gomanji Wellinkar, Gokuldas Kahandas Parekh, Fardunji Mancherji Dastur, Khan Bahadur Doraba Ruttonji, Chichgar Tribhovandas, Mangaldas Mathubhoy, Lalubhai Samaldas, Kazi Kabiruddin, Dr. Demonte. Mr. Fardunji Dastur, Professor of Mathematics, Elphinstone College, has been appointed Secretary to the Committee.

A MOVEMENT has been set on foot in Bombay to establish a branch here of the British Classical Association to be affiliated to the Classical Association of England, which was constituted to promote the development and maintain the well-being of classical studies. H. E. the Governor has consented to be Patron of the Society, and expresses the hope that it may be the means of inspiring some original work by scholars in India. Other prominent gentlemen who promise to assist are—the Bishop of Bombay, the Hon'ble Sir J. Muir-Mackenzie, Mr. Justice Batchelor, Mr. Justice F. C. O. Beaman, Mr. Justice R. Knight, Mr. R. A. Lamb, the Hon'ble Mr. Jenkins and General Swan.

THE Hon. Mr. Justice N. G. Chandavarkar presided at the annual distribution of prizes to the students of the Ghandharva Vidyalyaya, the School of Indian Music, which took place at the Framji Cowasji Institute, Bombay. There was a large attendance of gentlemen interested in Indian music.

The proceedings commenced with a special hymn which was followed by the reading of the report by the Principal of the school.

The report stated that the Institution had passed through one year of its existence in Bombay. The Vidyalyaya had been first established in Lahore on the 5th May 1901. The total number of students of all castes admitted since its establishment was 367, including 20 boarders and 12 lady students. The average daily attendance was 165. Besides instruction in music other subjects such as Sanskrit, English, Marathi and Drawing were taught but that was confined to boarders as yet. Dancing was also

taught there. A small factory providing musical instruments had also been attached as an economical arrangement. With a view to awaken in the minds of general public an interest in the cause of Indian music a series of public performances was given on Saturdays and Sundays. The proceeds of these performances during the year under report amounted to Rs. 715. A number of students then having played upon Sitar and Dhruba, the Hon. Mr. Justice Chaudhary briefly addressed the assembly, and the proceedings came to a close with a vote of thanks to the chair.

CALCUTTA.

The National Medical College of India (Calcutta), has, we are glad to know, continued to attract students in large numbers. Within a remarkably short time it has grown to close upon 350 scholars. It was established entirely by non-official agency and is a standing proof of the power of organisation which is manifesting itself in the nation. The boys after passing out have received good appointments outside Government Service. Notwithstanding the opening out new classes the monthly fee remains only Rupees three, as it is the object of the College to train even poor students to serve their motherland. A short time ago it celebrated its Founder's Day Anniversary. The report alluded to many difficulties which the College had surmounted. Several donations and contributions were announced. The Maharaja Bahadur of Cassimbazar heading the list with Rs. 4000. Many new departments such as for Ayurvedic, Research, for Public Health, have been added. Improvement in dissection has been made. A new structure has been added sufficient to admit of about 100 boys, practical or operative surgery has been also carried on. The winter session commenced on January 4th. Boys are now being enrolled on paying Rs. 3 admission and Rs. 3 College fee. Meritorious students are offered by Dr. S. K. Mullick, the founder of the College four scholarships being Rs. 50 and Rs. 40 for those who have passed the Matriculation or Entrance Examination; and Rs. 30 and Rs. 25 for those who have studied up to Matriculation. The College is not a private concern. It is public property and is duly registered under Act XXI of 1860 of the Acts of the Governor-General in Council and therefore depends on all true well-wishers of the country to support it either directly by funds or indirectly by recommending the instruction to intending students of medicine. The College works under a very substantial Council consisting of amongst others H. H. The Hon'ble Maharaja Bahadur of Durbanga, K.C.S.I., Raja Peary Mohan Mukerjee, C.S.I., Rai Narendra Nath Sen Bahadur, Mr. A. Chaudhury, Bar-at-law, Mr. S. N. Tagore, I.C.S., late Judge, &c.

ONE Post Graduate Research Scholarship of the monthly value of Rs. 100 tenable for a maximum period of three years, but is the first instance for one year only, will be awarded during the early part of the year 1910.

The scholarship will be awarded to a suitable candidate who proposes to undertake research in some scientific subject, such as Natural and Physical Science, Chemistry, Mathematical Science, etc., but in the event of no such suitable candidate being forthcoming, the undersigned may recommend that the scholarship be awarded for literary research.

No candidate will be considered who has not passed the M.A., or some other equivalent or higher examination of the Calcutta University in 1907, 1908 or 1909. No candidate will be considered who is not possessed of high qualifications and who cannot show that he has capacity for original research. He must state as definitely as possible the subject in which he intends to carry on his investigations. He must also state the name of the institution in which he proposes to study, or in default, the precise circumstances and conditions under which he intends to work. The candidate must be a 'bona-fide' native of the province of Eastern Bengal and Assam.

All applications must reach the undersigned on or before the 31st January 1910, and must be submitted through the head of the institution in which the candidate read last.

The form of application may be had from the Superintendent, Office of the Director of Public Instruction, Eastern Bengal and Assam.

The petition to be forwarded to the King's Most Excellent Majesty in Council by Mrs. Besant, concerning the proposed University of India, contains the following:—

"For some time past your petitioners have felt the need for, and have been desirous of, establishing a new University in India having a field of activity of a distinctive character from the existing Universities, and possessing special features of its own. The most marked speciality of the proposed University will lie in the fact that it will affiliate no college in which religion and morality do not form an integral part of the education given. It will make no distinctions between religions, accepting equally Hindu, Buddhist, Parsi, Christian and Mahomedan, but it will not affiliate any secular institution. It will thus supply a gap in the educational system of India, and will draw together all the elements which regard the training of youth in honour and virtue as the most essential part of education. It will be a nursery of good citizens instead of only a mint for hall-marking a certain standard of knowledge. The second important speciality will be the placing in the first bank of Indian philosophy, history, and literature, and seeking in these, and in the classical languages of India, the chief means of culture. While Western thought will be amply studied, Eastern will take the lead, and Western knowledge will be used to enrich, but not to destroy or cripple, the expanding national life. A third and important speciality will be the paying of special attention to manual and technical training to science, applied to agriculture and manufactures, and to Indian arts and crafts, so as to revive these now decaying industries, while bringing from the West all that can

usefully be assimilated for the increasing of national prosperity. The interests of education in India will be greatly advanced by the proposed undertaking, and the success of the said undertaking will be greatly promoted.

Mrs. Besant is the only European member on the Board of Trustees of the proposed University, all the rest being Indians.

JUSTICE Ashutosh Mukerjee has been re-appointed Vice-Chancellor of the Calcutta University for a third time.

THE deputation to Ceylon has been sanctioned by the Secretary of State, of Mahamahapadhyaya Satish Chandra Achariya Vidyabhusan, Professor of the Presidency College, Calcutta, to study Pali and Buddhist philology. Professor Vidyabhusan will afterwards proceed to Benares to conduct similar enquiries in connection with the Hindu religion. In future, such deputations of Government officials for periods not exceeding six months, to British possessions in Asia, will be settled by the Government of India without reference to London.

PUBLIC Instruction in Bengal:—It appears from the Government Resolution on Public Instruction in Bengal during 1908-09 that the total expenditure from all sources on institutions of all kinds has risen from 110½ lakhs in 1905-06 to 144½ lakhs in 1908-09 and within the same period expenditure from provincial revenues has risen from 34 lakhs to 49½ lakhs, while within the last two years there has been an increase of 13 lakhs in expenditure from provincial revenues. Mr. James who submitted the present report as officiating Director has emphasized the need for further provision of funds and for a clearly defined policy in the Department as to the proportion of total expenditure which the main heads of education should receive. The number of boys undergoing primary education was about twelve hundred, these representing 26.5 per cent. of the total male population of school-going age. A contrast has been drawn in the report between contributions of Bombay and Calcutta Municipalities to primary schools. The Bombay Municipality spends 1½ lakhs and possesses 93 schools of its own whereas the Calcutta Corporation has not a single school of its own and spends only one-fifth of a lakh on primary education. In Secondary Education, proposals for improvements have been kept in abeyance for want of funds. It is to be deplored that there is a tendency to prefer a bad education in Middle English Schools to a good education in Middle Vernacular schools. Collegiate and Mahomedan educations are making good headway but technical education is being hampered for lack of funds. As regards discipline in the best sense of the word it has still to be learnt in many schools. As Mr. James expresses it, "there is an acquiescent discipline, that is to say, there is not an active result from discipline but there is not so much as there ought to be

of respect for constituted authority and of the true spirit of active co-operation with authority."

THE *Hilabadi* states that Mr. T. Palit, the well-known Barrister, had donated properties worth Rs. 10 lakhs to the National Council of Education.

H. E. Lord Minto probably presides at the Convocation on the 12th March.

ALLAHABAD.

MR. J. M. David, an Indian Christian, a graduate of the Allahabad University, lately employed as an Assistant in the U.P. Secretariat, has been appointed Assistant Registrar to the Allahabad University in place of Mr. Basanta Kumar Mukherji on a salary of Rs. 250 per month.

Rs. four lakhs have been contributed by Sardar Chimbhoy Madhwal towards the scheme which has been approved by Government for a Science Institute at Ahmedabad.

THE foundation-stone of the Senate Hall and Law College of the University was laid by His Honour the Lieutenant-Governor on the 17th January at 5 P.M., in an open space in front of the present office of the Registrar of the University, in the presence of a large and distinguished assemblage of Indians and Europeans. Long before the appointed hour, crowds of students and gentlemen of the station came to the spot, and occupied their allotted seats. The Band of the Middlesex Regiment struck up at 4 P.M. and a Detachment of the 12th Cavalry was drawn up and presented arms when His Honour arrived, preceded by the Registrar and Fellows of the University at 4.20 P.M. Upon His Honour taking his seat under an embroidered canopy, the Registrar declared the object of the meeting.

VICE-CHANCELLOR'S SPEECH.

Then the Vice-Chancellor stood up and read his speech, in which he dealt briefly with the history of the foundation of the University, and said that this University commanded a larger area and population than any other University, except the Calcutta University. It is a matter of regret, he said, to find that of all Universities, Allahabad University is the only one which cannot claim to have a building of its own. He referred to the meeting of the Senate in which the building question was raised by him and the sympathy with which the proposal was received by His Honour. He then briefly related how the building scheme progressed, till it had reached the present stage. The objects with which students come to the University, he said, are either to qualify themselves for Government service, or to take to some learned profession, but as Government appointments are, and must necessarily be limited, it behoves them to come there with a view to acquire learning for learning's sake, and that every facilities should be afforded

them to equip and fortify themselves with knowledge before leaving the portals of the University.

L.-G.'s SPEECH.

His Honour then rose and read his speech. He remarked that the University had come into existence some twenty-two years ago, but it did not reflect credit on the public spirit of these Provinces, with a building these long years. He traced the origin, and emphasised the fact that the Universities of Great Britain owed their existence some centuries ago largely to the benefactions of great ecclesiastics and barons. Indian Universities, he observed, are examining and not teaching bodies, but he hoped that a time would come when a change for the better would be made. He expressed his regret that the University had no home of its own when it really commanded a larger area than any other University except Calcutta. He deeply deplored the tendency to flood the country with youths longing either to enter into Government service or to take to the legal profession. Henceforth, he said, endeavours would be made to pay more attention to the industrial and practical side of education. The true aim of an University, His Honour observed, should be to inspire students with a thirst for knowledge and to foster a pride for their Universities, but he could not but express his regret for the poor idea now prevailing, which demands a fixed amount of knowledge from its students, without evoking enthusiasm for their Universities. He would make his best endeavours to provide the University with the necessary buildings before his term of office expired. He expressed the dissatisfaction with the way in which a study of law had been made in certain colleges by a single inadequately paid Law Professor, but in order to do away with such a regrettable state of affairs, a Law College had been opened in Allahabad for the concentrated study of law, under efficient Professors and Lecturers. About ten lakhs of rupees, he said, would be required for the construction of the necessary buildings. About a lakh and a half had been given by the Government of India; two lakhs by the Local Government; 45,000 from the University Reserve Fund; and about three quarters of a lakh from the Raja of Tehri, Rai Nathu Mall of Khurja, and the late Ram Sahai, Rai with these 4½ lakhs he said the work of construction should be begun.

PUNJAB.

At the Annual Educational Durbar, held in Kapurthala, on 4th January, the Maharajah of Kapurthala presided and gave away the prizes. In his speech, His Highness advised the students not to actively participate in politics, but that they should keep themselves in touch with politics by studying selected newspapers and magazines. The other day, while laying the foundation stone of the new building of Kanya Maha Vidyalaya, Jullundar, the Maharajah of Kapurthala advised the Arya

Samajists to show by their actions that the Arya Samaj was a non-political body. The speech was well received.

At the Convocation of the Punjab University held recently, His Honor the Chancellor presiding, the degree of Doctor of Laws was conferred on Sir Pratul Chandra Chatterjee.

The Vice-Chancellor, speaking of the relations of students and teachers, said he had heard of influence excited on the part of teachers to involve their students in matters beyond their sphere, and to influence them in directions which were not for their advantage. If these rumours were true, no words could be too scathing in condemnation, and no action too drastic. Concluding, he said the name of the Indian student was in danger of becoming a by-word for self-conceit, want of discipline and moral ballast, and other undesirable qualities. He wanted the students of the Punjab to give a satisfactory answer to that by their conduct. "I want," he said, "each one of you starting on your life's work to sit down and think how you can best frame your life so as most to serve God and man."

At the Aitchison's Chiefs' College, Lahore, two ceremonies were performed when the foundation stones of a Hindu Temple and a Sikh Gurdwara were laid by the Maharajahs of Dharbhanga and Patiala respectively. Before the proceedings concluded, the Lieutenant-Governor made a short speech to the boys in which he said he was glad to see that their College was a College where religious education was really given by proper Professors. He had heard that sometimes in institutions similarly provided for, even in this College, the persons appointed to give religious instruction had not been so earnest in their work as they ought to have been. He hoped that now that each community would have its own place of worship such charges would not have to be made against religious instructors. There was no doubt whatever that religious instruction was necessary for school boys and students in right formation of their character and for this purpose, places of worship were a necessity. Men were much more disposed to religious thoughts if they assembled in proper temples for worship. As regards the unsatisfactory state of the subscription list, His Honour remarked that he could only say that they had with them that morning a gentleman from the United States of America, Mr. Price Collier, a well-known writer, who had announced his intention of giving Rs. 500 to the funds of the two buildings. Surely, if people who came from America took compassion on the state of subscriptions for Indian religious temples, it was time for the people of this country to reproach themselves.

The Maharajahs of Durbhanga and Burdwan have given Rs. 15,000 and Rs. 1,000 to the Punjab Mundle of Sanatan Dharm Sabha, Lahore, respectively.

The Maharaja of Burdwan has donated Rs. 1,000 to the Victoria Diamond Hindu Technical Institute, Lahore.

With regard to female education, the President of the Social Conference, Lahore, held on the 31st ultimo, said:—

Our aim in the education of women must be to create the new woman of India after the prototype of the old Savitri Sita, etc., adorned with the qualities that she has received as a heritage from her ancestors of the brilliant past as well as with those of her sisters of the West, without the taints of unworthy imitation. So far we have been making feeble efforts for the Primary education of girls, but this is not sufficient. Unless we provide means for the higher education of our girls, we cannot hope to have the ideal wives and mothers that are urgently needed for the uplifting of India. Besides being trained in the general departments of learning, our women should be taught holy books and pure doctrines of morality, domestic duties and fine arts, such as music, painting, etc., which shall prove useful to them in after-life. When a woman's education as required is finished, she turns out a competent housewife, efficient teacher of her children, and a good counsellor to her husband, relatives and friends. Her prejudices vanish, and the task of social reform is facilitated and easily accomplished.

At the last meeting of the Lahore Municipal Committee, Lala Dunichand's motion for making Primary education free in schools in Lahore was agreed to for one year. A proposal to make Primary education compulsory for all boys of the school-going age was opposed and dropped.

INDIA (GENERAL).

We are glad to learn that the Government of India have decided to award, during the year 1910, one technical scholarship to each province, provided that the Local Government or Administration concerned has a suitable candidate to nominate, and that its recommendation is made in accordance with certain principles and that the industry to be studied is either already developed or in the process of development. The principles, in accordance with which recommendations for scholarships are to be submitted to the Government of India, include the following:—

(a) In making selections Government will bear in mind the fact that it will be necessary for the students to have a competent knowledge of English, or of the language of any other country to which they may be sent.

(b) Government will also be guided by considerations of the capacity and intelligence of applicants, and of the practical interest shown by them in the industries selected, as also the assurance which they may afford that they will continue to devote themselves to the industries selected on their return to India. These being matters which cannot be

decided by competition, it is to be understood that the scholarships are not to be regarded as prizes, for which every one has a right to claim an equal opportunity of competing.

(c) As a general rule, a scholar, before being nominated, should have received the best technical education available in the province in the particular industry which he proposes to study. The standard of this education differs in different industries. And each may be considered on its own merits. Even if the standard of technical education in a particular industry is low, the scholar may be nominated if he has availed himself of the best facilities obtainable, and shown an interest in the industry selected.

It is reported that Habbie Jan Mahomed of Bombay and Dr. Shantaram Ragunath Shrigaonmar of Kolhapur have come out successful in the London M. D. Degree Examination.

The Secretary of State has appointed Mr. E. Smith, of Leeds University, to be Professor of English, Dacca College.

In the course of his Address for the All-India Mahomedan Educational Conference held in Rangoon, the Rajah of Mahmudabad said:—

Gentlemen, along with the greatest intellectual development that may be in store for Mahomedans if they bring themselves into harmony with modern civilisation, who have to take into account the disturbing influence of Western thought and the difficulty of adaptation to new environment. What is of the greatest importance to Mahomedans is the uniformity of a moral ideal. The destiny of the race is in the hands of another generation; the present moral and social situation is extremely embarrassing. Whilst the most advanced class of people in the country is becoming more conservative in spirit, under the influence of English education, the young generation of Mahomedans does not even attempt to arrive at a reasonable compromise, but finds it easier to reject wholesale the traditional code of conduct. If these young men divorce themselves entirely from the past, ignore those high principles of morality which are the soul of Islam and set before themselves purely materialistic lines of conduct, it will destroy all sense of Muslim unity. If they wish to rise as a nation, they cannot sever the link which connects them with the past. If they wish to develop separate individuality on the basis of similarity of culture they cannot rise as a nation. Of the community either of race, religion or interest—the three essential conditions of the existence of any nation—it was the identity of faith which gave a stamp of nationality to those diverse nations conquered by Islam and made them feel their common interest stronger than the differences of race which divided them. If you loosen the bonds of religion, you lose that necessary interest in the moral welfare of your community. Socially there will not be much left in common, owing to a growing exclusiveness in thought and habit, and the next step will be a

divergence of interests. Since Islam does not represent a particular race, but a congeries of races, they will split up, when there is no spirit of cohesion left, into separate groups, to be known by a new designation, which must be left to the future historian.

Gentlemen, I represent this danger to you to impress upon you the fact that the evolution of the East must proceed along Eastern lines. By absorbing the best which the West has to give to you and retaining unimpaired the glorious heritage that was bequeathed to you over 1,300 years ago, you may contribute to a fuller and more perfect life and attain the highest ideal of self-realisation.

Foreign Notes.

GREAT BRITAIN.

REPRESENTATIVES of modern Universities and University Colleges met recently at University College, London, and appointed a sub-committee to take the preliminary steps necessary with a view of holding a Congress of Modern Universities and University Colleges in London, in the early part of July next, to discuss various problems connected with their management and future.

THE education committee of the London County Council has down for "approval" a scheme by which boys and girls in Elementary schools may be encouraged to exchange letters with school-children in Japan. The practice of thus corresponding with the Colonies and the United States is already occasionally indulged in some of the Council schools, and is said to have excellent educational results. It is certainly very encouraging to see that Japan is to be included, although it is not stated what language these enterprising correspondents are to employ. The Japanese school-children at any rate must be acquainted with English.

In *Harper's* Mr. Bryce contributes reminiscences of Darwin, in which observation and reflection are characteristically blended. He visited the great man of science shortly before his death, and thus describes him:—

He was nearly six feet high, but did not look his height, having in later years contracted a slight stoop. Every one has seen engravings or photographs of him. They give a very good idea of his face, for its features were well marked, and in elderly men the expression seems to become a part of the features. The form of the head, high and dome-shaped, was characteristic, and it showed all the more because nearly bare in front. A long and snow-white beard gave him a venerable aspect. The nose, which had nearly caused him to lose the voyage on the *Beagle*, was rather blunt, more like that of Socrates than that of Julius Cæsar. But the feature which struck one most was projecting brow with its bushy eyebrows and deep beneath it the large grey-blue eyes with their clear and steady look. It was an alert look, as of one accustomed to observe

keenly, yet it was also calm and reflective. There was a pleasant smile which came and passed readily, but the chief impression made by the face was that of tranquil, patient, thoughtfulness, as one whose mind had long been accustomed to fix itself upon serious problems. With this there was also a benignity and serenity which reassured the visitor, and put him, however deep his reverence, at his ease in the great man's presence.

HIS SIMPLICITY AND MODESTY.

Mr. Bryce tells how he referred with great pleasure to the visit which Mr. Gladstone had paid him not long before:—

I doubt if they had ever met before, for though they were born in the same year. Darwin had studied at Cambridge and Gladstone at Oxford; their walks of life had lain wide apart, and Gladstone had given to natural science and natural history even less attention than Darwin had given to politics. However, they had enjoyed each other's company, and Darwin dwelt upon the interest of the talk, adding, "He was so perfectly natural and simple, just like anyone else: he seemed to be quite unaware that he was a great man, and talked to us as if he had been an ordinary person like ourselves." The friend who was with me and I could not but look at each other, and exchange covert smiles. We were feeling toward Darwin just as he had felt toward Gladstone. To us he was quite as great a man, and no less delightfully unconscious of his greatness.

His simplicity and modesty were indeed among the chief charms of his character. He did not think of himself as different from other people, and considered his own abilities to lie not in any exceptional gifts, but, as he says in his autobiography, "in the power of noticing things which easily escape attention and in observing them carefully."

Mr. Francis Marshall, M.A., has been elected a Fellow of Christ's College, Cambridge. He has been for some time Lecturer on Agricultural Physiology in the University, and has published many papers on the physiology of breeding.

Mr. William Geldart has been elected Vinerian Professor of English Law at Cambridge. He was educated at St. Paul's School, London, and had an exceptionally brilliant University career. He won many honours and was called to the Bar of Lincoln's Inn in 1897. He is now Lecturer in Law at both Trinity and All Souls Colleges.

AN interesting and suggestive speech on Examinations was recently made by Sir William White to the pupils of King's College School. In dealing with the cramming question he said he had known many cases in which boys had been crammed for an examination and had obtained for themselves positions for which they were totally unfitted. He had known men to spoil their lives by cramming for examinations, to take away all the freshness of life by simply accumulating different kinds of knowledge for reproduction in a match against time. Sir Wil-

liam strongly advised the boys never to cram, and to study their subjects thoroughly. On the other hand, he said they were many excellent men who directly they got into the examination room, could never do themselves justice. By means of examinations, therefore, they could not always find out the best men. But in the circumstances of the present time it seemed impossible to find a substitute. We could not go back to the old days of personal selection and patronage. One of the features of the school was that it prepared for examinations for the Civil Service and similar appointments, as well as the Universities. In doing that it avoided a system of cramming and gave the boy the tools which he could use and go on using in his life's work.

THE December Cambridge Local examinations commenced on December 13th at 222 centres in the United Kingdom and the colonies. Of the colonial centres, six are in Ceylon, eight in India, three in the Straits Settlements, eleven in the West Indies, nine in South Africa, and one each at Belize, Bermuda, Mauritius, Seychelles, and Shanghai; there is also a centre at Buenos Ayres. The total number of candidates (14,991), if compared with the number entered for the examinations of December, 1908, shows a decrease of nearly 700, but if the candidates for the July examinations are included, the entries for 1909 exceed those for 1908 by more than 1,000. If the figures for 1909 are compared with those for 1899, it appears that during the ten years the number of candidates has increased in round numbers from 14,000 to nearly 23,000, the most marked growth being in the Senior examination (from 2,247 to 8,028). The number of junior candidates has increased within the same period from 8,275 to 9,945; the entries for the Preliminary examination, on the other hand, have fallen from 5,501 to 4,758. The total number of candidates at colonial centres has grown in the ten years from 1,259 to 3,463.

THE Syllabus in Chemistry for the Matriculation examination of the University of London has been modified.

and the paper for the examination of January, 1911, will be based, for the first time, on the new schedule. The new scheme of work is more in harmony with the experimental method of study now adopted in schools, and the authorities have made it clear that they regard sympathetically what is known as the "research" method of instruction. The facts relating to the Chemistry of daily life, which form a conspicuous feature of the current syllabus, have been omitted in the new schedule, and more prominence has been given to an elementary study of the metals. Students in future, too, will be expected to be acquainted with the more obvious phenomena of electrolysis. On the whole, the new syllabus is an improvement, and forms an excellent introduction to the study of Chemistry.

AMERICA.

IN a recently published report on observations of American education, Mr. P. Board, Director of Education for New South Wales, institutes an interesting comparison between the provision of secondary education in New South Wales and in parts of Canada and the United States. New South Wales has gone further than any other Australian State in its provision of education beyond the primary stage. By its system of superior public schools, it is giving at present two years' instruction beyond what has been recognised as a primary-school standard to 9,000 children. It has, moreover, a system of high schools, five in number, providing a complete secondary-school course to 800 pupils. But the scheme of higher education, so far as it is at present carried, is extremely inadequate. The superior public schools simply continue the work of the primary school for two years for those who remain for that time at school, but the majority who complete the primary-school course at thirteen remain at school only until they reach the age of fourteen, and thus receive less than a year of higher instruction. The difficulty is partly due to economic conditions that lie outside the reach of educational organisation, but it is also partly due to the absence of a sufficient number of fully organised high schools which has led to a comparative disregard of the need for advanced education.

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The Educational Review.

In an article on this subject in the current number of the *Contemporary Review* Sir Andrew Fraser attempts to make out that for lack of religious education in Government educational institutions the results of higher education have not been salutary. In support of his view he quotes what a zealous Christian missionary said some seventy-five years ago would be the disastrous consequences of a purely secular education. The missionary's words are as follow:—"If in that land you do give the people *knowledge without religion*, rest assured that it is the greatest blunder, politically speaking, that ever was committed. Having free, unrestricted access to the whole range of our English literature and science, they will despise and reject their own absurd systems of learning. Once driven out of their own systems, they will undoubtedly become infidels in religion. And shaken out of the mechanical round of their own religious observances, without moral principles to balance their thoughts or guide their movements, they will as certainly become discontented, restless agitators, ambitious of power and official distinction, and possessed of the most disloyal sentiments towards that Government which, in their eye, has usurped all the authority that rightfully belonged to themselves. This is not theory, it is fact." An analysis of the ideas contained in these utterances of Dr. Duff would easily reveal their hollowness and bigotry. Dr. Duff, we believe, could not find any positive argument in support of imparting religious education and had therefore to resort to the bait of political agitation as a consequence of secular

education. We should ask men of the stamp of Sir Andrew Fraser if there are no political agitators in countries where religious instruction is imparted in schools, whether the missionary educational institutions in India have not been as productive of men discontented, ambitious of power and official distinction as the Government institutions in which no religious education is imparted. It is the aim of education to instil a spirit of inquiry, and that education which does not inspire one with the thoughts of elevating one's own country and freeing it from all stigmas is not worthy of the name. Those that regard the so-called unrest of the present day as the result of a lack of religious education would do well to make a study of the American War of Independence.

The Report on Public Instruction in Bengal for 1908-09 gives proof of the continuance of the educational activity primarily prompted by the Simla Conference of 1901. The total expenditure from all sources on institutions of all kinds has risen from 110½ lakhs in 1905-06 to 144½ lakhs in 1908-09 and within the same period the expenditure from provincial revenues has risen from 34 lakhs to 49½ lakhs, while within the last two years there has been an increase of 13 lakhs in expenditure from provincial revenues. The number of boys under instruction in primary schools was about twelve hundred thousand, representing 26.5 per cent. of the total male population of school-going age. The total number of primary schools for boys was 34,472 which is 518 more than in the previous year. We are surprised to note that the Calcutta Corporation has not a single school of its own and spends only one-fifth of a lakh on primary education. During the

year the scholars in high schools have increased by over 2,000 and expenditure by Rs. 1,43,000; at the same time the number of high schools has decreased by two. In collegiate education there has been a steady advance in all directions to conform to the regulations of the Calcutta University and there have been improvements in staff, buildings, science, equipment, libraries and hostels. An interesting item of information as regards collegiate education is that while the Government spends Rs. 145 per student in the Presidency College, it spends Rs. 830 per student in the Sanskrit College. The number of Mahomedans under instruction has increased on the whole by 27,000. The number of pupils in secondary schools is nearly 17,000, but there are only 300 students in the Arts colleges. It is somewhat astonishing that colleges for the training of teachers were opened only in 1908, and the Director complains that no students, other than teachers in Government schools, have yet joined to undergo a course of training. The hostel system is said to be gradually advancing. On the whole education in Bengal during the year under review may be said to be marked by efforts in the direction of progress.

In connection with the Theosophical Convention that took place last month at Benares, there was held an Educational Conference, the first of its kind, at which educational questions were considered from the theosophical point of view. Naturally religion figured a great deal in the papers read at the Conference. One Hindu gentleman described the education based on religion as the only scientific education. What connotation the term science carries in

this gentleman's lexicon it is not easy to divine, but we can tell him that religion becomes valuable to man in his progress only in so far as it adapts itself to the canons of science. While there is no possibility of an education based on religion, there is the possibility of a religion based on science. Mrs. Besant placed before the Conference her scheme for a University of India. She declared that her scheme had received the approval of the Viceroy and of the Council of Education of Bengal. She pointed out that the proposed university would be different from other universities in India. No secular college would be affiliated to this university, but any college that gave instruction in religion, be it Buddhism, Christianity, Hinduism, Mahomedanism, or any other faith (not thuggism, we hope) would affiliate. English would certainly be taught, but the foremost place would be given to Indian languages, Indian literature, history and philosophy. It is proposed to make the university at first only an examining body. The Conference unanimously carried a resolution recommending Mrs. Besant's petition for the establishment of a University of India to His Excellency the Governor-General and Viceroy of India and the Secretary of State and through them praying to His Majesty the King-Emperor to grant the royal charter petitioned for. We cordially sympathise with all attempts to have a true University of India on the German lines, but we fear that Mrs. Besant's contemplated university is not likely to produce any results more beneficial than the existing universities, except it be that it would be largely free from official control. The mere fact that a college teaches a religion does not seem to be a sufficient qualification for affiliation to a university. Why should religions whose aims and ideals

are different from one another join one and the same university. The ideal of a university is not the teaching of religion nor even the imparting of knowledge but the creation of new knowledge. We have too much regard for Mrs. Besant to think that she does not know these facts, but perhaps Mrs. Besant is laying the foundation for something better which she hopes to result from her scheme.

The All-India Mahomedan Educational Conference was held this year

The All-India Moslem Educational Conference. at Rangoon under the presidency of the Honourable

Raja Sir Mohammad Ali Mohammad Khan, K.C.I.E., Khan Bahadur, of Mahmudabad. We are glad to note that the president spoke approvingly of the policy of the educational department to reform indigenous Mahomedan schools and to push on secular education. He put in a strong plea for converting the college at Aligarh into an up-to-date university, the fountain-head of knowledge, the centre of national life and thought. He commended to his audience the example of the enlightened theologians of Egypt who, a few years ago, opposed the attempt to convert the Al-Azhar University of Cairo into a theological institution. Just as it has been decided to reorganise the Al-Azhar University on modern lines so must the Mahomedans of India endeavour by united effort and firmness of purpose to bring to Aligarh some of that "indefatigable charm that haunts the grey and venerable quadrangles of Oxford and Cambridge." We cannot follow the president when he asserts that the evolution of the East must proceed along Eastern lines. The ideal of self-realization is the ideal of all religions with only this difference that each religion understands self in its own sense. Why then should we say

that the East alone aims at the ideal of self realization. Whether we will or no, the East and the West always meet if we move sufficiently far, and so far as education is concerned there can be no difference between East and West. If it is true that mankind in its evolution passes through four stages, namely, savage, barbaric, civilized and humanitarian, it must then follow as night the day that the East and the West must in the long run meet when they both become humanitarian, and we believe that it is the first aim of all right education to make its recipients humanitarian. We hope that the appeal made by the president of the Conference as regards the education and elevation of Mahomedan women has not fallen upon barren ears.

In a joint report to be submitted by various sub-committees to the London County Council Education Committee, it is

pointed out that there is at the present moment a widespread feeling that it is of great importance in the interests of the community at large to give more attention to the development of "practical" education in the elementary schools. Both educationists and men of business agree in thinking that education can be made more effective if the pupils can be taught more by doing and less by listening. It is felt that the kind of boy whom the elementary schools should produce is the boy who will have had an all-round training of his faculties, and will have acquired that readiness and adaptability which will enable him to turn his hand to the task that awaits him in the workshop or factory. The recent formation of the National Industrial Education League with the object of promoting a system of education for boys in the element-

ary schools which will enable them to hold their own in the industrial world, is an evidence of the importance attached by working-class parents to this kind of training for their children. The Committee of the London County Council in their report say: "We are of opinion that this movement of public opinion gives an indication of the method which the Council should adopt in the organization of the proposed central schools. They should, in our opinion, be schools which will give their pupils a definite bias towards some kind of industrial or commercial work while ensuring that their intelligence should be fully developed. They should occupy a distinct position from the secondary school, though that position will not be in any sense inferior. They should avowedly frame their curricula with a view to the pupils leaving at an age between 15 and 16. Their courses should be so framed as to provide for the pupil the best possible equipment for entering upon the industrial or commercial world as soon as he leaves school, while at the same time qualifying them to enter upon a special course of training for some particular industry at a polytechnic or similar institution, if they desire to continue their education further. We feel convinced that there are many boys and girls for whom this type of school will be better suited than a secondary school."

We welcome the idea of establishing a separate university for Burma. The Indian Empire is so vast and the conditions of the several provinces are so different that there ought really to be as many universities as there are provinces. Even in the several provinces there ought to be at least one university to represent every Indian language which can lay a honourable

claim to a literature of its own. Any educational system in which special courses leading up to the university are dictated from the outside without any essential connection with the educational wants and interests of the particular area concerned stands self-condemned. It is undesirable that the youths of one province should be compelled to attend oral or practical examinations in the distant capital of an alien province. The experience of other countries shows that genuine progress in education is more likely to follow upon the establishment of sound local institutions with adequate provision for autonomy than from compulsory adherence to a distant body or institution unconnected in all essentials and always liable to subordinate the local affairs to its own conception of utility or convenience. It is no wonder therefore that Burma is to have a university of its own. The Director of Public Instruction of Burma has prepared a scheme and submitted it to the Educational Syndicate. The plan states that efforts have been made to preserve the continuity of the Indian University tradition with such modifications as have been suggested by the working of the Indian Universities Act of 1904 and the recent establishment of certain provincial British universities, regard being had to the special circumstances of the province. The University will recognise the two existing colleges of Burma as a part of itself. The main functions proposed for the university are to encourage co-ordination and control of such forms of higher education as ordinarily fall within the academic sphere, namely, literature, languages, philosophy, science, law, medicine and engineering. The university will also organise and maintain standards and tests of proficiency for the benefit of students at the institutions it recognises.

[JAN. 1910.]

public funds provided 2 as. 2 pies, which is poor compared with what the Americans are spending in the Philippine Islands. Public elementary schools for boys rose in number from 22,002 to 22,548, and in strength from 746,343 to 790,637. In the indigenous elementary schools there were 97,260 boys under instruction; including these the total number of boys in both public and private elementary schools was 801,053, and the percentage of boys under instruction to the total male population of school-age was 28.4. The total expenditure on elementary schools for boys was Rs. 32,95,800 towards which public funds contributed Rs. 20,44,340, fees Rs. 6,219,90, and other sources Rs. 6,29,464. Secondary schools fell from 421 to 375, but the attendance rose from 94,603 to 95,765. The total expenditure on non-European secondary schools for boys was Rs. 2,137,368 and the expenditure on European institutions was Rs. 8,48,236. The number of first and second grade colleges fell during the year from 35 to 33. The total expenditure on the maintenance of arts colleges was Rs. 729,975, of which Rs. 288,333 or 39 per cent. was met from fees and the net contribution from public funds was Rs. 241,875 or 33 per cent. We are glad to note that the strength of public institutions for girls rose from 73,548 to 76,821, although their number fell from 1,121 to 1,103. The percentage of girls under instruction to the total non-European population of school-age rose from 5.8 to 6.2. The private institutions for the education of girls number only 101. Including girls in boys' schools there were in all 1,78,867 girls under instruction. The total number of institutions in which gymnastics is taught according to the Syllabus laid down in the Educational Rules and according to the indigenous system, rose from 9,551 and 2,216

to 12,271 and 3,480 respectively. The total number of hostels and boarding houses rose from 245 to 247. One pleasing feature of the educational institutions in this Presidency is, according to the report, that everywhere there are signs of improvement and activity.

Some most interesting ideas regarding the necessity of art teaching, in the true sense, in schools have been put forward by

Mr. Rollenstein, an artist of world-wide reputation. Among other things he says: "At this moment the imaginative side of education is not considered at all in schools. To my mind an elementary school ought to have some spirit of unity going through all subjects, and where history and geography are taught, elementary notions of art, architecture and the crafts should be given. It is important that no young minds should be brought into contact educationally with any form of art which passes the experience of life which they have up to that moment acquired. A habit has been acquired of putting up old masters; but what you want to show children is that which they can understand, and as they get higher up the imaginative scale, then more and more intricate art can be made clear to them. There is no essential art culture in England, and art is only for the initiated. If we could get a democracy of artists, nay, to insist upon having, their own absolutely sane ideals of life expressed in the form of art, and if they would refuse to accept any trivial expression of it, then you might lay the foundation again for educating people as the Church did in the old days. At this moment it is mere temperament, mere educational phantasy, which fill our art galleries, and whether they are by good artists or bad ones is of little avail unless works of art reflect that sense of unity

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with life which has been the basis of real art. Two things are necessary—that the public should learn through education that dignity which alone should be the subject-matter of art and that the students should be trained imaginatively as well as technically to respond to that expressed need. Hence the importance of art education in all schools, and if there were some kind of sound, imaginative training the young craftsman leaving the ordinary school to go to an art school would not then have to look upon all he had learnt as useless, but would simply continue his education in a more practical way, and, as I say, the museum should be a moving, living, changing thing which would show either student or layman the relation of contemporary to past ideals." We agree with the great artist in looking upon imaginative education as a most important thing.

Speaking at the opening of the new Carnegie Physical Laboratory at University College, Dundee, Sir J. J. Thomson, the famous Cambridge physicist, indulged in some paradoxes worthy of consideration. He remarked: "It may seem a strange thing to say but I think a bad teacher is better than a good one. Your good teacher is too clear; your admirable text-book leaves no difficulties to puzzle over. So the student does not reap the old intellectual training of puzzlement."

"Quarter of a century ago science was regarded as a nuisance in public schools, and the boy who took that subject had to puzzle out its difficulties himself. Now boys are taught far more in these public schools; they know more facts, so to speak, than they ever did; yet the best men are certainly no better, and I doubt if they have the same independence and the same perseverance as those brought up under the old system." Similarly Sir Joseph praised but inveighed against

the completeness and magnificence of some modern laboratories. "He thought technical education had suffered very much and had not produced results that might have been expected, because many of those responsible for its management had not realised that, after all, the most important piece of apparatus in the laboratory was the professor." "He thought it might be an advantage in many cases to reduce the sum expended on laboratories and apply it in providing salaries that would secure first-class men."

It is happy sign of the times that the Compulsory primary education beginning to feel that it is in Lahore.

Municipalities in India are their duty to impart compulsory primary education in the areas under their control. People's money cannot be better spent than in giving elementary education. The Government of India passed a resolution on the making of elementary education compulsory in India but nothing has come of it. We fear that education in general has become an object of suspicion with the Indian Government. All the money at the disposal of the Government does not seem to suffice for the military and police reorganisation of India, not to speak of the other directions in which the Government spends India's money without any direct benefit to her people. In these circumstances we are glad to note that the Lahore Municipality has decided to make primary education free for one year in schools in Lahore. We hope the result achieved during the trial year would be such as to lead to the continuance of the measure now adopted tentatively, and this would conduce to the making of primary education compulsory. For the social evolution of our country two things would seem to be absolutely necessary, namely compulsory primary education and military conscription, but ours is a voice crying in the wilderness.

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and University Examiner in Mathematics.

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W. A. PORTER, ESQ., M.A., late Principal of the Kumbakonam College, writes:—"The book would be extremely useful to Teachers and also to students beginning the study of Geometry."

G. H. STUART, ESQ., M.A., Acting Principal of the Presidency College, says:—"It is admirably suited for the purpose."

P. RUGANATHA MUDALIAR, ESQ., M.A., Professor of Mathematics, Presidency College, says:—"I have great pleasure in saying that your little book supplies a real want. In most of the Middle and High Schools in the Presidency Euclid is learnt much in the way in which History is learnt; and I see no surer way of checking this pernicious practice than by prescribing a book, such as yours. What is wanted is a book that will compel the student to use his eyes and hands and to think for himself, and your book seems to me to serve that purpose admirably."

DR. A. DE PENARANDA, Professor of Mathematics, St Joseph's College, Trichinopoly, who is in a position to compare the French and the English system of teaching Geometry, having for many years taught both, writes as follows:—"All true lovers of sound mathematical education should feel grateful for your initiative. It gave me particular satisfaction to find that you lay particular stress and repeatedly insist on the careful drawing of figures. Let youthful beginners first use the figures they will have to argue about, as infant children often use words without realizing their meaning; let them make themselves thoroughly acquainted and familiar with the same—naming them, drawing and combining their parts in various ways so as to experimentally find out and realise some of their fundamental properties, &c. Such apparently is the order intimated by Nature and such likewise seems to be the guiding spirit of your First Lessons."

MISS E. A. MANNING, Secretary to the National Indian Association, England, writes:—"I have to thank you for your valuable First Lessons in Geometry. It appears to be very clear and attractive; and your practical directions are of great importance in enabling the pupil to follow out for himself the theoretical instructions."

PROF. W. B. MORREN, Christian College, Madras, writes:—"I am decidedly of opinion, that you are on the right track with regard to the teaching of young boys. The methods that Geikie recommends in the teaching of Geography are just those you lay stress upon in the teaching of Geometry."

The late PROF. R. H. PIGGOT, Central College, Bangalore, writes:—"I need scarcely say that I strongly approve of the system which you advocate and explain. The fundamental processes of Euclid are the same as the most elementary practical processes of daily life; and it is monstrous that they should be forced upon boys, as though they were arbitrary postulates or axioms. The separation between the lessons of the school-room and the lessons of experience to which this leads, is one of the most baneful of its effects. The whole system of Geometrical teaching in our Schools and Colleges made revision."

PROF. V. MADHAVA RAO, M.A., Maharajah's College, Vizianagaram, writes:—"Your book is a decided improvement on any existing elementary Geometry I am acquainted with."

The Hindu, 27th February, 1888:—"Indeed, of the numerous school books that have come out of the Indian Press, we hardly know of another so well entitled to the merit of originality, or of being a real help to education, as Mr. Hanumanta Rao's Geometry undoubtedly is. We have the greatest pleasure in welcoming the book, as one eminently calculated to bring about an intelligent study of Geometry,—a subject at once so interesting and so useful."

The Madras Journal of Education for March, 1888:—"We very gladly welcome a second edition of this able and interesting introduction to Geometry. It contains just what the ideal teacher would supply as exposition of his own when teaching his class."

The Madras Standard, 21st March, 1888:—"A book as creditable to the author, as it is eminently practical. Any one taking up his book and reading it, even in the most cursory manner, cannot but admit that the plan of the book is as original as it is ingenious. Mr. H. deserves the thanks of all lovers of education for the very valuable work he has given us."

SRINIVASA VARADACHARI & CO., TRIPPLICANE & ESPLANADE, MADRAS.



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II. CAMBRIDGE LOCAL EXAMINATIONS.

SINCE writing the article on this subject which appeared in last month's issue, I have received a large number of enquiries as to whether the Cambridge Senior Local Certificate is accepted by the Universities of India other than that of Madras. Enquiries are being made in this direction and I hope soon to be able to give a list of Indian Universities and Examination Boards that accept the Certificate in lieu of their own Entrance Examination.

The Time Table that will be followed at the 1910 examinations is given below. It will be seen that this is necessary because the University arranges that a number of different subjects shall be examined at the same time and "no student can take two papers included in the same bracket." Intending candidates should therefore see that they are not preparing any subjects which they will not be able to take under this rule. It will be quite useless to try and get the Time Table altered in any way and so candidates had better accept the inevitable without seeking to obtain favours either from the Cambridge Syndicate or the presiding Examiner.

It may interest candidates to know that representations are being made to Cambridge to have several centres in S. India next December.

Those intending to take the Examination should send to me at the beginning of June. If they send with their letter, a fee of eight annas, an application form will be sent to their

address. This fee of 8 annas will be credited towards the Examination fee and is only charged at the beginning to prevent persons who do not really intend to sit for the Examination from applying for the forms. The Cambridge fee is 15/- and 7/8- is the local fee. So that if a candidate sends 8 as. when he asks for the application form he will only have 22/- to pay when returning the form properly filled up. This is mentioned now because I am already being asked when application fees should be sent.

Subjoined are syllabuses of work to be covered in Geometry and Sound and Light and Heat.

"What books must we use?" is a frequent question. The choice is left to the candidate. There are many good and suitable books in the market on each subject and the candidates who want to do well should read several books and get a thorough all-round knowledge. He will not then need to fear the examination questions as they are always very general and contain no "catches."

Cambridge gives no minimum mark to be obtained in order to pass, and although a candidate might scrape together such a number as might be considered a "pass" standard, I doubt very much if his name would appear in the pass list of a subject if he clearly showed that his knowledge in that subject was meagre.

The method of conducting these examinations is as follows:—The Syndicate sends out to the local Secretary forms of application

about six months before the examination. These are filled in by the candidates and returned with the examination fees to reach Cambridge before *September 30th*. The local Secretary then arranges for the presiding Examiners to whom the sealed question papers are sent during November. As soon as the examination is over the papers are posted to Cambridge and heavily insured. The results are usually known in England about the middle of February and reach India about March 11th.

Only the names of the successful candidates are then known, but later in the year the local Secretary is furnished with a list giving examination numbers, not names, of all candidates who took the examination and opposite each number is entered whether the candidate passed or failed in *each* of the subjects for which he entered.

About May the certificates for those who have passed the examination are sent to the candidates through the local Secretary.

TIME TABLE FOR SENIOR STUDENTS

AT CENTRES COMMENCING WORK AT 9.30 A.M. (1910).

Some centres find it more convenient to commence at 9 A.M. and make each paper half-an-hour earlier, except on Monday.

No student can take two papers included in the same bracket.

MONDAY July 18. Dec. 12.	TUESDAY July 19. Dec. 13.	WEDNESDAY July 20. Dec. 14.	THURSDAY July 21. Dec. 15.	FRIDAY July 22. Dec. 16.	SATURDAY July 23. Dec. 17.
	9½-11½ Latin I. * Heat Perspective Drawing 10-11½ Memory Drawing 11½-1¼ Twelfth Night Chaucer	9½-11½ Arithmetic 11½-1¼ Old Testament Epistle Common Prayer	9½-12½ Algebra	9½-11½ Geometry 12-1¼ English History British Empire Roman History	9½-11 Trigonometry 11½-1¼ Analytical Geo- metry & Dif- ferential Calculus * Heat * Book-keeping 11½-1¼ German Spanish Dutch
2-3½ Gospel Genesis &c. Acts 3½-5 Geography	3½-5½ French.	2½-3½ Freehand Draw- ing 3½-5½ English Com- position	2-3½ Model Drawing 3½-5½ Latin II. Mensuration and Surveying	3½-3½ Shorthand 3½-5½ Greek I. Practical Che- mistry * Book-keeping Music	2½-4½ Greek II. Sound and Light * Physiology &c. Design
6-8 Applied Mathe- tics Experimental Mechanics Physical Geogra- phy	6½-8 Spenser &c. English Litera- ture	6-8 Political Economy Logic Theoretical Chemistry * Physiology &c. Agricultural Science I.	6-8 Electricity &c. Botany Natural History Agricultural Science II.	5½-6½ Shorthand	

* Alternative papers are set in these subjects. Candidates entering for the subjects on Tuesday, Wednesday or Friday cannot be allowed to take them on Saturday, or vice versa.

Substitutes for Set Books and Subjects.

The pupils at any school may, on application from the authorities of the school, be allowed to substitute for the Set Book or Books in any subject in the Local Examinations another Book or Books, or for the Syllabus in Geography or in Experimental Science a different Syllabus, provided that the consent of the Syndicate is obtained. Such consent will not be given unless the alternative proposed in lieu of that prescribed is in the opinion of the Syndicate suitable and of equivalent length and difficulty. Any application made in accordance with this announcement must reach the General Secretary not later than November 1 for the ensuing July Examination, and not later than April 1 for the ensuing December Examination. A fee, to cover the extra expense involved, will be payable by the school authorities for each special paper that has to be prepared.

Examination in Spoken French and Spoken German.

The Syndicate will arrange for the examination of candidates in Spoken French and Spoken German at schools at which the authorities are prepared to pay a fee of half-a-crown for each candidate examined in each language (the minimum payable by any school being £1 for each language), together with the travelling expenses and the hotel expenses (if any) of the Examiner or Examiners.

Two or more schools may, if they wish, combine for the examination, the minimum fee payable by the combined schools for each language being £1. All the negotiations, however, between the schools must be conducted independently of the Syndicate; and, in communication with the Syndicate or the Examiners, the Principal of one of the schools must act as the representative of all of them. The Principal of the school conducting the correspondence must also be responsible for collecting the fees, including the share payable by each school for the out-of-pocket expenses of the Examiners, and must forward them in due course to the Syndicate. The names of all the candidates must be sent to the General Secretary on the same form, and all the candidates must be examined together.

Applications must reach the General Secretary not later than May 12 or October 3, and the examination will be held at some time, before the commencement of the Local Examinations, to be fixed by the Syndicate.

Candidates entering for the Spoken Examination in either language must also enter for the Written Examination in the same language, and if they pass therein and also in the Spoken Examination, the fact of their having satisfied the Examiners in the Spoken Examination will be endorsed on their Certificate.

The Spoken Examination will not be necessary for passing in the language or for the mark of dis-

tinction; it will, however, be taken into account in determining the position of candidates in the general Class-list, and it will be counted towards the mark of distinction in cases where the mark of distinction would not be obtained without it.

In the Preliminary Examination, candidates will be required (1) to read aloud a passage of French or German; (2) to hold a short conversation in French or German with the Examiner.

In the Junior and Senior Examinations, candidates will be required (1) to read aloud a passage of French or German; (2) to write a passage of French or German from dictation; (3) to hold a short conversation in French or German with the Examiner.

School Certificates.

The Regulations for the award of School Certificates (Junior and Senior) can be obtained on application to the General Secretary.

Geometry for Seniors.

The paper in Geometry will contain questions on Practical and on Theoretical Geometry. Every candidate will be expected to answer questions in both branches of the subject.

The questions on Practical Geometry will be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate must provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compasses, and a fairly hard pencil. All figures must be drawn accurately and distinctly. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on Theoretical Geometry will consist of theorems contained in the annexed Schedule B, together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition will be accepted which appears to the Examiners to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as a sequence of their treatment.

In the proof of theorems and deductions from them, the use of hypothetical constructions will be permitted. Proofs which are only applicable to commensurable magnitudes will be accepted.

SCHEDULE A.

Bisection of angles and of straight lines.
Construction of perpendiculars to straight lines.
Construction of an angle equal to a given angle.
Construction of parallels to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Division of straight lines into a given number of equal parts or into parts in any given proportions.

Construction of a triangle equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Simple cases of the construction of circles from sufficient data.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6, or 8 sides in or about a given circle.

Construction of a square equal in area to a given polygon.

SCHEDULE B.

Angles at a Point.

If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles; and the converse.

If two straight lines intersect, the vertically opposite angles are equal.

Parallel Straight Lines.

When a straight line cuts two other straight lines, if (i) a pair of alternate angles are equal, or (ii) a pair of corresponding angles are equal, or (iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles,

then the two straight lines are parallel; and the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

Triangles and Rectilinear Figures.

The sum of the angles of a triangle is equal to two right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal; and the converse.

If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

Areas.

Parallelograms on the same or equal bases and of the same altitude are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities:—

$$\begin{aligned} k(a+b+c+\dots) &= ka+kb+kc+\dots, \\ (a+b)^2 &= a^2+2ab+b^2, \\ (a-b)^2 &= a^2-2ab+b^2, \\ a^2-b^2 &= (a+b)(a-b). \end{aligned}$$

The square on a side of a triangle is greater than, equal to, or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse, right, or acute. The differences in the cases of inequality is twice the rectangle contained by one of the two sides and the projection on it of the other.

Loci.

The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

The Circle.

A straight line drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle, and one only, which passes through three given points not in a straight line.

In equal circles (or, in the same circle) (i) if two arcs subtend equal angles at the centres, they are

equal; (ii) conversely, if two arcs are equal, they subtend equal angles at the centre.

In equal circles (or, in the same circle) (i) if two chords are equal, they cut off equal arcs; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

Proportion: Similar Triangles.

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally; and the converse.

If two triangles are equiangular their corresponding sides are proportional; and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional, the triangles are similar.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

For Candidates for Honours questions will also be set relating to other properties of triangles and circles, and to the Elementary Geometry of the plane and the sphere.

Sound and Light. (Senior).

[This Schedule is the same as that in force for the year 1909.]

The propagation, reflexion, and refraction of light; photometry.

Measurement of index of refraction of solids and liquids.

Total reflexion.

Graphic methods of determining the position and size of an image formed by reflexion or refraction.

Measurement of focal lengths of mirrors and lenses.

Deviation and dispersion produced by a prism, different types of spectra, the colour of natural objects.

Optical properties of the eye; long-sight and short-sight, their correction.

Combination of two lenses to form a telescope or a microscope.

Production, propagation, and reflexion of sound.

Relation between the sound produced and the character of the vibrations, musical intervals.

Determination of pitch of tuning-forks, beats, experiments on the vibrations of strings and columns of air; resonance.

Experimental determination of velocity of sound in gases, effect of change of atmospheric conditions on velocity of sound in the air.

The questions will be principally such as will test the candidates' knowledge of the subject as gained from a course of experimental instruction.

Heat. (Senior).

[This Schedule is the same as that in force for the year 1909.]

Temperature and its measurement.

Calorimetry, specific heat of solids and liquids, latent heat.

Expansion of solids and liquids.

Relations between the volume, pressure, and temperature of a gas.

Change of state; fusion, determination of melting and boiling points, evaporation, ebullition, vapour pressure, dew-point, hygrometry.

Transmission of heat by conduction and convection.

Radiation, its propagation, its relation to light.

Mechanical equivalent of heat, its determination.

The questions will be principally such as will test the candidates' knowledge of the subject as gained from a course of experimental instruction.

W. M. THEOBALD.

II. ON THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS.*

MULTIPLICATION: This portion of Elementary Arithmetic is very important and on a rational treatment of the subject mainly depends the success of the student in the future. The system of exercises in Multiplication noticed below are not only valuable in themselves but are calculated to give a training to the young mind in handling figures which is indispensable to a student of Arithmetic.

(a) Of Numbers 1—10:—

(1) Multiplication is a shortened process of addition. On square paper let the student mark side by side 6 columns of 2 small squares each. The pupil easily sees that the portion marked contains 12 small squares, i.e. 2 added to itself 6 times gives 12. This result in the language of Multiplication is expressed as $2 \times 6 = 12$.

(2) The pupils take different sets of numbers and arrive at results as in (1) and the teacher writes the results on the board and thus a Multiplication table for Numbers 1—10 is constructed. After the table is constructed the teacher questions the boys on the subject. The boys answer the questions with the aid of the square paper till they become quite familiar with the results. The teacher guides the pupils to use the square paper, they go from counting by small squares to counting by rows and columns.

(3) The pupil easily sees that 4 columns of 3 small squares or 3 rows of four small squares gives the same result, namely 12 hence he infers $3 \times 4 = 4 \times 3 = 12$, i.e. $a \times b = b \times a$ generally.

* The right of publishing the articles in a pamphlet form is reserved.

(4) When a number is multiplied by itself it is said to be 'squared,' the product is called the square of the number. The pupil learns the square of the first ten numbers from the table.

(5) The pupil takes 3 rows of 7 small squares each. He divides the whole into two compartments having rows of 5 and 2 small squares and sees that $3 \times 7 = 3 \times 5 + 3 \times 2$, i.e. $a(b+c) = ab + ac$ generally.

(6) By dividing the whole rectangle in (5) into two compartments having rows of 3 and 4 squares each he sees that $3 \times 7 = 3 \times 3 + 3 \times 4$, i.e. $a(a+b) = a^2 + ab$ generally.

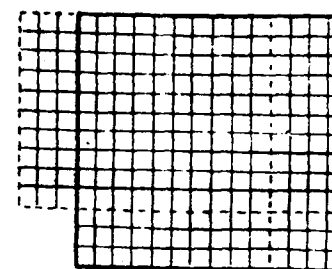
At this stage the pupils should practise computation. Let the teacher write on the board a series of numbers say, 5, 7, 9, 3, 4, 8, 6, 9, 2. Let the pupils quickly say only the product of the numbers successively by the first digit, then by the second and so on. They may give the products taken two at a time and so on. Let them multiply the first two and add the third, then the second and the third and add the fourth and so on. They may vary the exercise by subtracting the third from the product of the first two and by taking the digits in different orders.

(b) Of Numbers 11—20:—

(1) From (a, 5) it is seen that $7 \times 3 = 5 \times 3 + 2 \times 3$, the pupil can therefore understand that $14 \times 7 = 10 \times 7 + 4 \times 7 = 98$. Thus he can extend his Multiplication table and can make himself familiar with the products of Numbers 11 to 20 by Numbers 2 to 10. The teacher should constantly question the boys till they acquire the facility to answer him at once.

(2) The pupil marks a rectangle, say of 13 rows of 14 small squares each. He sees

that it consists of a square (10 rows of 10 small squares each), a rectangle 10 rows of 4 small squares, a rectangle 3 rows of 10 small squares and another rectangle 3 rows of 4 small squares. The second rectangle may be placed by the side of the square so that the whole consists of a rectangle 10 rows of 17 small squares and a rectangle 3 rows of 4 small squares:



Thus it is seen that 14×13

$$\begin{aligned} &= 10^2 + 10 \times 4 + 10 \times 3 + 3 \times 4 \\ &= 10[10 + 4 + 3] + 3 \times 4 \\ &= 10 \times 17 + 3 \times 4 \end{aligned}$$

$$\begin{aligned} \text{i.e. } (a+b)(a+c) \\ &= a^2 + ab + ac + bc \\ &= a[a+b+c] + bc \text{ generally.} \end{aligned}$$

The working rule: Of the two numbers to be multiplied together, add the 'units' digit of one number to the other and to the result affix a cypher [imagined when the student becomes familiar with the rule] and add the product of the 'units' digits.

Example (1) $14 \times 13 : 14 + 3, 17.$

$$\begin{array}{r} 12 \\ 182. \\ (2) \quad 16 \times 18 : 16 + 8, 24. \\ 48 \\ 288. \end{array}$$

(3) The above rule may be used to square the numbers 11 to 20.

Example: $18 \times 18 : 18 + 8, 26.$

$$\begin{array}{r} 64. \\ 324. \end{array}$$

The pupil now extends his Multiplication table to numbers up to 20. The working rule should be so thoroughly practised that the pupil is able to give the product of any two numbers readily without committing the partial products to writing.

(c) Of Numbers 21—100.

(1) When the pupil has acquired a considerable practice in the application of the above rule he can write down the product of any two numbers less than 100 whose 'tens' digits are the same.

Working rule: Of the two numbers add the 'units' digit of one number to the other, multiply the sum by the 'tens' digit, add a cypher to the product (better imagined) and to the result add the product of the 'units' digits.

Example (1) $35 \times 37 : 35 + 7, 42$

$$\begin{array}{r} 42 \times 3 = 126. \\ 5 \times 7 = 35 \\ \hline 1295 \end{array}$$

(2) $43 \times 49, 52, 208.$

$$\begin{array}{r} 27 \\ 2107 \end{array}$$

Thus the intermediate steps are omitted after some practice.

(2) For numbers whose 'units' digits are the same.

Working rule: Take the product of the 'tens' digits, imagine a cypher to be added, add the product of the 'units' digit and the sum of the 'tens' digits, imagine a cypher to be added and to the result add the square of the 'units' digit.

Example (1) $67 \times 47; 6 \times 4 = 24.$

$$\begin{array}{r} (6+4)7 = 70 \\ 310. \\ 7^2 = 49 \\ \hline 3149 \end{array}$$

(2) $57 \times 87; 40, 491$

$$\begin{array}{r} 49 \\ \hline 4959 \end{array}$$

After good practice, with the figures 57×87 before him the pupil will repeat only 40, 491 and write down 4959.

(3) From the formula $(a+b)(c+c) = (a+b+a)c + bc$, we can derive a working rule for multiplying any two numbers of which the multiplier has both the digits the same.

Working rule: Add to the multiplicand its 'tens' digit, multiply the sum by one of the digits of the multiplier, imagine a cypher to be added and to the result add the product of the 'units' digit.

Example (1) $48 \times 33, 48 + 4, 52$

$$\begin{array}{r} 52 \times 3 = 156. \\ 24 \\ \hline 1584 \end{array}$$

(2) $67 \times 44, 73, 292.$

$$\begin{array}{r} 28 \\ \hline 2948 \end{array}$$

(4) From the formula $(a+b)(a+b) = a(a+b+b) + b^2$, we can derive a working rule for squaring any number of 2 digits.

Working rule: To the number to be squared add its 'units' digit, multiply the sum by the 'tens' digit, imagine a cypher to be added and to the result add the square of the 'units' digit.

Example (1) $26 \times 26, 26 + 6 = 32$

$$\begin{array}{r} 32 \times 2 = 64. \\ 36 \\ \hline 676 \end{array}$$

(2) $78 \times 78, 86, 602.$

$$\begin{array}{r} 84 \\ \hline 6084 \end{array}$$

It is worth while noting the special case of numbers ending in 5.

Example: (1) $65 \times 65, 70, 420$

$$\begin{array}{r} 25 \\ \hline 4225 \end{array}$$

(2) $85 \times 85, 9, 72.$

$$\begin{array}{r} 25 \\ \hline 7225 \end{array}$$

(5) The product of any two numbers of 2 digits.

Working rule: Multiply the 'units' digits, write down the units, remember the 'tens' obtained, multiply the 'tens' digits and the units digits diagonally, add all the tens, write down the tens and remember the hundreds; multiply the tens digits together, add all the hundreds, write down the hundreds and the thousands in their places. Mr. Gokhale, in his Arithmetic, recommends this method of David Munn, to find the product of even larger numbers.

$$\begin{array}{r|l} \text{Example:} & 35 \\ & 47 \\ & \hline & 1645 \end{array} \quad \begin{array}{l} 5 \times 7 = 35 \\ 3 \times 7 + 5 \times 4 + 3 \\ \quad = 44 \\ 3 \times 4 + 4 \\ \quad = 16 \end{array}$$

(To be continued)

S. CHINNASAMI AYER.

THE RECENT MATRICULATION EXAMINATION.

THE heart-rending slaughter in the recent Matriculation examination is the climax of a series of such operations going on persistently from year to year. The gravity of the situation is too great to be neglected. The magnitude of the suffering is extensive and must open the eyes of even the most lethargic of men. We have no doubt that we are only voicing forth the silent opinion of many when we say that the evil has been allowed to grow on unfledged, till it has become a positive danger, a veritable canker which is eating up the very life blood of budding humanity. No doubt the importance of the Matriculation is to be much reduced by the School Leaving Certificate, the magic wand that is to cure the ills of a century, the talisman that is to open the gates of real education, the doors of Government service and the portals of the University, all in one stroke. What the ultimate results of the scheme will be, whether it will usher in the educational millennium, is a matter which need not detain us for the present. That is to be judged in the working rather than in the inception. And we must not forget novelty is commonly boomed forth as a panacea for existing evils. The peculiarly rigid and inelastic nature of the Madras University examinations have crystallised themselves into a state of affairs which, to say the least, is most undesirable. As regards the Matriculation in particular a situation has been created calling for drastic and immediate reform. Can anything be more appalling than that only 11.5 per cent. of the candidates should secure a pass in the recent Matriculation examination, the actual figures being 877 out of 7,508? Last year 23.5 was the percentage of success as compared with 17.4 in the previous year. From 23.5 to 11.5 is a very big drop, and this has to be satisfactorily accounted for. Have we to draw the inference that the candidates who appeared this year are a hopeless lot? Hopeless is it in spite of the training given them or on account of it? Last year the failures were chiefly in English and Science. At the instance of the Director of Public Instruction, a Committee was ap-

pointed to probe into the causes of the failures and submit its report. The report has come and the specific recommendations of the Committee are said to be of immense value. The report has also been circulated to heads of institutions and they must have acted on it; nay, on the admission of the Director himself, promotions and admissions have been regulated with more care than before, and improvements effected or attempted to be effected in every direction. Besides, the high percentage of failures in Science ought to have drawn special attention to that subject and the Government have promptly supplied funds to many Secondary Schools to equip laboratories for the efficient teaching of Science. These considerations tend to point out that the system of teaching and of promotions in schools have vastly improved. Can the blame be then wholly laid at the doors of those responsible for the training of the candidates? We cannot for one moment entertain this idea that the incapacity of the students would be seriously urged as the controlling cause. The admission that the system of teaching has considerably improved involves the further admission that the students' capacity has also been developed. There cannot be efficient teaching without turning out efficient students. To maintain the opposite is ridiculous. If in spite of the teaching the students are a hopeless lot, the methods adopted are at fault and require remodelling. We are thus compelled to ask the University itself to give us a satisfactory solution. Has the University done anything towards fixing a definite standard for the examination suited to the knowledge and capacity of the candidates? Ideals are good and must be aimed at, but hard facts ought not to be ignored, and attempts must be made towards a sympathetic uplifting of the actual to the ideal. The actual, it need hardly be said, should not be blindly sacrificed for the ideal. Last year a Committee or Commission sat in closed doors to enquire into the matter and made certain recommendations. Have those suggestions mended matters? If we are to answer the questions from the results of this year, we must say no. What is wanted is that an open enquiry should be held to sift

the whole question in broad and full daylight. Further in what manner has the University exercised its control over the methods of valuation, etc. of the answer papers? The answers to questions, and instructions for valuation are usually printed and circulated for the guidance of the assistant examiners. Have not the public a right to have such instructions made public, more so when crises like the present occur? We can hardly conceive of any legitimate objection raised against this. It will be nothing but a sympathetic response to educated feeling, should the University publish the answers and instructions and show to the public where the fault lies. Apart from this we should strongly suggest to the Fellows of the University that they should insist on perusing those documents and examine the whole problem thoroughly to the very bottom.

The meeting of the Madras University Senate is to come off on the 4th March, and the Hon'ble Mr. Stone is to move the following resolution which is a recommendation by the Syndicate:—"Candidates who sat for the Matriculation Examination of 1903, and obtained a total of 199 marks in the examination, and obtained also 40 p. c. of the marks in English, and 35 p. c. in three additional divisions, may be admitted by the head of an affiliated college, if he be satisfied as to their fitness, to a course of study for the Intermediate Examination in Arts and in consequence of such admission shall be registered for the purposes of Regulation 178 as Matriculates of the University, provided no such candidate may be admitted to such a course of study in Groups I or II unless he has obtained 35 p. c. of marks in Mathematics and in Elementary Science, nor Groups III or IV unless he has obtained 35 p. c. of the marks in History and Geography and also in either Mathematics or Elementary Science." The conditions laid down are stringent enough. The recommendation assumes that there was nothing defective in the questions and in the manner in which answer papers have been valued. But has the Syndicate satisfied itself

on this point? We want more evidence and we hope the Fellows would insist on such evidence. True we have no Mehta in our midst. But we expect the Fellows to guard the interests of the students and they may be sure of an intelligent public closely and anxiously watching their words at the next meeting. Another issue is raised by the recommendation. Discretion is allowed to the head of an affiliated college as regards admittance to the Intermediate class. The University declares some students fit for the Intermediate course. The head of a college may hold a different opinion and act on it too. Here is a conflict of authority which needs immediate remedy. Then again what is the exact status of those now declared eligible for registration "for purposes of Regulation 178 as Matriculates of the University." Are they not entitled to the usual certificates? If not, why not? Have they the same privileges as a passed Matriculate, e.g., are they eligible for Government service? As regards those who for some reason or other do not continue their studies for the Intermediate course this year, but wish to do so at some future time, what is to be their passport? Impossibility of securing admission in a college either because seats have been filled up or because admission is refused by the head of the college, and the stress of adverse circumstance will naturally tend to narrow very much the sphere of students actually benefited by the resolution. We hope the Fellows would consider the issues raised herein, and insist on a declaration on all points. We expect them to muster strong and see that the question is fairly discussed. The list now issued might perhaps be supplemented by the inclusion of those who have passed in English and two other subjects. In fact, we learn, that this was the initial recommendation proposed by the Syndicate, but how it came to be dropped we do not know. Our sole hope is that the Fellows will exercise their level best to guard the rights of the voiceless students, and secure the administration of justice to such as merit it.

AN EDUCATIONIST.

THE LATE MATRICULATION.

EXAMINATION.

"What cannot be mended must be ended." There does not appear to be a middle course, at least, in our Benighted Presidency. The doings of our Senate find no parallel in any other part of India. The short-lived Matriculation Examination cannot claim superiority over its predecessors of more than half a century. It aimed at minimising cramming by the appointment of a number of text-books in English for detailed and non-detailed study. As far as I am aware, the schools—at least most of them—made no distinction between the two and laboured hard to hammer into the heads of the unfortunates many things concerning style and idioms. Loads of composition exercises were given and corrected and all to what purpose? The largest number of failures is attributed to English! The English language seems to have assumed monstrous proportions all at once. In 1908, according to the report of the Syndicate the number of failures in the first examination in English was 4,793 against 10,762 who sat for it. In the re-examination the numbers were 1,959 and 5,490. The papers of 1909 cannot be said to have been more difficult than those of 1908 except that in the former the questions were more on composition than in mere verbal gymnastics. Again some centres have done better than others. Certain schools are altogether unrepresented in the Pass List! Some centres, which in former years regarded themselves particularly blessed if 25 per cent. came out successful, have during the last year obtained proportionately higher places in the list. There are other centres which had always excited the envy of schoolmasters by the large number of

passes in former years, but in which the passes have dwindled to a single digit though the number of examinees has been the same or nearly the same. The fluctuations have been so marked in some centres that the less thoughtful among the critics of the Madras University have gone the length of suggesting sinister motives both to examiners and to the Syndicate. When the failures in any centre are phenomenal and the passes in others equally so, it is impossible to maintain the mental equilibrium necessary to take a dispassionate view of the matter. This is the predicament to which most of us have been reduced by the action of the Madras University. There are not ignorant people wanting who say that the authorities who had all along been complaining of the University Matriculation Examination desired to make out a case against its retention and unduly raised the standard of proficiency in English and Science in the first examination held under the new order of things. Though I am too old to believe such trashy nonsense, I must admit that I have not been able to explain why so many candidates had failed to secure a pass in the newly-created third class at least. I am sure there are many in the profession who have the good luck to be chief or assistant examiners and these will no doubt throw some light on the causes that had contributed to the enormous failure—877 passes out of 7,508 who had registered themselves. I may mention by the way that in 1878 only a little over 300 were declared to have passed the Matriculation Examination against more than 3,000 registered. Thirty years afterwards—quite a generation afterwards—history has repeated itself. In 1876 on the other hand more than seventy per

cent. passed! In 1906, the passes were very fair all round.

Let me now consider the standard of proficiency which the University expects of its alumni in English. The Syndicate has issued a circular to the various heads of schools in regard to this in the following words:—"The examiners should aim at testing the candidates' ability to study a book carefully from the point of language and the elements of literary form. Candidates whose taste and ability for general reading have been widened by the study of these additional books should receive special encouragement." With my wonted partiality for brethren in the trade and for the taught, I cannot bring myself to believe that the objects the University had in view were lost sight of either by the teachers or by the candidates. The examiners in certain centres appear to have had some incomprehensible and unattainable ideal of English before them. What after all is the object of language? Is it not merely to convey one's ideas? If there are ideas, they must find expression—the latter being a varying factor according as one is utilitarian or æsthetic in his views. A book of Swift's Gulliver's Travels, two chapters of Kingsley's Heroes, Yonge's "Little Duke" and Finnemore's Italy and Japan were all the books that had to be brought up in English prose. The poetry portion was equally simple. The very simplicity of the style was to many very misleading. Few were able to imitate the style of the books they read. Washington Irving made supreme efforts to assimilate the style of Oliver Goldsmith in his works. Did he succeed, born as he was to parents whose vernacular was English? All that an Indian candidate can do is to imitate. The models were placed before him. It ought not to be

forgotten that he has other difficulties. Teachers of non-language subjects—at least a great many of them unconsciously and without the least thought of injury to the taught—undo and mar the work of the teachers of language. Some of these are zealots: their general vocabulary is very limited: they can talk their mathematical or science jargon and even there their powers of expression are pitifully poor. The result is—at least so far as the Tamil districts are concerned—that the candidates become accustomed to a mixture of Tamil and English which makes the matter clear to the learner at the sacrifice of good English. It is not unusual to hear a teacher of geometry tell his students—இந்த centre லே இருந்து circumference க்கு ஒரு straight line ஐ இழுத் தோமானால், அது tangent ஐ bisect பண்ணுமென்று. The ready answer of the pupil is ஆமா Sir. What happens during the geometry lesson happens during the arithmetic and algebra lessons as well. The faint impression of correct English that the English teacher had attempted to leave is more than obliterated by some mathematics teachers. The science teacher is in some respects equally guilty. A great majority are in the habit of dictating to their boys the language in which the students are to note down their observations on an experiment that is performing. In explaining likewise, expressions of the following kind are very frequently heard. இது negative electricity—இது positive electricity. Sulphuric acid-ல் கொஞ்சம் எடுத்து இந்த battery இல் இருக்கிற zinc plate இல் விட்டு copper wire ஐத் தொட்டுப் பார். அது hot ஆம் இருக்கும். Copper wire உடைய இரண்டு end ஐயும் சேர்த்தால் spark உண்டாகிறதுபார். அதுக்குத்தான் electric spark என்று பெயர். The time devoted to pure English language teaching in most schools

does not exceed seven periods, excluding of course grammar proper and composition exercises. Science and mathematics have between themselves twelve periods. When the homeopathic mixture is administered for nearly twice as long as the allopathic mixture, no one need wonder that the homeopathic doctor wins the day to the utter discomfiture of the allopathist. I must not omit to mention the sins of the geography and the history teacher. The former is the exact prototype of the science man and the latter is a spinner of long yarns. In many schools, history is relegated to the last hour or the last hour but one. No amount of zeal on the part of the teacher can revive the spirit of the students who had remained in a close and stuffy atmosphere for more than five hours sweating and yearning to be let free. He must be more than human who can throw life into the students with the frame of mind mentioned above. The teacher himself is probably as eager to have done with his lesson as the pupils are. He too is guilty of the offence of which the mathematics, science and geography teachers are guilty. In these ways, the poor students who have to serve half a dozen masters—each with his idiosyncrasies and crotchets—lose all their labour by the exacting temper of examiners each of whom thinks that the subject in which he is examiner must be the one to which they should have devoted all their midnight oil. No allowance seems to have been made for the inevitable failings of candidates who have to bring up a multiplicity of subjects which have nothing in common.

In this connection I am tempted to ask one question. There are many Europeans who profess to know a great deal of some vernaculars and who are even known to be

authors. Father Beschi is the reputed author of "Tembavani," a metrical biography of Jesus Christ in Tamil. It is even said that the excellence of both the matter and the manner of that book approaches the "Jivaka Chintamani" in perfection. Granting that the work is his own—unfortunately scepticism attaches the work to a native convert who was quite ready to father it on the Reverend gentleman—how many years of patient study both of Tamil literature and grammar must it have cost the missionary before he attained the facility and felicity of expression that "Tembavani" is famous for? Only during the past two decades the Government of Madras have been appointing Indians to translatorships. The Honourable Mr. J. D. Rees, M. P., was Government Translator in almost all South Indian vernaculars! We know the Munshis did all the work for him and Government accepted the version because it had the imprimatur of their trusted servant. I boldly ask any foreigner who professes to be master of any Indian vernacular if he can readily translate a conversation between two natives when they express themselves without restraint. I know he cannot do it and the same is the case with Indians who have to bring up English. This aspect of the matter seems to have received little or no consideration from the examiners and the Syndicate of the Madras University. Since writing the above, I have come across an article by Andrew Lang which is extracted by "The Hindu" in its issue of 18th February. It dispels once for all the dream that Indians can be made to speak or write as an Englishman does. Babu English is all that we are capable of and if we aim higher, we are sure to meet with disappointment. The English language is a living language to Indians only so far as the books they use are con-

cerned. It can never become the mother-tongue of the Indian, nor in the interests of the population is it necessary to make it the vernacular.

The Collector of a District in this Presidency was a Master of Arts of the Aberdeen University. In one of his reports to the Board of Revenue he had used certain expressions which were considered by the Board as un-English. One of the paragraphs of the B. P. had the following caustic criticism:—"This important paper seems to have been drawn up by a native clerk imperfectly acquainted with the English language. Otherwise expressions such as . . . could not have occurred in it." The Collector owned that the entire composition was his and that he saw nothing wrong either in grammar or idiom in his report. He was told by the then Sub-Secretary—a bigoted precisian—that the language used was *archaic*. While Englishmen themselves are not above committing gross errors, *e.g.* the Duke of Sutherland who is advised by a writer to improve his grammar by taking a few lessons from his wife—is it not preposterous to expect Indians to speak and write King's English. The "Nineteenth Century and After" in one of its articles said that there was a President of the Board of Education who was unable to pronounce the word *chimæra* correctly and actually sought the help of a friend while in the throes of a speech that he was about to deliver. I am therefore tempted to say "Doctor, cure thyself." The remarks of some Inspectors of Schools in this Presidency on their inspection of schools contain howlers at which the English world might stand aghast. Is it anything short of cruel to demand an impossible degree of acquaintance with English idioms from an Indian?

There are some Indians who have so far anglicised themselves in the matter of accentuation and intonation as almost to be regarded English except in the skin. This acquisition is merely an elaborate imitation and cannot be sustained for more than an hour at the longest. Such people instead of evoking admiration provoke contempt. "One snake knows the number of legs that another snake stands on," says a Tamil proverb. As Indians know that the coin is counterfeit and an attempt is made to palm it off as current, they feel contempt for the imitator and that is very uncharitable to say the least. I have dwelt too long on the degree of proficiency that is possible to attain and I am glad to be able to add that those who had passed the Matriculation Examination of years previous to 1909 had continued the collegiate course and are now holding the highest offices in the British as well as in the Native States' service. Sir K. Seshadri Aiyar, Messrs. Rajagopalachariar, Madhava Rao, Ananda Rao and others in Native States and Messrs. Gopala Rao, Ranganatha Mudaliar, R. V. Srinivasa Aiyar, S. Srinivasaraghava Aiyangar, Sivaswami Aiyar, V. Krishnaswami Aiyar and a host of others had all passed the Matriculation Examination of the Madras University before they became graduates and the instruction they had received in their own High Schools was quite equal to enabling them to prosecute their studies in the Arts Course. I should think that the teachers of High Schools in these days are a better read and better informed class of men than those of an elder age and the failure in English in the Matriculation of 1909 is due to eccentricity on the part of examiners in certain centres rather than to the failure of the teachers to do their duty by their pupils or to the imperfections of the candidates themselves.

Science appears to have claimed its own victims. I do not want to repeat my remarks on English under this head, because much of what I said on that point is applicable to science also. Except the most elementary knowledge and that too scrappy, it is not possible to expect anything from the students. The examiners appear to be exacting. A relaxation is absolutely necessary under this head too.

What about the other classes of High Schools? Ever since the abolition of the Lower Secondary Examination, the standards of schools have been varying. In order to improve matters, I would strongly recommend the revival of the Lower Secondary Examination and of the Comparative Examination of the Vth Form as Departmental tests, on the results of which alone promotions should be made to the High School classes and the Vth Form. The position of many Indian headmasters is very false and few can resist the temptation to send up a larger number than are fit for the class. The revival of these examinations will be a welcome relief to many headmasters who have no backbone.

The Syndicate of the Madras University, in its overflowing sympathy for the slaughtered innocents has come forward with a proposal to sanction the admission into the Intermediate class of those of the ploughed who had obtained 40 per cent. in English and 35 per cent. in three other subjects with a total of 199 marks. This is, on its face, only a means to an end, *viz.*, to increase the fee-income of colleges. The spirit in which the proposal has been conceived savours of melancholy money-making. The whole examination should be quashed and a re-examination held for all the failed candidates or the minima should be reduced to 30 per cent. in English and 25 per cent. in each of the

other subjects. According to the recommendation of the Syndicate 477 failed candidates are allowed to join the College classes. This is a dole which may be treated with the contempt it deserves. The examiners who have slaughtered the largest number should be debarred from the privilege until they have served five years as Headmasters of High Schools. The principle that none but those whose vernacular is English or who have taken the M.A. degree or a first class in the B.A. degree should be examiners in English ought to be relaxed considerably. What can an Inspectress of Girls' Schools know about the standard of proficiency attained by the Vth Form boys while all her life she has been overseeing the needlework and singing of girls in *Elementary* schools? I believe one of these Inspectresses was an Examiner in English! A thorough reform in the matter of selecting examiners is also called for.

The University will have little to do hereafter in respect of the Matriculation Examination as the School Leaving Certificate has superseded it. Where is the guarantee that the candidates for the Matriculation Examination from the Native States will not be treated to another Barmecidal feast? The Native States in the Madras Presidency can afford to have a University of their own without extraneous help and I am sure the Madras Government will recognize the same as a qualifying test for the public service in this Presidency. Have they not done it for the Entrance Examinations of Bombay, Calcutta, Allahabad and the Panjab Universities? The modesty of the Government in regarding the Matriculation Examination of the Madras University as of no worth for its public service is far greater than the modesty of Newton who is reported to have said: "What I have learnt all these many years is

nothing compared with what I have yet to learn."

SCHOOLMASTER.

THE LAST MATRICULATION EXAMINATION.

THE last Matriculation examination has yielded the worst results never before suspected, and has provoked the worst feelings of the reading and knowing public. The disaster it has spread, has been so wide and deep beyond all normal measure that it may be said to have almost lost its sting of shame and grief. The Matriculation candidates themselves did not know whether to weep or to rejoice, and the teachers were equally at a loss, and the parents too. Wild guesses and rumours have been afloat as to the root of all this evil; of which the most amusing is, "that the examiners had with one accord agreed (under secret instructions from Government) to put down English education, and send back Indian youths to mind their own *sastrams* and *puranams* and other peaceful avocations of life rather than have them meddle in politics and Government; this has been hit upon as one very effective way of quieting sedition and unrest!"—Curious masterpiece of ingenuity reminding us of the old Mutiny days of 1857, when telegraph and railway lines gave the swing to odd conceits and fancies. It has been now finally taken for an evident fact that monstrous injustice has been perpetrated by the body of chief examiners; all thanks to them for the more or less impartial treatment accorded to all centres alike, though poor Kumbakonam, usually proud of its uniformly good results, is made to smart under the heaviest visitation.

If one thing might be made out from this more than any other, it is this that secondary education is in a most deplorable state; that

teachers of secondary schools especially of the Matriculation class are as a rule lamentably ill-equipped and poorly qualified, in English and Science above all, these having 'ploughed' the largest number. The interests of secondary education might, in the next step—as it may be plausibly argued—require a still larger number of European Inspectors of the stamp of those recently drafted from England. Or this might lead to the appointment of Europeans as headmasters of high schools, presumably the best course! But in high schools at all events, an intimate knowledge of the vernacular is so essential that a native must surely get infinitely the better of an Englishman despite the latter's mastery of his mother-tongue. An Englishman, proudly aloof as he is, is besides ignorant of the habits and modes of thought of his juvenile scholars, and this alone must militate against clear impressive teaching. But no Englishman has as yet given himself a fair trial on any large scale, not even the Inspector who goes his yearly round of inspection and examination, and has found out what small measure of success he could achieve in the high school. Till then, the charge of incompetency may with impunity be laid against the native English teacher who will only be silently chafing under it. It is easy to lay on a charge; not so easy to refute it, and when persons of high pretensions and influence are involved in the controversy. It is complained that the natives seeking admission into the college are woefully poor; true, but is it not equally true that graduates thrown into the world from college are as poor, and some of them cannot put two sentences together properly? The high school condemns the poor instruction of the primary school, the college that of the high school, the world of the college: so goes the chain of carping criticism.

But this sudden fall in the percentage of passes in the last Matriculation examination is

not to be so accounted for. Surely there can not have been any abrupt deterioration in respect of attainments and capacity of teachers and pupils. Even in the matter of question papers, there was not much to complain of, except perhaps the English paper in which the wording of some questions was not very clear, and many of the questions demanded very lengthy answers in the form of a dissertation or essay. On the whole they were pretty satisfactory papers. So it is in the matter of valuation that a new standard has been set up; and the chief examiners must have acted quite in an original manner irrespective of high school conditions and limitations. As to the assistant examiners, they are only precious few that represent the high school; and the golden principle of expediency and other prudential considerations might constrain them to say 'yes' to whatever the higher powers are pleased to dictate. There is absolutely no means of ascertaining what instructions were given, and how wide of the mark they were. It surpasses human comprehension why these instructions should be so strictly confidential; why in all conscience copies of them should not be circulated to all high schools. There is something very mysterious and even suspicious in the scrupulous closeness of their proceedings. A wide divergence of aims and standards between the teachers teaching and the examiners examining must surely lead to wreck and ruin. There is at present such a wide chasm separating professors and headmasters as may well account for the conflict of the understanding of the Sixth Form requirements. Such a spirit of proud exclusion and jealousy shutting the doors of the Council of Chief Examiners against headmasters of high schools savours of bigotry and narrowness quite unbecoming the noble cause of education, in which we are all fellow-workers.

The professors of colleges have the privilege of examining their own scholars, and of themselves valuing the answer papers. They know exactly what to ask and what to expect. But it is a sad lot, the lot of the poor school-master! He is in the dark as to what may be asked, and what may be expected of his pupils. He has to submit his boys and himself too, to be examined and estimated by persons who neither know, nor care to know of the high school standard.

Is it not in the first place a great hardship to expect from the Sixth Form boys any high standard of English? Simple, idiomatic, direct, straightforward English is, it may be urged, all that is required; but this it is that is so very difficult of acquirement; not even the best graduate that passes with honours can be credited with anything like it. It is sufficient, seeing that English is not our mother-tongue, if the boys are able to express their thoughts in any clear and coherent manner. Literary correctness and accuracy cannot be thought of, unless it be for 'plucking' purposes, at so early a stage as the Sixth Form.

In Science again, the standard of the examiners has been too high. In 95% of the high schools there has been very meagre or no provision made for practical science work, which, however, the examination questions largely presume. The fact is that new and improved syllabuses were introduced all too soon into schools, and no pains was taken to ascertain if new requirements had been satisfied. In fact even in the best schools, for one reason or another, it has not been easy to rise to the new standard. Some schools had to go a-begging for funds; some other schools, though endowed with funds, could not promptly see to the increase of accommodation; other

schools again suffered both from want of funds and space. The science examiner innocently ignorant of these disabilities, drew up a list of answers for his questions, and accordingly gave directions of a procrustean nature. But then, after the valuation of some answer papers at various centres, he must have got disabused of his pre-judged notions. But he seems to have held on to his original instructions. Eventually it is the poor boys that have paid the penalty—a curious perversion of the sequence of events.

The supplementary list of candidates pronounced eligible to join the college bespeaks such niggardly kindness so grudgingly bestowed that, far from allaying any discontent, it only aggravates it and looks besides like trifling with public feeling. The firmness with which the authorities have refused to raise the percentage of passes, or to hold a re-examination of the unsuccessful candidates is indeed very remarkable, though not very commendable from the standpoint of other than examiners whose prestige has been so bravely and stoutly maintained.

V. M. DEVAN.

THE SCHOOL FINAL SCHEME, ITS DEFECTS AND REMEDIES.

(Continued from page 13).

II. The constitution of the School Final Board comes next in the order of the subjects I proposed to take up. The Board constituted according to the provisions of the scheme have not yet begun their work: it may be too early at this stage to propose reforms in regard to the constitution of an infant Board just ushered into existence. Yet, I venture to offer my suggestions as I believe they may prove of some value. The members of the Board that we are to have are likely to hold

honorary office, and it is a Board that will change every three years. The first defect in the constitution is that the work of the members is to be honorary. I say this on the supposition that the members are to receive no remuneration. Human nature being always what it is, I do not know whether, when a work is done for no remuneration, it will be done with as much earnestness and devotion as when it has to be done as a matter of duty for pay. Barring honorable exceptions, the generality of those who are honorary office-holders may be able to enlighten us on this point much better than I can do. The second defect is that the work of managing the operation of the scheme will be tacked on to other and more onerous duties pertaining to the permanent office that the members hold. To make the duties of membership which will be many and onerous a spare-hour-business is not to be thought of. Thirdly a changing Board is apt to break the past traditions and to introduce innovations which are likely to cause hardship. Instead of a Board as now constituted, I would propose that a Board consisting of paid members be constituted, the members being mostly those who have had long High School experience, who are men of acknowledged capacity and who possess special knowledge of the subjects included in the scheme. The advantages of having such a Board are obvious and it will be similar to the Examining Boards consisting of members who are paid and who hold permanent office as examiners, that are reported to exist in England and elsewhere.

III. (a) The general cry against the scheme is that it makes the attainment of uniformity of standard almost impossible and that it gives too much power to Assistant Masters and Headmasters. All that can be said for

and against these aspects of the scheme have been said and no purpose will be served by repeating them here. But it must be admitted that blunders in the early stages of inexperience cannot be avoided and that new powers cannot be wielded without wise guidance and control. The apprehended evil can be obviated only by wise and judicious departmental check. The officer that has to exercise it is the Inspector. If this officer should hereafter do his work in the manner he has been doing it hitherto, it will not serve the purpose of checking all probable abuses or mistakes due to ignorance or inexperience. I should not be understood as casting a slur on the inspection work as it is done at present. Inspectors do their work as well as they can, single-handed, within the time available for each school: but this kind of work is inadequate. Some years ago the Inspector confined his work to indifferent class examinations. During the past few years it has been an examination of the teaching capacity of school masters; neither this alone nor that will be effective in checking the apprehended evil. Gentlemen, I would request you to have these points in view while bestowing your thought on the suggestion that follows.

It appears to me that scrutiny by Inspectors must be more thorough-going hereafter than now. The three upper forms must be carefully examined by Inspectors at the time of inspection by means of carefully prepared question papers. The answers must be carefully valued and the results retained in the office of the Inspector concerned. A work like this and a more careful scrutiny into the time-table, syllabuses, organisation and so forth will enable Inspectors to give very careful suggestions and to avoid incorrect impressions which are unavoidable in hasty inspections.

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A thorough-going examination of pupils and a fairly correct impressions formed about the capability of the upper forms of schools by means of results cannot but act as a wholesome check on Assistant Masters and Headmasters abusing their powers in regard to periodical marking, promotions, selections of pupils for the public examination and so forth. Such a scrutiny will keep the teachers always on the alert and thus the work of schools cannot but be made efficient. This will also tend to avoid indifferent treatment being accorded to the subjects included in the second group, not to speak of the possibility, by this method, of uniformity of standard being reached by personal suggestions by Inspectors and by the question papers they give at the time of inspection.

All this cannot be done by a single Inspector and within the limited time allowed him for inspection. To obviate this difficulty I propose the appointment of subject Inspectors as is done in England. The subject Inspectors need not be highly-paid men like Inspectors in charge of circles. Each circle Inspector may be made the chief to be assisted by three assistants who are specialists in Mathematics, Science, and History and Geography and who are such as are of proved capacity and have had sufficient teaching experience as High School masters. The whole staff may finish the inspection of a school in two or three days or each member may visit it on different occasions. I need not dwell on the obvious advantages of this arrangement. This proposal is not a novel one and therefore fit to be treated as unworthy of regardful attention. The system I propose is I am told in vogue in England and is productive of beneficial results. The objections that I anticipate against this proposal is the fear that

some may entertain that there may be too much of departmental rigour and interference. But my view is different. I am sure that far from undue rigour and interference, there will be a good deal of helpful guidance and it is necessary especially for the successful working of the scheme hereafter to be in force. A calm reflection of the scheme and the possible evils and difficulties in the absence of healthy control and guidance, will convince you, I believe, of the value of the suggestions here put forth.

(b) The next subject I have to deal with is what I consider should be the work of the Board in connection with the scheme. It is on their work that the successful operation of the scheme depends and this work is onerous and manifold. This will by itself form a subject for a separate paper. The members of the Board should form the Advisory Body to the Educational Department, to the Syndicate and to Managers of Schools and to Principals of Colleges. I do not propose to dwell here on the details of the Board's duties. They should at once issue instructions, of course through the educational authorities, regarding the successful enforcement of the scheme in schools—instructions not regarding unreachable ideals—but in respect to what is practicable and possible. Another matter of urgency is the publication of syllabuses showing the scope of work in each subject found in the scheme along with the list of books to be used either as text-books or as books of reference. Many of us are not aware of what subjects are included in Elementary Mathematics and how much knowledge is expected in that subject and in Elementary Science.

Similar is our ignorance in regard to any of the other subjects included in the scheme. It is hoped that the Board will take

early and active steps in the directions above indicated so as not to keep us long in anxious suspense.

(c) I then pass on to a matter of grave importance which affects the vital interests of all unattached High Schools in the Presidency. By the expression unattached High Schools I mean complete Secondary Schools which are not attached to second or first grade colleges under the same management. These schools are in all probability to be affected very largely in strength by the resolution recently passed by the Senate which allows full discretion to Principals of Colleges in matriculating and admitting students in the college departments going to them with the school-leaving certificate. For obvious reasons it will be readily admitted that pupils reading in secondary departments of colleges are more advantageously situated than those of the unattached secondary schools. I do not mean to say that Principals will be unfair. I do not at all believe that that will be the case. I cannot sufficiently disabuse your minds of any implication by me of even the remotest chance of abuse of the privilege of discretion they are allowed to enjoy. But look at the situation of two sets of pupils, one sort reading in attached secondary schools and the other in unattached ones. In one case the capacities of pupils are sufficiently known and in their case it is a mere matter of promotion for students to be matriculated so as to go up from Sixth Form to the first Intermediate Class. But the case of pupils of unattached schools coming to colleges for admission into the Intermediate Class is quite otherwise. They are strangers and their capacity has yet to be tested. A hasty examination at the time of admission may probably mislead. The results of the school-

leaving certificate cannot be depended upon invariably for all cases. Even though the evidence of moderated marks in the certificate held by a pupil of an unattached secondary school may not be encouraging, he can be admitted into the Intermediate class, if the Principal of the college under the same management is satisfied from personal knowledge with his general progress. A similar advantage pupils of unattached secondary schools have not. There are many other points to be urged in connection with this matter. There are clear indications of unattached secondary schools suffering in strength hereafter. In Madras a headmaster has reported to me that many parents have expressed their idea to withdraw their boys from the school over which he presides. All the headmasters and managers of unattached secondary schools are in anxious suspense. We, teachers, whether of colleges or high schools, should unitedly join to save the schools of this kind which are many and are institutions of great usefulness from the grave peril that threatens them. The only effectual remedy that suggests itself to me is the fixing of minimum by the Senate qualifying pupils for being matriculated. Sufficient elasticity may be permitted in regard to this matter by providing wide limits. Irrespective of weakness in other subjects the limit of the minimum may be insisted on in respect of the subjects which the applicant for admission into a college intends to take up for the Intermediate course. I request the Executive Committee to consider this subject in all its bearings and if they agree with me in the view, to bring up a proposition in regard to this matter before the meeting of the Conference to-morrow.

Gentlemen I have done. Responsibilities, great and onerous devolve upon headmasters and principals. In proportion to responsibility is the difficulty in the satisfactory discharge of their duties. No headmaster can be a subject teacher hereafter. He has to exercise constant, vigilant and sympathetic supervision over the work of his assistants. He has to see that none of the flock of which he is the grand-shepherd suffer by injudiciousness on the part of any of his assistants. He must try to get intimate knowledge of each of the pupils of his school, of his capacity and character. In large schools he can get this knowledge only through Assistant Superintendents and through experienced teachers. He must prune out the vagaries of young and experienced young men on the staff. He must moderate and direct in the right groove over-enthusiasm that often happens to move along wrong channels from sincere but wrong conviction. He has to steer clear of laxity on the one hand and over strictness on the other, in admission, promotion and selection. He must prevent before he detects. He must see that boyish frivolity and pranks are not put down for misconduct, except confirmed immorality and defiance of authority in spite of constant advice. He must hereafter be a real educator and not a mere coach and he must see that his assistants are educators and not coaches. The duties of principals with respect to the scheme though not so many are yet equally onerous. To matriculate young men and women and thus to permit or deny admission into the field of higher studies is no small responsibility. Principals have to see that their work is impartially done in the best interests of the University without favour or prejudice from consideration of *mine* and *thine*. They should see that in no case merit is kept back and unfitness pushed up. Considerations of

caste, creed or colour should find no place in the work of selection, as happily they have not been hitherto.

Like principals, officers in public service have got large discretionary powers in the selection of young men for the service. While we may hope that the discretion may be used with wisdom and in the best interests of public service, it is reasonable to expect Government to publish regulations for the selection of the best and most capable hands suited to each branch of the service. Merit and character must be the only consideration for the enlistment of young men for public service, not any other. Detailed regulations are necessary to guard against abuse by inexperienced individual officers.

Gentlemen, our duties have become responsible and difficult. Financially our position has not materially improved. If it has not, the salvation is in our own hands. We must make our cries heard. They should not be feeble and in unknown nooks and corners. We must press our claims becomingly but emphatically again and again. It is becoming more and more difficult for managers to make both ends meet. We have to work for them and for ourselves. Fortunately His Excellency Sir Arthur Lawley, who ever since he entered on his duties as Governor of this large and enlightened province, has been a warm and sympathetic friend of the schoolmaster, has set on foot inquiries to improve the teaching profession by provident fund or pension. Mr. J. H. Stone who presided over the commission of inquiries has submitted a sympathetic report. I am sure the government of Sir Arthur Lawley helped as he is by an able Educational Secretary and by a Director as sympathetic as himself will have earned our lasting gratitude by

bringing a pension or provident scheme into actual operation before His Excellency lays down the reins of his exalted office. Meanwhile let us discharge our duties to the best of our powers and earn the appreciation of the public and the Government alike. Great, indeed, is the responsibility devolving on us and shall we not realise it? Great also is the confidence that the public and Government will repose in us and shall we not deserve it? The response should not be in word but in deed. May righteousness and justice be our guide and the spread of light our goal!

A. PANCHAPAGESA AIYAR.

MATHEMATICS.

[Conducted by B. KRISHNAMACHARI, M.A.]

Communicated by KANCHI LAKSHMAN.

(a) To find practically a circle which shall be approximately equal to a given square.

Let ABCD be a square. Let the diagonals cut at O. Let the perpendicular OH meet at E the arc CED described from O at the distance OC. Take $HF = \frac{1}{8} HE$. Then OF shall be the radius of the circle required.

[Śūlva Sūtras. Vide R. C. Dutt's Ancient India.]

NOTE.—On calculation, it will be found that the circle described would be about 1.7% greater than the given square.

(b) The converse problem is said to have been worked practically by taking $\left(\frac{7}{8} + \frac{1}{8 \times 29} - \frac{1}{8 \times 29 \times 6} + \frac{1}{8 \times 29 \times 6 \times 8}\right)$ of the diameter of the given circle for a side of the square.

We must observe here that the fractional parts can be easily found with the help of a string.

Communicated by C. V. RAMANATHA IYER.

To find the square of a number having 5 in the unit's place.

From the given number remove the 5 in the unit's place. Multiply the number formed by the remaining digits by itself increased by one. To the digits in the product, add the digits 2 and 5 towards the right. The resulting number is the square required.

For example let us find out the square of 195. Removing the 5, we have 19. $19 \times (19+1) = 380$. Adding the digits 2 and 5 we arrive at 38025 which, we find, is the square of 195.

89. [P. S. SUNDARAM IYER.]

If ABCD be the line passing through the centres of two circles, and A' B' C' D' any circle cutting them orthogonally, then the four lines AA', BB', CC', and DD' will be concurrent.

Solution by M. BHIMASENA RAO.

Let the radical axis of the circles AA' BB' and CC' DD' cut the circle A' B' C' D' in S and S'. Invert the figure with respect to the circle whose centre is S and which cuts AA' BB' and CC' DD' orthogonally. The circles AA' BB' and CC' DD' remain unchanged by inversion; the circle A' B' C' D' inverts into a line cutting the circles AA' BB' and CC' DD' orthogonally, i.e. the line ABCD. It is evident that the points A, B, C, D are the inverses of A', B', C', D'. Hence AA', BB', CC', DD' concur at S the centre of inversion.

By taking S' as the centre of inversion, we see that AB', BA', CD', DC' meet at S'.

92. [G. V. TELANG.]

Draw two equal circles touching each other and touching two given straight lines at two given points in them.

93. [G. V. TELANG.]

Draw two circles touching two intersecting straight lines at given points so that the line of their centres may pass through the point of intersection of the two given lines.

Solution by M. BHIMASENA RAO.

Lemma:—If two variable circles touch two lines at given points, the line joining their centres touches a fixed circle and the point of contact lies on a concentric circle.

Let the circles having their centres at L and M touch at P and also the lines OB, OC at B and C. Then L and M lie on AB and AC where A is the point diametrically opposite to O on the circle OBC. If S be the middle point of the arc BC and SE, SF perpendiculars to AC, AB, we know that SE=SF and BF=CE.

$$NM = NP + PM = NB + MC$$

$$\therefore \text{The perimeter of the triangle AMN} =$$

$$AN + NM + AM = AN + NB + CM + AM = AB + AC = \text{constant.}$$

Hence NM touches a circle whose centre is S and which touches AB and AC. If NM touches this circle at Q, since NP=NB and NF=NQ we have QP=BF. Therefore SP=SB, for the right-angled triangles SFB and SQP are equal in all respects. Hence the point of contact P lies on a circle whose centre is S and which passes through B and C.

If S' be the middle point of the major arc BC, we may in a similar manner show that tangents to the circle which has S' for its centre and touches AB and AC are variable positions of the line NM and that in this case the point of contact P lies on the circle having centre at S' and passing through B and C.

Analysis:—

Let BPL' and CPL be the two equal circles touching at P and touching the given lines OB and OC.

Let the line OP cut the circles at L and L'.

Since the circles are equal $PL = PL'$.

$$OB^2 + OC^2 = OL \cdot OP + OP \cdot OL' \\ = OP(OL + OL') = OP \cdot 2OP = 2OP^2.$$

Since OB and OC are given OP is determined. Therefore P is given as a point of intersection of the circle, centre at O and radius equal to $\sqrt{\frac{1}{2}(OB^2 + OC^2)}$ and one or the other of the loci of the point of contact of the circles, referred to in the lemma.

When the line of centres passes through a given point, the centres of the required circles are found by drawing tangents through the given point to the envelope of the line of centres.

The construction for the circles required is obvious.

96. [G. V. TELANG.]

AB is a chord of a given circle and P the middle point of the arc AB. Through P a chord PCD is drawn intersecting AB in C and the circle in D. If O_1, O_2, O_3 be the centres of the circles ABD, ACD and BCD, show that the circle $O_1 O_2 O_3$ passes through D and a fixed point.

Solution by M. BHIMASENA RAO.

The property given in the question holds good if P be any point on the circle and may be proved as follows:—

Through P draw PQ' parallel to AB meeting the circle in Q' and let Q be the point diametrically opposite to Q'.

The angle

$$PDB = PAB \text{ in the same segment} \\ = ABQ' \because AB \text{ is parallel to } PQ'$$

$\therefore Q'B$ is a tangent to the circle BCD

and $\therefore O_3$ lies on BQ which is perpendicular to BQ' for the angle QBQ' is a right angle. Similarly O_2 lies on AQ.

$O_1 O_3$ bisects BD the common chord of the circles ABD and CBD at right angles. Similarly $O_1 O_2$ is perpendicular to AD.

$\therefore$ The angle $O_2 O_1 O_3$ is the supplement of the angle ADB.

But angle ADB = AQB

$\therefore$ The points $O_2 O_1 O_3 Q$ are concyclic.

$$\text{Again angle } O_3 DB = O_3 BD \\ = O_1 AD = O_1 DA$$

$$\therefore O_1 DO_3 = O_1 DA + ADO_3 \\ = O_3 DB + ADO_3 = ADB = O_2 QO_3$$

$\therefore$ the point D lies on the circle $O_2 O_1 O_3 Q$.

Therefore the five points O_1, O_2, O_3, D, Q are concyclic and Q is fixed when P is given and D varies.

Since the triangles DEF and LMN are in perspective $\pi \frac{FE}{LE} = 1$.

$\therefore \pi \frac{PB}{PC} = 1$, i.e. the triangles ABC and LMN are in perspective

$\therefore$ the triangles ABC and LMN are in perspective.

97. [G. V. TELANG.]

A triangle Y is inscribed in another triangle X and a triangle Z is inscribed in the triangle Y. If triangles X and Y are in perspective as well as triangles Y and Z, show that the triangles X and Z are also in perspective.

Solution by M. BHIMASENA RAO.

Let ABC, DEF, LMN be the triangles X, Y, Z.

If AD, AL meet EF, BC in P', P respectively, the anharmonic ratio $FP'LE = BDPC$,

$$\text{i.e. } \frac{FP' \cdot LE}{FL \cdot PE} = \frac{BD \cdot PC}{BP \cdot DC}$$

Considering similar anharmonic ranges on the remaining sides of the triangles ABC and DEF and multiplying

$$\text{we have } \pi \frac{FP'}{P'E} \cdot \pi \frac{LE}{FL} = \pi \frac{BD}{DC} \cdot \pi \frac{PC}{BP}$$

where $\pi \frac{BD}{DC}$ denotes the quantity $\frac{BD}{DC} \cdot \frac{CE}{EA} \cdot \frac{AF}{FB}$

and $\pi \frac{PC}{BP}$, etc., denote similar quantities.

$$\text{Again } \pi \frac{FP'}{P'E} = \frac{\Delta AFD}{\Delta AED} \\ = \frac{\Delta AFD}{\Delta ABD} \cdot \frac{\Delta ABD}{\Delta ADC} \cdot \frac{\Delta ADC}{\Delta AED} \\ = \frac{AF}{AB} \cdot \frac{BD}{DC} \cdot \frac{AC}{AE} = \frac{AF}{AE} \cdot \frac{BD}{DC} \cdot \frac{AC}{AB}$$

$$\therefore \pi \frac{FP'}{P'E} = \pi \frac{AF}{AE} \cdot \pi \frac{BD}{DC} \cdot \pi \frac{AC}{AB}$$

$$\text{But } \pi \frac{AF}{AE} = \pi \frac{BD}{DC} \text{ and } \pi \frac{AC}{AB} = 1$$

$$\therefore \pi \frac{FP'}{P'E} = \left(\pi \frac{BD}{DC} \right)^2$$

$$\therefore \pi \frac{BD}{DC} \cdot \pi \frac{LE}{FL} = \pi \frac{PC}{BP}$$

$$\therefore \pi \frac{BD}{DC} \cdot \pi \frac{BP}{PC} \cdot \pi \frac{EL}{LF} = 1$$

If ABC and DEF are in perspective $\pi \frac{BD}{DC} = 1$.

If ABC and LMN are in perspective $\pi \frac{BP}{PC} = 1$.

If LMN and DEF are in perspective $\pi \frac{EL}{LF} = 1$.

The above shows that if any one of the three triangles is in perspective with each of the remaining two, the latter two triangles are also in perspective. Hence the proposition.

The following proof of the question by projection is shorter:—Project the axis of perspective of the triangles ABC and DEF into the line at infinity. Denoting corresponding points by small letters, the triangle DEF has its sides parallel to those of the triangle ABC. It is plain that $FL : LE = BP : PC$ and

$$\therefore \pi \frac{FL}{LE} = \pi \frac{BP}{PC}$$

100. [B. KRISHNAMACHARI, M.A.]

Rama, Krishna and Nala had been to market taking their wives Damayanti, Seeta and Rukmani with them. They bought apples; each person bought as many apples as they gave annas for each apple. Rama bought 23 apples more than Rukmani; and Krishna bought 14 more than Damayanti; likewise each man laid out sixty-three rupees more than his wife. (Apples then seem to have sold at a fancy price). Find the name of each man's wife.

Solution by KANCHI LAKSHMAN.

Let a man buy x apples and his wife y apples. Then they paid x^2 annas and y^2 annas respectively. By the question $x^2 - y^2 = 63 \times 16$, i.e. 1008. The question reduces itself to this—find pairs of numbers whose squares differ by 63×16 . Now $x^2 - y^2 = (x + y)(x - y) = 1008$; neither $x - y$ nor $x + y$ can be odd, for then we would not get integral values for $x + y$. Therefore $\frac{x - y}{2}$ and $\frac{x + y}{2}$ are integers. We have now

$\frac{x - y}{2} \times \frac{x + y}{2} = \frac{1008}{8} = 252$. The pairs of integral factors are (1, 252), (2, 126), (3, 84), (4, 63), (6, 42), (7, 36), (9, 28), (12, 21), (14, 18). Therefore $x^2 - y^2$ may be $(253^2 - 251^2)$, $(128^2 - 124^2)$, $(87^2 - 81^2)$, $(67^2 - 59^2)$, $(48^2 - 36^2)$, $(43^2 - 29^2)$, $(37^2 - 19^2)$, $(33^2 - 9^2)$, $(32^2 - 4^2)$. Thus we have values for $x + y$.

32 under x and 9 under y differ by 23. Rama

x	y	must have bought
32	9	Rukmani, 9. 33 exceeds 19
128	124	by 14. Therefore Krishna
87	81	bought 33 while Damayanti
67	59	bought 19. Nala is the only
48	36	man whose number we have
43	29	not fixed; and therefore 43
37	19	(or 37) must be Nala's number.
33	9	Sita is the only one remain-
32	4	ing of the associated numbers.

Hence Sita bought 4. Thus the couples have been settled (without violence to sentiment).

Nala 43 (or 37) × Damayanti 29 (or 19)

Krishna 33 × Rukmani 9

Rama 32 × Sita 4.

QUESTIONS FOR SOLUTION.

101. [G. V. TELANG.]

From the angular points A, B, C of a triangle ABC tangents AP, BQ and CR are drawn to a circle. If QR, RP and PQ meet BC, CA and AB in D, E and F respectively, show that AD, BE and CF are concurrent.

102. [G. V. TELANG.]

If A, B, C, D, &c., be any system of n points, O their centre of mean position, the sum of the squares on the tangents drawn from A, B, C, D, &c., to a circle exceeds the sum of the squares of their distances from O by n times the square on the tangent drawn from O to the circle.

103. [G. V. TELANG.]

Straight lines drawn from the middle points of the sides of a triangle parallel to the bisectors of their opposite angles meet in K. Through K straight lines each intercepted by two of the sides of the given triangle and bisected at K are drawn meeting the third sides in P, Q and R. Then (i) P, Q and R are collinear; (ii) the product of the ratios of the segments of the lines made by P, Q and R is equal to unity.

104. [G. V. TELANG.]

Given $p^2 + p_1^2 = q^2 + q_1^2 = x^2 + 2xy$ and $x = \frac{pq_1 + qp_1}{p_1 + q_1}$,

show that one value of y is $\frac{p_1 q_1}{p + q}$.

105. [G. V. TELANG.]

Given the base and the vertical angle, construct a triangle such that the rectangle under

the sides shall be equal to n times the square on the straight line drawn from the vertex to a fixed point in the base.

THE RULERS OF ENGLAND.

(A RHYME.)

William the Conqueror long did reign;
William, his son, by an arrow was slain.
Henry I. was a scholar bright;
Stephen was king without any right.
Henry II. Plantagenet's scion;
Richard I. was as bold as a lion.
John, though a tyrant, the Charter signed
Henry III. had a weakly mind.
Edward I. conquered Cambrian Dales;
Edward II. was first Prince of Wales.
Edward III. humbled France in its pride;
Richard II. in prison died.
Henry IV. for himself took the crown;
Henry V. pulled the French king down.
Henry VI. lost his father's gains;
Edward of York took hold of the reins.
Edward V. was killed with his brother;
Richard III. soon made way for another.
Henry VII. was frugal of means;
Henry VIII. had a great many queens.
Edward VI. reformation began;
Mary the cruel prevented the plan.
Elizabeth shattered the navy of Spain;
James from Scotland was called to reign.
Charles found the people a cruel corrector;
Oliver Cromwell was called Lord Protector.
Charles II. was hid in an oak;
James II. took on Popery's yoke.
William and Mary were offered the throne;
Anne succeeded and reigned alone.
George I. from Hanover came;
George II. kept up the name.
George III. was loved in the land;
George IV. was polite and grand.
William IV. had no heir of his own;
Victoria then ascended the throne.
Victoria the Good long did reign;
Then Edward VII. in peace, does reign.

LONG LIVE THE KING.

MAHAKALI SUBRAHMANYAM.

THE METHODS OF GEOGRAPHY.*

The position assigned to Geography in the educational system of every civilised country in general, and in the School Leaving Certificate scheme of the Madras Presidency in particular, seems to mark it out as an essential element of mental culture; but this will be true so long as the methods adopted in the teaching of this subject are modern, scientific and up to date. Notwithstanding the strong advocacy of these scientific methods, there are still men of the old school engaged in the profession of teaching who repeatedly persist in the system of learning by rote even in the teaching of science. Unfortunately these men happen to be at the head of most of our institutions in the Presidency. Whenever young enthusiastic teachers strongly advocate the modern methods of teaching the several subjects of the school curriculum, they are pooh-poohed and threatened to follow the old methods. Unless such fossilised men are removed from the educational field of the land, there is not the least hope for improvement in the educational system of the country. The little improvement that is sometimes seen in the teaching of the various subjects is all due to the persistent efforts of the young enthusiastic Inspecting Officers. Geography is only one of the various subjects that are ill-taught in the school-room.

Of those who acknowledge the value of geography, there are many who see that value almost solely in its usefulness, in the help it brings to their general studies. There are still others who reject the abovementioned reason and advocate the study of geography for a different object. From the adherents of this view come the familiar arguments for the disciplinary value of a geographical training in which keen observation, manual dexterity and inductive reasoning are given a prominent place. Whatever might be the reasons for the teaching of this subject, the usefulness of the subject cannot be denied. To the teacher whether in the Primary school or in the Secondary school, the question of scheme and methods is of prime importance; for the whole scheme of study and the methods of instruction will be found in the long run to be determined by the general attitude that is taken up by the public with respect to the value of the subject. At the present time of educational reform, there is considerable uncertainty in the minds of

teachers regarding the methods of school geography, and many of the older men are disposed to look unfavourably on recent changes as tending to impair the true disciplinary effects of a geographical training.

In all the recent publications of the geography text-books, the guiding principle that has come out seems to me to be the explicit recognition of the essential part that observation and induction play a large part in the acquisition of geographical knowledge. With this recognition it is scientifically unsound and practically hurtful to emphasise the cramming method or the deductive element in the early training of our pupils. The geographical training of our boys and girls should in its broad outlines be modelled on the course that the historical development of geography has followed. Observation, classification and induction are the essential elements of the scientific method and these are well-illustrated in the historical development of geography. It is a well-known fact that in the opinion of many experienced modern teachers, it is not only possible but absolutely necessary to make full use of these scientific methods in geographical training. In acquiring the knowledge of the various natural phenomena, observation and inductive reasoning and sometimes classification are necessary. The knowledge thus obtained is entitled to the name Scientific; if the course is carefully planned and carried out, it will be quite possible to obtain a system that is not a mere aggregate of isolated details but a coherent harmonious structure. The importance of a practical course in geography is now generally recognised as means for manual dexterity and sound reasoning and accurate ideas.

These scientific methods are very difficult especially in the early stages even in the hands of specialists of vast educational qualifications. When this is the case, it is no surprise to see that the teaching of these subjects that require scientific treatment has not made sufficient and satisfactory progress in spite of the vigilant yet sympathetic supervision of our Inspecting Officers. It need not be told that these subjects should be taught by teachers who have made special studies of them. If this scheme is very costly, then the teaching of these subjects at least should be supervised by the specialised teachers employed in the various institutions. As long as our Headmasters and Principals are of the old school who presume to know everything of education, who pose themselves as authorities in the various subjects taught in the school-room and who never allow these active

* A paper read by Mr. V. G. Subbaita Aiyer, B.A., L.T., before the North Madras Teachers' Association, Washermanpet.

young enthusiasts to have their own way in the teaching of these subjects, there is the temptation on the part of the teachers that serve under such heads, to let their teaching degenerate into a mere mechanical application of rules and parrot study. I cannot but think, however, that the spirit of modern scientific methods has permeated into all our schools and colleges and the time is not far distant when all these fossilised Headmasters and Principals will be brought round to adopt these methods and to strongly advocate them in season and out of season. In this connection, I have to mention a little defect in the existing Education Code. The Code provides ample leisure for these Headmasters and very little for the Assistants. The Headmaster in most cases is old enough not to yield to the modern methods. Nor is he willing to ask his Assistants who are specialists, to supervise the teaching of the various subjects in the lower classes. Unless this supervision is done by the specialists it is not possible to expect any improvement in the teaching of the school subjects. The Headmaster should be one who would willingly part with his supervision work to his Assistants and who would consider his Assistants as teachers entitled to ample leisure hours for the preparation of notes of lessons and for the purpose of supervision in the lower classes. If this is not done systematically, the work of the specialists will practically be to undo the work done by the lower class masters under the supervision or no supervision of the supposed all-round Headmaster. If these Headmasters who practically enjoy three or four hours leisure every working day did really supervise the teaching of the lower classes, it would be well and good; but what we find in most schools as the result of this rule in the new Education Code is that the Headmasters go round the school compound, see that all classes have masters and then enjoy rest in their seats. I have never come across a Headmaster actually teaching a class in the presence of the class-teacher or in the absence of a teacher. Most of the Headmasters take delight in making their Assistants work. Neither the Department nor the Managers recognise the grievances of these Assistants. These men who are at the head of institutions are in most cases considered as the District Magistrates of the institutions and these Assistants possessing the same qualifications in most cases and better ones in some respects are considered as mere clerks working under them. This is really a wrong presumption. Unless the corporate feeling of equality is created amongst the staff of an institution, there

is no hope of any success in the educational system of this country. Hence it may be concluded that the co-operation of the Headmasters and the Assistants is absolutely essential for the successful working out of these scientific methods in the teaching of geography.

The teachers of geography should be freely supplied with the necessary appliances and apparatus. The Managers should be freely approached for the purchase of maps or books. The Headmasters should give up the practice of pleasing their Managers by their stinginess in the purchase of these essential things. It is no exaggeration to say that the majority of our High Schools have not the requisite maps and apparatus in spite of the repeated warnings of our Inspectors of Schools. Some of the Metropolitan schools have not these. To some extent these Inspecting officers are to be blamed for this state of affairs in our High Schools. I have some experience of the inspection of these Inspectors. In these annual inspections these officers inspect the teaching of the various subjects by the teachers employed in the schools. Their reports are always full of remarks no doubt of condemnation, on the teaching of teachers. These officers always ignore other points that are to be taken into consideration in the teaching of the subjects in the school-room. They never enquire whether these assistant-masters are allowed sufficient leisure hours for reference, preparation of any maps or notes of lessons. They always forget to make enquiries whether the assistant-masters are provided with a separate room for their special reading during the leisure hours, whether they are supplied with the necessary books for their preparation, whether the necessary wall maps and apparatus are purchased for the use of the school, and whether these teachers are paid decently and regularly their salaries. They never consult the assistant-masters as to their special grievances and very rarely try to remove them. While such is the general attitude of the Inspecting officers, how is it possible to expect a better system of instruction in our schools? There are many schools without a separate room for teachers. Most of the schools have not the requisite books in geography and history in their libraries. Some schools have not the physical wall maps of the various continents. In some schools the specialists are not to be found. The Geography text-books are not yet changed in some of our High schools though modern methods have been advocated. In some schools old antiquated wall maps are still in use. When we take all these into consideration, we can realise

very well under what unfavourable circumstance our assistant-masters have to teach their special subjects. The remedy for these defects lies in the hands of our Inspecting officers. If these officers bear in mind that they ought to inspect these things first and the teaching next, if they understand that they can pass any remarks on the teaching of these masters only after they are provided with the necessary maps, books and apparatus and other conveniences and if their sole object be to raise the status of the assistant-masters, at the same time to elevate the teaching profession as a whole without no doubt neglecting the teaching methods, then the success of our secondary education is sure and certain.

Granting all these things—the schools are well provided with the necessary wall maps, books and apparatus; the teachers are paid their salaries amply and regularly; they are provided with a neat room; they are given sufficient leisure hours for their preparation and other general studies; the Headmasters freely co-operate with the Assistants for drawing up of scheme of studies, syllabuses, time-tables, etc.,—What shall be the methods adopted in the teaching of geography? There are no doubt many methods. Of the various methods, I wish to describe the chief of them. Before I describe the best method, it is well to say something of each of these methods. First let us take the *Regional method*. This method is strongly advocated in some of our recent publications. The whole world is divided into so many regions, each region is sub-divided into many divisions and the boys are taught each of these. There is always this danger in this method, i.e. the boys have not a systematised knowledge of geography; they understand only mere isolated facts here and there. Hence this method cannot be recommended to our schools. This method is a wholesome one if the boys had already studied the descriptive geography of the world. Next let us consider the *Political method*. In this the political units are taken one by one and a detailed study of each is made. This is the method adopted in most of our books on geography. If we adopt this method, there is always the complaint of teaching our boys too much of details unnecessary and indigestible. Considering the limited time we have for teaching this subject, the vast portions we have to teach and the ability of our boys, this method should be cautiously recommended. There is a third method which I wish to call the *Compartment method* wherein the physical geography, the commercial geography, the political and the

astronomical geography all these are separately treated. This method is not at all satisfactory, for in the first place the interdependence of one on the other is ignored and boys are not able to connect the one with the other. Moreover the teaching will be monotonous and the boys are likely to be disgusted with the subject. No doubt there are books written in this model. Such books should be studied by our teachers, and teachers should form books of their own for the satisfactory teaching of the subject. A fourth method there is and that may be styled as the *Observation method*. Boys are made to observe the natural phenomena and draw inferences. Boys are sometimes conducted to the seashore and made to observe the waves, the tides, etc. They are sometimes taken round a manufacturing town and taught the various manufactures. They are always made to observe the wall-maps and their atlases in the class-room and are self-taught. They are very often asked to perform experiments with the Tellurion and the Globe and are made to record their observations. This method is no doubt scientific and thoroughly satisfactory; but this is a costly method and is likely to give a great deal of trouble to the teachers concerned. For that reason, this method should not be neglected. There is a method which is strongly recommended in the early stages and which is no doubt scientific. This is what is called the *Practical method*. Boys are made to construct maps and other things for themselves. Sometimes they are asked to construct relief models of some of the continents. They are given instructions to draw these maps and plans.

This method is very interesting to young children and they take a great deal of interest in works of such kind and unknowingly imbibe many geographical ideas. On that account we cannot recommend this method for all the classes in our school-room; for there is always this charge brought against this method, that this makes our boys mere mechanics and no intellectual development is prominently seen. Hence this method should be adopted with some caution. If our teachers adopt each of these methods in the teaching of geography, which they are doing now, there will not be sufficient ground for improvement and progress in the geographical training of our children. In adopting any single method, we have to take into consideration the cost, the time and the portion required, for a satisfactory teaching of the subject on modern scientific lines.

There is a well-known method called the *Comparative method* which is talked of, a great

deal and for which a text-book is strongly recommended. At present this book is found in the possession of every Matriculation student. Whether these boys understand the contents of the book, whether they properly use the book and whether the teachers are approached for the clearance of any difficulty are questions that demand our careful examination. To my mind it seems that the text-book recommended for this comparative method in geography is not at all suitable to be placed in the hands of our boys. I am of opinion that the teachers of geography also may find the book not very satisfactory. No doubt the book is full of fine big maps of different varieties; and that is the admirable feature of the book. Moreover we find in the book comparative ideas of climate, vegetable products, etc. If one studies the book very minutely the inference will be that the book is incomplete and unsuitable for the class. In all these cases, we always walk in the footsteps of the Westerners. We never wait to see whether the books recommended in the English journals and the methods advocated by the geographers of the West are the books and methods to be recommended in our schools. The book that we praise to-day is condemned to-morrow; the method we adopt to-day is changed to-morrow. So it is my earnest desire that teachers of geography should meet every year and decide for themselves the suitable text-books and methods for the benefit of the schools in the Presidency. This comparative method is praised by one Inspector and it is at once adopted in all our High Schools. A certain book is highly spoken of by an Educational officer and boys rush for the purchase of the book. This comparative method has only one defect and that is the reason why such a book should not be placed in the hands of our boys. This is the defect. It presupposes certain amount of ideas in the minds of our boys. Hence our boys are not able to understand and appreciate the contents of the book written on this comparative method. There are some teachers who wish to adopt a certain method called the *Topical method*. They take up certain topics in geography and teach each of these topics in full detail. In this method boys are not able to understand the relation of one topic to another and hence the knowledge obtained by our boys from this method of treatment is a mass of isolated details and not of organised kind. Hence from the above observations, it can be said that no one method should be singled out for teaching this subject satisfactorily, but on the other hand a proportionate harmonious combination of all these methods

would be a welcome feature in the geographical training of our schools. Some teachers may desire to ask me whether there are text-books in geography written on the combination method. The only answer I like to give is that every teacher should have a book of his own making for the purpose of teaching the subject to his entire satisfaction. Most of the books that we find in the market are books written for English children more on the commercial line than on the educational line. If every teacher in our High schools adopts this method, prepares a geography text-book of his own and teaches his boys on the lines marked out by him, the rapid progress in geography teaching is assured.

I wish to describe this *Combination method* in detail to the satisfaction of those who may have some misgivings about it. Suppose we wish to teach our boys the continent of Africa. Before you begin the lesson ask the boys to prepare a mere outline map of the continent with no names, marking the water portions blue. These outline maps may be prepared by means of the tracing paper. In this connection our boys should be compelled to have a large drawing book, a good atlas, and a fine note-book to do practical exercises. Boys without these should not be under any circumstance, allowed to sit in the class-room. No exemption should be granted if individual progress is aimed at. When the lesson is to be begun, the teacher should place the physical wall map of Africa before the boys and ask them to compare their outlines and make the necessary corrections. Then the teacher should go round and see that the outlines drawn by the boys are all correct. The teacher then should give the small exercise of the coasting voyage of a steamer. He should get from the boys the names of the seas, bays, gulfs, straits, capes and chief seaports on the way. Then he should ask the boys to mark these in their outlines not the full names of these but only mere first letters, e.g., Gulf of Tunis should be marked in the outline as G. T. and Strait of Gibraltar as S. G. In this way the memory of our boys can be strengthened. From the study of these they may be given an idea of the coast line of Africa. Place the outline maps of the other continents. The boys may be asked to compare the coast line of Africa with each of the other continents. Having given the comparative idea of the coast line, we may next proceed to give our boys the idea of comparative areas and populations of the continents of the world. Here our boys should be asked to perform practical exercises in the graph note-book. Then the boys must be asked to draw another

map of Africa marking the natural divisions. In connection with the drawing of these maps, boys should be advised to leave the adjoining page of the drawing book for writing notes on the map drawn and in that way maps of the vegetable Africa, rainfall Africa, political Africa with the respective capitals and the mineral map of Africa, should be drawn in order and the corresponding adjoining pages should be filled with notes on important points in connection with the drawn maps. In these exercises and in exercises of such kind, frequent questioning is essential. No method can succeed in the teaching of the school subjects without oral questioning. The most successful teaching is one by questioning with black board illustrations and maps and appliances and not one by oral descriptions and lectures. If in this way a continent is taught, we can confidently hope that our boys might carry with them certain clear ideas of the geography of Africa in particular and the general method of studying the geography of other continents. In the same way for a detailed study of the continent, the same method should be adopted for each of the political units or regional divisions. For instance Africa may be divided as North Africa, the valley of the Nile, British South Africa, the Sahara, the Soudan, East Africa and West Africa. For the successful working of this combination method in the teaching of geography the following requisites are necessary:—In the first place every school should have a large room specially set apart for maps, relief models, the globes, and other necessary appliances. In this room big wall maps of the world, the two hemispheres, and other continents and parts of continents, should be always hung up in all the four walls of the room for the daily observation of the boys. The geographical library should be separate and should be full of new readers and other publications in geography. The geography teacher should be in sole charge of this room and its contents. Besides these maps, there should be other maps special in their features, for the use of class teaching. Whenever teachers desire to give special lessons on the globe boys may be recommended to purchase for their use the 6-inch globe and bring them to the class. If this method is successfully adhered to in the teaching of geography, what shall we find at the close of the year? Every boy of the class shall have a record, no doubt of a permanent nature, of the work done during the year. It will be if carefully examined, a text-book on geography. Much may be said on this subject. I have stated clearly the principles underlying these methods and I pro-

pose to deal with the subject of geography text-books in the next issue.

MADRAS STUDENTS' ADVISORY COMMITTEE.

THE GUARDIANSHIP OF INDIAN STUDENTS IN ENGLAND.

Circular No. III.

The question of the Guardianship of Indian Students in England has recently been fully discussed by the Central Advisory Committee in England. It is felt that such a Guardianship implies responsibilities both to the parents and to the students which cannot be undertaken unless it is possible effectively to carry them out. A parent who has placed his son under the charge of a Guardian naturally holds that Guardian responsible in case his son neglects his studies, contracts expensive or other undesirable habits or in any way fails to fulfil the expectations with which he has been sent to England. The best advice may be given to such a student and the best possible arrangement may be made for the conduct of his studies and for his residence in England, but unless some measure of control is given to the Guardian, such advice and such arrangements may be wholly disregarded by the student and the efforts of the Guardian may thereby be rendered ineffectual. Seeing that no control is effective that does not imply control of the purse, the Advisory Committee feel that the serious responsibility of Guardianship cannot be undertaken unless the parent will in each case send remittances of money to the Guardian and to the Guardian only.

Accordingly the conditions given below have been drawn up, such parents as are willing to accept them may have the advantage of placing their sons under the Guardianship of Mr. Arnold. In case of such acceptance Mr. Arnold undertakes to the best of his power to make such arrangements as may be desired for the young man's education and residence with respectable persons and to do everything he can to make his stay in England profitable to the student and satisfactory to his parents.

If on the other hand it is not desired that the Guardianship of any student should be undertaken in this narrower sense, Mr. Arnold will still be glad to give such occasional advice to any student as he may require.

Conditions.

1. It is necessary that remittances of money shall be sent to the Educational Adviser; such remittances shall be by quarterly instalments in advance, and a deposit of 40% shall be put to his account in the bank for unforeseen contingencies.

2. The father shall send to the Educational Adviser explicit instructions as to the course of study he wishes his son to follow.

3. The student shall, on reaching England, at once call upon the Educational Adviser, and follow his advice (which will be in accordance with the instructions received from the parent) in regard to the choice of a University or College.

4. The student shall at all times obey such instructions as he may receive from the Educational Adviser until such time as his father may wish this arrangement to terminate.

5. The Educational Adviser shall send half-yearly reports to the father, together with a statement of accounts. More frequent reports may be sent if special occasions call for them.

(Signed) ARTHUR DAVIES,

Secretary,

Madras Students' Advisory Committee.

February, 1910.

We are desired to publish the following:—

COUNCIL OF NATIVE EDUCATION, MADRAS,
20th August 1909.

FROM

MR. S. RAJAGOPALACHARI, B.A.,

Joint Secretary to

The Council of Native Education,
Madras.

TO

THE PRESIDENT

OF THE MUNICIPAL CORPORATION,
Madras.

SIR,

I am directed by the Council to bring to your kind notice that, on the 23rd March 1907, the Council addressed a memorial to the Madras Government on the desirability of establishing School Boards in villages or groups of villages for the spread of education, and the Council also suggested in the concluding paragraph of the memorial "that the experiment be first tried in Madras Town, where the facilities of observation by Government and the educational department would be the greatest" (a copy of the memorial is herewith sent).

2. In para. 15 of the memorial it is pointed out that "in Municipalities School Boards will have to be established in wards or groups of streets."

3. The arguments urged for the establishment of School Boards in villages or groups of villages for the spread of education apply with equal force to the adoption of a similar plan in Municipal towns also.

4. The Government passed a sympathetic order on the Council's memorial on the 6th November 1907 and therein pointed out that the Local Boards' Act and the Municipalities' Act had made ample provision for the establishment of such School Boards leaving the question of the Council's suggestion of initiating and working out a scheme in the Madras City untouched. (Copy of the G. O. No. 742, dated 6th November 1907 is herewith sent.)

5. The Council thereupon addressed the Presidents of District Boards and the Chairmen of Municipalities and requested them to establish central committees and village committees in the manner indicated in paras. 10, 11, 12, 13 of the Council's letter, dated 10th April 1908. (A copy of the letter is herewith sent).

6. The Council is glad to find that many of the Municipalities have established such committees and some of the Presidents of District Boards have also issued instructions to the Chairmen of Taluk Committees to establish village committees.

7. From the tabular statement given in Appendix A it will be seen that illiteracy prevails to a very large extent and such illiteracy acts as an impediment to the progress of the people in many directions. In the words of Sir Thomas Munro, "the general diffusion of knowledge is irreparably followed by more orderly habits, by increasing industry, by a taste of the comforts of life, by exertion to acquire them and by a growing prosperity of the people." Diffusion of knowledge will induce people to take a keen interest in municipal matters and in the industrial development of the country.

8. In Bombay the Municipal Corporation is taking steps to give the children of the City of Bombay free primary education.

9. In these circumstances it is earnestly desired that the Municipal Corporation should take steps to bring into existence a central committee consisting of members chosen in the following manner:—

Two members to be elected by each of the following public bodies:—

1. The Madras Municipal Corporation.
2. The Missionary Council on Aided Education.
3. The Council of Native Education.

One member to be elected by each of the following bodies:—

1. The Madras Teachers' Guild.
2. The Muhammadan Association.
3. The Theosophical Society at Adyar.
4. The National Fund and Industrial Association, Madras.

FEB. 1910.]

THE EDUCATIONAL REVIEW.

One member to be nominated by

1. The Director of Industrial and Technical Inquiries.

2. The Secretary of the Madras Trades' Association.

The Sub-Assistant Inspectors of Schools will be ex-officio members of this Committee and the Inspector of Schools of the Circle will be its Chairman.

10. The Committee constituted as above, repre-

senting varied interests, will bring into existence Ward Committees for raising funds for the maintenance of schools, for suggesting improvements in the existing system, and for establishing schools for the benefit of the children of the labouring and depressed classes as well as the poor children of the middle class, specially to give them such instruction as would fit them for their position in life.

11. In these circumstances the Council earnestly desires that the Municipal Corporation would be pleased to take the initiative at an early date.

Appendix A.

MADRAS CITY.

Education by age.

Age.	Literate.	Illiterate.	Total.	Literate in English.
0—10	5,084	114,580	119,664	1,600
10—15	13,157	42,770	55,927	5,007
15—20	15,691	29,467	45,158	7,153
20 and over	81,549	207,048	288,597	29,945
	115,481	893,865	509,346	43,705

Appendix B.

For 1908-1909.

Classes of Population.	Population of school-age.		Pupils under instruction.		Percentage.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Native Christians	3,009	3,134	648	814	21.7	26
Muhammadans	4,366	4,234	230	373	5.3	8.8
Brahmins	31,084	30,505	434	587	27.2	22.2
Non-Brahmin Caste Hindus			5,697	5,133		
Panchamas			2,424	1,099		
Others	51	20	4	1	7.8	5
	38,510	37,893	9,437	7,957		

For 1908-1909.

Institutions.	No. of Schools.	No. of Pupils on 31st March	
		Boys.	Girls.
Elementary, Municipal	1	71	17
Aided from } Boys' schools	146	9,051	1,639
Municipal Funds } Girls' schools	54	319	6,301
		9,441	7,957

Appendix B gives a detailed account of the present state of Elementary Education in the Madras Municipality.

During the year 1908-1909 the Municipal Corporation spent on Education a sum of Rs. 49,282 8-9 which included a Government subsidy of Rs. 29,050.

OUR ENGLISH LETTER.

LIVERPOOL, February 1910.

The election is practically over, and the result is that many are predicting another election almost immediately. The Liberals have a majority of two over the Conservatives, and with the support of the Labour party and the Nationalists will be 120 to the good. But this support will only be given on conditions that possibly the Liberals may not be able to comply with. Hence the uncertainty. Nothing is known, not even whether the Budget will pass. If Mr. Asquith attempts to deal with the Lords' Veto first, he may be forced to resign forthwith, and Mr. Balfour may form a Ministry and dissolve Parliament, as the late Premier did. Whatever happens we shall not see any reform of the 1902 Education Act during this Parliament. When it has dealt with the Lords, and Unemployment, and Poor Law Reform, and Electoral Reform, and Welsh Disestablishment, it will have little chance to deal legislatively with education. It is suggested that they might at least table their proposals on education, but little would be gained by the production of another Bill doomed from its birth.

The proposal for establishing British University in China has been taken up zealously, as we predicted. The site is to be Hankow. Originally it was called the Oxford and Cambridge scheme, but the name is to be altered, so that other universities may bear their part and a wider appeal be made. It is confidently anticipated that the large sum of money necessary will be obtained.

During the Christmas vacation a number of Conferences have met. Close upon the Headmasters' Conference followed the Association of Headmasters. The question of free places in Secondary schools was one that occupied their attention, and there seemed absolute unanimity on the point of the results of this policy. A good case was made out against the Board of Education. Some of the headmasters were obviously opposed to the democratization of the schools, but others without taking that stand protested against the 'free places' being considered irremovable. Their position is not contingent upon their diligence and progress, and the proportion of places allowed to them is in many places in excess of the demand. The registration of teachers was also discussed. The President regarded it as a means of securing themselves as members of an honourable and respectable profession. Dr. McClure of Mill Hill, the school set on a hill and making no attempt to be hid, remarked that they were now 'waiting for the

answer of the Board. What that answer would be, no man knew, except that it would be a surprise of some sort. They were struggling for more than a mere register. They wanted to unify the profession and put it on a lasting basis.

There is no closer student of London life than Mr. Pett Ridge. And he can set down what he sees with point and force. His character studies are inimitable. Mr. Howells, the American litterateur whose qualifications as a critic are indisputable, in a recent critique places Mr. Pett Ridge in the very front rank of present day writers. Mr. Pett Ridge is now engaged in a campaign against the loafer. His indictment is full of wit and humour, but at the same time is sincerely serious. The London loafer, he tells us, is made, not born. When is he manufactured? Either just after the age of fourteen, or about the age of seventeen. Take a typical case—a boy sent to drive a van. 'What his character requires at this age of sixteen is just what it does not receive. He needs drill, supervision, regular habits. He should be learning to do a full and complete day's work; he ought to be acquiring method and strict obedience.' He soon desires to better himself, demands more wages, and gets dismissal. He now finds it impossible to get another place: no one wants a boy who has enjoyed the comparative freedom of van life. He joins, after many rebuffs from might-be employers, the noble army of loafers. Henceforth he watches others work. 'A road up, an asphalt pavement laid down, a house taken to pieces, an iron-safe craned to a high window, furniture removing—he can look on at all of these for hours together. Street accidents have a special attraction.' It is quite possible he may marry; then he 'tastes an added comfort in directing his wife to hasten away to the occupation by means of which she earns his living, upbraiding her severely for want of celerity, and warning her that it is not by the practice of leisureliness that folk make progress in the world.' What steps can be taken to diminish the supply of this undesirable article? It is of little use dealing with him, once he is a finished product: he is finished, and there is an end of it. He will work long enough to earn money for beer and tobacco; beyond that he has conscientious objections which cannot be overcome. But the disease can be prevented. 'There must be a daily task for every boy of the hard-up districts on leaving school, and if he does not engage in some appropriate and sufficient occupation immediately, there should be workshops which, he is compelled to attend. Farm colonies, to which the mature are sent, might be utilised for any lad showing no special

ability. The lad must be discouraged from taking up duties which give him no better training than that of fetching and carrying; if he does enter on these, it should be compulsory that of an evening he learn some sensible trade. The boys, whether they be telegraph messengers, or vanguard, on errand lads, are a great deal too good to become later fit for nothing better than to be thrown on the scrap heap. The State spends a large sum of money on them, and the State ought to take the trouble in starting them on the sea of life that it gives to the launching of a battleship at Portsmouth dockyard. The habit of work, or the habit of abstaining from work, can each be acquired during the susceptible years."

Against the cry of "Expense!" surely we can contend that it is better that more money should be expended than that so much should be washed, as is the case to-day. Supervision after the age of fourteen is an absolute necessity. And something is being done in the direction of linking up the workshops and the schools. Thus, for instance, the report of the County Council shows us that a definite move has been made in London. The Gas Light and Coke Company is having its junior apprentices trained under the auspices of the Council. The Company provides a workshop, tools, and instruction in gas fitting, while the Council teaches practical arithmetic and more general subjects. The report of the authority urges other employers to link themselves on to the schools in the hope of raising the workers' standard of efficiency, and preventing number of boys drifting into the ranks of the unskilled and unemployed. Also in Manchester, the Education Committee report a distinct advance in the character and efficiency of evening schools. Eight centres have been equipped with laboratories for the teaching of mechanics and physics. During 1907-8 thirty-five separate firms paid the fees of 173 employees. In the case of 192 other lads information was asked for and given to their employers, to acquaint them with the progress that was being made. It is along these lines that the solution of the loafer problem lies. We have to try and induce the Government to make continuation schools compulsory. But this is a measure which would be resented by masses of the population, and accordingly does not commend itself except by its intrinsic merits. Meanwhile the voluntary attendance is improving. In Bucks the percentage of evening-scholars to day-scholars is as high as 24. The average for the counties is 11. Berks falls as low as 4.

Co-education is not making any headway in Germany. Last year the result of the Baden

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experiment was pronounced to be distinctly unsatisfactory and now, though some Municipalities are desirous of admitting girls into their higher boys' schools, the new Kultusminister has pronounced against the change. The reasons given concern the interest of the girls. The influence of a woman is indispensable for the production of feminine character, and this influence was not to be found in boys' schools. Her competition with boys overtakes her strength: thirty-six hours' instruction takes the place of thirty. Her development, too, follows a different curve, and so she needs a different course of instruction.

To put alongside this rebuff in Germany, we have evidence from the United States, where the elementary schools are all co-educational, as are most of the high schools. An experiment in segregation has been tried. Boys and girls still met in division rooms and in the study hall, but they said their lessons in separate classes. Each teacher who had a boys' class had also a girls' class. Thus they could make comparisons, and the experiment could not be vitiated by possible difference in teaching capacity. At the end of a half-year the parents of the children were asked if they thought good had come of the change, and whether they desired the method continued. 90 p. c. answered both questions in the affirmative. Later they repeated their verdict, and the principal of the school reported that the boys had certainly done better alone, and that they profited by men rather than women teachers. Much has to be proved before England will be converted to co-education.

Reviews and Notices.

EUROPEAN RENAISSANCE AND REFORMATION 1453—1659. BY MAY A. HOLLINGS, M.A. WITH TEN MAPS, METHUEN AND CO., 36, ESSEX STREET, W. C. LONDON, 1909.

This is the fourth volume of a book edited by Mr. A. H. Johnson, M. A., on the six ages of European history from A. D. 476 to 1878 for the higher forms of schools. The two movements which divide Medieval from Modern times are the Renaissance, which rediscovered for man the powers of the human mind, and the Age of discovery which enlarged the universe. A stimulus was given to both of these by the fall of the Greek Empire in 1453. Greek scholars who had to leave

their country on account of the fall of the Eastern Empire settled down in Italian towns, and the keen Italian mind fell under the spell of the deep critical thought of the Greeks, their joy in life and worship of beauty. The Renaissance found wonderful expression in the arts of painting, sculpture and architecture. The fall of Constantinople also hastened the Age of Discovery. As in Eastern Europe the Turks had overrun the trade routes and thus made Asiatic commerce risky and expensive, other routes had to be found. In doing this Columbus discovered a new continent, Vasco de Gama found a new route to India round the Cape of Good Hope, Magellan first circumnavigated the globe. The invention of artillery and the use of gun-powder gradually destroyed feudalism and put into the hands of governments a weapon against which rebellion was at first powerless. The invention of printing facilitated the spread of learning all over Europe. All these tended to bring about new developments. These subjects are fully dealt with in the book under review in twelve chapters. We find at the end of the book five genealogical tables of the royal families of the several countries of Europe during the period. Besides the lists of books given at the end of each chapter, a list of books specially useful to teachers is appended at the end of the book.

THE GROWTH OF THE EMPIRE. A HANDBOOK TO THE HISTORY OF GREATER BRITAIN. BY ARTHUR W. JOSE. REVISED. JOHN MURRAY, ALBEMARLE STREET, LONDON, 1909.

This book is an attempt to give an accurate, and at the same time interesting, account of the growth of the British Empire showing it in all its stages as an organic whole. The author has chosen for description only such events, such lines of policy and such currents of opinion in the past which throw most light on the events, policies and opinions of the present time. The maps give in clearly visible form furnish information which the ordinary atlas either omits or hides among a crowd of details. The new edition contains two chapters, almost entirely new, which, while dealing more fully with recent events within the Empire, give some account of Imperial work in Egypt and China. The chapter on Africa has been enlarged in the light of original authorities themselves. The book will form a good addition to the libraries of Indian colleges.

AN ELEMENTARY TREATISE ON THE DYNAMICS OF A PARTICLE AND OF RIGID BODIES. BY S. L. LONEY. CAMBRIDGE UNIVERSITY PRESS. 1909. 12s. net.

As is mentioned in the preface, the book is a very elementary class-book treating of those parts of Dynamics of a particle and of rigid bodies which require the use of calculus for a full discussion. There is nothing special or noteworthy in the treatment of the subject excepting that there are numerous well-chosen examples immediately bearing on the principles treated of in the text. The contents and the treatment follow Dr. Routh's treatises on the subject so very closely that the book may be said to be an abridgment of the elementary parts treated in those volumes. It is intended as a course in Applied Mathematics for students preparing for the Science and Engineering degrees. Though the Science and Engineering students of the Madras University are not required to go through any such course, the book will be found to be admirably suited as an introduction to Dr. Routh's treatises which are generally read by the students preparing for the M.A. degree in Mathematics. S. L. Loney is well-known as a good text-book writer, though not an original author; and the book amply justifies the expectations that may be formed from the mere name of the author; and those who have read Loney's elementary books will find this a useful introduction to the higher parts of Dynamics.

A FIRST BOOK OF ENGLISH—BEING A PRACTICAL INTRODUCTION TO THE TEACHING OF ENGLISH BY THE DIRECT METHOD WITH ORAL LESSONS FOR THE FIRST HALF-YEAR (STANDARD III), TOGETHER WITH HINTS AND INSTRUCTIONS FOR TEACHERS. BY LLEWELYN TIPPING, INDIAN EDUCATION SERVICE.

A FIRST ENGLISH READER—FOR CLASSES LEARNING ENGLISH BY THE DIRECT METHOD—A CONTINUATION OF THE FIRST BOOK OF ENGLISH. MESSRS. MACMILLAN & CO.

We welcome these tiny books. The method of procedure is rational. As the author observes in his preface, the difficulty is in training the teachers. We require heads of schools with a zeal for the work of training their assistants in the Direct Method. The plan of the books is similar to the one adopted in Mr. C. Nagoji Rao's book. People who have used Mr. Rao's book will

find little difficulty in teaching the books under review. The most familiar objects are taken for purposes of conversation and the extreme simplicity and naturalness of the style are very great recommendations. The introduction of simple dialogues is a new and praiseworthy feature in the books. All that is required in the teacher who has to handle these books is a little doggedness and some earnestness of purpose. A small degree of imagination—an element wanting in most people who are teachers—will be of great help in securing success in the Direct Method. The two books cost only Annas Six, and as the objects treated are all to be found in or brought into the class-room, the absence of illustrations plain or colored is no obstacle to the books being largely used. South Indian teachers may perhaps think that the Bengali names introduced in the book are not familiar. When John, James, Diok and Ned are believed to be understood by Indians, Asutosh, Ram Prasad, Mohitosh and Hassan cannot reasonably be objected to. We can confidently recommend them for use in the Third Standard of both Elementary and Secondary Schools.

Indian Educational Notes.

MADRAS.

The Godavari District Elementary Educational Conference and Exhibition:—This year's session of the above was held at Amalapuram in the spacious compound of the Board High School for three days from the 6th January. Teachers from all parts of the District assembled to the extent of nearly 1,000, and there were present the Assistant Inspector of Schools, all the Sub-Assistant Inspectors of the District with the Supervisors under them and the teachers of the High School.

Opening Day—6th January.

The proceedings began at 8 A.M. when the elite of the place were present in large numbers and the capacity of the spacious pandal was fully tested. Mr. C. Perayya Naidu, the President of the Conference Committee tendered a hearty welcome to the delegates and thanked the Educational authorities for the opportunity afforded to the public of Amalapuram to attend the deliberations of the Conference and have an insight into the details of the new methods followed in education. After saying a few words contrasting the new system with the old, he concluded by requesting the President, Mr. P. Subbayya Mudaliar, B.A., B.L., the District Munsiff, to open the Exhibition.

In his presidential address which lasted nearly an hour Mr. Mudaliar first spoke of the advantages accruing from such Conferences and Exhibitions.

He then dwelt at great length on the several features of the new methods, such as developing the powers of observation of the pupils, providing them with practical work and so forth. The apt illustrations he gave in application of the several principles to the subjects of school study, showed a thoroughness of his grasp of the new spirit, in education rarely found outside the department. In emphasising on the necessity for free compulsory education, he referred to the measure of success that has been achieved in Baroda and said that we should not look up to Government for every thing, and that if the wealthy and enlightened citizens of India followed the noble example of Mr. J. N. Tata, and came out with their offers though not with 30 lakhs each but with thousands and tens of thousands, the education of the masses would be an accomplished fact, and along with it the amelioration of the country. The last point he touched upon was the state of the political atmosphere of the country; in this connection he said that the teachers could do much to dispel from the young minds wrong notions of things, and regretted the absence in India of boarding schools of the type that existed in England, the only nearest approach to it being the Central Hindu College at Benares. He concluded by wishing the Conference every success and declared the Exhibition open.

The leading gentry of the place were then taken through the halls and shown the exhibits which were many and varied, prepared dexterously and arranged in a very exquisite manner.

After nearly an hour had been spent in examining the exhibits, the Assistant-Inspector of Schools thanked the two Presidents for their instructive addresses and the public for the keen interest they took in the course of the Conference, and referred incidentally to the Hon'ble Mr. K. Perrazu Pantulu's philanthropy in the matter of education and said that his example should be followed by many, if free elementary education is to be introduced.

In the afternoon, Mr. V. Narasimharayudu, B.A., L.T., of the Training College, who had specially come from Rajahmundry, delivered a very impressive lecture on *The Correlation of Lessons*. The day's proceedings closed with a Lantern lecture by the same gentleman on Physical Geography.

Second Day—7th January.

From 7 to 10 A.M., Mr. P. Raghavendra Row of Rajahmundry delivered a very interesting and instructive lecture on *Bird Life*. His treatment of the subject was so thorough, the illustrations so apt, and his delivery so fascinating that he kept the audience spell bound for about three hours.

In the evening session Mr. T. Nagabhushanam, B.A., L.T., of Peddapur delivered an able lecture on the Teaching of Space Work, and Mr. A. Suryanarayana of Attli gave an address on *The Teaching of Geography*. A Lantern lecture on Botany by Mr. P. Raghavendra Row finished the second day's work.

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Third Day—8th January.

The Teaching of Nature Lessons was the subject of the lecture in the morning session and it was delivered by Mr. V. Tarakabrahmam, B.A., of Cocanada. In the evening Mr. M. Kameswara Row Pantulu, B.A., Assistant-Inspector of Schools delivered an able and practical lecture on *The Teaching of Drawing*. This was followed by a Lantern lecture by Mr. Narasimharayudu on "The flora of the several zones of the earth." The proceedings closed with thanks to the lecturers, the Taluk Board President for the use of the school and all those that contributed to the success of the Conference, and three cheers called to His Majesty the King-Emperor were lustily responded to.

The boarding arrangements were simply excellent and on a very grand scale. The average attendance in the dining pandal was 1,500 and on the night of the second day the public were invited and the number then rose to 2,000. The Exhibition was thrown open exclusively for ladies on the afternoon of the third day and many ladies of position in the town availed themselves of the opportunity. On the nights of the second and third days the guests were treated to *Harikatha Kalakshepam*. From all points of view the instructive nature of the lectures, the choice, the collection of exhibits and the splendid arrangements for the boarding and the comforts and other enjoyments of the teachers assembled, the Conference was an unqualified success, and reflects much credit on those in charge of the arrangements. All these details have been graphically described in some excellent Telugu verses composed by Mr. A. Somayya, a teacher of the local High school.

Departmental Notifications.—Mrs. C. E. Rhenius, Inspectress of Girls' Schools, Northern Circle, has combined privilege leave and furlough for two years from the 1st March 1910 or such later date as she may avail herself of it.

Mr. J. W. Coombes, Deputy Superintendent, Reformatory School, Chingleput, has combined privilege leave and furlough for fifteen months with effect from the 1st April 1910 or such later date as he may avail himself of it.

Mr. C. L. Cartwright, Professor of Mechanical Engineering, College of Engineering, has privilege leave for one month and nine days in continuation of the Christmas holidays.

Mr. E. Thurston, C.I.E., Superintendent, Government Central Museum, Madras, has been granted an extension of leave on medical certificate for five months and twelve days.

The Rev. A. F. Gardiner, M.A., is nominated to be an Ordinary Fellow of the University of Madras.

The Secretary of State has appointed Mr. Charles Ransford, B.A., Worcester College, Oxford, member of the Indian Educational Department and to be the Headmaster of the Mercara High School.

Brennen College.—We understand that a proposal has been made by the Government for converting the Brennen College, Tellicherry, into a model High School.

Zamorin's College Hostel.—We understand that H. H. the Zamorin of Calicut has been pleased to place temporarily his palace at Tally at the disposal of the Board of Management of the College to be used for its Hostel. The concession speaks volumes for his generosity and it is only proper to mention that it is in keeping with the best traditions of the enlightened Zamorins of Kottakkal.

Elementary School Buildings.—The Madras Council of Education had requested the Government to direct the Committee recently appointed by the Government to enquire into the existing condition of Elementary School buildings, to enquire into the feasibility of certain proposals they had formulated for the improvement of elementary education, and the Government have passed orders to the effect that they do not consider it advisable to widen the enquiry upon which the Committee is engaged.

Victoria Technical Institute.—The Victoria Technical Institute, Madras, will shortly make an election to the Prince of Wales' Scholarship. The Scholarship is to be given for the encouragement of working in brass and copper. It will be tenable for three years. Candidates must be under 25 years of age. This Scholarship is of the value of Rs. 15 per mensem for the 1st, Rs. 17-8-0 for the 2nd, and Rs. 20 for the 3rd year. Full particulars will be given on application.

Report of the Director of Public Instruction.—The Madras Government Order reviewing the Report of the Director of Public Instruction for 1908-09 says: "The year was marked by an advance especially under Elementary education and the thanks of Government are due to Dr. Bourne and the officers of the Department for their work during the year."

The transfer of "Science".—The Government have accepted the proposal of the Board for the Award of Secondary School-leaving Certificates and sanction the transfer of "Science" from list A to list B of the subjects of study specified in the scheme for the award of Secondary School-leaving certificates.

A re-appointment.—We are glad to learn that the Committee of the Hindu College, Tinnevely, have, with the sanction of the Director of Public Instruction, re-appointed Mr. P. Sitharama Iyer, B.A., as Vice-Principal of the College.

A Teachers' Association.—The teachers of the Board Secondary School at Orathanad recently

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formed themselves into an association under the name of "The Teachers' Association, Orathanad" to discuss points of educational interests. The first meeting was held with Mr. V. R. Krishnaswamy Aiyangar, B.A., Headmaster in the Chair. Some of the teachers gave their ideas about the usefulness of such associations. The President, in his concluding speech dealt at length on the same. The meeting dissolved with a vote of thanks to the chair.

A New Secondary School.—The Divi Secondary School was opened at Avinigudda on the 7th Feb., 1910 with much *clat*. The managing committee consists of Mr. K. Venkata Rangayya (President), Mr. W. Lutchminarasimham (Vice-President), Mr. V. Sriramulu (Secretary), Mr. P. Sriramulu (Treasurer), Mr. T. Subramanyam, Mr. N. Brahmanandam, Mr. G. Narayya and Mr. V. Venkatappayya.

B. G. M. Scholarship.—The B. G. M. College Scholarship Fund Committee, Calicut, offers four Scholarships, tenable in the First Intermediate Class. The first student will have Rs. 75 during 1910, the second Rs. 60, the third Rs. 40 and the fourth Rs. 25. These scholarships do not include any of the scholarships instituted by the College or by any other body.

Madras Convocation.—Mr. Justice Abdur Rahim, of the Madras High Court, will deliver the Madras University Convocation address on March 31. He is the first Mahomedan to be selected for this honour in the history of the Madras University.

State Technical Scholarship.—The following Government Order, dated 29th January, 1910, has just been issued:—

In Government Orders, Nos. 48 and 630, Educational, dated respectively 23rd January and 26th September, 1908, and Government Order No. 103, Educational, dated 10th February, 1908, the attention of the public was invited to the scheme of technical scholarships instituted by the Government of India, and information was furnished regarding the object of the scholarships and the conditions under which they were offered. Since the introduction of the scheme in 1903, scholarships have been awarded to four candidates from this Presidency, one in 1906 to Mr. G. N. Dewal for the study of the weaving industry; one in 1907 to Mr. M. A. Ramunni Panikkar for the study of the leather industry; one in 1908 to Mr. V. Govindan Nair for the study of textile chemistry as applied to the dyeing, bleaching, finishing, and printing of textile fabrics, and one in 1909 to Mr. A. Kesava Menon for the study of the chemistry of soap-making and the use of native oils. After consulting the Chamber of Commerce, the Trades Association and some other leading commercial firms in Madras, the Governor in Council considers that the State Technical Scholarship available for award in this

Presidency in the current year may most advantageously be assigned for the study of "glass-making." The following notification will accordingly be published in the *Fort St. George Gazette* and in all the district gazettes:—

A State Technical Scholarship will be awarded in this Presidency during the current year for the study of glass-making. Candidates desirous of prosecuting the technical study of glass-making should submit their application for the scholarship to the Director of Industries, so as to reach him on or before the 1st March, 1910.

2. Candidates for the scholarship should have taken the B.A. degree with advanced Chemistry (Branch II-B of the Madras University) as their optional subject, but the claims of candidates who have passed in Chemistry for the degree will also be considered.

3. Ordinarily the period for which these scholarships may be held is two years, but in special cases, it may be increased to three years or reduced below two years. The value of the scholarships has been fixed at £150 sterling a year, but if in any particular case this amount is found insufficient, the Government will be prepared on good grounds to consider its enhancement. The scholarships are tenable in Great Britain and, with the approval of the Secretary of State, in a foreign country.

4. The holder of the scholarship will not be bound by any engagement to serve the Government on the completion of his course, nor will the Government be bound to employ him. He must generally depend upon his own exertions to make his living on his return to India and must not ordinarily expect to be taken into Government service. In selecting candidates, the Governor in Council will be guided by considerations of capacity, character and practical interest in the industry selected, and the assurance that the candidate will continue to devote himself to that industry on his return to India. No age-limit is laid down for scholars. The course of study to be followed as well as the place in which it is to be prosecuted will be settled by the Secretary of State when a scholar arrives in England. Other conditions under which the scholarships are held are—

(1) that the candidate is a native of India as defined in section 6 of the Government of India Act, 1870, viz.: "a person born and domiciled within the dominions of His Majesty in India, of whose parents habitually resident in India, and not established there for temporary purposes only."

(2) that he has the consent of his family (i.e., of his father, if alive; if deceased, of his guardian) to proceed to Europe or America;

(3) that his character is good;

(4) that he has sufficient knowledge of the English language; and

(5) that he is physically fit to undergo the course of life and study that he will have to follow.

MYSORE.

Starting of Elementary Schools.—The Government of Mysore have sanctioned the opening of twenty-three new Village Elementary Schools in the different districts of the State at a cost of Rs.288 per mensem, or Rs. 3,456 per annum.

Manual training in schools.—The importance of imparting manual training in schools has been recognised both in Europe and America. There are now gratifying signs that the true bearing of the problem is dawning upon enlightened Indians. The Maharaja of Mysore in 1906 deputed Mr. H. T. Bhabha, Inspector-General of Education in that State, to study the systems of manual instruction in force in schools of general education both in England and America, and the results of this valuable investigation are embodied in a volume which has just been issued from the Government Press at Bangalore. Practical steps, moreover, were taken by Mr. Bhabha on his return from his tour to introduce kindergarten methods and manual training into the schools of Mysore, and Mr. Gustaf Larsson, the most distinguished teacher of *loyd* in America, when he visited Bangalore to train teachers, spoke in the highest terms of the natural aptitude of Indian children and Indian young men for manual work. The signs of an awakening to the importance of this system are highly gratifying.

The aim of the system, as Mr. Bhabha points out, is educational and not industrial, but a person who has enjoyed the training given by *loyd* is in a far better position to acquire a trade rapidly than one who has not, and moreover he has had his inventive faculties much improved. Another advantage of the system lies in the fact that it inspires a respect for honest bodily labour. There is abundant evidence also to show that *loyd* is directly advantageous to members of the professional classes who have received training in it. The problem of manual training in both its aspects has therefore peculiar interest for India.

TRAVANCORE.

Sanction of the School-leaving Certificate Scheme.—The Travancore Government have on the recommendation of its Director of Public Instruction, sanctioned a Scheme of School-leaving Certificate both for Elementary and Secondary Schools. The rules for the Secondary School-leaving certificate have been approved by the Syndicate of the Madras University also. The minimum age for Elementary School-leaving certificate is 14 and that for the Secondary School-leaving certificate is 15. The compulsory subjects of study for the Elementary School-leaving Certificate are:—

- (1) Malayalam (or Tamil) Language and Grammar,
 - (2) Arithmetic and Mensuration, (3) Geography,
 - (4) History, (5) Drawing and (6) Physical Training.
- The following are the Optional subjects, any two of

which should be chosen, (1) English, (2) Sanskrit, (3) Urdu (Hindustani), (4) Elementary Nature Study, (5) Agriculture, (6) Domestic Economy and Hygiene, (7) Needle work.

The Compulsory subjects for the Secondary School-leaving certificate are (1) English, (2) Elementary Mathematics, (3) Vernacular Composition and Translation, (4) Elementary Nature Study, (5) Geography, (6) History, (7) Drawing and (8) Physical Training. The Optional subjects over and above those required for Elementary School-leaving Certificate are (1) Algebra, (2) Geometry, (3) Physics, (4) Chemistry, (5) Botany, (6) Geography, (7) History of India, (8) History of Great Britain and Ireland, (9) Second Language, (10) Commercial Practice, (11) Book-keeping, (12) Type-writing, (13) Office Correspondence and Practice, (14) Embroidery and Lace-making, (15) Music and (16) Elementary Design.

The Second Language may be any one of the following:—

- (a) Sanskrit, (b) Arabic, (c) Latin, (d) Greek, (e) Malayalam, (f) Tamil, (g) Urdu (Hindustani), (h) German, (i) French. To put it in other words, the Elementary School-leaving Certificate is for all Malayalam Schools and the other for all the English Schools.

The School-leaving Certificates will be first given in May, 1911.

COCHIN.

Teachers' Conference.—Several important matters connected with education were discussed at the Educational Conference at Trichur and the decisions arrived were taken note of by the Special Educational Officer for being brought to the notice of the Durbar. The most important matter considered at the Conference was the necessity for enhancing the pay of school-masters, which, according to Mr. Pope, is very low, considering their work and responsibilities. The revival of the old Lower Secondary and Primary Examinations, the enhancement of grants to aided schools, the improvement of the Training School at Trichur and the desirability of securing uniformity in the matter of textbooks in all schools in the State are some of the questions that were threshed out on the occasion.

Agricultural Scholarship.—Mr. C. T. Krishna Menon, B.A., Clerk, Huzur Secretariat, Ernakulam, is selected for training in the Agricultural College, Coimbatore.

Prize distribution.—The distribution of prizes to the successful students of St. Theresa's Convent School, Ernakulam, was held with great ceremony when the British Resident gave away the prizes.

A Raja graduate.—Mr. Rama Varma Rajah, of Chirakkal has come out successful in the Chemistry

branch of the recent B.A. examination and has completed his course.

New State School.—The private High School at Chittur has been taken possession of by the Cochin Durbar who have paid as compensation Rs. 20,500 for the building and premises. An offer has also been made to the Sirkar by the management of the private High School at Kunnunkulam to take up the Sirkar High School of that place. The matter has not yet been definitely settled.

State Night Schools.—The Special Educational Officer recommends that 12 night schools be opened during the current year (1905 M. E.) at the following places:—

- | | | |
|--|-----|--|
| 1. Vallanghy in the Chittur Taluq. | | |
| 2. Krzhinjampara do. | do. | |
| 3. Wadakanberry do. | do. | |
| 4. Mnndor in the Trichur do. | do. | |
| 5. Trichur do. | do. | |
| 6. Kuimangalam do. | do. | |
| 7. Kattur in the Makundapuram Taluq. | | |
| 8. Kara do. | do. | |
| 9. Azhikal in the Cochin-Kanayanore Taluq. | | |
| 10. Kochangady do. | do. | |
| 11. Kadungamangalam do. | do. | |
| 12. Mulanthuruthi do. | do. | |

There is no difficulty about a building for holding the night school in any of the above places, as the existing Sirkar or aided day schools of the localities can be utilised for the purpose without any extra expenditure. It is reported that if night schools are opened at the above places, the average daily attendance will vary between 30 and 50 to begin with. For the proper working of the schools, he thinks that for the present two teachers will be required for each school. Either the teachers of the Sirkar or aided schools of the places or new men may be employed, according to the nature and circumstances of each locality. In the former case the Head teacher should be paid Rs. 5 and the second Rs. 4 and in the latter case Rs. 8 and Rs. 7 respectively. The hours of instruction may be fixed at 2½ hours commencing from 7 P.M. to be divided into 5 periods. In the case of some of the schools, e.g., Mulanthuruthi, Kadungamangalam, &c., where the boys are all Polayias, a small expenditure will have to be met towards the purchase of books, slates, &c., for the pupils. A sum of Rs. 30 per annum will be required for each such school for the above purpose. Besides this, the necessary lighting charges will have also to be incurred.

CALCUTTA.

A new library at Benares.—“The Malati Sarasadan,” founded in memory of his mother by Rai Krishna Chandra was recently opened by H. H. the Maharajah of Benares with great pomp and ceremony at his *mandir* in the *Chowk* which was gaily

decorated for the occasion. The library has been started with about 3,000 books and 200 Sanskrit and Persian manuscripts, one being 900 years old. There was a large and representative gathering of the Benares gentry including the Pundits. The special feature of this library will be that there will be lectures on social and moral subjects periodically by eminent educationists in connection with it.

Mrs. Besant's advice to students.—Speaking at the Boarders' Union anniversary, Mrs. Besant strongly condemned the dissemination of seditious literature and warned the students against being led into error by men who tried to send foolish youths to the scaffold by playing upon their ignorance and wilfully misdirecting their enthusiasm.

An anniversary.—The eleventh anniversary celebration of the Central Hindu College passed off very well. Many gentlemen sympathising with this unique and all-important institution gathered on the occasion and attended the several functions that took place on the appointed days. Mrs. Besant's lectures were as inspiring as ever and great enthusiasm prevailed all round. There was a good arrangement for guests who had come from outside Benares.

An address.—Mr. B. N. Das, the Senior Professor of Physics and Chemistry of the Dacca College, gave an address on “The seen” at the Regent Park Hall. This lecture was appreciated by all present.

A donation.—Srimati Dinomoni Choudhurani has made a liberal donation of Rupees twenty thousand for a Science laboratory in the Mymensing College to be named after Mr. Blackwood, the District Magistrate.

Preliminary Examination in Law.—Two hundred and twelve candidates are declared by the Syndicate of the Calcutta University to have passed the Preliminary examination in Law held last month.

University notice.—On the recommendation of the Syndicate and the Senate, the Government of India have been pleased under section 24, subsection 5, of the Indian Universities Act, VIII of 1904, to direct that with effect from June 1909, the privilege of affiliation in Law up to the standards of the Preliminary and Final B. L. examination is granted to the Government College at Rangoon.

An appointment.—The Secretary of State has appointed Mr. K. S. Caldwell, of University College, North Wales, to be Professor of Chemistry, Patna College.

BOMBAY.

University Convocation: Advice to students by H. E. the Governor.—At the Convocation for conferring Degrees, H. E. the Governor as Chancellor presided. In a short speech he impressed upon the students launching into world not to form hasty opinions on political subjects. At your age it is not possible for you to have gained insight into the way in which India is governed, and writing of political institutions can be learned only by study, observation and experience. Yet it is evidently essential to know exactly what is, before deciding what ought to be of the giant forces whose equilibrium keeps the world at rest and which include India within their scope. You have never been told of those other great forces lying dormant on the boundaries of India. You have no knowledge even of the latent forces within the continent of India itself. You have not the least conception. And only by bringing trained minds to bear upon the facts can any conception of them be obtained.

Yet knowledge of this kind and far more is the necessary equipment of all who attempt to guide others into acceptance of revolutionary changes which would sit back civilization of India by a century. I ask you to believe me that questions to which your attention may have been or may be drawn are exceedingly complex and fraught with dangerous issues and that true patriots as you will wish to be, must think deeply before allowing their imaginations to be swayed by glamour of ideas which ignore great truths of the situation and which if they could be realized, would inevitably involve the ruin of India.

Sir Narayan Chandavarkar as Vice-Chancellor made a long speech giving a history of the educational progress and changes in the University course, and gave a sound advice to students saying "Let us by sobriety of conduct and by avoiding all extravagances of thought prove ourselves worthy of the education we have received."

The Bombay Matriculation.—At the Senate meeting on Saturday evening (Feb. 12) the subject of the Matriculation Examination was again discussed and it was finally resolved to retain the Matriculation as an University Examination. Sir Pherozshah Mehta next proposed:—"That the Senate approves the recommendation of the Committee for the Improvement of the Course for the Matriculation Examination and requests the Syndicate to obtain thereon the opinion of High Schools, Colleges, Faculties of Arts, Medicine, and Engineering." The proposition was carried.

Sir Pherozshah's proposition that the previous Examination be retained was also accepted.

A Science Institute for Ahmedabad.—Four lakhs of rupees have been contributed by Sardar Chinu-

bhoj Madhowlal towards a scheme which has been approved by the Government for a Science Institute at Ahmedabad.

New degrees.—The Senate of the University of Bombay has passed regulations as to the two new Degrees viz—Bachelor of Hygiene and Doctor of Medicine (Sanitary Science).

Indian Cricket Team.—The amount collected at Bombay for sending an Indian Cricket team to England now amounts to Rs. 33,000. Amongst the recent subscribers are the Maharaja of Patiala, Rs. 5,000 and the Maharaja of Natore, Rs. 1,000.

PUNJAB.

University Vice-Chancellorship.—The Revd. Dr. Ewing, M.A., D.D., LL.D., Principal, Forman Christian College, Lahore, has been appointed Vice-Chancellor, Punjab University, vice the Hon'ble Mr. Justice Robertson gone on leave. The appointment is very popular.

Degree of Public Health.—The Punjab University Medical Faculty considered the proposal of the Inspector-General of Civil Hospitals for instituting a Degree in Public Health. The Faculty recognised the desirability of instituting such degree examinations, but regretted that no facilities were available.

A new President.—Rai Bahadur Lal Chand, Advocate and formerly Judge, Punjab Chief Court, has been elected President, D. A. V. College Managing Committee, in the place of Mr. Dwarka Das, M.A., Pleader.

Elected Fellows.—For the first time in the history of the Punjab University, says the *Tribune*, the graduates can look upon two Fellows as their representatives in a special sense—as elected by their suffrages: Lala Durga Das, B.A., LL.B., Pleader, Chief Court, and Lala Dhanpat Rai, B.A., LL.B., Pleader, Chief Court, the former by 183 and the latter by 187 votes. We congratulate the new Fellows on their election. Both are graduates in Arts and Law of several years' standing and may be trusted as such to interest themselves in the educational welfare of the Province. Lala Durga Das has, for a number of years, been Secretary and Vice-President respectively of the Dayanand Anglo-Vedic College Managing Committee, while Lala Dhanpat Rai as a former Law lecturer and Examiner is conversant with the needs and requirements of an important class of students with whom he has been specially in touch.

ALLAHABAD.

A popular teacher.—At the Kayastha Pathashala, Allahabad, a farewell address was presented to Babu Lakshmi Narayan, fourth master, by the students of the Matriculation, School-leaving and other classes, on the eve of his resignation, with a view to join the bar. Light refreshments were provided. The function was well attended by students and others.

A prize distribution.—The prize distribution of the Crosthwaite Girls' High School, Allahabad, took place recently in the school premises. The Honourable Sir John Stanley, Chief Justice, presided. The young pupils of the school entertained the audience with their sweet songs in Urdu, English and Sanskrit. Then the Lady Principal read the annual report in which it stated that it has been well supported by the public and that good progress had been made.

The Chairman in a short speech expressed his pleasure that plans for the new building were ready, and he hoped to have the next prize distribution held in the new premises. He closed his observations thanking the young pupils for their musical entertainment.

Then Lady Stanley gave away the prizes which comprised a variety of interesting articles useful for girls.

The University of Allahabad in dispensing with the services of Mr. Basant Coomar Mukherji, late Assistant Registrar, did not assign any reason. The local Government, however, have appointed a commission to enquire into the matter.

Foreign Notes.

GREAT BRITAIN.

University at Hankow.—Important meetings are taking place at Oxford and Cambridge in furtherance of the projected Chinese University at Hankow. They will be followed by a meeting at the Mansion House on 19th of March, at which the scheme will be definitely presented to the public and an appeal made for funds.

Fifty thousand pounds are asked for to establish the University. Within five years a further two hundred thousand will be required to endow the institution.

School boys' misconceptions.—A recent number of the *University Correspondent* contains a selection from the annual crop of "howlers" gathered in its prize competition for the best collection of amusing mistakes made by pupils in answers to questions. We give a few of these humorous blunders, some of which will be found interesting to our readers. The

earth is an obsolete spheroid—The Duke of Clarence was drowned in cold blood—In India a man out of one cask may not marry a woman out of another cask—Tennyson wrote "In Memorandum"—Sir Walter Scott's publishers liquified, and he had to pay off the National Debt before he died. This wore him out—Gender shows whether a man is masculine, feminine or neuter—*Raison d'être*, right to live—*Il pleut à verse*, he cries at poetry—*Sursum corda*, I double hearts—*Hors de combat*, the hour of battle—Geometry teaches us how to bisect angels—In the stomach starch is changed into cane-sugar, and cane-sugar into sugar-cane—Algebraical symbols are used when you don't know what you are talking about—The Press to-day is the mouth-organ of the people—A lie is an aversion to the truth—Pythagoras built a bridge for asses—Women's suffrage is the state of suffering in which they were born.

The teaching of history.—Mr. C. Darling at the Leeds Educational Conference urged that, valuable as the study of history is, we must be on our guard against expecting too direct results. The end of our teaching is not so much to impart knowledge as to exercise the power of applying it. The problems which history furnishes cannot be solved with mathematical certainty, but at least we can judge of the temper of mind they tend to produce by the methods of teaching we employ.

A teacher of history will lead his pupils to select facts, to arrange them in proper sequence, and to discover their casual relation. Refraining from imposing his own authority, he will guide his pupils in the use of their own observation and judgment. He will hope to quicken their imagination and to develop something of sympathy and a tolerant spirit, and an interest in subjects connected with historical study. If a teacher has definite aims and makes a careful selection of material, it is possible to complete a wider course of study than that which is usually attempted.

Educational Conferences.—The past month (January), has been crowded with Educational Conferences. Though much familiar matter has been threshed out once more, there are tokens of fresh vigour and incisiveness that bespeak a clear insight and a real advance. While the importance of the literary side of education is fully recognized, the claims of science and of more practical elementary work are strongly pressing forward. The educational possibilities of the English language and literature are more and more realised. In point of energy and business-like procedure, the Assistant Masters' Association stands prominent. In spite of repetitions and confusions, the Conferences afford great encouragement to the hopes of reasonably rapid and well-ordered progress.

Birmingham University.—The cosmopolitan character of the students attending Birmingham University becomes yearly more marked. During the 1907-08 sessions there were enrolled at the University fifty-one students from abroad; now there are seventy-nine. The attractions of Birmingham appeal to all parts of the world; China has sent for the 1909-10 sessions twenty-three students, the Argentine and Japan five each, France three, Russia and West Africa two apiece, Siam, Roumania, Poland, Germany, the United States, and South America (excluding Argentina), one each. Whilst nearly every civilised country in the world has its representative or representatives, Mr. Chamberlain, the Chancellor must feel gratified that the British Empire beyond seas is keenly alive to the facilities which his University affords, and that it sends a large proportion of the total number of fifty-one students from outside these islands. Of the fifty-one students from abroad in 1907-08 India was responsible for fourteen, Australia four, South Africa three, and Egypt one. Now there are twenty-two students from India, four from South Africa, five from Egypt, and two from Australia. An analysis of the branches of learning which these students cultivate shows that, as in 1907-08, so now the most attractive faculties are those of science and commerce. There are five students of pure science, fifteen of mining, six of metallurgy, twenty-four of engineering, two of arts, twenty-five of commerce, and four of medicine. This continued and constant growth of students from abroad is no mean tribute to the educational advantages of the Birmingham University.—*The School Guardian*.

The Indian Guild of Science and Technology.—A section of the Indian Guild of Science and Technology has been formally inaugurated at Leeds

University. The Guild is an association which has been formed by Indian students at Universities in England and Scotland, on the continent, and in America, with the object of fostering the study of natural science amongst the cultured people of India, and of promoting the application of science to the development of Indian industries and resources. The meeting was attended by all the Indian students in Leeds and by delegates from various English and Scotch Universities. There were also present some members of the professional staff interested in the new organization. Professor Smitwells was elected President. Mr. S. P. Viccajee of Leeds, read a report which described the origin and progress of the movement. After communications had been passed between students in England and Scotland, he said the work of the organization was carried on to the continent, and now 120 strong. Some of the members were already back in India, working at a scheme of much more ambitious character than the one they were inaugurating at that meeting. They had decided to form five sections, with the following centres:—Edinburgh, for medicine; Glasgow, for mechanical engineering; Leeds, for leather manufacture; Birmingham for mining; and Manchester for dyeing.

GERMANY.

Matriculation in Germany.—The number of matriculated students at the German Universities during the winter session has been returned as 52,456, an increase of 3,739 since the corresponding period in 1908. The increase in the number of women students continues. The foreign matriculated students at the German Universities number 4,409, an increase of 332 since last winter.

MATRICULATION HISTORY OF ENGLAND for 1911 (adapted to the Madras University Syllabus containing the Pre-Norman, Norman and Early Plantagenet Periods) by S. N. GHOSH, B.A. Price—8 Annas.

A HANDBOOK OF HISTORY OF ENGLAND by the same Author. Price—Re. 1.

A HANDBOOK OF HISTORY OF GREECE based on Bury and Smith, by the same Author. Price—12 Annas.

The Educational Review.

The results of the last Matriculation Examination of the University of Madras are appallingly poor. Out of a total of 7508 candidates only 877, or something like 11·5 per cent., have secured a pass. The reason of this disastrously low percentage of passes is not clear. A comparison of the percentages of passes and failures at the different centres at which the examination was held does not enable one to arrive at any rational interpretation. The results have been so fluctuating from year to year that no intelligible inference can be drawn from them. In 1907 the percentage of passes was 17·4 and in 1908 it rose to 23·5. It has fallen this year from 23·5 to 11·5, a sudden fall for which the Syndicate of the University must offer an explanation to the Senate and through the latter to the public at large. It can not be said that the teaching in schools has deteriorated or that the students who sat for the last examination have all been below the average candidate of previous years. All the evidence, on the other hand, is to the contrary. The Director of Public Instruction tells us in his annual report that admissions and promotions in Secondary Schools have been regulated with greater care and judgment, and that special attention has been bestowed on the teaching of science. The only rational inference, therefore, can be that the fault lies with the examiners in those subjects in which the failures have been abnormal. The largest number of failures is in English and elementary science. The questions in the first subject have all been framed on a new model; the students were regarded as born Englishmen and expected to bloom into essayists at

the age of fifteen. Added to this, the minimum in English—forty per cent.—is too high to secure in a foreign language. We are not therefore surprised at the poverty of results in English. It is even said that the Board of Examiners did not expect better results, which shows the state of mind in which the papers were set and valued. As regards the second subject in which the percentage of passes was the lowest, it is a notorious fact that the examiners in physics and chemistry vie with each other in making their subjects appear as difficult as possible. The questions are never straightforward and they are sometimes of such a nature that even experts can not determine what exactly are the answers expected. The members of the Board of Examiners in physics and chemistry seem to be under the impression that the dignity of their subjects would be compromised, if the questions were straightforward and simple. It is extremely pitiful that the Syndicate is unable to control the vagaries of examiners in physics and chemistry for the Matriculation. And the consequences are disastrous in the extreme to students. A great deal is written and spoken now-a-days about moral instruction in schools. But what can be the moral influence of such disastrous results which make the students feel that the University tests not what they know but what they do not know? The students must be impressed that justice will always be done.

With a view to mitigate the poverty of results the Syndicate has permitted the heads of colleges to admit such candidates as have obtained a total of 199 marks and forty per cent. in English and thirty-five per cent. in three of the remaining four divisions, in the Junior Intermediate class, but these will not

be regarded as having passed the Matriculation examination and therefore eligible for public service. This concession granted by the Syndicate may slightly raise the strength of the Junior Intermediate classes of our colleges, but does not deal justly by the student population. This year is the last in which the Matriculation examination serves as a passport to public service, and a very large portion of those that appear for the entrance examinations of Indian Universities do so not with the view of prosecuting their studies further but to qualify themselves for public service. Is it much easier to study for the Intermediate examination than to do the routine clerical work of a Government office? The University must never swerve from the principles of justice and equity. The best way of meting out justice would be to declare all those that have obtained a total of 199 marks and forty per cent. in English and thirty-five per cent. in three other divisions to have passed the Matriculation examination, and to permit all who have obtained a total of 199 marks and forty per cent. in English and thirty-five per cent. in not less than two other divisions to enter upon a University course. We should even go farther; we would suggest that all those who have obtained a total of 250 marks should be allowed to enter upon a University course, if they have also obtained not less than thirty-five per cent. in English. We hope the Madras University would take a lesson from the sister Universities of Calcutta and Bombay and prove to the public at large that the University exists for the students and not students for the University.

Many corporal punishments seem to be in use at the C. M. S. High School at Srinagar, and the Punjab Educational

Journal takes pleasure in publishing the revolting list to the world at large. We have often commented in our columns on the baneful effects of corporal punishments on the moral tone of educational institutions. We are glad to find that Mrs. Besant concurs with us. In a letter to an Allahabad daily she writes as follows:—

"The evil of the punishments described lies in the fact that they destroy all self-respect in the boy and thus dooms him to a manhood lacking all manly qualities; they make him cowardly, servile, deceitful. A boy may talk nonsense and talk too much, but to perch him upon a pole and force him to chatter, beating him from below if he is silent, is a far worse action than was his childish babble. The other punishments described fall under a similar condemnation except two which are direct incitements to brutality, the making of a tale-bearer, and the handing over of a boy to the boys to deal with, the culprit being left to the tender mercies of his class. It is said that sometimes a teacher has to be present "to see that the boys do not put too much heart into the game"—the game of a number falling upon one. One can imagine that lads, who have been subjected to the other punishments and brutalized out of self-respect, would be cruel. Allusion is made to the public schools of England, but none of these punishments exist there, and no master would hand over a victim to a class with a hint to ill-use him.

"A boy's sense of dignity, of self-respect is a precious quality, which should be used to guard him against all that is base, vile, and dishonourable. These young things, weaker than ourselves, helpless in our grasp, should never be roughly used, and the employment

of cruel punishments is the condemnation of the teacher. I lately came across a school, where boys were caned for being late, and for any trivial fault down came the cane. Naturally they were timid, shrinking, deceitful. When will teachers who use corporal punishment learn that love yields better results than cruelty, and if they cannot rule without the whip they should seek a profession other than the noble one of teaching."

We have been surprised not a little that Mrs. Besant had to make this protest against a Christian educational institution. An ounce of practice, they say, is better than a pound of precept. Why should not Christians put into practice that love which they proclaim from house-tops to be the essence of their religion?

At the annual meeting of the Association of Public School Science Masters, Prof. H. E. Armstrong delivered the presidential address, the subject being "the problem of science in our schools, their complete re-organization a necessity." In the opinion of Dr. Armstrong the future of all schools will depend on the position accorded in them to science, whose acknowledged office is the elucidation of truth. The men most competent to take charge of schools will be the science masters, whose business it is to study method and be practical, and therefore to solve problems and to lead. Before long the literary man in charge of a school will be an anachronism. The teaching of science in schools should consist primarily of instruction in the art of inquiry—in other words, in the experimental method, which is not the same thing as demonstrating experiments. The system of lecturing to students and then directing them to work from printed instruc-

tions is considered by Dr. Armstrong to be as vicious as it could be. So far as he could discover, he found no organization of the teaching in British schools and scarcely any of the headmasters in England were in any sense of the term, masters of method. England was in need of a new race of headmasters, a race of broad-minded, practical men, who would be in touch with the world and be prepared to put aside every form of commercialism, and would make the study of educational method their own. These ideas of Prof. Armstrong are not new, but how far such ideas can be realised in practice is a problem still to be solved. We have had occasion to test the utility of the heuristic method so warmly advocated by the professor, but we have not been able to achieve any valuable results. The method often involves much waste of time, to avoid which pupils have to be guided either by oral, written, or printed instructions.

The University of Bombay has lately been much before the eyes of the public in connection with the retention of its Matriculation examination. The Government of Bombay proposed the abolition of the Matriculation examination and suggested that each college should have its own examination for admission to college. The idea of the Government is very good, but is fraught with many dangers and difficulties, as was clearly brought out in the discussion that took place on the question in the Senate. Though we happen to differ from Sir Pherozeshah Mehta on many matters, we admire the manner in which he marshalled facts to win over a large majority in favour of the retention of the Matriculation examination. In the present condition of India a public examination,

common to all colleges, seems to be necessary for admission to college. Even in America where all the Universities are teaching Universities, it has been found necessary to conduct a public examination for entrance to the University. There a number of Universities have combined together and appointed a Board to conduct the examination as at Oxford and Cambridge. In Madras it has been resolved to accept the school-leaving certificate given on the moderated results of a public examination conducted by a Board as a passport for entrance to college. The Matriculation examination of the University itself may be so modified as to serve the same purpose as the school-leaving certificate. It seems to us that the power of testing for entrance to college should rest with the University and not be transferred to the Education Department. We are glad that the Senate of the Bombay University has by a very large majority decided in favour of the retention of the Matriculation examination by the University. Undue multiplication of public examinations acts as a great drag on the normal growth of the human faculties, and should be avoided. We are distinctly in favour of the abolition of the previous examination, which comes between the entrance examination and the First in Arts examination. It would be a happy day when we shall have only an entrance examination and an examination for the Degree in Arts or Science four years after.

In this connection we may also note the Convocation of the University of Bombay which recently took place. In a short speech the Chancellor of the University, Sir George Clarke, admonished the students not to entangle themselves in party politics and political controversies. The Vice-Chancellor,

Sir. Chandavarkar, delivered a lengthy address in which he laid much stress on the ideals which ought to actuate the life of young India. We wish all graduates to ponder over the weighty remarks of Justice Chandavarkar on the pressing need for endeavouring to remove the many sad defects in the character and civilization of the average Hindu.

It is a matter for regret that it has been resolved to raise the fees considerably in our Secondary Schools. This resolution is said to be the decision of a Conference of inspectors and some managers. But we are told that this Conference was not at liberty to consider whether there was any necessity for raising the fees at all; it had only to decide by how much the fees could be raised above the existing rates. It is a pity that while there are more than 300 private Secondary Schools only a few of them were represented at the Conference. The Department ought to have taken the managers of private institutions into confidence and their opinions should have been called for before the Government took such an important step as the enforcement of higher fees in all recognised schools. We need not say that in all civilized countries the tendency is to make education as cheap as possible. This is the motive of making primary education free and compulsory. In British India there is no free primary education. Only a few days ago when a question was asked in the Imperial Legislative Council the answer was that the Government had no funds at its disposal to undertake this gigantic task of educating the masses. In a backward country education must be made accessible to as many as possible, and that can only be done by cheapening

education and not by enhancing the rates of fees in Secondary Schools. A sound national system of elementary and secondary education is a desideratum in India. It is an advantage to the State to have a high average level of knowledge and ability. If the State is of greater importance than the individual, individual prominence must be sacrificed to raise the common average. Would such a thing be secured by raising the fees in Secondary Schools in such a poor country as India? The result of this raising of fees is, we fear, not likely to be productive of benefit to the State. Unfortunately the State in India does not see eye to eye with the people of the country. We hope our countrymen will rise equal to the occasion and by self-sacrificing efforts endow institutions so as to enable them to spread education among the poorer classes in the country. The aim must be to provide an efficient Secondary School within the reach of every child requiring such an education. We may note that the fees in the newer Secondary Schools of England have been generally made

low with a view to throw the way open from the infant school to the University.

The spread of primary education in India is an urgent necessity. Primary education. We are glad that several of the Municipalities in India have come to regard the free education of children in the elementary grade as one of their primary duties. Bombay has already introduced free primary education. Steps are being taken to do the same in Calcutta. We regret to note that Madras is very backward in this respect. So far as we know, no attempt has till now been made to give to this matter the serious attention it deserves. The Council of Native Education has often called the attention of the Madras Municipality to this subject, but it has only been crying in the wilderness. We wish the Government would by some legislation make it incumbent on all Municipalities to do what they can towards the spread of primary education.

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The Madras Journal of Education for March, 1898:—"We very gladly welcome a second edition of this able and interesting introduction to Geometry. It contains just what the ideal teacher would supply as exposition of his own when teaching his class."

The Madras Standard, 21st March, 1898:—"A book as creditable to the author, as it is eminently practical. Any one taking up his book and reading it, even in the most cursory manner, cannot but admit that the plan of the book is as original as it is ingenious. Mr. H. deserves the thanks of all lovers of education for the very valuable work he has given us."

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THE SCOPE AND PURPOSE OF THE TEACHING OF ELEMENTARY MATHEMATICS.

IT will be a superfluity to remind our readers that we are in a time of important reform in the educational methods and subjects, not only in our own country, but in all highly civilized countries, such as England, Germany and America. Especially is this so in the subject of Mathematics, that in the course of the last ten years beginning with the famous Perry movement, we have witnessed such a momentous step in the Cambridge University as the abolition of the Senior Wranglership, a step which was taken not without serious opposition. Changes dominated by the same motives have been introduced in the curricula and in the methods of teaching, such as a compulsory preliminary training in Practical Mathematics, and the co-ordination of Physics with Mathematics throughout the whole course. Changes of a similar nature but more revolutionary, have been made in France, Germany and America. Struck by the same wave of activity, we in India have also taken up the same spirit of reform, though somewhat late, and within the last few years we have seen important changes in the curricula of studies, collegiate, secondary, and elementary. At such a time, however,

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it is very important that we should from time to time take a steady and clear look at the *spirit of the reform*, lest we should miss the very ideals which actuated the reforms. When the evils of an existing system accumulate, then they are decried in every quarter, in the platform and in the press, by the scientist and by the man in the street, by the parent and the teacher. Some reformer comes out with a new scheme, designed to remedy existing evils, and the people accept the scheme but too readily. Converts to new theories are made, not by cool-headed philosophers but by exaggerating enthusiasts; but once the theories are accepted, it certainly requires cool-headed people of stout common sense, for the devising and working out of a well-proportioned scheme, in which the subjects and ideals will bear just the position and importance which they deserve. It is this latter work, of judicious choice and intelligent working out, that falls to the share of schoolmasters. Time was when the schoolmaster was proverbially wanting in that all important commodity, common sense, when he was thought a thoroughly unpractical visionary being, fit only to deal with half-mature intellects and silly nothings, a ludicrous though harmless and somewhat necessary item in the social fabric. But thanks to the

growth of civilization, and the theories of national growth and advancement, the profession has not merely become honourable and has already attracted some of the best men, but the schoolmaster is now expected to be conversant with the problems of national advancement and national character, and has constantly to keep before his eye a definitely outlined, though distant, national goal, and constantly shape his means and methods to that goal. It is a high ideal indeed, and the task trying at times, and monotonous frequently. And the very height and remoteness of the ideal and the trying monotony, are apt to lead the teacher into lapses of mechanical procedure in which the real purposes are lost sight of, or in some cases, even perverted. It will be a surprise, perhaps, if it is said that, as a result of bad teaching, the mathematical prodigy of the High School may be a non-observant, dull, clumsy and half idiotic boy, instead of the sharp, active, neat little fellow he ought to be. To guard against that danger of lapsing into useless or harmful methods, it is highly imperative that the objects fulfilled by any particular subject of the curriculum should be kept fresh in the teacher's mind. Our first business in any discussion about the teaching of Mathematics will be to recount the purposes which the subject serves in the school curriculum. And in another issue we shall go into the general methods which will ensure the achievement of such objects. The reader will be inclined to smile perhaps, as at a man riding his hobby when I enunciate the advantages that all mathematical study is intended to give; but I shall have made a sufficient apology when I say that unless a teacher frequently asks himself why he teaches a particular subject, the chances are

the purposes of teaching that subject are altogether lost sight of. It is with that object that, side by side with examining what Mathematics teach the boy, I propose to examine also what they do not teach.

The most obvious purpose which Mathematics serve is their practical value. From the simple bazaar account of the rustic to the most complicated calculations of steam and electric power, mathematical facts and processes are in constant use, in such constant use that the people using them are in many cases unaware that they are of mathematical origin. The farmer and the landlord, the mason and the carpenter, the mechanic and the engineer, have all to learn some Mathematics, and the more of mathematics they learn (of course with judicious choice), the better fitted they are for their profession. The very fundamental ideas of time, space, and number are in their nature so eminently and so simply mathematical, and are so woven in the web of human experience that you cannot think of the experience without thinking of space, number and time. Man is all his life breathing an atmosphere of Mathematics, lives and works in accordance with mathematical laws, and arrives at results which are also mathematical, all along ignorant or unaware of the laws. Mathematics are implied in the beat of the heart and the revolution of the earth, in the falling stone and the flying bullet, in the breath of life and in the currents of the ocean, in the rhythmic kicking of the baby and in the carefully adjusted motion of a steam engine regulated by a conical pendulum governor. Nature being so immensely mathematical while being so invitingly attractive, our methods must be to blame, not the subject, if Mathematics do not interest the average pupil.

Secondly, Mathematics exemplify in a simple, typical, and clear way certain modes of thought, to develop which is the major and very important part of all education. They train the pupil to use his mind to observe, analyse, compare, separate the relevant from the irrelevant, measure, arrange and build up materials, in a manner which no other subject can approach. And that too, in degrees which in the hands of a good teacher, can be adapted to the mentally weak, strong or indifferent. The world presents its problems to all alike, in forms more or less complicated, buried under a mass of irrelevant and misleading details. They cannot except casually educate the individual. They are puzzling sometimes to the acutest thinker, and are not attempted by the average man who has to run for his day's living. But school Mathematics are like a gymnasium where boys of varying ages and powers are trained for better physique and health, the weak boy swinging a lb. dumb-bell, and the strong one performing a complicated feat on the horizontal bar or trapeze, each doing some work which will stimulate and strengthen him without tiring him or disabling him. The teacher of Mathematics has all that scope for choice and regulation to adjust his exercises to the child, to the growing boy, and to the healthy young man prepared to meet difficulties and feeling a joy in overcoming them. The peculiar adaptability of the subject-matter of Mathematics to train up the power of reasoning is well analysed by Dr. Young in his *Teaching of Mathematics*. First of all, there is the certainty of its conclusions. Starting from certain premises, the conclusion must be right, not partially or vaguely, but completely and distinctly right, not right sometimes only, but right always.

"*In all other branches, experts, authorities (not merely beginners or bunglers), have disagreed, have often contended, and have not been able to convince each other or the world at large. In Mathematics there is substantial agreement. There are different schools of thought, but they are harmonious; supplementing not antagonising each other. Mathematics can decide whether or not their conclusions are right. The mathematician more than any other scholar, can find his own errors or be convinced of them." This quality of certainty gives to the pupil a sense of triumph when he has arrived at a result and has verified it to be correct. It gives him self-confidence, confidence in his own power of keeping to a chalked out path and coming out victorious. It gives to the teacher an infallible means of training the pupils in methods of logical reasoning which can be illustrated only in an imperfect or approximate way by examples from life. A boy is told that when his shadow is equal to his height, the angular elevation of the sun is half a right angle. He finds that so, all his life, in all places, whatever other circumstances be. But if he is told that the temperature at noon on a certain day will be 85°, the pupil in all probability finds it not 85° but something else. The helpless teacher has to revolve in his mind a thousand and one causes that affect the result, and answers to the bewildered boy: "the difference may be due to change of latitude, of elevation above sea-level, the change in the prevailing wind, to change of pressure of the air, to change in the quantity of dew-fall, to the change in the sun-spots, to the passage of the earth through a swarm of meteors, to the change in the radio-activity of the sun and the earth, and what not. The difference may be due to one

* Dr. Young, *Teaching of Mathematics*.

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of these causes, to some of them, or all of them." The causes are some of them so fitting that they would not allow time to the enthusiastic investigator, even if he attempts to measure them or study them. But mathematical results are there for you always. You can verify them if you doubt them, you can put them by for future reference, you can get them back if you lose them.

The second feature of mathematical processes is their simplicity. It is a feature which makes them highly useful in the hands of the teacher. The mind is not harassed by an unmeaning profusion of details, which do not inform but only confuse the mind. The attention is fixed only on those attributes which help one particular line of thought. A child is trained to see that all equilateral triangles are equilateral though of different sizes, that all cubes are cubes though of different volumes, that two figures are of the same area though of different shapes, that the three angles of a triangle are together equal to two right angles, whatever be the magnitude of each—I may multiply examples like these endlessly. It is this abstraction of relevant particulars that is of very high value in practical life. True, that in life it is not triangles or cubes that we have to compare, but men and things with far more numerous attributes than the elements of a triangle or a cube. But comparison of cubes and triangles are the stepping-stones to the higher platforms on which the future men have to work. * "If you are to be a lawyer, how can you learn to analyse a complicated legal case, if you cannot learn to analyse a simple proposition of geometry? Are you a student of history? How can you determine the influence of Napoleon on the world's deve-

lopment, if you are incapable of determining the influence of a co-efficient in a simple algebraical relation? Are you a linguist? How will you translate a master-piece, with its myriad shades of meaning, from one language into another, if you cannot learn to translate a trifling problem into the corresponding mathematical symbols? Are you to be a physician? How will you diagnose and eliminate a disease, with its complicated, ambiguous, and obscure symptoms, if you lack the faculties needed to diagnose and eliminate the unknown quantity out of an elementary equation?"

This naturally leads us to the question, most vexed and most perversely answered even by eminent men, the question—"How far is the mathematical skill acquired at school practically applicable in the life of the pupil himself? It is exactly on this point that the defects of the method are fathered on the subject. It is exactly at this point that a careful previous examination is not made of the purposes which a subject can serve, and the purposes which it cannot serve. The subject in the end is condemned because it failed to fulfil those objects which it was never intended to fulfil, and cannot possibly fulfil. The eminent Scotch philosopher Sir William Hamilton complained that the excessive study of Mathematics was deleterious to the mind, and that Mathematics ought therefore not constitute or even dominate University instruction. Hamilton's contention was that the subjects form merely chains of deductive reasoning, with little practical utility, that they are but

"Tricks to shew the stretch of human brain
Mere curious pleasure, or ingenious pain."

But this was on the supposition that one pursues that study alone, and nothing else. It would be long to state all the arguments

* Dr. Young, *Teaching of Mathematics*.

for and against, but we can say at the present moment, that, so far as the secondary school is concerned, Mathematics form only one subject out of a number, and that even in collegiate education, Mathematics are studied along with Physics. As to the question of absolute utility in an immediately tangible form, one has only to quote Professor Forsyth: "I must point out what would be a platitude if we were not in discussion, that scientific subjects do not progress necessarily on the lines of direct usefulness. Very many of the applications of the theories of Pure Mathematics have come many years, sometimes centuries, after the actual discoveries themselves. The weapons were at hand, but the men were not ready to use them. Take the case of medicine, which surely is a practical subject. It owes immense debts to the study of sciences like physiology and bacteriology; yet these have been developed, and continue to be developed along their own lines, without being guided in the direction of immediate application at every turn. Yet, independent as has been their development, it is notorious that, perhaps all the more because of their freedom in growth, they have provided new knowledge that is of the utmost importance in the conduct of living processes. Take one last example, the X rays. If any one had been set down, as a practical problem, to take a photograph through solid things, I think the common answer would have been that he was being told to solve an insoluble problem. Let its solution come from the physicists, indirectly as it were, in the course of researches made to obtain knowledge for its own sake. The knowledge so obtained has subsequently led to wonderful results in its application. Influenced by these examples and by others more directly mathe-

matical, we must decline to accept utility as the main or the sole discriminating test, either in the study or in the teaching of Mathematics."

It will be extremely unwise then, to condemn the study of Mathematics on the test of immediate and direct utility. We do not condemn a razor because it cannot cut stones, or throw away a silk thread because it cannot serve as a mast-rope. Each instrument is designed for a particular use, and our intelligence consists in improving it so as to serve that purpose more and more adequately, not in trying to use a spade to extract a thorn and cursing the instrument and ourselves when we fail. Professor Perry in his opening speech before the meeting of the British Association at Glasgow disclaimed bitterly and vehemently against the system of mathematical teaching then in vogue. His wholesale criticism can be summarised in this way, giving side by side each purpose of teaching the subject, and Professor Perry's finding on that issue:—

(1) The teaching should produce the higher emotions and give mental pleasure. *Finding*—Hitherto neglected in teaching almost all boys.

(2) It should give development and produce logical ways of thinking. *Finding*—Hitherto neglected in teaching most boys.

(3) Mathematical weapons should give aid in the study of physical science. *Finding*—Hitherto neglected in teaching most boys.

(4) Help in passing examinations. *Finding*—This is the only form that has not been neglected, the only form really recognised by teachers.

(5) It should give mental powers, which

* Adapted from the Professor's own summary.

except the very lowest in the scale of responsibility, deal not with the actual things, but with symbols representing them, and figures measuring them. In a business firm it is only the lowest paid that are attending to the actual manufacture, but above them are the clerks, accountants, managers and directors who deal only with the figures. They regulate and guide the men below with paper and pencil, find their markets and make their profits with paper and pencil, judge of the way their business tends by means of symbols, and regulate and shape their business by means of symbols. The politician watched the progress of the people, studies their aims and tendencies, judges of their physical, intellectual, and moral well-being from figures, symbols, and returns on his table. Even in warfare, we are told that the greatest generals of the world have not been physically the strongest, but those who had the greatest mental acumen, who could picture in their minds the situation of affairs with mathematical precision, who could so adjust their available resources as to achieve a desired object with the unerring certainty of a mathematician writing his Q. E. D. at the end of his proof. The use of symbols, therefore, furnish a convenient and indispensable form of language in this day; none but those engaged in the lowest form of work can afford to be ignorant of its use and meaning.

Next comes the love which Mathematics create for knowledge for its own sake. The solution of a problem may lead to nothing else immediately, but nevertheless it is a problem solved, and the student feels "a joy akin to rapture" when he has solved it—the more so if he did it all by himself. It gives him self-confidence, gives him power to grapple a fresh problem. This aspect of mental culture

is not usually appreciated by the so-called utilitarians. But practical experience so often shows us that success in the world is to a great extent dependent on the mental attitude. Modern psychology only confirms that wonderful power of the mind on the material condition of man. A study which by dint of habit keeps the mind in an attitude of self-confidence must therefore be of infinite value to man.

Fourthly, the study of Mathematics cultivates in the pupil reverence for truth. The man of mathematical training knows not merely when he has proved his point, but also when he has lost his point. He is easy to be convinced, perceives the force of an argument readily, recognises when exactly a conclusion is reached. He is not the man who, like the village school-master, "even though vanquished, would argue still." The premises are clear, the argument is on definitely chalked-out lines, the bearings of the causes at work are carefully measured. All these things render impossible any doubt or misunderstanding about the conclusion. If his position is untenable, the mathematician is not merely ready to admit it, but very often sees it sooner or clearer than his adversary himself. He does not believe anything on mere authority, anything which cannot be proved and verified. At the same time he does not want others to believe anything on mere authority, anything which cannot be proved and verified. This reverence for truth is of great value in life. The man who is trained in this way is never a bore, never offends or irritates people, and goes his way without nudging or bruising others. The mathematical man is ready to criticise not merely others, but also himself. His life is one constant scrutiny of results obtained by

others as well as himself, oftener himself than others. This habit of self-scrutiny makes him keenly alive to the possibilities of error. He does not think it derogatory to be told he is wrong, and he does not hesitate to examine himself again. This is an aspect which can be turned to very good use by an able teacher.

The next benefit from the study of Mathematics is the effective way in which it cultivates the habit of undivided attention. We are told everywhere, in every branch of thought, it is concentration that leads to more and more knowledge and promotes discovery. Take any department of science or art, the man who succeeds most is the man who focusses all his attention on the subject in hand, who does not allow his mental rays to be dispersed in a variety of directions. Dispersion of attention to many subjects may be interesting to the man, but is fatal to the study of the one particular subject taken up. Mathematical science secures this purpose very effectively by what has been called the discipline of natural consequences. The slightest want of attention in one step, shows itself immediately and demands re-tracing of the whole path. In the simplest arithmetical problem of the school-boy is involved this self-adjusting governor. He knows full well, what work a small slip or error in calculation would mean to him, and lest he should have to do the whole again, he makes sure at every step, feels his foot firm before setting it on a higher step. This habit early formed and regulated proves an infinite source of usefulness and comfort to the man in after life. Practice in concentration helps him enormously in the control of his emotions which are baneful to correct thinking and correct resolving. The man swayed by intensity of

emotions cannot act for himself in the most proper way, cannot see things in their true proportion, is too much blinded by his emotions to see his way through. But the man who has come under the spirit of mathematical thought, can in mind dissociate himself from the situation, picture the situation clearly before himself, describe the position to himself in the form of so many equations and relations, and arrive at a sober and accurate solution. He sees the solution not vaguely enshrouded in a mist, but in bold relief in the background of his transparent thought. We are all familiar with the proverbial concentrative power of Newton, Galileo, Laplace and Lagrange. Their absent-mindedness amuses us no doubt, but it is their concentrative power that has given to us to-day the wealth of their thoughts. The average man does not at all stand in danger of their absent-mindedness, but on the contrary can learn and improve a great deal by their example of undivided attention and concentrative power.

Lastly, we have the neatness characteristic of all mathematical work. Neatness and accuracy are indispensable to a student of Mathematics, and in course of time they become part and parcel of his nature. The teacher has to keep a vigilant eye on the pupil's work, it will be weakness on his part if he accepts shabby or slovenly work. An inaccurate figure, an incorrect account or an illegible letter, have as little claim for existence as a knife without an edge.

Such, in short, are the aims which the teacher of Mathematics has to keep in his mind; and to the extent to which he realises these objects, will he be doing good to the pupils and to the subject.

MATHEMATICS.

[Conducted by B. KRISHNAMACHARI, M.A.]

83. The solution given in the January issue is incorrect, as the result (vii) obtained is not unique. The relation might as well have been

$$\frac{x}{b^4+b^2c^2+c^4} = \frac{y}{c^4+c^2a^2+a^4} = \frac{z}{a^4+a^2b^2+b^4} = k.$$

The following solution is furnished by the Proposer.

$$x^2 + xy + y^2 = c^2 \quad (1)$$

$$y^2 + yz + z^2 = a^2 \quad (2)$$

$$z^2 + zx + x^2 = b^2 \quad (3)$$

$$\text{Let } xy + yz + zx = k \quad (4)$$

$$(3) + (1) - (2) + (4) = 2x^2 + 2xy + 2xz = b^2 + c^2 - a^2 + k$$

$$\therefore 2x(x+y+z) = b^2 + c^2 - a^2 + k$$

$$\therefore x(x+y+z) = \frac{1}{2}(b^2 + c^2 - a^2 + k) \quad (5)$$

$$\text{Similarly } y(x+y+z) = \frac{1}{2}(c^2 + a^2 - b^2 + k) \quad (6)$$

$$z(x+y+z) = \frac{1}{2}(a^2 + b^2 - c^2 + k) \quad (7)$$

$$(5) + (6) + (7) = (x+y+z)^2 = \frac{1}{2}(a^2 + b^2 + c^2 + 3k)$$

$$\therefore x+y+z = \left(\frac{a^2 + b^2 + c^2 + 3k}{2} \right)^{\frac{1}{2}} \quad (8)$$

$$(5) \div (8) = x = \frac{b^2 + c^2 - a^2 + k}{\{2(a^2 + b^2 + c^2 + 3k)\}^{\frac{1}{2}}} \quad (9)$$

$$\text{Similarly } y = \frac{c^2 + a^2 - b^2 + k}{\{2(a^2 + b^2 + c^2 + 3k)\}^{\frac{1}{2}}} \quad (10)$$

$$z = \frac{a^2 + b^2 - c^2 + k}{\{2(a^2 + b^2 + c^2 + 3k)\}^{\frac{1}{2}}} \quad (11)$$

In order to find k substitute the values of x, y, z in (4)

$$\Sigma xy = \frac{\Sigma(b^2 + c^2 - a^2 + k)(c^2 + a^2 - b^2 + k)}{2(a^2 + b^2 + c^2 + 3k)} = k$$

$$\therefore \Sigma \{k^2 + 2k.c^2 + (b^2 + c^2 - a^2)(c^2 + a^2 - b^2)\} = 2k.\Sigma a^2 + 6k^2$$

$$\therefore 3k^2 + 2k\Sigma a^2 + \Sigma(c^4 - a^4 - b^4 + 2a^2b^2) = 2k\Sigma a^2 + 6k^2$$

$$\therefore 3k^2 = 2\Sigma a^2b^2 - \Sigma a^4$$

$$\therefore k = \left(\frac{2\Sigma a^2b^2 - \Sigma a^4}{3} \right)^{\frac{1}{2}}$$

$$\therefore x = b^2 + c^2 - a^2 + \left(\frac{2\Sigma a^2b^2 - \Sigma a^4}{3} \right)^{\frac{1}{2}}$$

$$\begin{aligned} & \sqrt{2[a^2 + b^2 + c^2 + \{3(\Sigma 2a^2b^2 - \Sigma a^4)\}^{\frac{1}{2}}]} \\ &= \frac{\sqrt{6(b^2 + c^2 - a^2)} + \sqrt{2(\Sigma a^2b^2 - \Sigma a^4)}}{2[3(a^2 + b^2 + c^2) + 3\sqrt{3(\Sigma 2a^2b^2 - \Sigma a^4)}]^{\frac{1}{2}}} \end{aligned}$$

98. [B. KRISHNAMACHARI, M.A.] The digits of a are added, the digits of this sum added, and so on till a single digit is arrived at. This last is denoted by $\phi(a)$. Show that $\phi(a+b) = \phi\{\phi(a) + \phi(b)\}$: and that the values of $\phi(8n)$ for $n = 1, 2, \dots, a$, successively consist of the nine digits continually repeated in descending order. [Chrystal.]

Solution by P. S. Sundaram Iyer, B.A., L.T.

$$\text{Let } a = 9Q_1 + \phi(a)$$

$$b = 9Q_2 + \phi(b)$$

$$\therefore (a+b) = 9(Q_1 + Q_2) + \phi(a) + \phi(b)$$

$\therefore \phi(a+b) = \phi(a) + \phi(b)$ if it is more than one digit. Casting out the nines we get

$$\phi\{\phi(a) + \phi(b)\}$$

$$8n = 9n - n \therefore \phi(8n) = -n = 9-1, 9-2, \&c.$$

99. [B. KRISHNAMACHARI, M.A.] A common conjuring trick is to ask a boy among the audience to throw two dice, or to select at random from a box a domino on each half of which is a number. The boy is then asked to recollect the two numbers thus obtained, to choose either of them, to multiply it by 5, to add 7 to the result, to double this result, and lastly to add to this the other number. On mentioning the final number thus obtained, the conjurer is able to tell the two numbers originally chosen. How is this done?

Solutions by M. S. Sundareswaran and M. M. Venkatachariar.

Let x, y be the numbers originally chosen: then the number as given out by the boy in the end is $10x + 14 + y$. This being given, the original numbers x and y are obtained by subtracting 14 from the final result, and dividing $10x + y$ by 10. The quotient obtained is x , and the remainder is y , since the numbers

are 6 or less than 6. Thus the conjurer who takes the quotient as x , and the remainder as y , is enabled to give out the two numbers.

The following generalisation is furnished by M. M. VENKATACHARIAR:—Suppose the numbers are x and y . Multiply x by a . Add b . Make it c times. Add y . Then the final result is $c(ax+b)+y=acx+bc+y$ of which bc is constant. Now $acx+y$ is apparently a number of two digits in the scale of ac (where x and y , though they may consist of more digits than one, shall be taken as a whole); hence x and y can be found. In the same way, the final result given out by the boy should first be diminished by bc , and the resultant reduced to the form $acx+y$. For example, take the two numbers 246 and 249, which lie between 24 tens and 24 tens + 9, i.e. 240 and 249. Suppose 246 is multiplied by 4; 10 is added to the result, then it is made threefold, then the other number 249 added. We get 3231. Now to arrive at the chosen numbers.

3231. Subtract bc , i.e. 30 which is constant. Then there remains 3201.

We know the period within which the chosen numbers lie, i.e. 240—249. The scale should be $4 \times 3 = 12$.

$$\begin{aligned} \text{Now } 3201 &= 12 \cdot 266 + 9 \\ &= 12 \cdot 240 + 12 \cdot 26 + 9 \\ &= 12 \cdot 240 + 312 + 9 \\ &= 12 \cdot 240 + 240 + 12 \cdot 6 + 9 \\ &= 12 \cdot (240 + 6) + 249 \\ &= 12 \cdot 246 + 249. \end{aligned}$$

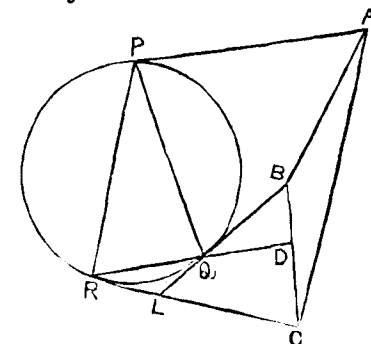
This is in the form $acx+y$.

Hence $x = 246$; $y = 249$.

N.B.—We must take care to note that the first number of the period within which the chosen numbers lie, i.e. the n tens should be taken into consideration throughout the process of converting the final result into the form $acx+y$.

101. [G. V. TELANG.] From the angular points A, B, C of a triangle ABC tangents AP, BQ and CR are drawn to a circle. If QR, RP and PQ meet BC, CA and AB in D, E and F respectively, show that AD, BE and CF are concurrent.

Solution by M. Bhimasena Rao.



Produce BQ to meet CR in L

DQR is a transversal cutting the sides of the triangle BLC in D, Q, R

$$\therefore \frac{BD}{DC} \cdot \frac{CR}{RL} \cdot \frac{LQ}{QB} = -1.$$

$LR=LQ$ being tangents from L

$$\therefore \frac{BD}{DC} = \frac{QB}{CR} \quad (LR \text{ and } RL \text{ are of opposite}$$

signs and QB and CR are of like signs

$\frac{BD}{DC}$ is positive.

$$\text{Similarly } \frac{CE}{EA} = \frac{RC}{AP} \text{ and } \frac{AF}{FB} = \frac{PA}{BQ}.$$

$$\therefore \frac{BD}{DC} \cdot \frac{CE}{EA} \cdot \frac{AF}{FB} = 1 \therefore AD, BE, CF \text{ are concurrent.}$$

This theorem holds good for any conic.

102. [G. V. TELANG.] If $A, B, C, D, \&c.$, be any system of n points, O their centre of mean position, the sum of the squares on the tangents drawn from $A, B, C, D, \&c.$, to a circle exceeds the sum of the squares of their distances from O by n times the square on the tangent drawn from O to the circle.

Solutions by (1) M. Bhimasena Rao.

(2) M. S. Sundareswaran.

(1) Let S be the centre and r the radius of the circle.

$$\begin{aligned} \text{Then } SA^2 + SB^2 + SC^2 + \dots \\ = OA^2 + OB^2 + OC^2 + \dots + n \cdot SO^2 \\ \text{see Prop. 10, page 25, Casey's Sequel} \\ (SA^2 - r^2) + (SB^2 - r^2) + \dots \\ = OA^2 + OB^2 + \dots + n(SO^2 - r^2). \end{aligned}$$

$\therefore$ The sum of the squares on the tangents exceeds $OA^2 + OB^2 + \dots$ by n times the square on the tangent from O .

(2) Let the equation of the $\odot$ be $x^2 + y^2 = a^2$.

Let the co-ordinates of $A, B, C, D \dots$ be

$$(x_1, y_1), (x_2, y_2), (x_3, y_3), (x_4, y_4) \dots;$$

then the co-ordinates of O are $\frac{\sum x_1}{n}, \frac{\sum y_1}{n}$.

Let S_1 be the sum of the sq. on the tangents drawn $A, B, C, D \dots$ to the $\odot$ and S_2 be $\sum OA^2$.

$$S_1 = \sum x_1^2 + \sum y_1^2 - na^2.$$

$$S_2 = \sum \left(x_1 - \frac{\sum x_1}{n} \right)^2 + \sum \left(y_1 - \frac{\sum y_1}{n} \right)^2$$

$$= \sum x_1^2 + \sum y_1^2 + \left(\frac{\sum x_1}{n} \right)^2 + \left(\frac{\sum y_1}{n} \right)^2$$

$$- \frac{2(\sum x)^2}{n} - \frac{2(\sum y)^2}{n}$$

$$= \sum x_1^2 + \sum y_1^2 - n \left(\frac{\sum x_1}{n} \right)^2 - n \left(\frac{\sum y_1}{n} \right)^2$$

$$= \sum x_1^2 + \sum y_1^2 - na^2$$

$$- n \left\{ \left(\frac{\sum x_1}{n} \right)^2 + \left(\frac{\sum y_1}{n} \right)^2 - a^2 \right\}$$

$= S_1 - n$ times the sq. on the tangent from O to the $\odot$.

Hence the result.

104. [G. V. TELANG.] Given $p^2 + p_1^2 = q^2 + q_1^2 = x^2 + 2xy$ and $x = \frac{pq_1 + qp_1}{p_1 + q_1}$,

show that one value of y is $\frac{p_1 q_1}{p + q}$.

Solutions by (1) M. Bhimasena Rao.

(2) M. S. Sundareswaran (not published.)

(1) Let $p = \gamma \cos \theta, p_1 = \gamma \sin \theta,$
 $q = \gamma \cos \phi, q_1 = \gamma \sin \phi.$

Then $x^2 + 2xy = \gamma^2$ and

$$x = \frac{\gamma^2(\cos \theta \cdot \sin \phi + \sin \theta \cdot \cos \phi)}{\gamma(\sin \theta + \sin \phi)}$$

$$= \frac{\gamma \sin(\theta + \phi)}{\sin \theta + \sin \phi} = \frac{\gamma \cos \frac{\theta + \phi}{2}}{\cos \frac{\theta - \phi}{2}}$$

$$y = \frac{\gamma^2 - x^2}{2x} = \frac{\gamma^2 \left(1 - \frac{\cos^2 \frac{\theta + \phi}{2}}{\cos^2 \frac{\theta - \phi}{2}} \right)}{2 \gamma \frac{\cos \frac{\theta + \phi}{2}}{\cos \frac{\theta - \phi}{2}}}$$

$$= \frac{\gamma \left(\cos^2 \frac{\theta - \phi}{2} - \cos^2 \frac{\theta + \phi}{2} \right)}{2 \cos \frac{\theta + \phi}{2} \cdot \cos \frac{\theta - \phi}{2}} \\ = \frac{\gamma \sin \theta \cdot \sin \phi}{\cos \theta + \cos \phi} = \frac{p_1 q_1}{p + q}$$

QUESTIONS FOR SOLUTION.

106. [M. BHIMASENA RAO.]

Given the base and the vertical angle, construct a triangle such that the rectangle under the sides shall be equal to n times the rectangle under the straight lines drawn from the vertex to two fixed points in the base. (Suggested by Question 105.)

107. [M. BHIMASENA RAO.]

Show that Question 103 holds good for any point K and that the line PQR is parallel to the polar of K with respect to the given triangle.

108. [M. BHIMASENA RAO.]

The lines OA, OB, OC divide the sides BC, CA, AB of a triangle ABC in the ratios

$m : n, n : l, l : m$ respectively. If AO meets the circumcircle of the triangle in D , show that

$$AO \cdot OD = \frac{lmn}{(lm + mn + nl)} \{a^2 l + b^2 m + c^2 n\}.$$

109. [M. M. VENKATACHARI.]

TA and TB are tangents to a circle, angle ATB being obtuse. TCD is a chord such that $\angle BTC$ is supplement of $\angle ATB$. A tangent AP is drawn to the concentric circle touching CD . AQ is drawn parallel to TB such that AQ is equal to the intercept on TB made by AD and AC . PA and PQ are produced to meet TB at M and N . Shew that $\triangle MNP$ is isosceles.

110. [K. KRISHNAMACHARI.]

A conjurer arranged 27 different stones in 3 rows, A, B and C , of 9 each. He asked a boy to think of one of the stones and to point out the row A, B or C in which the stone lay. This being noted, he re-arranged the stones in 3 other rows D, E and F of 9 each, so that the first 3 stones of D were the last stones of C, B and A respectively, the next three of D were the last but one stones of C, B and A , and the last 3 of D were the last but two of C, B and A and so on till the rows E and F were formed. Again he learnt from the boy the row D, E or F in which the stone lay. Then, for the last time, he re-arranged the stones in 3 other rows G, H and K of 9 each, the process by which G, H and K were obtained from D, E and F being the same as that of D, E and F from A, B and C . Now the boy was asked to state the row G, H or K in which the stone lay. This done, the conjurer picked up the right stone. How was this accomplished?

THE EDUCATIONAL IMPORTANCE OF STORY-TELLING IN PRIMARY SCHOOLS.

THE most successful teachers of children have always been those that had made a study of child-nature, and the ways of utilising its features to the best advantage. It is a matter of our every-day experience of children that they have a strong fascination for stories, and it is this characteristic in them and the mode of employing it in school-teaching that will form the subject-matter of this short theme.

This is not the first occasion on which reference is made to this topic, and my only excuse for this attempt to remind the profession of this apparently common-place subject is the utter disregard and indifference displayed in the matter in almost all schools, training schools excepted. Once the usefulness of the love of stories on the part of children begins to be recognized in schools, there will be quite a marvellous change even in their attitude towards the matter of going to school, which is not unfrequently a disagreeable one.

One of the commonest difficulties experienced by the teachers of the young is that of securing the attention of the pupil; and until the brain is trained to a habit of concentration, nothing avails the teacher in the matter except the infusion of interest. And who has not noticed the sudden "pricking up" of the ears among children when they are cheered with the hope of a good story. The effect is simply marvellous. It is even more perceptible than the result of the word of command "attention" to a battalion of soldiers. Slates are thrown down, books are closed, and the whole class sits spell-bound, every child's face turned towards the teacher with rapt attention and keen interest. Now begins the part of the teacher. He must then

narrate the story in a simple straightforward manner, employing all his resources to sustain the interest of his audience. The effectiveness of the attempt will, to a great extent depend upon what I may for the sake of convenience call "the powers of accommodation" possessed by the teacher. I mean by the last expression, the capacity on the part of the teacher to adjust the facial expression, the modulations of the voice, the postures of the body, according as the particular portion of the narration requires. In short, the teacher should dramatise the whole story.

In this connection, it may be noted that story-telling is as much an art as any other. It is not less idle to believe that any one can narrate stories successfully than it is to say that anybody can be a successful painter, for, what is story-telling but painting the imagination with language. The metaphor is not less appropriate to this art than to that of the poet. Nothing can afford a better test to the teacher as to the success of his effort, than the variety of emotional response he is able to call forth from his audience, suitable at every moment to the particular portion of the story then narrated.

Apart from the intrinsic attractiveness of stories for children, and their consequent stimulating influence on the young brain, there is another not less important aspect of the matter. I refer to the facility with which stories most impressively lend themselves to be made happy vehicles of moral education. It will be out of place here to refer to the imperfect nature of any system of education which does not make a suitable provision for the formation of character. Now it should be remembered that childhood being essentially a stage of "impressions," is the period best adapted to instil high ideals into the mind with the certainty of its retention. Childhood is again the period in which the imita-

tive faculty is most active, and moral education would then have to consist only in presenting good models for imitation. And what better shape could such models take than that of interesting stories? It is not unusual to find children being given a show of moral lessons in the shape of short poems, model lines for copy-writing, proverbs and such other things. One has hardly to reflect for a moment to see that the story of "Bruce and the spider" will teach a lesson on perseverance far more effectively than a recitation of the poem "Try, try, try again," may it be a hundred times, or even more. Can any number of proverbs about "honesty" match the impression that the story of "George Washington and the cherry tree" would leave on the infant mind? Illustrations might be given in plenty, but for the sake of brevity, I desist from doing so.

Then again, History is one of the subjects which afford some difficulty to the Primary School teacher in the matter of presentation. Let him only present it in the shape of short stories narrated in the class, and then there will be hardly any necessity even for revision of the matter in the class. I say, "narrated in the class" advisedly; for, from an imperfect understanding of this method of teaching the subject, many teachers read from books of "Historical stories" which are compiled in recognition of the method of teaching under reference. These books are only meant to guide the teacher and not to be used as text-books in Primary Schools. In this subject more than in anything else, the use of text-books in Primary Schools should be totally discountenanced.

Lastly, stories are of immense help in teaching language to children, be it their mother-tongue, or a foreign one. Here again, a great deal depends on the teacher, and what

I have called aptly or otherwise, his "powers of accommodation." Stories—and they should be short ones—should be narrated by the teacher in simple but chaste language consisting of short sentences, and no pains should be spared in making them as entertaining as possible. If this part of the teacher's work is successfully performed, the next stage of the lesson, viz., repetition of the story by the children will only enhance their interest. They thus learn language without knowing that they do so, and their powers of expression improve at a surpassingly rapid pace.

Once more, I would refer to an abuse of this method by many teachers apparently ignorant of the principle underlying it. I mean the pernicious practice of forcing children to learn stories from their text-books by rote, apparently to satisfy the Inspecting authorities during the annual inspection. The essence of the method lies evidently in requiring the reproduction of the matter by the children in their own language, and a recognition of this principle alone will effectually save the teacher from the abuse of the method referred to above.

S. RANGASWAMI AIYAR.

EDUCATIONAL EFFORTS.

A PLEA FOR EXPANSION.

THE recent notification of the Government of Madras qualifies candidates passing the Oxford or Cambridge Senior Local Examination to enter Government service. This has brought hope to them not a day too soon as they were told by the authorities of the University that these passes will not entitle them to proceed to the Intermediate examination of the University. In this matter the University is not consistent as they had previously held that that would do so, and even

now, are prepared to hold such passes as operative for the purpose of admission into their collegiate classes in the case of candidates who have passed such examinations outside British India. A Cambridge Senior Local Examination pass will be effective only for a candidate who lives outside British India or unless some candidate is found enterprising enough to proceed to the examination at a centre like Singapore or Ceylon. This too has occurred; one or two attempts were actually made but proved unsuccessful on account of the application reaching the Cambridge authorities late. At present the Cambridge examinations are conducted at two centres—one at Coimbatore and another at Palamcottah. The local agent for the examination at Coimbatore is Mr. W. M. Theobald, Principal of Stanes' High School, Coimbatore, the other centre being Palamcottah where the students of the technical institute of that place are prepared for the examination. Outside British India these examinations are very popular, for instance, in the Colonies, especially Ceylon.

At one time schools in Ceylon were closely associated with the Calcutta University. Ceylon schools prepared their students for many years for the Calcutta examination. But from 1909 forwards these schools stand affiliated to our University. At the present time, however, with the exception of Colombo students who take to the examinations of the Indian University, students in other parts of Ceylon desire to take British University degrees and adopt British courses of study. The Cambridge Senior Locals are, for the present, in great favour (and who can say that the stiffness of the local Matriculation is not responsible for the change) and a large number of candidates present themselves for these examinations year after year. The total number of entries for the examina-

tion from Ceylon is about half the total of Colonial entries or nearly 1200 candidates for the two examinations while the passes are something like 50 per cent. The said examination also serves as a stepping-stone for higher examinations for up till now, 240 candidates from Ceylon have presented themselves for the London Matriculation examination and of these nearly 100 have passed. London University has entered into an arrangement to the effect that they would accept a Cambridge Senior pass in five subjects (English, Mathematics included) as the equivalent of their Matriculation.

Let us now see how matters stand in connection with these examinations in comparison to our own Matriculation. The Matriculation of the local University had become unpopular on account of the age-limit and also on account of its ruling that no candidate is allowed to appear for more than three times. The rule at Cambridge is somewhat different for it enables older boys appearing for that examination to obtain pass certificates though at the same time they are prevented from obtaining the honours certificate, boys below a stated age only being entitled to get the honours certificate. Doubtless our rule restricting boys to appear for the examinations three times only is conceived for the benefit of boys as their parents will turn to train such boys to different walks of life by diverting them to different industrial and technical schools. But where are the technical schools to accommodate all those against whom the University had shut its doors? Echo answers where? The mental tribulation of those "unpassed" students who are unable to get through the entrance examination is indescribable. The agony of their parents is not less. This is not the place to discuss the large number of failures in the Matriculation

examination during the last few years. The Cambridge examination is far and away the best compared with our Matriculation for the superiority of the former is not only evident in the case of age-limit and in the number of times a candidate is allowed to appear for the examination but also in the matter of the curriculum of studies, the time of holding the examination, the limited number of compulsory subjects. There is also this advantage in that examination for those who have discontinued their studies that they need not attend or study in any particular school. The wide range of optional subjects suitable for practical purposes and the manner in the question papers, *viz.* questions being confined to particular text-books and the option of answering many alternative questions are all facilities that go to make the Cambridge examination more popular so that very large number of students will be inclined to prefer to undergo that examination. It is now high time to organize efforts to push forward the claims of this examination in this country. This is only intended to help such students whom the University will not help.

It is urged that the new device, the School Final Examination, may relieve the congestion and the crowd of unpassed will soon vanish. Let that be so and let us pray for that consummation. In these circumstances it is desirable that classes should be opened for those who do actually attend schools to prepare boys for the Cambridge Examinations at half a dozen centres, *viz.*, (1) Vizianagaram, (2) Bezwada, (3) Bellary or Cuddapah, (4) Madras, (5) Trichinopoly, (6) Trivandrum.

It will serve remarkably and will be eminently suited to the capacities of students who found the late Matriculation examination too wide in its scope and too rigid in its

operation. The system will also administer to the needs of young men who, for various reasons, cannot afford to undergo the regular school education intended to train students for the School Final Examination.

While upon this subject, we think it is also desirable that efforts should be made in the direction of University extension classes for the preparation or further training of students for the Oxford and the Cambridge Senior Local examinations and also for the London Chamber of Commerce examination. In this connection we wish to point out that the London Chamber of Commerce Examinations are also recognized as a passport for Government service.

For the last fifty years the youths of this country had to pass the University Matriculation examination for Government service and for entry into college classes. Very often educationists complained that poor results in the entrance examination of our University were due to the fact that the University dominated the studies. The Government were also not free from blame. The Government took into their service only such of those who had the hall-mark of the University. But the Government have now changed their policy and are now pleased to admit into their service those who take a pass in the examinations of the British universities. But they have not gone farther as they could and afforded facilities for such candidates who elect to prepare for such examinations by establishing schools. It therefore behoves upon quasi Government bodies like the Municipalities, which are organized by the Government to take upon themselves this work. It might be said that the resources at their control are limited and funds now appro-

priated for education must maintain the schools already in existence.

That is no doubt true. But the time has come when these Municipalities should be enabled to go in the wake of similar English bodies. Is it not a fact that the Technical University at Birmingham is not a Government institution but an institution supported by the Municipal Corporation? Many such institutions exist in other parts of England and are the outcome of national efforts.

This brings us to the question why should not the better classes of the community come forward to fill up the gap. For an example if only 700 persons who are eligible to become Commissioners in the town of Madras should each contribute fifteen rupees and more for this object a sum of about ten thousand rupees could easily be collected and with this sum the services of a full-timed Cambridge or Oxford graduate could easily be secured for a year or two to do service in this town. A large number of graduates who are at present actually engaged in the work of teaching, say at least 50 teachers in the town of Madras, could be trained. Similarly the services of a specialist from a Birmingham technical university or one connected with the system of London Chamber of Commerce examinations could be secured by say, the rich Tanjore District whose well-to-do inhabitants can subscribe each his share for such a purpose.

For organizing and calling into existence these useful institutions, public bodies like the Mahajana Sabha which has at present ceased to be exclusively a political body, the Madras Teachers' Guild, the South India Teachers' Union, and lastly the Council of Native Education may co-operate and take steps to create public opinion in the first instance and bring

later on into existence a movement which will be of great service to the country.

If the abovementioned public bodies can only be persuaded into action we can easily bring into existence a class of home-made specialists trained by eminent technical scholars from different countries like Germany, America and Japan and we can have at an early date different types of schools as in Germany suited to the children of the various classes of people.

When the country is entering upon new phases of social, material and moral advancement, we may be pardoned if we enquire whether the time has not come for national efforts to be organized to improve the present deplorable and one-sided character of the education of our children independently of Government, who have done so much and who have yet so much to do and who with all the generous impulses that actuate them, find they cannot do more with the limited funds under their control.

AN EDUCATIONIST.

COMMERCIAL EDUCATION.

THE following lecture on Commercial Education was contributed by Mr. S. Vaidyanatha Aiyar, Headmaster of the Government School of Commerce, Calicut, at the Annual Session of the South Indian Association, Madras, held on the 27th ultimo:—

I hardly know which to wonder at the more—the clever move of the distinguished President of your Association for having lured an innocent victim on this occasion, or my own audacity in having so thoughtlessly allowed myself to be let in. For, it is rather a foolhardy undertaking for me, to submit myself to what must be a crucial test to appear before an august tribunal of a critical and cultured audience, that may assemble at the annual

session of a distinguished Association in the most intellectual centre of the Metropolis; and if you have no compassion, therefore, for the man who has had that courage, your hearts must be harder than adamant. If, then, I come before you with considerable misgiving, I trust, nevertheless, that the importance of the subject will sustain my weakness and that a few remarks about its purpose and programme, however imperfectly stated or fragmentary, may enable me to indicate its true scope and aim, its proper position and place in a well-organised scheme of education.

The question of how best to adapt educational machinery to the requirements of modern life and modern times, and the need for providing special commercial education, which for more than a decade has been largely engaging the attention of the authorities in the British Empire and other great commercial countries in the West, seems to have risen from two phenomena which have marked the closing years of the last century, and marked it in a very striking degree. The one is the stress of modern competition between the great trading and producing nations of the world, which has become far more keen and exacting than it ever was before; for, the countries which manufacture and those which undertake the business of transportation and exchange are now striving more eagerly, one with another, for a share in the markets of the world. The other is the improvement and development of science which has gradually expanded its application to all specialised branches of work, which has made people feel that the operations of commerce might become the subject of scientific treatment, and be made the object of practical interest, study, and usefulness, calling forth the attention of practical men, as being the means by which the commercial interests and the material resources of the country might be improved. These two causes operating, seem in time to have brought the subject to the front in the countries of the West, and last of all, its importance has come to be recognised to a certain extent in our own country.

But, no branch of education has given rise to more vague discussions of a theoretical kind

than that of commercial education. There is yet much loose thinking and much uninformed expression of opinion about it, as regards its scope and utility. Some are known to hold that commercial education includes also a definite course of training in industrial subjects, while others use the words 'technical education' in a very narrow and restricted sense, applying it exclusively to training in industrial subjects, that is, those relating to the producing and manufacturing of commodities. But, 'technical education' is a very comprehensive expression, and refers to all branches or course of training for any profession, and is wide in its scope; while industrial and commercial education, which are quite distinct from each other, are among the several branches of technical education. Industrial education refers to the training which relates to the manufacturing and producing of commodities, and concerns itself mainly with the training for the production of goods, raw or manufactured; while commercial education concerns itself with the machinery of distribution to complete the work of the other. Letters for information about the working of the School of Commerce at Calicut have been received, inquiring whether the school teaches Applied Mechanics, Hygiene, and Telegraphy, showing what vague and curious ideas are held about the meaning and scope of commercial education. I may, however, assure that, so far, no inquiries have been made to know whether provision is made in the school for teaching how to make tooth-powder or to teach Chinese music.

Now, to approach a satisfactory solution of the problem of commercial education, it is necessary to have a clear conception as regards its scope, the purposes it is intended to serve, its correlation to general education, and the requirements and conditions of the province where it is sought to impart it. Some hold that business cannot be reduced to so exact a system of knowledge as any other branch of science, and that the science of trade and commerce is purely an empiric one which cannot be learnt in a school, but can only be learnt thoroughly in practical life. There are others who entertain the impression that commercial education by itself will bring

about the commercial millennium of a country, relying perhaps on the example of countries like Germany and England. Both are extreme and incorrect views, due to misconceptions of the present conditions of life and the scope of commercial education. Because a complete and systematic course of business has not been necessary for a few to attain success in commercial life, that can be no reason it should be left entirely to the haphazard knowledge to be gained through experience only. On the other hand, it must be understood that commercial education did not precede or cause the commercial development of the countries in the West, but followed it, more as a result of the development of those countries, to meet their changing and growing requirements.

Let me first indicate briefly the scope of commercial education, and then point out its distinctive value, and its limitations as well. The world of commerce or business is made up of a variety of persons employed in many diverse functions and with very diverse needs, and it is important to recognise at the outset that there are three distinct types or grades of commercial education, suited to the three different grades or classes of workers in the commercial world, the workers in each department having their own particular function.

The first is the elementary grade for those who commence work in the lower branches or subordinate positions, as junior clerks in business houses. What is most wanted for them is a good grounding in the elements of general knowledge, supplemented by two or three special acquirements with reference to business routine, office operations, the methods and elements of book-keeping, commercial arithmetic and usages. This class is by far the most numerous of the three groups, and the special education its members require is essentially primary in its character.

The second, the next class, consists of those in a superior capacity, in more responsible positions, such as correspondence clerks, accountants and auditors, assistants or managers of departments, and business agents, the nature of their work varying according to the different kinds of business such as that of

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a manufacturer, merchant, shipper, banker, etc. These require special education of a higher standard, which may be called commercial education of the secondary grade. The kind of specialisation these should receive must be such as to give them an insight into the working out of commercial transactions. Business correspondence, advanced accountancy and auditing, including manufacturing, partnership, and joint stock companies business; head office and branch office accounts; commercial geography and commercial products; cheques, bills of exchange and their negotiability; bills of lading and other shipping documents; and the general principles of banking must form part of their curriculum. The course for this curriculum will extend from 2 to 3 years.

The third class includes the employers of industry, traders, merchants, bankers, and managers of business undertakings, and young men intended for this grade of commercial career must be given facilities for a still wider and deeper special training, which may be called commercial education of the tertiary, collegiate, or university grade. The instruction and training to be provided for them to meet their requirements will comprise the following course, and only those that have received a sound general education will be fit for this grade of training and can benefit by it. Modern trade history with special reference to its structure and organisation; the growth and vicissitudes of industries and commerce; a knowledge of the modern methods of importing and exporting goods, freight, and modes of transport; study of the market at home and abroad and the customs of the trade; trade statistics and their application; foreign exchanges; tariffs (though it may not be necessary for young men to dogmatise with certitude the bottomless mystery of free trade, protection, and preferential treatment); trade fluctuations; shipping and insurance; the science and art of salesmanship; company formation; administration of joint stock companies; partnership and agency; relations of employers and employed; methods of remuneration; the science of economics; money and banking, credit instruments and their use; study of balance sheet; principles of book-keeping and accountancy; the rela-

tion of selling price to cost; stock and stores accounts; costing and cost accounts for various undertakings; and last, the art and mystery of advertising, which is an important part of commercial life, and which has become still more so even in public life. The scheme to be provided for this course will extend over a course of three years.

The above is by no means an exhaustive and complete analysis of the scope of the training that may be given for the three different grades or stages of commercial education, and only a brief outline of the curriculum for each grade has been suggested. If the course of commercial training in any of these stages is to prove efficient so as to serve a really useful purpose, it is necessary that the youths should have received a degree of general education, the standard of which should be correspondingly higher for the higher grades of commercial course. Only on a suitable general education, can a useful commercial superstructure be raised, and specialisation without sufficient general education is unsatisfactory to all concerned.

The chief aim of the first two stages of commercial education—the elementary and the secondary grades—is to supply practical training for those who are to enter business houses in a subordinate and superior capacity. It is sometimes said that business cannot be learnt in a school and that it must be learnt in a counting house. Some would speak indifferently of the value of business training that can be given in a school, and say how, without previous training, men have been able to get on in business life. Such men would seem to overlook the fact that the conditions under which commerce and business are now carried on, are quite different from what they were 50 or even 80 years ago; and it is owing to this difference that a different and special kind of training for the various grades of commercial career is found useful, if not necessary. Commerce is no longer carried on under the easy conditions which prevailed even so recently as a quarter of a century ago. The whole course of mercantile life has been profoundly affected by various civilising influences at work, and recent inventions have revolutionised the

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commercial office, which with its type-writers and telephones, its duplicating apparatus, its fountain pens, electric lights, its filing systems, its card systems, its ledgers and account-books with detachable pages, has entirely transformed the mechanism of business. Commercial transactions are much more rapid and much more varied than they were before. The old idea that any body was fit to walk straight into an office and begin commercial work is rapidly giving way. There is a demand for specially trained assistants for the work, and a system of commercial training to meet the new demands created by new conditions is necessary. Of course, no system of education, however well-designed, can take the place of experience. But a thorough and systematic course of commercial training, on the lines indicated above, must furnish a youth with a good grounding in knowledge useful for those two grades of service in commercial life, enable him to cope with business details in an intelligent manner and understand business transactions, and to profit by the preliminary training more rapidly and with greater ease than he otherwise can. It will provide valuable commercial assistants by raising their general level of efficiency for up-to-date requirements of modern business methods. It will be interesting to know how many Indian firms and business offices ever keep stock-book and stores account, or ascertain periodically how much they are gaining or losing in each department and also the net result on the whole business, checking the correctness by independent methods. Some of them may indeed be getting gaily along, without such a system and method, but it is a pure accident that they do so, and the severe lesson will ultimately come to those who continue to rely on it, when perhaps it is too late. Even then, there can be no gainsaying that the adoption of such a system will yield better results and minimise fraud and embezzlement. A business conducted, without a trained accountant and an efficient system of book-keeping, and without effective methods of check, will ultimately come to grief, and the collapse of many a business concern may be largely traced to it.

The kind of education to be given does not,

however, consist in simply stocking the minds of young men with mere technical information which can be obtained from hand-books, but it must be such as to enable them to apply the information to the needs of life. It must not be circumscribed by the mere routine of office-work, and must be more than a mere nursery for clerks. The instruction must be educative, and such as to train them in habits of accuracy, mastery of details, power of calculation, breadth of view, and clearness of expression in speech and in writing. It must be such as to create in them an aptitude for business, a desire for work, the love of order, system, and economy, and a spirit of enterprise. A study of business, as a worthy career, will create love and interest for it. They will then do it better and be happy in the doing of it. A rational education must correct the too common dissatisfaction with the lot of those who enter business life in the lower grades, and the wrong notion that it is a mechanical one. When the typist puts in his work the best of himself by way of preparation and execution, his is a work of art. The trial-balance prepared by a book-keeper contains lessons of eternal truth, and an efficient course of training in book-keeping has an educative value and gives a mental discipline of a very definite and desirable kind. To take even a very simple transaction:—A, a merchant, buys goods for Rs. 10,000, sells the same to B for Rs. 12,000, receives in payment a bill drawn by B on C, pays freight and insurance on the goods, and ultimately receives payment by means of a cheque from C, the cheque being collected through A's bankers, and the amount credited to him in his banking account. To record every stage of these transactions, so that they can be traced at every step, involves a very scientific process. The entries in the day-book, in the journal, and stock-book to record the purchase, receipt, sale, and despatch of goods are but a beginning of the process. Then there are the entries in the cash-book, the bank passbook, the bills receivable book at various stages of the transaction, and next comes the fine art of transferring it all to the ledger. To be able to take every transaction through the various

steps—and many actual every day transactions are far more intricate—and to master the reasons for every step, is to have received a scientific training, a training of value to every one, even to those who will never be called upon to keep a set of books or accounts at all. There is testing, verifying, checking, and analysing to be gone through. A working knowledge of shorthand is useful not only in commercial and professional offices, but the many purposes to which it is applied in business life render it a useful equipment to all who may take part in that work, and its practice gives an incentive to the study of literature, trains the mind, improves the intellect and strengthens memory, and furnishes a useful mental discipline. Thus, a training in every one of these subjects has also a distinct and lasting educative value. The notion that prevailed some years ago, that if a subject of study has also a practical value, it becomes stained and besmirched—a cult which was reflected in the statement made by a professor after completing a difficult demonstration in mathematics, that the beauty of the proof lay in the fact that it can never be of any practical use—such feeling is no longer entertained, and educational authorities have come to recognise that if a scheme of instruction should train the mind, it can be of service, only if it makes sure that the power trained shall also be turned to account. A young man who receives training along these lines can thus gain a wide and comprehensive knowledge of business methods which gives to his vocation a distinct value and interest.

Let me next consider the provision to be made in the scheme of education for these two stages of commercial education—the primary and the secondary grades. The best and most effective way of providing for a course of business training of the primary grade is to incorporate it in the scheme of secondary education, so that the general education of this stage and the special education of an elementary type may go hand in hand, so that there may be no sudden break between the training of the school and the training one obtains in the active business of life. Such discontinuity in education can only be avoided by teaching in secondary schools,

those subjects the knowledge of which may be useful in after-life, by offering a pretty wide choice of studies for the pupils. This will obviate the necessity for separate commercial schools for the primary or elementary stage. Secondary education should have less regard for the small minority that enters upon collegiate education, and consider the rights of the majority that does not. It is not quite fair to compel all the students to take a special course for college admission, when only a small proportion go to it. High Schools for secondary education should only incidentally be *fitting* schools for those that enter upon higher education, while they should, at the same time, be *finishing* schools for those who do not. Young men who prepare for a course to fit them for a business career, must not be incapacitated for getting into college, if they choose to do so; and if he is, there is something wrong then with college requirements. In fact, there must be more points of contact and more doors open between Secondary or High Schools and College education. Till now, our High Schools for secondary education only tended to leave the boy who does not go to college for a University course, unfit and unprepared for the needs of life or for satisfying the demands of the present age. An important step has been recently taken to modify it, and it has now been so revised and adapted with due regard to the preparation in life of those who attend secondary schools, and co-ordinating it at the same time for the University course. In the new scheme for the School Leaving Certificate or School Final Examination, the curriculum prescribed embraces a knowledge of general subjects, as well as those which have a bearing on the vocation of young men to give them a suitable preparatory training for the active business of life. A fairly wide choice of studies is prescribed in which an elementary knowledge of commercial and other subjects finds a place, and the course has also been recognised as a qualifying test for entrance into the University.

To those that wish to specialise further for a training in the secondary stage, provision must be made by establishing separate schools of commerce, which will devote most of its attention for the special training to be im-

parted to them. The beginning which has been already made in this direction at Calicut, Bombay, Lucknow, and Calcutta shows that the attempt to provide suitable courses for this secondary grade of commercial education meets with encouraging response; and increased attention will soon have to be given to the extension of such training by establishing similar institutions for commercial or business education of secondary grade in all large centres of business and population. The value of education given in the Calicut School of Commerce is attested by the readiness with which the young men who obtain leaving certificates after completing a full three years' course in it are enabled to find places in mercantile firms. The special training given in the school has benefited hundreds of young men who had completed the full course in it, and given them a fair start in life, and the equipment necessary for better prospects, if they would only make the best of the opportunities they get. Many young men trained in the school are now holding responsible positions in numerous mercantile firms and business offices in many important centres of India—in Madras, Bombay, and Calcutta, while several have gone as far a-field as Ceylon, Burmah, and East Africa, and, so far, a few have also made small beginnings and started business on their own account, as public accountants, bankers, business agents, and as export and import merchants.

Commercial education cannot, however, fulfil its true purpose, nor deserve the attention which is claimed for it, if the special schools are intended to be merely clerk factories and stop short of the provision made for the elementary and secondary grades. The true object of commercial education, its real purpose and programme, is to direct the attention of our youth—not of the rank and file—but of those who evince an aptitude for it, to the establishment of business undertakings and for business careers. This is commercial education of the tertiary or collegiate grade, and the kind of training that will have to be given for it has already been briefly indicated. Though there does not seem to be sufficient scope at present in India for establishing model institutions for this grade of commercial education, in a few years the time will

become ripe for an effort to be made in this direction. Efficient institutions for higher work of this kind cannot be created to order, and they can only grow by natural development to suit the changing needs and the growing requirements of the country; only, it is necessary that the public must utilise to the full all possibilities for such development. Young men, who aspire to rise to responsible positions as captains of trade and heads of industry and would train themselves for it, must in most cases be content to begin from the lower rungs of the ladder and gradually work their way up to it. No work must be considered as menial or low. There is still the false notion among young men and their parents that there is more respectability in quill-driving in Government service, even if it be to earn only 8 annas a day all one's life, than to be a mechanic or to hawk wares for sale, though it be for 8 Rs. a day. The proprietor or head of a tiles factory, for instance, though he be a man with University honours, must not hesitate or consider it degrading to him when occasion needs it, to lift or carry, even if it be a basket of clay, where his men are working, and he has to do it well and do it gracefully. He must make himself familiar with the several details of the processes and work in his factory, so as to have a hand in them occasionally if necessary. The only work that is low, is work that is useless and dishonest, work that is ill done and heedlessly.

While it will be readily admitted that the kind of training, such as can be afforded in the primary and secondary grades of this branch of education for subordinate and superior positions in business offices, will be a useful preparation for such work, the value of higher commercial education which it is the function of business colleges to provide for the benefit of young men who look forward to a career as leaders of business concerns, its value for them may not be quite apparent to some. For, it is sometimes urged that such training as that offered by a course of commercial education of the collegiate grade will only be theoretical. This view can only be taken by those who have an imperfect acquaintance with the scope and object of the course. It is not suggested that the course of training is

a substitute for business experience. The object of the training is not merely to give useful information, but to discipline and train the mind with reference to the problems which must be faced in public and private life. Certainly, institutions intended for such training could not turn out commercial men ready to enter upon a trade at once. No curriculum can possibly be devised which will enable the commercial graduate to step at once into positions of leadership and authority, and nothing can dispense with the actual bearing of responsibility and incurring of risks. But, to deny that young men may be systematically trained for a business career is to say that commerce is merely an imitative art to be acquired only by seeing other people do the tricks and practise them. The institution of special schools and colleges for Law and Medicine would perhaps have been considered a daring proposal in the olden days, when it was thought that the study of medicine could be acquired only by grinding the doctor's drugs and going round with him to make his calls, when it used to be the fashion to study law by copying deeds and briefs in a lawyer's office. It is true that successful business men are born, not made; so also, are successful teachers or men taking to any professional walk of life; but, that has not dispensed with the need for schools and colleges for the training of teachers and destroyed their utility. Business colleges and schools of commerce cannot create commercial genius, but they can foster it, stimulate and promote its development, and direct, into paths of commercial life, a great deal of ability and enterprise which at present goes to waste. They ought to be the means of securing for commercial life some of that business ability which is latent in many young men and at present finds no development and outlet for lack of opportunity. Modern conditions have developed such intensity of competition between different countries, that a wide knowledge and utmost vigilance are necessary to take advantage of all favourable conditions in the conduct of business operations. Vast changes have taken place in the methods of mercantile dealings, and the accumulation of a large fund of experience in the field of commerce is such as to yield a body

of principles of policy for study, guidance, and practice. There are some who advocate that commercial education of the collegiate grade should form an integral part of the University, and that it should be recognised as a separate faculty. But, so long as educational institutions for this grade can be established and worked, where the conditions require them and as demand for them may arise, it seems to be immaterial whether they are given University recognition or not. Business men should appear in such institutions for occasional addresses, and the instructors on the staff should not only be experts well-equipped for their task, but should have strong business leanings and instincts. A museum of economic products will be a useful adjunct to institutions of this kind. It must be utilised to illustrate lessons in the technology of merchandise. It must be furnished with specimens of raw and finished products in their several stages of manufacture, carefully selected with a view to their educational value. Such institutions will not be less useful for training properly qualified teachers for the work of commercial education, than to the business man. At present, there is considerable difficulty in getting a supply of competent teachers for training youths for a business career and in a knowledge of commercial subjects, and steps have now been taken by the Director to solve this difficulty by sanctioning a scheme for training, at the Calicut School of Commerce, graduates and under-graduates in commercial subjects up to the secondary grade, and thus furnish special preparation for commercial teachers for whom there will be a demand in secondary schools which train youths for the final School Leaving Certificate.

The real and important function of commerce is the development of the resources of a province or country, by finding the best and most profitable markets for its surplus products or what it may produce for export, and procuring the commodities it needs from the cheapest markets of the world. Industrial development depends not only on the skill and ingenuity shown in the production of goods, but also on the special knowledge and ability displayed in the sale of the products of industry. The different tastes and requirements of consumers should be carefully

studied, and considerable activity and economy shown in bringing the products of industry to the doors of the consumer. Many of the minor but useful industries that have of late sprung up in our land are languishing, for lack of well-directed effort and organised skill to push the sales and secure a market for them, and to even bring them to the notice of the public. The economy of production is so closely connected with that of distribution in the machinery of commerce, that markets for commodities are as great a necessity for the producer, as fields of production are necessary for the continued existence of a market. In fact, neither the manufacturer nor the merchant can prove a success, unless they both co-operate together; and it has been well said that 'without commerce, industry would be intermittent.' What is needed, therefore, for the development of commerce is not only the faculty of production but also of distribution, and the art of both production and distribution have become more scientific and more complex, depending on a greater degree upon clear knowledge and previous preliminary training than upon mere unaided intelligence. True commercial education, therefore, will not have fulfilled its purpose, if it stops short of providing for the preliminary and secondary grades, and makes no provision, when the time is ripe for it, to impart instruction for the higher grade of the collegiate type. It will be readily seen that a training given in the curriculum of studies sketched above as adapted for commercial education of the higher type, contains elements of liberal culture and will be peculiarly valuable for those who have to assume responsibility and take the initiative in the conduct of business undertakings, that, while it will strengthen their power of judgment, widen their sympathies, and stimulate their imagination, it is at the same time of real value to them as a preparation for the practical duties of later life in the world of commerce. Young men with good general education, who are trained for this grade of commercial education, will regard business with new interest and give to it new meaning. It will give them ideals and power to realise them. Above all, the commercial education given must be such as to train them for

real citizenship and inspire them with a strong sense of duty, to promote in them the valuable qualities of manhood and self-reliance, and to establish character by the formation of habits to influence their lives for good and elevate the tone of society. Commerce is a mighty agent for drawing together in close bonds of union all the nations of the earth; for, its function is mutual service by exchange, for mutual benefit, the varied gifts of climate and soil bestowed on all by a bounteous Providence. The self-dependence of a nation is not achieved by disdainful exclusiveness. With the gradual evolution of commerce, each country and nation grows more and more inextricably inter-dependent, that no one State can isolate itself, nor if isolated, could maintain its rank in the comity of nations; and this inter-dependence is the truest self-dependence. For, it is a law of Nature that isolation, separation, and exclusiveness, means ultimate decay and death, while union and harmonious co-operation means life and progressive growth. Thus, commerce leads to closer fellowship among the different nations of the world, and teaches them that they form but separate provinces of the universal kingdom of mankind, till, in course of time—which it surely will be—it will make the whole humanity as one great family and household, consisting of self-governing members, related to each other by voluntary ties of love, honour, and mutual service, realising that the crowning blessing of wealth and power is to make others happy and help the weak, when national selfishness will perish, and the whole world would recognise the oneness of interests pervading it and become a federation or commonwealth of free nations, with England and India, indissolubly united together, foremost in the good work of promoting the spirit of human brotherhood; and blessed are those who are engaged in the vast organisation of trade and industry in the world and those who may be prepared and trained to enter into it, for working to bring about the achievement of such a great consummation, which it is the function of commerce to fulfil, its mission to accomplish.

THE NELLORE ELEMENTARY TEACHERS' ASSOCIATION.

[FROM A CORRESPONDENT.]

The second anniversary of the above Association was recently celebrated with much eclat in the Government Training School hall with Miss P. F. Parsons, B.A., L.T., in the chair. The hall was full with about a hundred teachers. The programme began with a prayer-song sung by the girls of the Government Town Girls' School. Then followed the reading of the report by the Secretary from which the following were gathered:—The strength of the Association was 40 and average attendance 31. Eleven meetings were held during the year, and model lessons on 'Fractions,' 'The Camel,' 'Telugu Poetry,' 'Reduction' as well as lectures on 'Blood circulation,' 'The principle of correlation,' 'The teaching of drawing,' 'How to prepare notes of lessons,' 'Preparation of syllabuses' were given. During the year rules were framed for the circulation of the books of the library among the members, and eighteen new and useful books were added to the library. The drawing class opened under the auspices of the Association did not work well and therefore its working was handed over to the Municipality during the year. The school excursions made by the Association formed a special feature during the year under report. Many of the members of the Association sent exhibits to the Nellore Educational Exhibition and some of them were awarded medals and certificates of merit. About Rs. 15 was collected in the shape of subscriptions and the major portion of the expenditure was for the purchase of books. The Elementary School Journal continued to be subscribed for during the year. The report wound up with offering thanks to Miss P. F. Parsons, Rev. D. Downie, Messrs. C. M. Srinivasa Charriar and M. Subrahmanyam, B.A., L.T., and the Inspector of European and Training Schools, and to Mr. P. Venkatachari for having given the use of the Training School hall for the Association meetings. Then the pupils of the Government Girls' School, Mulappet, acted the story of 'The Lion and the Mouse' and amused the audience. Miss F. Teneate then delivered an interesting lecture for half an hour on the 'American Elementary School System' and the following are extracts from the same:—

"Boys and girls in America are provided with free education from the Infant Standard through the Matriculation Grade. Books, pencils, notebooks, paper, everything that the child requires is furnished to him free of charge at the begin-

ning of each year and a careful record is kept until the end of the year, when he is required to return all the books that have been furnished to him. If these are all in first rate condition, his account is checked off and he is dismissed. If however, some of the books are missing he must pay the value of them, or if some have been abused, these will not be accepted by the teacher but the child must pay the full value of the abused book. Thus the same set of books will answer for a number of years. This care of books on the part of the pupils forms a very wholesome lesson in neatness and economy.

"In many parts of the country the system is not only free, but compulsory. A man not only may educate his children, but he must. Any child in the home must be sent to school even though the child be a servant in the house. Thus the teachers' time is not wasted in trying to keep up the strength of the school.

"In India the teachers seem to be very much troubled over some of the present day improvements in the system of education because a number of the new branches introduced appear like fads that are not practical and never will be. Take the school garden as an example. Let us see what the American schools are doing in this respect. From the day when the garden is made it becomes an aid to the teacher in mathematics, composition, and general knowledge. The children in the first classes are required to do the measuring and to keep careful record of the size of their gardens, thus getting their first lessons in Practical Measurements very early in life in a very pleasant way which they are not likely to forget, and each one is apt to understand the lesson because it is really a game to him. The price of the seeds, cost of the preparation of the soil, all outlay of money must be reckoned by the older children, and when their crop matures the produce is sold and we have quite a variety of problems for the classes, problems that will be full of interest because they deal with the actual work of the school. The lack of funds to carry on the work here is distressing many of the teachers in our district. Then, too, the lack of interest on the part of the parents is also another hindrance. It may take some time and patience on the part of the teachers to bring the parents to a willingness to carry on this branch of our work but it will pay.

"We Americans have the name of being very alert in the matter of money-making. This may or may not be true, but we find that if we can put our children in the way of earning something

they take great delight in it, so it seems wise to develop our educational system along this line from the start. It is found that Brush Work is an excellent means of developing the powers of observation so it has been introduced into our schools. This development is of immense value to the child during his entire life, so if we accomplish nothing more, we have more than paid for the time we have devoted to this branch. In American schools we lead to something more, or rather, the work gradually develops into a money-earning scheme on the part of some of the more clever pupils, for they endeavour, as they grow older, to turn this skill into account in the sphere of decorative art and endeavour to produce something that will find sale in some department."

Miss Teneate illustrated her lecture with the Exercise Books, Brush Work, &c., of the Elementary schools in America.

'The Pial School' was then acted by the pupils of the Mulappet Municipal School and this drew forth cheers. Then followed some interesting comic readings by Mr. M. Subrahmanyam, B.A., L.T., after which Telugu verses were recited as a model by Mr. T. Venkayya. Then Mr. B. Chenga Reddi, B.A.—the well-known reciter of Julius Caesar—recited the funeral oration of Antony. Flowers were afterwards distributed, after which Miss Parsons delivered a most interesting and instructive speech. After speaking about the advantages of Teachers' Associations and congratulating the Nellore Association on the excellent work turned out during the year, she gave very useful hints regarding school-work. She spoke of want of tidiness and neatness in Indian schools and requested the teachers to see that everything done by the children is done neatly. Reading in schools is mechanical. Teachers should feel like children and should not be too advanced for their charge. Teachers should be able to defend the method pursued by them. Four stories under composition for a year will only make wood of our children. The child like a tree is growing and mechanical methods reform the growth. The teachers though they work for money should do the best of what they can and make the best of the character of the children entrusted to their care. She condemned the practice of keeping young children in the infant-standard for more than a year. In conclusion she exhorted the parents assembled to work in conjunction with the teachers. A song on Emperor Edward VII sung by the girls of the Stonehousepet Government Girls' School and

the usual votes of thanks brought the celebration to a close.

OUR ENGLISH LETTER.

Liverpool, MARCH 1910.

The last ten years have been remarkable for the increased cost both of national and municipal government. In 1910 the Chancellor of the Exchequer will have to provide almost twice the amount that was necessary a decade ago. Local rates have risen proportionately. All over the country there is a feeling of sullen hostility on the part of rate-payers. Political exigencies make men chary of condemning national expenditure for fear of alienating those for whose benefit the money is being expended. But this is not the case to the same extent in the municipalities. Three years ago the Progressives were soundly beaten in the London County Council election, because their opponents who had assumed the title of Municipal Reformers were pledged to retrenchment, which they have found it exceedingly difficult to effect. One of the chief causes of this increase has been the large amounts expended on education. We have now a rate for secondary as well as elementary education. And there seems small prospect of much relief. But most people will be glad to see that the President of the Board of Education has appointed a Committee to inquire into the question whether some saving cannot be effected in the present huge cost of erecting school buildings. The serious need for economy in this respect is manifest to all. Under the 1902 Act there has been less public control than before over the expenditure of public money. School schemes have been framed and carried out with a princely disregard of cost. New schools have been built often on an almost palatial scale, fitted with all things necessary and most things luxurious. A comparison between an ordinary class-room in one of the old public schools (where boys pay fees to the extent of £100 a year) and in one of the modern elementary schools is conclusive on this point. It is another instance of the law of compensation. The one boy has furniture in his home, the other boy has furniture in his school: the one has the better bedroom, the other has certainly the better class-room. The modern elementary school is built as if it were intended to be a sumptuous nursery, a costly gymnasium, an elaborate hotel kitchen, a science and art museum, and a college of music, all in one. Mr. Runciman is evidently alarmed at the

distance we have gone in this direction. He has appointed this Committee to see whether construction cannot be carried on much more cheaply without sacrificing in any way the requirements of either hygiene or education. Most people will agree that it is time measures were devised to put some restraint upon the enthusiasts who, in their zeal for the minds or the bodies of the children, have been paying so little heed to the purses of the parents.

Steps are being taken in many places to find suitable employment for children who are leaving school. And, as we have said more than once in recent letters, there is no more shameful gap than that which at present exists at this point. Bolton and Liverpool have both initiated a movement that has great possibilities. For instance, at Liverpool there has just been held a Conference between the Employment of School Children Committee and the head teachers of the elementary schools. At this meeting general expression was given to the sense of the futility and fatuity of the State spending millions on the education of boys and girls, and then, as each reached the age of thirteen or fourteen years, leaving them to their fate, which owing to their selfish and short-sighted exploitation by their parents was not likely to be a happy one. An Employment Bureau is to be formed in connection with the schools. The fact of the education authority working in conjunction with the head teachers and employers ought to make a considerable difference. Up till now the teachers have done their best in many cases to suggest employment for which their scholars have shown an aptitude and which offers some reasonable prospect of advancement to the boy, but they have not carried sufficient weight either with employers or with the parents of the children. Union will mean strength. A good organisation and much hard work will be necessary to carry out the scheme, for in the course of twelve months there would be some 8,000 children in Liverpool whom the Bureau would need to place in employment.

Mr. J. L. Paton, High Master at Manchester, has delivered an inspiring and provoking address to the members of the College of Preceptors on 'Cross-fertilization in Schools.' His text was that constant inbreeding tends to degeneracy: and on this text he preached a vigorous sermon in the true Paton manner. Apparently we are all in grooves. The public school boy is thrown only among his own class: his school is a close corporation, shut off from

foreign schools, from schools of a different grade in this country, and largely even from schools of the same grade: his is the one and only school. "It is part of his school patriotism to maintain this against all comers as the fundamental principle of all educational discussion. The citizenship of Eton, of Harrow, or Rugby is so persistent that it is only by a special providence or special effort that any other citizenship of later life, whether it be of London or Liverpool or Manchester, establishes its hold upon him as a matter of real obligation." The elementary school system is open to the same criticism. Take a case: "He was trained up in the elementary school; at the age of eleven or twelve, being promising he was selected for a pupil-teacher; he acted as pupil-teacher in the elementary school; he passed his examination while still there; he passed into a college where the atmosphere was still the elementary school; his comrades came from there, they were looking forward to them, and their little life was bounded by that span. He never got outside the cave and the idols of the cave; never had a chance to free himself from the tanks and buckets of knowledge, which we call text-books—never had a chance to come out under the illimitable dome and wash his hands in the infinite sea." Having had much and intimate knowledge of the public school man and much recent acquaintance with a number of elementary school teachers, we are rather of opinion that Mr. Paton is right in both his indictments. He has hope of good from the work of associations of teachers, and of His Majesty's Inspector, who is the fertilizing bee who flits from flower to flower. There is no desire for bureaucratic uniformity: our education must reflect the essentially diverse qualities of our national life. The plea which Mr. Paton puts in is for (1) freedom of experiment, (2) recognition of successful initiative, (3) rapid diffusion of successful results, for which last boon he looks to the Inspectors and the educational press. "At present out of touch with each other, we are working in the dark, many of us. Here and there some one hits upon a good thing, admirable work is done in that one isolated school; perhaps one or two others by chance get to hear of it. But it ought not to be so narrowed in, nor ought it to be left to chance, still less ought it to be any man's special nostrum which he works for his own private profit. If teaching is a profession and not a trade, then, as in medicine so in teaching, one teacher's discovery should be at once placed at the disposal of all teachers. We should know the best methods,

the best apparatus, the best buildings, the best results of experiments, the best syllabus and curricula, know and have ready access to the best men and women. Any sound bit of work should have free course and be glorified. Even in the fads and nostrums there is a soul of goodness, if we are able observingly to distil it out. With free cross-fertilization none of these would become a trade secret, each would yield up what it had in it of good for the benefit of all, and would at once fall into its right place in the system."

The National Union of Teachers has published a significant leaflet, as a warning to parents against sending their children into the teaching profession. It certainly wears a glowering face, which presumably is meant to have some likeness to Medusa's. Entrance upon the profession means a large outlay in labour and money which may never be adequately repaid. Of 4,836 students who left the training colleges in July, 1909, 1,528 were still without employment in October, 1909. They are kept out of their own profession, because education authorities who have wasted money on buildings are resolved to waste none on teachers, and employ young people with salaries proportionate to their qualifications, and accordingly often less than that given to a good domestic servant. Once again the lack of money is the root of the evil, and the evil is the greater because what money there is is spent on bricks and mortar instead of men and women.

Lord Curzon has been distinguishing himself again. He is not only Chancellor of Oxford, but Rector of Glasgow University. He was to have given his Rectorial address about the middle of January, but, owing to his political engagements, it was postponed until February 25. Ten days before that time it was announced that Lord Curzon had further political engagements which would prevent him from going to Glasgow on the re-arranged date, and the address would be postponed till next session. A meeting of students was held, and both political parties were agreed in viewing Lord Curzon's action as a slight to the University. A resolution was sent to him from the Students' Representative Council, expressing the general resentment of the casual way in which he was regarding his Rectorial duties. Lord Curzon has written in explanation, but not to general satisfaction. It is expected that, when he comes to Glasgow next session—unless a second general election intervene to spare him, and them—all the students will boycott him. Most men would resign in such

circumstances, but Lord Curzon may be relied upon to rise superior to the situation: is not this superiority his distinctive trait?

Miss Dove, of Wycombe Abbey School, has resigned her post. In all she has served twenty-eight years as head mistress. It was in 1896 that she started the Wycombe Abbey School which she has raised to a high position. Along with Miss Beale and Miss Buss, Miss Dove has done much to make the modern girls' school what it is and the modern girl what she is. A year or two ago, the Town Council of High Wycombe wanted to elect Miss Dove as Mayor. This misfortune (for Miss Dove, was averted through the action of certain men with strong views, or at least views strongly held, on the matter. But the desire is sufficient evidence of the appreciation of her character and services to the township. She has deserved well of her country. The mention of Miss Buss, by the way, recalls the story that a certain Bishop was applied to recently for a motto for the North London Collegiate School: his reply on a postcard was 'Propria quae Mary Buss.'

The Clifton College vacancy is not yet filled up, but Mr. Reginald Carter, Rector of Edinburgh Academy, has been appointed as successor to Mr. King at Bedford. Mr. Carter was at Radley before he came back to Oxford as a tutor. He was very popular at College; his wife was altogether gracious and charming, and her hospitality was much appreciated. We could imagine her as an ideal headmaster's wife. Mr. Cradock-Watson, who followed Canon Armour at Merchant Taylor's, Crosby, was a prominent applicant. His present school is feeling the effects of modern movements. The Board of Governors is undergoing a serious change. The Wardens of the Merchant Taylor's Company have governed the school for centuries, but management is now being put into the hands of local governors. The old order changes, and those who welcome modern improvements effected by the Board of Education upon other schools are apt to look askance when rude hands are laid upon their old school.

Reviews and Notices.

A LIFE OF JESUS CHRIST IN MODERN ENGLISH FOR THE USE OF SCHOOLS, COMPILED FROM THE GOSPELS, BY REV. JAMES SMITH. (MACMILLAN AND CO., LIMITED, ST. MARTIN'S STREET, LONDON. 1910.)

This book is primarily intended for use in Indian schools. The author has attempted to tell the story of the Gospels in language which will be readily understood by the average High School pupil, while at the same time all the details mentioned by the four Evangelists have been woven into a continuous narrative so as to present a complete history. We have much pleasure in commending the book to such as are desirous of knowing the life of Jesus Christ as told in the Gospels.

A FIRST BOOK OF PHYSICS, BY L. LOWNDS, B. SC., PH.D. (MACMILLAN & CO., LIMITED, ST. MARTIN'S STREET, LONDON. 1910.)

This book is intended for use by pupils beginning the systematic study of physics by work in the class-room and laboratory. It aims at being a guide to the scientific method of study by observation and quantitative experiment. The book may be consulted by students preparing for the Intermediate Examinations of Indian Universities.

PRACTICAL CHEMISTRY, BY JAMES BRUCE AND HARRY HARPER. (MACMILLAN & CO., LIMITED, ST. MARTIN'S STREET, LONDON. 1910.)

This book deals with the ordinary qualitative and quantitative analysis and contains also a section on inorganic and organic preparations. It pre-supposes some knowledge of elementary chemistry. The book may be found useful by teachers.

HAZELL'S ANNUAL, 1910. A CYCLOPÆDIC RECORD OF MEN AND TOPICS OF THE DAY.

We have much pleasure in acknowledging with thanks the receipt of this annual for the current year. It is replete with information and needs no special recommendation from us.

POPE'S ESSAY ON CRITICISM, EDITED WITH INTRODUCTION AND NOTES, BY JOHN SARGEANT. (OXFORD: CLARENDON PRESS). 2s.

The present edition of Pope's Essay contains a short critical introduction. Pope's debt to earlier critics is indicated as also his shortcomings. The notes confine themselves to real difficulties. Grammatical obscurities are explained. Mythological and historical allusions are not neglected and questions like those in the Notes to Haler's *Longer English Poems* are inserted to make the pupil think out for himself some of the textual difficulties. We have compared the notes and the introduction of this edition with the notes and introduction of Churton Collins's edition. The latter edition is more learned and fuller. The present one as a neat and presentable edition of a poem of Pope's which deserves to be better known as a whole than it seems to be merits cordial welcome.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—The privilege leave for one month granted to Miss Jessie Patterson will have effect from the 11th February, 1910.

Miss Jessie Patterson, First Assistant Inspector of Girls' Schools, West Coast Girls' Range, on leave, to act as Inspector of Girls' Schools, Northern Circle, vice Mrs. Rhenius on leave or until further orders. To join as soon as possible.

The Director of Public Instruction is pleased to grant Mr. S. Venkatasubba Aiyar, Sub-Assistant Inspector of Schools, Conjeevaram Range, privilege leave for three months with effect from the date of relief and to appoint Mr. K. Amirta Rau, Acting Sub-Assistant Inspector of Schools, Chittoor Range, to act for him in the probationary class during his absence on leave or until further orders—to join on relief and to draw Rs. 75 per mensem.

Mr. K. Ramunni Menon, Senior Assistant Professor, Presidency College, to be Professor of Zoology in that institution with effect from 1st February 1910.

Lieut.-Col C. M. Thompson, I. M. S., to be President, Board of Examiners, Medical College, and to hold office for three years.

Mr. J. L. Simonsen, to be an additional Professor of Chemistry in the Presidency College, Madras.

Mr. E. W. Green, to be an additional Professor of History in the Presidency College, Madras.

Mr. C. de St. C. Ransford, to be a member of the Indian Educational Service, Madras.

Mr. A. I. Mayhew, Deputy Director of Public Instruction, to be Inspector of Schools, Sixth

Circle, vice Mr. O. J. Couldrev, without prejudice to his present employment in Foreign service.

Mr. H. S. Duncan, Inspector of Schools, Fourth Circle, and acting Inspector of European and Training Schools, to be Deputy Director, vice Mr. A. I. Mayhew. To join on relief by Mr. E. W. Middlemast.

Mr. A. C. Pranatartihara Aiyar, Inspector of Schools, Seventh Circle, and acting Deputy Director, to be Inspector of Schools, Fourth Circle, vice Mr. H. S. Duncan. To act in the Indian Educational Service, during the employment of Mr. Mayhew in Foreign service or until further orders, with effect from the date of his taking charge of the office of Inspector of Schools, Fourth Circle.

Mr. R. G. Grieve, Inspector of Schools, Third Circle, and acting Inspector of Schools, Fourth Circle, to be Inspector of Schools, Seventh Circle, vice Mr. A. C. Pranatartihara Aiyar.

Mr. O. J. Couldrev, Inspector of Schools, Sixth Circle, and acting Principal, Rajahmundry College, to be Inspector of Schools, Third Circle, vice Mr. R. G. Grieve, without prejudice to his present acting appointment.

Mr. J. A. Yates, Inspector of Schools, First Circle, has combined privilege leave and special leave on urgent private affairs for six months from the 15th April 1910, or such later date as he may avail himself of it.

Malabar Shorthand Writers' Association.—The seventh meeting of the Malabar Shorthand Writers' Association was held recently at the Government School of Commerce, Calicut, with Mr. W. K. M. Langley of Messrs. Peirce, Leslie & Co., Limited, in the chair. Mr. P. A. Sankara Iyer, teacher, Zamorin's College, Calicut, delivered a lecture on "The Attainment of High Speed in Shorthand." The lecturer enumerated the several stepping stones that would lead to the acquirement of high speed in Shorthand. The Chairman, in reviewing the lecture, remarked that he did agree with the lecturer as regards the utility of Shorthand in the commercial world, and its usefulness to all business men; and he did not agree with him as regards its wholesome influence in the development of the language, since he feared, that Shorthand as used by an American Yankee in his office at Chicago, would instead of improving, spoil the beauty and originality of the English tongue. He also expressed that he was of opinion, that an average educated Indian was in no way inferior to an educated Englishman as regards his linguistic attainments and pointed out that India was not wanting in opportunities for the development of High Speed in Shorthand. The proceedings of the day came to a close with hearty votes of thanks to the Chairman and the Lecturer.

Matriculates of the Bombay University.—The Madras Government have directed that the Matriculation Examination of the Bombay University shall be accepted as a qualification for entrance to the Government service in the Madras Presidency.

The slaughtered innocents.—The Senate of the Madras University has approved the proposals of the Syndicate whereby a number of failed candidates at the last Matriculation examination who obtained a certain percentage of marks in specified subjects, will be allowed to pass.

Technical instruction.—In connection with the scheme for the encouragement of technical instruction in the Presidency of Madras, the Government has sanctioned grants to the Chengalvaraya Naicker Institute of Rs. 6,000 for equipping with suitable machinery and tools, and Rs. 7,500 as an annual grant for the maintenance of the staff, including a Superintendent from England.

Poor Boys' Fund.—We are glad to learn that a scheme has been set on foot to help poor boys in pursuit of collegiate education. The scheme is outlined in the following account, and we hope it will command a large amount of public support:—

It is conceived that a provision for poor boys studying in the Colleges is a great necessity in the City of Madras. School and College fees have been steadily raised within the last few years. Numbers of poor boys are seen tramping through the streets for small donations to make up their term fees in the Colleges or the fees for their examinations. In this country high intellect and natural capacity are often found amongst the poor. It is of course impossible to make any provision for a large number of people, but it is desirable that some of the best amongst poor boys should be given an opportunity to acquire higher education. The aid to the students will be in the shape of monthly scholarships. The provision will for the present be limited to boys studying in the Colleges.

2. To secure this end a fund has been raised, chief among the contributors being:—

The Hon'ble Mr. Justice V. Krishnaswami Aiyar, Mr. P. R. Sundaram Aiyar, Mr. C. P. Ramaswami Aiyar, and Mr. K. Srinivasa Iyengar.

The funds that have been collected will enable the disbursement of scholarships to 20 boys to begin with, commencing from this year.

The scholarship for Intermediate course is Rs. 7 per mensem. Honours course is Rs. 10 per mensem.

3. The following gentlemen have kindly consented to administer the funds for the current year:—

Professor M. Rangacharya, Mr. K. B. Ramanatha Aiyar, Mr. V. S. Srinivasa Sastry.

4. The condition of the tenure of scholarship will be good character and conduct and regular promotion to the senior class or success in the next examination. A report will be obtained from the Principal of the Institution in which a selected pupil undergoes his training every year as regards the satisfactory progress of the student. The scholarship will be limited to Hindus. There will be no restriction as to the particular College in the City of Madras to be selected by the student. As far as possible, the number of scholarships will be evenly divided among the several college classes; each selected candidate shall go to the Secretary, on the 5th of each month, to receive his stipend.

The Secretary shall maintain a register in which the names of all stipendiaries shall be entered together with the date of payment to the respective stipendiaries. The Secretary shall furnish a report once in every six months as regards the number and distribution of scholarships and the progress of the scholarship-holders to donors.

Madras Students' Advisory Committee.—The second meeting of the Committee was held at the Senate House at 5-30 p.m. on the 3rd instant.

Present:—The Vice-Chancellor of the University of Madras, President. The Rajah of Kollengode, Mr. P. T. Srinivasa Aiyangar, Mr. P. S. Sivaswami Aiyar, Mr. E. S. Davies, Mr. Muhammed Qadir Navaz Khan Sahib, Mr. V. K. Raman Nayanar, Mr. J. H. Stone, The Rev. William Skinner and Mr. K. Ramunni Menon, Members and the Secretary.

Read Secretary's Report of progress from November, 1909 to February, 1910.

Resolved that the Report be printed and circulated.

Read and Recorded Letter to Government, dated the 17th December, 1909, re Finance. Reply thereto from Government, G. O. No. 74, dated the 12th February, 1910, and Proceedings of the Director of Public Instruction, dated the 2nd March, 1910, placing Rs. 120 at the disposal of the Secretary to meet contingent charges for the current year.

Read and passed Accounts showing actual expenditure to date of Rs. 81 and an estimate for Rs. 39 more for the current year.

Read letter from Mr. T. W. Arnold of the 11th January, recommending the purchase of Students' Hand-books to Oxford and Cambridge and stating fully the conditions upon which Mr. Arnold undertakes the guardianship of Indian Students.

Resolved to purchase copies of the above Hand-books and to approve Circular No. III which incorporates the effect of Mr. Arnold's letter re Guardianship.

Read letter from Mr. T. W. Arnold of the 3rd February enquiring whether this Committee proposes to establish Branch Committees in educational centres other than Madras in the Presidency.

Resolved that there seems to be no need at present for such Branches and it is not proposed to establish them.

Read Circular letter from Mr. T. W. Arnold of the 3rd February drawing attention to the fact that Indian students often apply for admission to Oxford without producing the necessary certificates and complying with the Regulations and enclosing papers which state the conditions explicitly.

Resolved that a circular be printed embodying the effect of these conditions and that it be published in the usual way.

Read and recorded letters from the Bombay and Punjab Students' Advisory Committees offering and requesting mutual co-operation with this Committee.

Resolved that after consultation with Mr. T. W. Arnold printed forms containing particulars about the students who apply to the Committee, should be adopted.

Read G. O. No. 95, dated the 28th February, 1910, drawing the attention of this Committee to the desirability of Indian students who proceed to England providing themselves with certificates of identity, and forwarding three copies of G. O. No. 246, Public, dated the 23rd March, 1908, which contains the rules on the subject.

Resolved that a circular be printed embodying the effect of these G. O.'s and that it be published in the usual way.

Resolved that Government be asked for a ruling that Government officers, members of this Committee, proceeding to Madras from the Mofussil on the business of the Committee should be considered to be on duty.

Resolved that the next Meeting should be held on the day before the Senate Meeting in October 1910.

The Teachers' Association, Vellore.—The second anniversary of the Association took place recently in the Hindu Municipal School at Saidabad. Mr. H. A. Kershaw, B.A., B.Sc., was in the chair. Select pupils of the local Municipal School acquitted themselves to the satisfaction of the audience, when they sang the action songs. The Secretary's report showed progress during the year and the number of members rose from 56 to 95. Mr. M. C. Rajah, Supervisor of the Local College, delivered a weighty address on Nature Study. He pointed out the differences between a Nature Lesson and an Object Lesson, and said that it is highly important that we should acquire our knowledge of nature at first hand.

Mr. Rajah then gave a practical demonstration of a Nature Lesson to a number of children.

Mr. Kershaw in summing up his remarks said that nowhere, in his range, has he seen teachers taking such a keen interest in the cause of educating children, left under their care. He compared the Association to a vigorous infant and said that he was much pleased with what he saw. He said that he enjoyed the model lesson given by Mr. Rajah and wanted the teachers present to go to their schools and try to do as Mr. Rajah has done. He emphasised on the importance of the three acts. Mr. Aiyaswami Aiyangar, B.A., then followed Mr. Kershaw and translated his speech. Then the Hon'ble Khan Bahadur Mahomed Habibulla Sahib gave a present of Rs. 10 to the school children who took part in the entertainment of the evening. With the usual vote of thanks, proposed by Mr. Durasawmy Aiyangar, the meeting came to a close.

MYSORE.

His Highness visiting a Vidyalaya.—His Highness the Maharajah of Mysore accompanied by the Prince Yuvaraj, Mr. Raghavendrarao, Private Secretary, Mr. N. V. Mandlik and Mr. Narotamdas Morarji Goculdas, recently paid a visit to the Gandharva Maha Vidyalaya, Girgaum Back Road, Bombay. On arrival His Highness was received by the Principal, Pandit Vishnu Digambar and was taken over the classes in the Institute. The Lady classes—under the entire management of Lady teachers—were also inspected, and His Highness was pleased at the satisfactory progress made in vocal as well as instrumental music by some of the Lady students. His Highness spent nearly three-quarters of an hour in the Institution, and expressed himself quite pleased at the management and wished success to the Principal and the promoters.

TRAVANCORE.

Moral instruction in Travancore.—The Director of Public Instruction, Travancore, has issued a circular under the new Education Code stating that the attention of the Maharajah has been called to the question of instruction in morals. The circular adds that it is to be clearly understood by managers and teachers that they are expected to instruct their pupils in the practice of those external forms of conduct which express a true sense of the proprieties of life and politeness.

Important educational Notifications.—These important notifications relating to educational matters appear in a recent issue of the *Travancore Gazette*. The Director of Public Instruction in Travancore has had control till now also over the Archaeological Department, the Geological Department, the Department for the publication of Sanskrit Manuscripts and the Public

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Lecture Committee. In view, however, of the increasing work of the Director in connection with his own department, he has been relieved of the control over these four departments which will, in future, be under the direct control of the Huzur. The *Gazette* also contains the courses of instruction, in detail, for Elementary Schools and Secondary Schools. The course for Elementary Schools is designed to lead up to an Elementary School-Leaving Certificate which may be granted at the end of the school year in which Class VII is attended, and those in Secondary Schools are intended either for the Matriculation Examination or for a Secondary School Leaving Certificate which may be granted at the end of the school year in which Form VI is attended. The course of instruction in Elementary Schools comprises the following subjects:—*Compulsory*: Malayalam or Tamil language and Grammar, Arithmetic and Mensuration, Geography, History, Drawing and Physical Training; *Optional* (any two to be chosen): English, Sanskrit, Hindustani, Elementary Nature Study, Agriculture and Hygiene. The course of instruction for a Secondary School Leaving Certificate, it is interesting to note, differs from that instituted in Madras. It is as follows:—*Compulsory*: English, Elementary Mathematics, Vernacular Composition and Translation, Elementary Nature Study, Geography, History, Drawing and Physical Training; *Optional* (any two or more subjects to be chosen): Algebra, Geometry, Physics, Chemistry, Botany, Geography, History of India, History of Great Britain and Ireland, Second Language, Agriculture, Commercial Practice, Book-keeping, Type-writing and office correspondence and practice. We are informed that special stress will not be laid during the next two or three years on the examinations in the compulsory subjects of Elementary Nature Study, Drawing and Physical Training, because they are new. The following remarks of the Director regarding moral instruction in schools will be read with interest:—

The attention of Managers is drawn to the fact that in the curricula now prescribed, no mention is made of instruction in manners and morals. It is not intended that this omission should be taken to mean that instruction of this kind is not compulsory. It is to be clearly understood by managers and teachers that they are expected to train pupils in the practice of those external forms of conduct which express a true sense of the proprieties of life and of that politeness which denotes a genuine respect for the wants and wishes of others. It is also an essential part of the teacher's duty to turn the attention of pupils to the moral quality of their acts and to lead them to a clear understanding and constant practice of every virtue. The means to be adopted towards this end are various, but it is to be noted that the direct teaching of manners and morals loses its value when unsupported by the indirect, though not less powerful, influence of the teacher's own life and example.

COCHIN.

Teachers' Associations.—The schools of the State are grouped together into eleven centres for men teachers and two centres for women teachers for the purpose of forming Teachers' Associations. For each centre a convener is appointed, whose duty it is to notify, in due time, the days and hours of meeting and arrange the programme of work. It will be open to each Association to choose its Chairman from time to time, and a Secretary, who will submit for the information of the Government a short report on each meeting. No paper is to be read or any subject discussed that is outside the profession of teaching. Politics, religion and criticism of Government are strictly forbidden.

CALCUTTA.

Technical Schools.—Technical or industrial schools were, during the year just closed, maintained or aided by eleven District Boards in Bengal, namely, those of Burdwan, Midnapore, Khulna, Shahabad, Saran, Darbhanga, Bhagalpur, Balasore, Hazaribagh, Ranchi and Manbhum. The local Government remarks that it cannot be said that in any instance was the record of progress very encouraging. "Reference is particularly made in various reports to the introduction of fly-shuttle looms, but the degree of success achieved has varied greatly and at the present stage District Boards would probably do better by assisting pupils to attend the Serampore Weaving School, rather than by attempting desultory local experiments under inadequate supervision. It is hoped that as the result of the appointment of an Inspector of Technical and Industrial Schools, it will be possible to systematise and improve the methods of instruction now followed."

The Calcutta Literary Society.—The Calcutta Literary Society recently held its eighth public meeting of the 35th sessions at the hall of the Calcutta University Institute. The Hon'ble Mr. Mahomed Ali Jinnah presided, and Dr. S. K. Roy delivered a lecture on "Medical teaching in ancient Rome."

The Calcutta Mathematical Society.—The annual general meeting of the Calcutta Mathematical Society was recently held at the Senate House. The Hon'ble Mr. Justice Asutosh Mookerjee, President, was in the chair. The President delivered a short address. The Secretary read a brief report of the Council for 1909 and the Treasurer presented his statement of accounts for 1909. The following officers and Council were elected for 1910:—President: The Hon'ble Mr. Justice Asutosh Mookerjee; Vice-Presidents: Sir Guru Dass Banerjee, Prof. Gauri Sanker De, Dr. C. E. Cullis; Treasurer: Mr. Abinash Chandra Bose; Secretary: Mr. Phanindra Lal Gangooly; Council: Prof. V. Gupta, Mr. B.

Chakravarti, Babu Mahendra Nath Roy, Prof. Shyama Das Mookerjee, Dr. D. N. Mallik, Mr. P. N. Dutt, Prof. Haran Chandra Banerji, Dr. Ganesh Prasad and Dr. S. C. Bagchi. The following papers were communicated:—"On the typical sections of the Moebius once of the third degree," by Dr. C. E. Cullis and Mr. Bireswar Bagchi; "On the origin, development and applications of Quaternions," by Mr. Abinash Chandra Bose; "On the present state of the theory and application of the Fourier's Series," by Dr. Ganesh Prasad. The first two papers were read at the meeting.

The Calcutta Convocation.—At the last Convocation of the Calcutta University at which the Vice-Chancellor, Mr. Justice Mukerji, delivered an able address, His excellency the Chancellor wound up the proceedings with a few brief remarks. Reminding the Vice-Chancellor that this would be the last Convocation he had the honour to open, he congratulated him on his eloquent address. "I rejoice to feel that the administration of this great University will continue to benefit from your distinguished ability and fearless courage." This is high praise but not higher than it is deserved, for Mr. Justice Asutosh Mukerji, during his two terms of office as Vice-Chancellor and his special work on deputation, has conducted the affairs of the University with an ability and an *elan* deserving of the very highest praise.

Khulna National School.—The Khulna National School has been abolished owing to financial difficulties.

A scholarship.—In recognition of the good work in which the Indian Society of Oriental Art is engaged, Mr. Profulla Nath Tagore has been pleased to offer a scholarship of Rs. 300 to be awarded in such manner and to such persons as the Society thinks fit.

An appointment.—The Secretary of State has appointed Mr. Charles Joseph Henderson to be the Head Master of the Dacca School of Engineering.

BOMBAY.

Sir C. Jehangir School.—The jubilee of the Sir Cowasji Jehangir Khetwady Girls' School, Bombay, was celebrated recently, when in the presence of a large gathering of ladies and gentlemen, His Excellency Sir George Clarke distributed prizes to the pupils of the school at the Framji Cowasji Institute.

Previous Examination retained.—At the University Senate meeting on the 25th ultimo the debate on Dr. Surveyor's amendment to Sir Pheroze Shah's motion to retain the Previous Examination, was put

to vote and carried by 30 votes against 29. Sir Pheroze Shah demanded a division, the result of which was that voting was equal—32 for and 32 against the amendment. The Vice-Chancellor said that although personally he was very strongly opposed to Previous Examination he had several objections to this particular amendment, and as there were subsequent amendments on the same subject he thought it was his duty to vote against the amendment. The Amendment was, therefore, declared to be defeated.

PUNJAB.

English in the Matriculation.—At the annual speech day of St. Stephen's College, Delhi, Principal Rudra spoke out strongly concerning the low standard of English in the Matriculation examination which crippled the work of the Colleges. "I cannot," he said, "hide from myself the serious disadvantage that the majority of students entering a college labour under, on account of their imperfect knowledge of English." The mental strain on the students is very severe, when difficult subjects are undertaken in a foreign language, and this is largely responsible for 'cram' as it is called; for general poverty of thought; for mechanical habits of mind. There is a tendency in the Indian public to press for a lowering of standards. But the real remedy is to emphasise the need of a much higher standard of English in the Matriculation examination. Added to this difficulty of language is the University requirement of proficiency in a large variety of subjects, all studied and tested through the medium of English. Under these two-fold disabilities we cannot be surprised at the poor results obtained. Probably no country in the world suffers under similar disadvantages. The true path-way of reform lies in reducing the number of subjects taught and requiring a higher standard of English in the Matriculation itself.

Lahore Islamia College.—The prize distribution of the Islamia College, Lahore, held recently was attended by almost all the big officials in the station. His Honour Sir Louis Dane, who presided, addressed the students present and impressed upon them the necessity of good manners, which were inseparable accompaniments of sound moral training and higher education. He was glad to remark that the advice about good manners which he had occasion to give to the students of the Islamia College on some other occasions had been very readily accepted and acted upon.

Society for the Advancement of Education among Mahomedans.—A correspondent informs us that a "Society for the Advancement of Education among the Mahomedans" has been established at Amritsar to provide money for the higher and professional education of Moslem youths in the shape of scholarships and loans. The Association is worked by a strong Board of Trustees composed of some

nine or ten gentlemen of good social standing with Sheikh Rahim Buksh as its President, Sheikh Muhammad Umar, Barrister-at-Law, as Secretary, and Sheikh Ghulam Muhammad, Wakil, as the Joint Secretary.

La Martiniere College, Lucknow.—His Honour the Lieutenant-Governor presided at the recent prize distribution at La Martiniere College, Lucknow. On arrival at the College, His Honour, accompanied by Lady Hewett, was met by the Principal and was conducted to his seat. The Principal then read the reports for the Boys' and Girls' schools, after which the successful candidates of the two schools were presented with their prizes. At the conclusion of the distribution his Honour delivered an important address on the education of the domiciled community.

Sardar Dyal Singh College.—Those interested in the cause of higher education and in the fruition of Sardar Dyal Singh's princely bequest will be gratified to learn that the Trustees of the College Trust are sparing no pains in the matter of giving a practical shape to the wishes of the illustrious deceased. The College is to start from April next and endeavour is being made to secure an exceptionally competent and efficient staff. We understand that Professor Wellinkar, M.A., LL.B., Inspector of Municipal Schools in Bombay and formerly Professor, Wilson College, Bombay, has been offered and has accepted the post of Vice-Principal and Professor of English. It is also understood that several others with eminent academic distinctions are in view for the several Professorships in the College. It is proposed to establish a Science Laboratory on an advanced and up-to-date scale in consultation with the best Indian scientists of the day who, it is gratifying to learn, are evincing a keen interest in the matter. Pending the erection of its own buildings, the College will be located in Sardar Dyal Singh's Buildings and Barracks on the Nisbet Road, where hostel accommodation will also be provided for a fairly large number of boarders. The prospectus, we understand, is in press and detailed announcement will, no doubt, be awaited with keen interest by parents and guardians of boys, whose physical, moral and intellectual training will be the special aim of the College to promote.—*The Tribune*.

Students and Politics.—Presiding at the recent prize distribution of a Mission College, Mr. Justice Johnston said that there was no objection to students taking lessons in politics under competent professors. But students must by no means mix in party politics, or take sides or form opinions on controversial politics.

UNITED PROVINCES.

Basti District School.—The first prize distribution of the District School, Basti, took place recently. It was a very interesting function.

The new Registrar.—The Allahabad University Senate at one of its recent meetings appointed Mr. Coles, Principal, Khalsa College, Amritsar, Registrar of the University on Rs. 700 rising to Rs. 1,000 per mensem. The pay of the post till now was Rs. 500, but Government will contribute Rs. 200 monthly. The Senate resolved to constitute a Faculty of Medicine and passed rules relative thereto. These require the sanction of the Local Government. It was resolved on the motion of Mr. Ward of the Lucknow Canning College to keep a register of University students in which their failures and successes at the colleges at which they study and such other particulars will be recorded. Each student will be required to pay a fee of two rupees a year for the privilege and we understand the payment will be compulsory in the case of every student. The utility of this register is open to question and enforced payment will be undoubtedly a hardship.—*The Leader.*

The late Assistant Registrar.—The University of Allahabad in dispensing with the services of Mr. Basanta Kumar Mukerji, late Assistant Registrar, did not assign any reason for its action. The Education Department, however, we have heard, held an inquiry and found that nothing was proved against Mr. Mukerji. He has therefore been allowed to revert to Government service and has been temporarily posted to a clerkship in the office of the Director of Public Instruction, United Provinces. It is a case not only of great hardship but gross injustice, and we hope some attempt will be made to demand an explanation and throw light upon what so far appears quite inexplicable.—*The Leader.*

Prize distribution at the Anglo-Bengali School.—The annual prize distribution of the Allahabad Anglo-Bengali School took place recently. The Hon. Mr. Justice Tindball presided and there was a good attendance of gentlemen interested in the school and education generally.

Mr. Durga Charan Banerji, the Honorary Secretary, read the annual Report. This was followed by a recitation of an English speech, recitations in Bengali and Persian and a song in chorus.

The prizes, including many special prizes, were then distributed, after which Mr. Justice Tindball delivered a speech in the course of which he said that the thanks of the community are due to the Committee and the Honorary Secretary and his Assistant for their good management in the past. He trusted that the school will continue to grow and prosper in the good work it is doing and that the students whom it turns out into the world will be sober-minded, earnest men, independent but of just mind, and well fitted to hold their place in the management of public affairs.

Dr. Satish Chandra Banerji proposed a vote of thanks to the chair, and the singing of the National Anthem in English brought the proceedings to a close.

INDIA (GENERAL.)

Progress of education in the N.-W. Frontier Province.—Education is beginning to make good headway in the North-West Frontier Province, and a proposal is under consideration for the establishment of a Provincial College. It was instituted by Col. Sir George Roos-Keppel, and the Acting Chief Commissioner is taking steps to push on the creation of this institution, the prospect of which is welcomed by the people of all the districts. In the Kurram-Shirani country and the Khyber Agency the progress is slow, and the number of primary schools fell off during the last year.

CHINA.

Hong Kong University.—The Hong Kong University movement is making progress. Plans for buildings to cost £58,000 have been prepared, and Mr. H. N. Mody, a local resident, has undertaken to defray the whole expense of their erection.

Foreign Notes.

GREAT BRITAIN.

The Indian Guild of Science and Technology.—We have received a comprehensive report of the inaugural proceedings held at Leeds recently. The event is one of considerable importance to all who take an interest in Indian questions. Professor Smithell's presidential address is well worth reading in its entirety, and we hope many of our readers will procure themselves that privilege by joining the Guild. The movement owes its inception to the Indian students studying various branches of Science and Technology in the different centres of higher education in Great Britain, and was originally conceived with the main object of establishing friendly relationship between students of Science coming from different parts of India in order that they might, on their return home, put forth a united action in developing the sanitary and industrial well-being of their country. Soon, however, the organisation gained enough recognition in other foreign countries where Indian students had migrated for the purpose of studying various scientific and industrial subjects, as also in the different parts of India, to encourage the promoters of the scheme to venture on establishing the institution on a firmer basis, but with moderate ambitions at the start, in order that the Association might prove, though at a distant date, of some practical utility to the country. Funds are greatly needed in order to establish an office and to bring out an official journal, and donations and subscriptions will be very welcome.

Poetry Recital Society.—A society which is known as the Poetry Recital Society has hit upon the idea of giving an annual dinner to the descendants

of poets. The first of these entertainments is to be held in April on the anniversary of the birth of Wordsworth or Swinburne. The Chairman of the dinner will be Lord Crewe, the son of Lord Houghton (the author of "Strangers Yet") the President of the Society being Lady Margaret Sackville, a descendant of the poet Earl of Dorset. Descendants of Wordsworth and Browning will be present, and all descendants of poets are asked to communicate with the Secretary at Clun House, Surrey street. If the descendants muster in full strength a fairly large hall will, as a Home contemporary points out, be needed. Tennyson, Meredith, John Davidson, Wilde, and Locker Lampson have sons living. Landor's grandson has made some stir in the world. A descendant of Southey recently appeared before the public in destitute circumstances. On the other hand Matthew Arnold, Keats, Swinburne, and Rossetti left no children. It is not stated how the Society defines the word "poet," or whether the descendants of Martin Tupper (if any) and of writers of the same calibre will be eligible.—*The Statesman.*

Mr. Crees on international interchange of students.—Speaking at a meeting at Aberdeen University in connexion with the movement for the international interchange of students, Mr. Henry W. Crees, the Hon. Secretary of the movement, said that opinions as to the value of the plan were unanimous. But notwithstanding this the Committee were obliged to forego many of their proposals through a lack of funds. The response to the appeal had been very disappointing for the most part, and as a result no scholarships could be offered for this year. Whether or not this lack of funds would be remedied as their work became more widely known they did not know. But they felt this was a movement in which a large number of people should bear a part—a small part perhaps, but still a part. The information which the bureau was collecting would be as valuable as anything they could offer. They were also doing something towards a very real interchange, in spite of a lack of scholarships.

Lord Curzon and Glasgow University.—The situation at Glasgow University caused by the postponement of Lord Curzon's Rectorial address will appear strange to English readers. The University Courts of Scottish Universities are presided over by Lord Rectors—dignitaries elected by the students and charged in a peculiar manner with watching over the students' interests. It has been for long the general practice to elect as Lord Rector some distinguished public man—political, literary, or scientific,—and such commanding figures as Carlyle and Gladstone have in times past held the office. Now-a-days the tendency is more and more to go to politics for candidates, and such people as Mr. Asquith, Mr. Haldane, Mr. Chamberlain, and Lord Rosebery either have been or at present are Lord

Rectors in one or other of the four Universities. The Lord Rector is, of course, in this case non-resident, and it is the custom for his duties as an intermediary between the students and the authorities to be undertaken by an assessor in the Court appointed by himself in consultation with the Students' Representative Council, while he himself makes one ceremonial public appearance and delivers an address on some academic or intellectual topic to the members—and particularly the undergraduate members—of the University. Lord Curzon's offence is that, though elected two years ago, he has never appeared to deliver this address, and now for the second time has indefinitely postponed it when all arrangements had been completed. It is easy to sympathise with the students' point of view. These positions are highly thought of by the electors to them, and the fact that the leading statesmen of the country can be induced to accept nomination makes it obvious that they carry some value to the men who are chosen to fill them. Lord Curzon will also have to remember that undergraduates, and particularly those in Scotland, employ certain roughly decisive methods of showing their displeasure. If, as is probable, he fails to get a hearing when he finally appears, the improvement in manners which Scottish University men must have welcomed in the last three or four years, and which won Mr. Asquith (who was Lord Curzon's predecessor at Glasgow) such a splendid reception last time he spoke there, will get a grievous set-back. When Mr. Asquith and Mr. Chamberlain have gone before in showing careful consideration for the feelings of their constituents, it is unfortunate for Lord Curzon to persist in his present attitude, and he will be wise (if he values a friendly reception the next time he goes to Glasgow) to turn up after all this time.—*The Manchester Guardian.*

A characteristic generosity.—Mr. W. H. Lever has with characteristic generosity made over to the University of Liverpool the magnificent sum of £91,000 which he obtained in his libel actions against the *Daily Mail* and other Harmsworth papers. It is not stated whether the gift has been made to found an additional chair of Chemistry, or a new chair of journalism, or to strengthen the Law department of the University. The source of the donation would justify one or all of these appropriations. In any case, £91,000 will go far to remove the more pressing financial requirements of the University and will place Lord Northcliffe in the position of an involuntary but munificent patron of learning.

The Educational Review.

At the last meeting of the Viceroy's Legislative Council the Hon. **Elementary education.** Mr. Gokhale moved an important resolution on making elementary education free and compulsory throughout the country. The resolution was not of an ambitious nature. It recommended that a beginning should now be made in the direction of making elementary education compulsory and free in the country. Mr. Gokhale marshalled his facts with great skill in order to bring home to the members of the Council the urgent need for the measure he proposed. In all civilized countries of the world mass education is regarded as one of the duties of the State. Throughout the world it has been possible to meet this obligation of the State to its future citizens only by making elementary education free and compulsory. During the last century under the lead of Germany the countries of Europe and America and in Asia, Japan, have one after another adopted during the last century a system of free and compulsory primary education and to-day the system is in operation in every country in Europe with the exception of Russia and Turkey and a few of the smaller States as also in the United States, Canada, Australia, Japan and even in some of the Republics of South America. Even in India the enlightened ruler of the Native State of Baroda has adopted the system in his State. When the revolution took place two years ago in Turkey, one of the first declarations of the Committee of Union and Progress, which came into power, was that it would take immediate steps to make elementary education compulsory and free. In Russia though instruction is not compulsory it is for the most

part free. In no part of British India, on the contrary, is primary education free or compulsory. After a brief survey of the progress which has been made in this country in regard to primary education during the last quarter of a century as compared with what has been achieved in other countries during the corresponding period, the Hon'ble Mr. Gokhale laid the following suggestions before the Imperial Council:—

(1) Following the example of the English Act of 1870 an Act should be passed empowering municipalities and local boards to make with the previous sanction of Government primary education compulsory within their areas. In view of the unpopularity which compulsion was likely to evoke among certain sections and the special difficulties attaching to the position of the British Government in this country direct compulsion by the State must be avoided at any rate to start with.

(2) Compulsion should be confined to boys only.

(3) The period of compulsory attendance should be between the ages of six and ten. This seems to us to be too low. The London County Council, the leading Education authority in England, has recommended that the age of compulsory attendance at elementary schools should be raised from fourteen to fifteen.

(4) Where at least 33 p. c. of the boys are already at school, the local bodies should make attendance compulsory for every boy within the area. Under this scheme it is expected that it will be possible to introduce compulsion at once in many large towns.

(5) Where compulsion is introduced, instruction should be gratuitous, at any rate

gratuitous for the children of those whose monthly income is below Rs. 25.

(6) The cost of instruction in an area where compulsion has been introduced should be divided between the Government and local bodies in the proportion of 2 to 1.

(7) Education should henceforth be a divided head instead of being a purely provincial head.

(8) Instead of a Director-General of Education the Government of India should have to begin with a separate Secretary for Education in the Home Department. Eventually a separate member for Education should sit in the Executive Council.

(9) A statement showing the progress made during the year in the field of Education and especially in regard to primary education should be published every year with the Financial Statement as is done in regard to Military matters and Railways.

All these suggestions appear to us to be extremely moderate. Considering the importance of primary education in all civilized society one would have thought it strange that so much labour should have been spent on urging the acceptance of a truism. We think that primary education and military conscription are urgently necessary for the progress of our country in various directions. If it is the aim of the British Government of India to elevate the people of this land and make them fit for self-government, nothing is more likely to accomplish this aim than a good elementary education and a course of military training.

It is a gratifying sign that more and more attention is being given to technical education in the Legislative Councils of

India. At the last meeting of the Imperial Legislative Council the Hon'ble Mr. R. N. Mudholkar moved a resolution for the establishment of a polytechnic college for all India in addition to the establishment of colleges of technology in the several provinces. In moving his resolution Rai Bahadur R. N. Mudholkar said:—

"There is, however, nowhere yet a technical institution which, in the language of Lord Macdonnell, is the highest embodiment of instruction in the particular arts or industry which it professes to teach. There is still to come into existence what was so strongly recommended by him, a central institution for each province directing and controlling the teachings of the schools scattered throughout the province, inspiring them with new ideas and furnishing them with good designs. I would, in the first place, point out that the kind of college I advocate is intended to supply a want which is already felt. Secondly, the supply of this demand is urgently needed for the present and future well-being of a country and cannot be ignored without injuring the highly beneficial movement and, thirdly, that it is a want which is not met by any of the existing institutions and does not involve any re-duplication of machinery or departure from the policy accepted by the Government. The institution proposed is for giving instruction in higher branches of mechanical engineering, including machine construction, electrical engineering, marine engineering, railway engineering, textile manufacture, mining and metallurgy and different departments of Industrial Chemistry."

By his position as the General Secretary of the National Industrial Conference Rai Bahadur R. N. Mudholkar is thoroughly acquainted with the industrial and economic

condition of the country and therefore with the needs of the country. He is in charge of a regular bureau of information upon every question connected with the industries of the country. The bureau has published a book detailing the centres where any kind of industrial education is available in India. His request to the Government of India to establish one fully-equipped polytechnic college for all India is a very moderate one. It is the duty of the Government to establish such an institution. In all industrial matters the moving force must come from the Government, as has been the case in other countries. Scientific research is not the aim of the institute; its primary object must be to supply the kind of instruction that is given in the Imperial Engineering College connected with the University of Tokio.

Under the auspices of the Teachers' Association connected with the Teachers' College, Saidapet, the Right Reverend the Lord Bishop of Madras delivered an address on "Religious Education in India." We agree with his Lordship as regards the ultimate object of education. The true end and purpose of education is not so much the conveying of useful information to the mind as the training of pupils in such a way that they might live the best, the happiest, the best and the most useful of which they are capable. But when the Bishop enters more specifically to define the adjectives in his definition of education, we are sorry we have to differ entirely from him. His Lordship thinks that religion stimulates the imaginative faculties of man. This is merely putting the cart before the horse. Religion is the product of the imaginative faculty and its foundations are therefore seen to be slender. Attempts are be-

ing continually made to wean religion from the play of imagination and interpret it in the light of reason. We are further told that morality in a human being can only be achieved on the basis of imaginative ideas. Surely no moral philosopher will accept imaginative ideas as the basis of morality. Nothing can be more fatal to moral life than to base it on imagination. If religion and morality rest on imaginative ideas, then surely we have no means of differentiating between true and false religion. Yet the Bishop lays down as a rational principle that they should teach true religion. But what this true religion is we are not told, though by implication we are led to think that it is the religion which he himself believes. Again, we are told that religious education does not consist in merely teaching religious principles, that a school started by religious men but in which religion is not taught will be more effective in point of religious education than a school started by non-religious men but in which religion is taught. This paradox is unravelled to us in the next sentence. It is not the religious teaching but it is the religious character of the teachers engaged that is really important. How does the character of Renan or Berthelot differ from that of a religious man, say the Lord Bishop himself? All this does not seem to us to be worthy of an address to the students of a Teachers' College, where the students are supposed to be taught the scientific and philosophical foundations of the methods of teaching. We have something still worse in store. As education in India is given, contributed and paid for by the State and as the State without violating its pledges of religious neutrality cannot afford to impart religious education, therefore education must be transferred from the hands of the

State to the hands of the different religious communities themselves. We wonder if the Bishop is acquainted with the development of education in other countries. Once education was solely in the hands of the church. In all civilised countries at the present day education has been taken away from the hands of religious communities and is entirely controlled by the State. In countries like the United States of America, France, Italy, education given by the Government is purely secular. Have these countries degenerated in any way? Are countries like Spain where education is still largely in the hands of the church in the vanguard of progress? We should like to hear what the Bishop has to say to these questions. In this country the utterances of men in position seem to pass unchallenged even though they verge on absurdity.

The Hon'ble Mr. Justice Asutosh Mukerjee delivered the address at the Convocation of the Students and politics. Calcutta University held on the 12th instant. The main portion of the address dealt with the relation of students and teachers to politics. It is the paramount duty of a university to afford to innocent boys and young men of promise under its control adequate protection from the path of evil and ultimate ruin. The problem is by no means easy of solution but there are two powerful and effective remedies at its disposal. In the first place, a systematic extension of the residential system is immediately needed; in the second place, a well-planned and determined effort must be made to impart moral instruction to our boys in schools and to our young men in colleges at every stage of their career. It is impossible

to provide colleges and schools with adequate and well-managed places of residence for their students without a liberal grant-in-aid from the State, continued for many years, and supplemented by private effort on an equally extensive scale. Nor can the expansion of the residential system produce much good, unless the students gathered together are brought into intimate personal relation with devoted, sagacious, wise, sympathetic and patriotic teachers and professors who can inspire their pupils and students with love for noble thoughts and deeds. The Government of India issued a resolution twenty years ago on the importance of moral training in schools and colleges. But it has borne no fruit. The reason is plain. It is not easy to develop a well-planned scheme of moral instruction applicable to all schools and colleges. A mere study of ethical rules and formulæ selected from the great writers of the past or an examination of the primary grounds of moral obligation can not lead to any permanent advantage. Concrete instances of noble and virtuous life, of heroism in war, of genuine patriotism, if presented to youthful minds, by men who sympathise with their noble aspirations, whose loyalty to truth and humanity is as marked as their loyalty to the Government, are likely to impress themselves indelibly on youthful minds. So the problem of elevating and refining the character of young India reduces itself to the question of instructors. All this can be done only by a true national education, a work which has to be done wholly by Indians. The closing words of Justice Mukerjee must appeal to all teachers: "Let not the noble band of instructors of our youth forget

by any means that they are but priests who minister in the temple of learning, where no devotion of experienced teachers and aspiring scholars is too great for the all absorbing pursuit of search after truth and diffusion of knowledge; and let them, with all reverence and in all humility, take as their motto the memorable words of the wise man of olden time: 'Happy is the man that findeth wisdom, and the man that getteth understanding; for the merchandise of it is better than the merchandise of silver, and the gain thereof than fine gold. Give instruction to a wise man and he will be wiser; teach a just man and he will increase in learning.'

An important question connected with the teaching of science is whether teaching capacity or eminence in scholarship should be the chief qualification in the professor of science. In the majority of cases when a professor of science is appointed greater attention is paid to the brilliancy of his attainments and he is exempted from the struggle for existence and left free to carry on his research. This policy is not objectionable so long as the man is fitted for the duties of the teacher, but when the man appointed has no capacity for teaching we doubt the advisability of the step. We think that professors, lecturers and demonstrators ought in the first instance to be men of undoubtedly high teaching qualifications. The brilliant man who knows how to impart his knowledge to others is, generally speaking, the exception and not the rule. The college has to pay great consideration for the student of average intellect, who constitutes a large percentage of the raw material of these institutions. Their chief need is the man who, while having a thorough grasp of his subject, is

able to impart it to others and to appreciate the difficulties lying in the road of the average student. A writer in a recent number of *Engineering* condemns much of the so-called research work in the newer type of university and university colleges established in great industrial centres as a weariness to the flesh and a regrettable waste of time and money. Local training in scientific subjects of men who, for the most part, are going to apply their science in the industrial and commercial world, must be the chief aim of institutions like the Tata Institute. As at present constituted, the results achieved are likely to prove of much benefit to India, though likely to be very advantageous to some brilliant men. The teaching of science with a view to enable men to withstand the stress of application in commercial work should form the chief object of such institutions. The closing words of the writer of the article above referred are worthy of the consideration of our readers:—

"After all, no one can deny that there is much nobility in teaching, as distinct from original investigation.

"Some years ago, at a university degree day, the customary oration, setting forth the merits of the recipient of an honorary science degree, concluded with the statement that the candidate was 'a generous and able exponent of others.'

"Surely no higher tribute could be paid to a teacher than this, which sums up the real qualification needed for those whose high mission it is to raise the standard of education among the soldiers of our commercial army."

In a paper read before the Missionary Conference at Calcutta Dr. Carfield Williams suggests a self-contained college as a remedy for the unrest now existing among students. Though we cannot agree with the dark description he gives of the life and work of the present day Indian student, we are at one with the ideal of a self-contained college he placed before his hearers. "A self-contained college is one which offers its members a complete and many-sided life,—intellectual, social, physical. On the intellectual side it will aim at inspiring and guiding the studies of such of its members as are under instruction not only by lectures but also by the stimulus of intellectual interests shared in common and common intellectual sympathies. The work will be regulated and kept in hand by a reasonable limited number of lectures, but lectures will be supplemented by practical exercises of various kinds, even sometimes by college examinations, by independent work in a library or laboratory and by as much as possible of personal supervision. In special intellectual sympathies will be fostered by informal kinds of instruction such as are afforded by popular lectures, entertainments, and literary societies and debating societies and debating clubs, which belong to the social side even more than the intellectual. On the social side the life will depend first upon the presence of a large proportion of resident students and professors—the college will be largely residential. There will be hostels near the colleges and carefully supervised in which ultimately nearly all the students of every college with comparatively few exceptions will live either by choice when their own houses are near or by the rules of the college, and in them a common feeling of fel-

lowship in the college will grow up. The principal and some at least of the professors will live in close proximity to the college and hostels. Lastly, whenever practical, and means will more and more be found to make it practical, there will be open grounds attached to each college in which healthy games, cricket, football, hockey, lawn-tennis can be carried on and failing this there will at least be a fully-equipped gymnasium. By all these means a healthy common life will be fostered in which all the members of the college, teachers and pupils alike, will share so that in after life a student may look back to the years spent in college as a period of special advantages and happiness." This is the ideal of a university in Europe, America and Japan. We do not know if any of the existing universities in India could attain this ideal in the near future.

From the financial point of view the position of the secondary school teacher in Germany is enviable. The preliminary preparation, including a period of about four and a half years at the University and a two years' course of training, costs some five hundred and forty pounds, and his initial salary, when work begins, is little more than two pounds per week. But in three years it rises to one hundred and fifty pounds per annum, and the salary of a headmaster is more than three hundred and fifty pounds per annum, while, in Hamburg, after twenty one years of service, it reaches four hundred and fifty pounds. The German teacher occupies a most enviable position as regards superannuation. His pension is not only substantial in itself but is continued to his widow and orphans, and in the case of at least eighty per cent. of all the headmasters throughout the empire, not ob-

tained from the teacher's own contributions. Both in Germany and Austria the secondary school teachers discharge their noble functions in eminently satisfactory conditions as regards their salary, their tenure, their hours of work, their relation to the central authority and their freedom from all vexatious restrictions. In Austria, however, salaries are not so high as in Germany and the teacher has to contribute towards his pension fund. Though in Denmark, Norway, Sweden

and Finland the scale of salaries is somewhat lower, there are teachers who are civil servants in the enjoyment of a secure tenure together with regularly increasing salaries, followed on retirement by pension. The secondary teacher in India does not occupy a very respectable position in life. Their salaries are low and they have no scheme of superannuation. The Madras Teachers' Guild has for many years been crying for a superannuation fund without any profit.

MATRICULATION HISTORY OF ENGLAND for 1911 (adapted to the Madras University Syllabus containing the Pre-Norman, Norman and Early Plantagenet Periods) by S. N. GHOSH, B.A. Price—8 Annas.

A HANDBOOK OF HISTORY OF ENGLAND by the same Author. Price—Re. 1.

A HANDBOOK OF HISTORY OF GREECE based on Bury and Smith, by the same Author. Price—12 Annas.

MATTHEW ARNOLD: SOHRAB AND RUSTUM

WITH INTRODUCTION AND NOTES,

By T. O. HODGES, Esq., B.A.,
Principal and Professor of English,

KUMBAKONAM COLLEGE.

PRICE Re. 1.

Srinivasa Varadachari & Co., Triplicane & Esplanade, Madras.

We are desired to publish the following:—

SIR,

Certain remarks regarding Inspectresses of Girls Schools occurring in the article "The Late Matriculation Examination" contributed by *Schoolmaster* to the February number of your journal appear to need comment. They are these:—"What can an Inspectress of Girls' Schools know about the standard of proficiency attained by the Vth Form boys while all her life she has been overseeing the needlework and singing of girls in *Elementary* schools? I believe one of these Inspectresses was an Examiner in English!"

There are only three Inspectresses and not one of them was an examiner in English in the late Matriculation Examination. Further, not one of them has passed her life in the manner described by your contributor. The Inspectresses have many girls' high schools under them, Native and, until recently, European, from which girls appeared for the very examination of which the article referred to hereto. Since the standard of proficiency attained by Sixth Form girls is well known to the Inspectresses, the standard of proficiency attained by boys who are studying in the same class of school and for the same examination cannot be said to be an unknown quantity especially in view of the fact that boys' schools are not unfrequently visited by Inspectresses and the Sixth Form boys conversed with. Many years of the lives of the Inspectresses were spent in high schools in England and elsewhere and the needlework and singing in *Elementary* schools did not concern them.

It appears to me that your contributor is singularly ignorant of the Inspectresses, their antecedents and their work and that he should withdraw the slighting remarks he has made about them.

Yours faithfully,

ONE OF THEM.

THE MADRAS STUDENTS' ADVISORY COMMITTEE.

SECRETARY'S REPORT.

November 1909 to February 1910.

Part I.—Statistical Account of dealings with individuals seeking information and advice as to study in England.

Direct applications have been made on behalf of 57 persons. In addition applications have been made to Mr. Arnold and forwarded to this Committee for being dealt with on behalf of 7 persons, making a total of 64.

The first 18 or 20 direct applications were made before our Circulars were issued, which was towards the latter end of January. The remaining 37 direct applications were made during the last six or seven weeks.

Over 100 letters have been received and answered, and 32 interviews have been held in 22 different cases.

The following were the proposed pursuits of the applicants:—

The Bar, generally in combination with some other pursuit, 23.

Universities, Oxford 6, Cambridge 2, London 8, Edinburgh 6, Manchester 2, Leeds and Glasgow 1 each, Uncertain 3, Total 29.

I.C.S. Examination	...	10
Engineering	...	8
Medicine	...	9
Agriculture	...	3
Forestry	...	2
Textile and other industries	...	3
Police Service*	...	4
Scotch Advocate	...	1
Chartered Accountant	...	1
Uncertain	...	9

The Educational qualifications of the applicants so far as they are recorded were as follows:—

B. A.'s	...	11
Appeared for recent B. A. examination, result unrecorded	...	4
Read the B.A. course but failed at examination	...	3
F. A.'s	...	4
Appeared for recent F.A. examination, result unrecorded	...	3
Read the F.A. course, but failed at examination	...	4
Matriculates	...	9
Read for Matriculation, but not passed the examination	...	6

* NOTE.—These had to be told after communication with Mr. Arnold that there is no opening in England for Indians either with the object of training or to obtain appointments in India.

Medical qualifications	...	5
Legal do	...	2
Engineering do	...	2
Agricultural College student	...	1

Of the 64, 54 have not yet earned any income; of those who have done so there are a Journalist, an Accountant, a Post Office Master, a Telegraphist, a Science Teacher, a P. W. D. Overseer, a P. W. D. Executive Engineer, a Hospital Assistant, a First Grade Pleader, a Sanitary Inspector.

All the applicants are Hindus except 3 Mahomedans and one Eurasian. The record does not distinguish castes. No ladies have applied.

So far as is known only one student has actually gone as yet to England but at least 10, it seems are likely to set out during the next three or four months. Of these may be mentioned in the order of date of their first applications to the Committee.

A, a Medical College student who goes to read Medicine at Leeds.

B, a failed Matriculate who is to read for the Bar and probably goes to Oxford at the same time.

C, a B. A. in Biology who likewise goes to Oxford and the Bar and talks of trying for the I. C. S. as well.

D, a first-class graduate in Physical Science, who takes a scholarship of £150 a year for 3 years given by the South Indian Industrial Association, Rangoon, to study textile industries at the Manchester School of Technology.

E, who has recently tried for the F. A. Examination and has the Bar and the I. C. S. in view.

F, a Mahomedan who has just failed in the F. A. Examination, and is also to try for the Bar.

G, a B. A., M. B. and C. M., with high honours throughout who now aims at becoming L.R.C.P. and M. R. C. S.

Enquiries have only been made in the cases of two students already in England.

PART II—GENERAL PROGRESS.

Handbooks of information have been purchased and sent to each member of the Committee.

Circulars Nos. I, II and III have been printed and widely circulated. They have also been published in the principal papers of this Presidency and apparently in other and distant parts of India, as applications for them have been received from Agra and Bareilly.

The Secretary has been in communication with Messrs. Thos. Cook and Son, Colombo, with a view to information on the subject of the journey to England.

The Secretaries of the corresponding Committees in Bombay and the Punjab, which have been more recently formed, have been in correspondence with this Committee with a view to co-operation and it is hoped that there will be a continual interchange of suggestions and experiences.

The Financial position of the Committee has been settled by an allotment of Rs. 120 for contingencies in the current official year and Rs. 200 a year hereafter, together with Rs. 15 a month for office-rent.

The Resident of Mysore has been added as an *Ex-officio* member of this Committee by G. O. No. 23, dated the 15th January 1910.

The accounts show an actual expenditure of Rs. 81 to date and an estimated expenditure of Rs. 39 more to the end of March.

ARTHUR DAVIES,
Secretary.

3rd March 1910.

Circular No. IV.

INDIAN SENIOR AND JUNIOR STUDENTS AT OXFORD.

The Registrar of the University of Oxford draws attention to the fact that not infrequently students who wish to claim the status of Indian Senior or Junior Students go to Oxford without having the necessary evidence to support their claim.

In order to prevent the inconvenience and delay which often arises from this cause, he suggests that each such student should be provided with a certificate which will at once show that he has satisfied the necessary conditions. These conditions are:—

(a) for a Junior student—

- (1) that he has pursued at his University a course of study prescribed by it and extending over two years;
- (2) that he has passed all the examinations incident to the course.

(b) for a Senior student—

- (1) that he has pursued at his University a course of study prescribed by it and extending over three years;
- (2) that he has 'taken Honours' in the final examination incident to the course.

The certificate should therefore in either case state definitely that the two conditions have been fulfilled.

The conditions under which a student of the Madras University shall be deemed to have 'taken Honours' are that he shall have passed the Examination at that University for the degree of Bachelor of Arts, and shall have been placed in the First Class in two or more of the Divisions of that Examination.

Specimens of certificates which would be sufficient in the case of a student from the Madras University are appended, and it would be a very great convenience both to the Registrar of the University of Oxford and the applicant, if a certificate in one or other of these forms could always be produced when a claim is made.

All certificates should be officially stamped or sealed, and signed by the Registrar of the Madras University.

Form of Certificate for Candidate who desires to become an Indian Junior Student.

I certify that (full name of Candidate) of the Madras University has pursued at that University a course of study prescribed by it and extending over two full years and has passed all the Examinations incident to that course.

(Signed) _____

Registrar of the Madras University.

Form of Certificate for Candidate who desires to become an Indian Senior Student.

I certify that (full name of Candidate) of the Madras University has pursued at that University a course of study prescribed by it and extending over three full years, and that he (see above for definition of taking Honours and quote the facts which make it applicable)

(Signed) _____

Registrar of the Madras University.

(Signed) ARTHUR DAVIES,

Secretary.

Madras Students' Advisory Committee.

MADRAS,

March 1910.

Circular No. V.

CERTIFICATES OF IDENTITY.

Students proceeding to England are strongly advised to provide themselves with authoritative certificates of identity before their departure from India. These certificates are required to enable the India Office to deal with cases in which Indians in England apply for passports to enable them to travel in foreign countries or appeal to the Secretary of State for India for assistance in other matters, and may also prove useful in other ways.

Certificates should be in the form prescribed at the end of this Circular. They should be signed by the Collector of the District or by the Commissioner of Police, Madras, in the case of residents in the Madras Presidency, or by the Political Officer in the case of residents of Native States. For a student the certificate should be signed by the head of his last school or college and countersigned by the Collector, the Commissioner of Police or the Political Officer, as the case may be.

Certificates are intended to be granted to natives of India proceeding to England either direct or after visiting a foreign country. A certificate would be granted for use in England even though a passport may have been granted for the purposes of foreign travel.

Form of Certificate of Identity.

1. Name of applicant
2. Father's name and caste
3. Residence
4. Age of applicant
5. *Nationality of applicant
6. Social and pecuniary status of father (or guardian)
7. Date of probable departure of applicant from India
8. Object of applicant's visit to England (Europe)

Signature of District Officer

(in a Presidency Town, the Commissioner of Police) or Political Officer or head of school or college.†

Dated

(Signed) ARTHUR DAVIES,

Secretary.

Madras Students' Advisory Committee.

March 1910.

* i.e., whether a British subject by birth or by naturalization (or a subject of a Native State).

† Countersignature of the District or Political Officer should be obtained on certificates signed by heads of schools or colleges.

A WITHDRAWAL.

The writer of the article signing himself "Schoolmaster" withdraws his remarks on the Inspectresses of Girls' Schools, none of whom, as he is now informed, was an examiner in English in the late University Matriculation Examination and regrets having given offence to any of them by his remarks.

23-3-1910.

SCHOOLMASTER.

UNIVERSITY OF CALCUTTA

Intermediate Examination, 1910.
Arts and Science.

GOLDSMITH—THE TRAVELLER, edited with Introduction and Notes, by J. M. Hensman, B.A., Principal, Kumbakonam College. ...	0 6 0
Recommended by the Text-Book Committee, and approved by the Director of Public Instruction, Madras.	
TENNYSON—THE PASSING OF ARTHUR, Notes and Introduction, by E. H. Elliot, B.A., formerly Junior Professor of English, Presidency College ...	0 12 0
MILTON—PARADISE LOST, Book II, with Introduction and Notes, by W. Bell, M.A., Director of Public Instruction, Lahore ...	0 12 0
MACAULAY—ESSAY ON ADDISON, with Introduction and Notes, by P. T. Srinivasa Aiyangar, M.A., F.M.U., Principal, Hindu College, Vizagapatam ...	0 12 0
RUSKIN—CROWN OF WILD OLIVE ...	0 12 0
do. Notes, by Prof. J. Horne ...	1 0 0

1911.

GOLDSMITH—THE TRAVELLER, edited with Introduction and Notes, by J. M. Hensman, B.A., Principal, Kumbakonam College ...	0 6 0
MILTON—COMUS, with Introduction and Notes, by Dr. S. Sathianadhan, M.A. 2nd Edition (revised and enlarged) ...	0 12 0
do. by Bradshaw ...	0 8 0
TENNYSON—THE COMING OF ARTHUR, by E. H. Elliot, B.A. In the Press.	
MACAULAY—ESSAY ON ADDISON, with Introduction and Notes, by P. T. Srinivasa Aiyangar, M.A., F.M.U., Principal, Hindu College, Vizagapatam ...	0 12 0

Bachelor of Arts, 1910.

SHAKESPEARE—MERCHANT OF VENICE, by J. H. Stone, M.A., F.M.U., formerly Inspector of European and Training Schools; Principal, Presidency College, Madras ...	1 4 0
JULIUS CAESAR, by Mark Hunter, M.A., F.M.U., Principal and Professor of English, Rajahmundry College ...	1 8 0
MACBETH, by Dr. J. Morrison, M.A., Principal and Professor of English, General Assembly's Institute, Calcutta ...	1 4 0
SILAS MARNER—Cassell's People's Library ...	0 8 0
Notes by W. E. Hoare, M.A., F.M.U., Principal, Doveton College, Madras. 3rd Edition, Revised and Enlarged ...	1 0 0
BACON—ESSAYS (complete) with Introduction and Notes, by the late Rev. F. W. Kelleff, M.A., Madras Christian College, (cloth) ...	2 4 0
LAMB—ESSAYS OF ELIA, by J. H. Stone, M.A. 1 4 0	
Contents: Oxford in the Vacation; Mrs. Battle's Opinions on Whist; The Old and the New Schoolmaster; A Dream Children—a Reverie; Distant Correspondents; A Dissertation upon Roast Pig; Blakesmoor in H—shire; Detached Thoughts on Books and Reading; The Superannuated Man; The South-Sea House; Christ's Hospital, Five-and-Thirty Years Ago; The Two Races of Men; The Old Benchers of the Inner Temple; Grace before Meat.	
1911.	
SHAKESPEARE—MERCHANT OF VENICE, by J. H. Stone, M.A., F.M.U., formerly Inspector of European and Training Schools; Principal, Presidency College, Madras ...	1 4 0
DICKENS—TALE OF TWO CITIES, ...	0 4 0
MATTHEW ARNOLD—ESSAYS IN CRITICISM. I SERIES, ...	1 8 0

BROWNING—RABBI BEN EZRA

WITH

INTRODUCTION AND NOTES,

By H. DODWELL, Esq., M.A.,

Junior Professor of English, Presidency College, Madras.

PRICE—As. 3.

Srinivasa Varadachari & Co., Triplicane and Esplanade, Madras.



The Educational Review

A Monthly Record for India.

VOL. XVI.

APRIL 1910.

No. 4.

THE ENGLISH ASSOCIATION

By PERCY SIMPSON, M.A.

Hon. General Secretary of the Association.

ONE of the most striking developments which recent years have seen in the educational life of England has been the rapid growth of learned societies formed to advance the study of a special subject. Science and the Classics, Mathematics and Modern Languages, History and Geography, each has its organised body which meets and discusses, puts forth programmes and schemes of study, advocates reform in methods of teaching, and invariably, for in this point they are all agreed, preaches the paramount importance of its own particular object. Teachers in England at the present day are overwhelmed with suggestions and advice which pour in upon them in a steady stream from these rival sources. But these societies are much more than aggregates of teachers; the scholar and the expert also join them, and members of the general public. A series of keen and concentrated efforts such as these, supported in some cases by the highest intellectual forces at their command, must inevitably raise the standard of English education.

One of the latest societies to enter the field is the English Association, now in its fourth year of life and numbering some 1600 mem-

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bers. Not many years ago English was, by common confession, the most neglected subject in the curriculum of English schools; but it is now receiving more and more its share of recognition. It is specially appropriate that, at such a moment, there should come into existence an Association which forms an organised centre for the expression of opinion on questions affecting the national language and literature. It has certainly succeeded in bringing together into one federation teachers of every grade, scholars, men of letters, and the average cultured Englishman. Viscount Morley is President, and Lord Curzon is one of the Vice-Presidents. Two eminent novelists, Mr. Thomas Hardy and Mr. J. M. Barrie, are also Vice-Presidents; a third, Mr. Anthony Hope, last year gave an address to the Society. Scholarship too is well represented on the official list: there are philologists like Sir James Murray, Dr. Henry Bradley, Professor Skeat and Dr. Furnivall; critics like Professor Walter Raleigh and Mr. A. C. Bradley; the Shakespearian scholars, Dr. Sidney Lee, and Dr. H. H. Furness; nearly all the English Professors in the Kingdom—the names of Professors Dowden, Elton, Gollancz, Herford, Ker, Mackail, and Saintsbury, may be given as a selection—and to these may be added distinguished representatives of foreign scholarship, such as

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Professor Alois Brandl of Berlin, the French Ambassador at Washington, Monsieur J. J. Jusserand, and the American Professors Bright, Lounsbury, and Spingarn. To represent education, there are Canon Lyttelton, Head Master of Eton, Dr. Burge, Head Master of Winchester, and Dr. Gow, Head Master of Westminster; and the Chairman of Committee is a former Minister of Education, the Right Hon. A. H. D. Acland. It would be easy to cite further names; but those already given are sufficient to show that a body which includes them may claim to speak with authority and is certain to be working on sound lines.

It will be well to quote from an official source the statement of the chief objects of the Association. They are defined as follows:—

(a) To afford opportunities for intercourse and co-operation among those interested in the study and teaching of English Literature and Language.

(b) To promote the due recognition of English as an essential element in the national education.

(c) To discuss methods of teaching English and the correlation of School and University work.

(d) To encourage and facilitate advanced study in English Literature and Language.

To carry out these objects the Association employs the simple machinery of meetings and publications. The titles of some of the addresses and lectures may be given as an illustration of the topics treated at the meetings, for instance: "Shelley's View of Poetry" by Mr. A. C. Bradley; "The Poetry of William Watson" by Canon Beeching; "Milton and Party" by Professor Elton; "Sir Richard Fanshawe" by Professor Mackail; "Romance" by Professor Ker; "The Impersonal Aspect

of Shakespeare's Art" by Dr. Sidney Lee; and "Shakespeare and the Grand Style" by Professor Saintsbury. Most of these have been printed and issued to the members of the Association.

The educational work is carried on largely by means of publications. Leaflets have been issued on such topics as the following:—"English Literature in Secondary Schools" by Mr. J. H. Fowler, of Clifton College; "The Teaching of Shakespeare in Schools," "Early Stages in the Teaching of Literature," "A Short List of Books on English Literature for the Use of Teachers," "Types of English Curricula in Boys' Secondary Schools," and similarly in Girls' Schools.

Three times a year a bulletin is also issued, giving the official record; a selected bibliography, to which foreign scholars contribute the notices of works on English published in France, Germany, and America; and occasional articles on matters of special interest. This year in addition a volume of monographs will appear, under the editorship of Mr. Bradley.

The annual subscription—a very modest one, considering the wide range of the Association's activities—is five shillings; the payment of the sum of three guineas constitutes life membership. The Secretary is Miss Elizabeth Lee, 8 Mornington Avenue Mansions, West Kensington, London, to whom all applications for admission to membership should be addressed.

Is it possible for the Association to be of service in India? Its form of organisation would suggest that this is the case. The Central Body has its headquarters in London, but there are also branches vigorously at work in the Provinces, in Birmingham, Bristol, Liverpool, Manchester, and elsewhere; and

there is a Scottish branch with local centres similarly scattered through the country. An Indian branch or branches—the headquarters of the Indian Universities would naturally suggest themselves as the centres of organisation—keeping in touch with the main body, receiving its publications, and discussing on the spot the complex problems which arise in the educational system of India, should be fruitful in good work, and would give Indian and Englishman an opportunity of meeting on common ground. It is interesting to note that a suggestion to this effect has already been made by a distinguished Indian, the Right Hon. Syed Ameer Ali, of the Judicial Committee of the Privy Council. Speaking at the annual dinner held at London on January 14, he paid a warm tribute to the aims and ideals of the Association, and indicated the great possibilities of future good which it might achieve within the empire. 'I believe,' he said, 'that if branches of this Association are opened in different centres in India in conjunction with the educational institutions where the youths of the various nationalities are being trained in Western ideas through the medium of the English language, you will be conferring a very great boon on the empire. These young men require to be trained to think—and I believe that is the first essential of culture—to think according to the best models of the empire to which they belong; and I venture to say that if they are accustomed to think in the language of the empire they will lose in no degree the individuality which is theirs by their creed or their race, but they will be welded into the imperial entity to which all the nations who owe allegiance to our Sovereign should be proud to belong.'

It is in the hope that this generous sugges-

tion may bear fruit in India that a brief statement of the principles and working methods of the English Association is laid before the readers of the *Educational Review* of Madras.

Postscript:

My friend, Mr. Mark Hunter, of the Indian Educational Service, to whom the above paper has been communicated, is very strongly of opinion that a Madras Branch of the English Association is not only possible but desirable. 'If energetically worked,' he writes, 'it would greatly contribute to the improvement of English studies both in Secondary Schools and in Colleges. Three of the four objects of the Association, in the list quoted above—those defined in (a) (c) and (d)—are quite as applicable to Madras as to England; perhaps even more so, in view of the fact that the object defined in (b) has in Madras long been realised. English is a compulsory branch of study in Madras Secondary Schools, forming indeed the most important side of the curriculum—a condition amply recognised in recent educational changes. In University education, the study of English Language and Literature form, in the scheme adopted by the reformed University, at least half of the University course for all students during the first two years of the complete four or five years' course; while, in the case of students seeking the ordinary B. A. degree, the proportion continues the same throughout the whole four years' course. In addition, the scheme for advanced studies includes provision for an Honour course of three or four years in English Literature and Philology. Students selecting this course devote their whole time to the study of English.

'Now there can be little doubt that a

branch of this Association, if organised on a wide basis—that is to say, with the support and co-operation, as far as possible, of all existing educational agencies, official and non-official—could be made a most valuable means of ensuring the adoption in schools of the best and most recent educational methods as applied to the teaching of English, and would in the case of the more advanced studies supply perhaps the most serious defect from which they have suffered in the past, by bringing teachers of English in touch with the best literature of the subject and with the results achieved by scholars working in the same field in Europe and America.

‘Towards these ends the English Association would form a basis of union and a centre of combined effort for those immediately engaged in teaching English, such as no purely local organisation could supply, and the mere fact of affiliation with a Society officered and supported by such eminent scholars and men of letters as those named above would lend the branch an influence to which no local independent body could for a moment pretend.’

THE PROPER METHOD OF TEACHING THE YOUNG.

IT is admitted on all hands that the profession of teaching is the noblest of all the professions. The teacher is the educator of humanity. The making of a nation depends on his influence. We are what our teachers have made us. Among those that influence the young and form their character the most prominent place has to be given to our teachers.

In all successful teaching it is the personality of the teacher that plays a prominent

part. He is looked up to as a semi-divine being and to the youngsters under him his word is law. In his little circle he wields the greatest influence and his example is a model for imitation. “As is the teacher so is the school.” His actions are reflected in the acts of his young disciples. It is necessary therefore that every teacher should realize this responsible position. He should love his profession, be affectionate towards the children, be virtuous in disposition and good mannered to all. His character should be ennobling and every act of his should be such as to lift the young soul.

But what is the work which he has to do? He has to educate his pupils. The aim of education is to prepare his children for life. The pupils should be so trained at school that they may, when they come of age, be able to discharge their duties to their own satisfaction, and to the satisfaction of the Almighty to whom we all owe our being. The teacher should always keep this aim in view and arrange his work and the courses of instruction in school so that this aim may be realized. Teaching is not a mechanical process. Without clearly understanding what our aim should be, without a grasp of the fundamental principles of the child’s psychology, we can never succeed as teachers. We must adapt ourselves to the conditions of child-life, suit the syllabus of work to the children’s present environments and their probable future career of life and be slaves to no rigid curriculum or time-table. Children are not all cast in one mould. Nor can they be made alike. The rules governing children should be elastic and the intelligent teacher should have freedom of action.

Next to the personality of the teacher and the spirit with which he works, his methods

of teaching are very important. A method is nothing more than a system and like all systems the advantage in its use consists in its organisation. If a system is properly organised so as to fulfil the end in view, it becomes a great help in our work. But if no forethought has been exercised in its organisation and if we fail to keep the end in view, the method becomes our master, our individuality is lost and the fulfilment of the work for which we labour never reaches our arm’s length. In educating our pupils, therefore, we must have a method. “Which is the best method?” is my present question.

Let us first understand clearly what we as teachers have to do at school. We must educate our pupils and discipline their minds. Children are not parrots. They possess reasoning faculties. Their minds resemble a tablet of wax in so far as they are ready to receive impressions. But it is a mistake to suppose that their minds are a blank paper. They have instincts of their own. They possess curiosity, imitation and activity. The characteristics of children should be taken into account in educating our youngsters. If we go against them and if our methods of teaching fail to take into account the chief characteristics of childhood we are doomed to failure. That method therefore is best which takes into account the psychological condition of children and is adapted to their mental condition.

As the aim of education is to prepare our pupils for complete living and as life consists of action we must from the every outset make our teaching practical. Education must be a means of forming men not simply to enjoy life but to accomplish something in the life they enjoy. Life presents an infinite number of opportunities and calls us to perform a multitude of duties. We must therefore uti-

lise the spontaneous activity of children and give them interesting occupations which will develop manual dexterity. It is a matter for regret that in the majority of the schools at present very little attention is paid to the training of the hand. We must all remember Carlyle’s dictum that a man is a tool-using animal. “Man can use tools, can devise tools; with them the granite mountain melts into light dust before him: He kneads glowing iron as if it were soft paste; seas are his smooth highway; wind and fire his unwearing steeds. Nowhere do we find him without tools; without tools he is nothing; with tools he is all.” To use tools involves using the head and eye in conjunction and not alone but guided by the mind. Education now trains us to desk-work and not to handiwork.

The next requisite for a good method should be the training of the eye. We are so accustomed to our eyes that we fail to recognise that to use them properly they require some training. Without accurate observation our sense-percepts will be inaccurate and our knowledge consequently will be inexact. Knowledge we know is power but it is only that kind of knowledge which we gain through observation and not that learnt through books. If our pupils can but make use of their eyes they will soon find “tongues in trees, books in babbling brooks, sermons in stones and good in everything.”

Nor should we forget to train the imagination of our pupils. Those who have gained reputation as practical people had a large measure of imaginative power. This power of constructive imagination is necessary for all those who are expected to foresee difficulties and take stock of the future. We must therefore see that we cultivate this power in our pupils and thus enable them to discharge their duties in life in the best manner possible.

sible. There is a dearth of imaginative power in our children and our pupils are ever ready to imitate rather than to originate and individualise. This defect should be remedied by our teachers.

Next, it is a mistake to suppose that our pupils have no reasoning faculties. The faculties are all there—all in embryo and we will be bad teachers if we deny the existence of this faculty in children and make our instruction dogmatic and didactic. We must not communicate learning but must teach our pupils how to learn. We must put thinking heads on the shoulders of our rising generation. Experiments have to be performed before the pupils and they should be enabled to draw the correct inferences. If our pupils are not trained to exactness in word or in deed, if they are not able to think "in shape" as Mr. Thring has put it, if a spirit of enquiry and a search for causes is not cultivated in them and if they are not curious to know the why and the wherefore of the common phenomena, the task of our teachers cannot but be considered to have been poorly done.

From what has been written above, you may infer that I consider that method of teaching best which takes into account the psychological condition of pupils, which trains the hand and thus prepares it for the world—the greatest of workshops, which develops accurate observation and which cultivates clear thinking and logical reasoning. What is this method? Let us call it the scientific method. The scientific method is the method which our teachers should adopt if they desire to prepare our pupils for the battle of life. Let me illustrate this method.

Take the subject of English. A sentence which has a meaning is taken as the unit and pupils are taught to converse on familiar

subjects. Ample practice in conversation is given before pupils are asked to read and write. The pupils learn how sounds originate and they are thus enabled to command their breath and pronounce words correctly. Composition is carefully attended to in the higher classes and practice given in letter-writing. Pupils think about the subjects given to them, arrange their ideas, group them into paragraphs and learn to sum up a discussion and to arrive at a conclusion by a process of logical reasoning. Spelling is better learnt through the eye and pupils are therefore practised to silent reading.

In vernacular teaching prominence should be given to ideas and not to words. Illustrations should be freely resorted to. Questions in the very words of the book are avoided and pupils are practised to answer intelligent questions. A taste for literature should be created. Sow good books in the path of children and cultivate the art of reading. Manuscript reading should be amply practised. The idolatry of knowledge should be smashed and the duty of teachers should be to develop knowingness in children. Language should be so taught as to be a means of cultivating the powers of thought and imagination. Illustrated moral maxims may be recommended for recitation and it is advisable that the recitation should be accompanied by the appropriate *ragams*. Writing may be correlated to drawing and legibility, speed, and accuracy due attention should be paid to.

The main aim of teaching arithmetic should be to develop the thinking powers of pupils and to foster in them habits of self-reliance.

Briskness in mental arithmetic should be encouraged and the sums given should be practical. Pupils should be enabled to see how one step leads to the next. Thorough-

ness should be insisted on. Subtraction should be taught along with addition and division along with subtraction. When the values of places are clearly learnt the teaching of decimals may begin. The teaching should in the early stage be with the help of concrete objects. Bazaar bills may be taught by 'shopping.' The giving of long sums involving many processes serve no other purpose than that of testing the patience of pupils. Pupils should be practised to make their own measurements and construct their own tables. In the working of sums, short and intelligent methods should be recommended.

Next, do not confine your children to the four brick or mud-walls of your schools. Let them romp about and play. Allow free vent to their spontaneity and encourage native games and sports. Watch them during play, observe their peculiarities and try to lift their souls. Proper attention should be paid to moral training. For this end, the teacher should be a model for imitation; he should check the evil actions of pupils on their first appearance; create opportunities for doing good and recommend good books and develop a spirit of healthy union among the children.

Develop observation by means of Nature study. Create a fondness for the creation and take pupils on well-arranged and previously thought-out excursions. Let them be familiar with all the important natural phenomena and their obvious causes. Foster a spirit of research and enquiry and let our pupils take nothing on trust.

Train the hand in the beginning by organised manual occupations. Free-hand drawing should be largely practised and attention paid to drawing of plans to scale and drawing from real objects.

Every pupil should be acquainted with the laws of health and teachers therefore by their attention to sanitation and cleanliness in and out of school and by explanatory references to such matters occurring in text-books, should teach our children the necessary precautions against the development of diseases.

We expect our pupils to be good citizens in after-life and to this end we should give them an elementary knowledge of the different departments of administration and foster in them the virtues of loyalty, obedience and patriotism. Our pupils should know how to behave in this world and why they should so behave.

In teaching, the duty of the teacher should be to develop observation, train the hand, discipline the mind and cultivate the powers of judgment and reasoning. Such a method is called the scientific-method. The teacher should not be a slave to any rigid curriculum or time-table. Nor should he be an automaton wound up once for all in a training college. Every teacher must work out his own salvation. At present pupils are not asked to do things for themselves. This accounts for the fact that most of us are not practical and are wanting in imaginative power. Self-reliance is not fostered. Experiments are not performed with a motive nor are pupils helped to draw the inferences for themselves. We are blind to what goes on around us. Bad housewifery makes our little homes places of vexation and torment. When the weary worker comes back from work wanting to refit, cookery alone can turn him outfit for work again. Good cookery should mean economy, health, comfort and love. The cooks in our kitchens have no eyes—their fire is disproportioned to the work, they scarcely know when the water boils, they rarely weigh

or measure. The mistress is no better and can rarely teach the cook a system. Again many of the infant diseases are due to a want of exact knowledge of science on the part of the mothers.

Though the above subjects are included in the curricula of schools the results have not been satisfactory. This is chiefly due to the fact that in teaching, the proper method is not adopted and even where attempts are made to adopt the proper method the end is not kept in view and too much fuss is made about the method. Like a good mirror that method is best which least displays itself. The scientific or the heuristic method is according to my humble opinion the best method of teaching the young. The scientific method must not be confounded with science teaching in schools. A scientific method is a system which enables our teachers to cultivate scientific habits of mind. "To be scientific is to be as far as possible exact in thought, word and deed; to act with a purpose and after due and careful consideration; to be observant and thoughtful; to be logical and methodical and to be guarded but fearless in opinions and judgment." For complete living our

pupils must march with the times and it is only the scientific method that enables our pupils to keep pace with the march of civilisation. This method claims to be a practical method as children are set to make measurements and find out things themselves. It is a logical method as it develops thoughtfulness and reasoning. As it encourages habits of self-reliance, thrift and obedience and enables pupils to foresee difficulties it is a system in which the mind is well disciplined. It is an anti-dogmatic system as nothing is taken on trust. As most of the exercises relate to the common objects or practices of daily life it is a very useful system. Lastly it is an ennobling system as it gives play to the imagination and tends to turn the imagination not inwards but outwards. It is this scientific method, that has been adopted in the best schools on the continent and I exhort all the elementary school teachers to give a fair trial to this system and thus make of our pupils good citizens and cheerful householders not only ready to enjoy life but to accomplish something in the life they enjoy.

MAHAKALI SUBRAHMANYAM.

THE RECENT EDUCATIONAL CONFERENCE IN BOMBAY.

THE Educational Conference recently held in Bombay under the joint auspices of the Educational Department and the Teachers' Association, very successfully concentrated public attention on some extremely important subjects connected with the system of education as it obtains at present in this country. Religious and moral education have become the topics of the day. No convocation address, no speech made to students, no contribution made to discussions of subjects of educational interest, and no lecture even on a non-educational subject, is now-a-days regarded as complete without a reference to religious and moral instruction in our schools and colleges. And this is natural. The events that have taken place in India within the last few years have made people pause and seriously ponder over the present situation. It has been felt that the rising generation is not being properly brought up and that many of the evils which we all so much deplore are due to the lack of proper religious and moral education. This fact being then assumed, the question arises how shall we improve the situation? Is it possible for us to introduce religious education in our schools and colleges? How shall we impart moral education to our boys? Should it be based upon religion or should it rest on a secular basis? What can Government do in the matter? These important questions demanded a solution at the hands of the Bombay Conference and though it was not possible that they should be satisfactorily solved, the discussion which took place there, is calculated to lead us one step further in the solution of those questions. In the introductory speech

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with which His Excellency Sir George Clarke opened the proceedings of the Conference—a speech which like his other speeches, evinced a firm grasp of broad principles and an appreciation of the limitations imposed by circumstances—His Excellency said that the question of moral education has been lately attracting greater attention in all civilized nations and that in the transitional stage through which India is passing at present, owing to the clash of two divergent civilizations, it has become necessary to supply new modes and rules of conduct in the place of the old ones which have been losing their hold upon the mind of the people. He stated that it was not possible for Government to do anything in the matter of religious instruction, essential though it is to mould the minds and characters of the members of the younger generation. As regards moral education much may be done by the teacher, both by precept, and example, and especially the latter and the ancient authoritative and sacred books of the Hindus, for instance, such as the Bhagvat Gita, may be utilized for impressing moral lessons on the minds of the young. In the discussion which followed on this question, opinions varied and touched the two extremes. Not that there was anybody in the Conference who did not feel the urgent necessity of moral education. But there was a keen difference of opinion as to whether moral instruction should have a religious or a secular basis, though the general sense preponderated in favour of the first view.

Here I should like to emphasise one important point. Though the need of a general moral education for our students may be admitted as urgent, it is difficult to agree in the wholesale condemnation which some

critics of our secular educational system have passed upon its alleged godless and morally indifferent character. It may be godless in the sense that God is not directly preached in our schools and that the young men who go out into the world from our Universities have not the same respect for all those old prejudices, customs and manners which members of the past generations had. But it must be distinctly remembered that our students and young men generally, are not a whit less moral or even really less religious than their predecessors or their contemporaries in other countries. If any thing, they are better and may confidently challenge comparison. No doubt during the last few years many youths in this country have been deluded and misled into thoughts and acts of an undesirable character. But that has little to do with morals. Of course I use that word in its ordinary usual sense. To prescribe religious and moral education to correct the wild and misdirected turn which the thoughts of many young men about politics and such other matters have taken, is to misunderstand the disease altogether. The evil is political and not moral or religious, and no amount of moral preaching or sermonizing would arrest the growth of the silly ideas. The students have been long fed on unwholesome political literature and peculiar habits of thought have been formed. They have been accustomed to look at things through distorted media. If they are supplied with correct information and are taught to take correct and sober views of things, the undesirable tendencies may be easily checked. But proper control has not been so far exercised in this connection and students have been allowed to have their own way. Yet that is no symptom of bad morals as the word is popu-

larly understood, and religious or moral education no remedy.

This brings me to the consideration of civics, the second topic discussed by the Conference. If we wish that our students should be properly equipped for the position they will be called upon to occupy in later life, it is essential that they should be taught the duties, privileges and responsibilities of citizenship. As Mr. Natarajan urged in his paper, the system of teaching civics in this country should be historical, so that students may be able to realize the gradual development of the present form of society and government among us. They will also appreciate the limitations of their situation and the path of duty will be clear to them. Ignorance, absence of the historical and the critical faculty and the habit of taking things as they are presented, without any careful thought, are responsible for many of the raw, silly and wild notions about Indian society and Indian politics which we unfortunately find current among our students. Youthful curiosity and enthusiasm must be properly directed through the right channels and this can be done by a course of civics taught in the senior school classes and in the colleges. It is no use shutting out students from all politics. Active politics, agitation and demonstrations, are indeed no business of theirs, but we must provide a substitute and do something positive to prepare them for the life of citizens. The courses of civics suggested by Mr. Welinkar are designed to meet this need and will prove very useful in giving the students the grounding that is necessary in that subject. But here the difficulty, as in the case of moral education, will be about the proper sort of teachers. Teachers will have to be specially trained for that purpose.

Even then the subject will require a delicate handling which will be rarely met with and few teachers will be thought worthy of the trust. Government also will not readily see their way, therefore, to adopt the proposal, and even if it is adopted, nothing more than prescribing a text-book like the "Citizen of India" is likely to be done. If it comes to this, matters will not have improved. No practical action can therefore be expected, in the near future and the question is bound to hang fire for a long time to come if in the meanwhile it is not dealt with in the fashion indicated above.

But to come to the point of religious and moral education. Indian people are intensely religious and their whole life is closely bound up with a kind of religion. Religion however is not the end but the means, and the majority of speakers in the Conference held the view that moral education ought to be based on religion. In the first place it is not feasible for our Government to introduce religious instruction in their institutions. Supposing they employ Pandits and Moulvies for the purpose, the teaching is bound to be mechanical and formal. Religion and morality are not subjects like Sanskrit or Persian. Denominational institutions may give religious education as they like and parents who may be particular about it, should see to it in the homes. The exclusively secular education, that is at present being given in our schools and colleges, has in no way undermined the morality of our students. What the advocates of religious education seek to attain, may best be achieved by a general moral education imparted by the teacher by means of his own example as well as with the help of stories and such other means. Moral teaching must be more indirect than direct. The pupil must live in

healthy and moral surroundings. The home and the school ought to exercise and are calculated to exercise a wholesome moral influence which no books or sermons in the world can even partially exert. The power of narrow creeds and dogmas is, throughout the whole world, being weakened and the general tendency in all progressive countries is to secularize education. Modern civilization, new inventions and discoveries of science, are liberalizing the intellect and widening the outlook of man. Under these circumstances religious sanction can no longer be made the spring of human action. A certain conduct is good or bad because it is ultimately beneficial or otherwise and not merely because it has the sanction of a particular religion. If it may be said that religious precepts about good conduct are based upon and are consistent with ethical considerations, then what is the necessity of religious sanction? We are not here speaking of the illiterate masses who cannot reason and must be coerced by the hope of heaven into good actions. We have to deal with pupils who are to be educated, and whose reasoning faculties are to be developed. Why then cramp their intellects by religious sanctions not to be questioned or disputed about? Leaving this higher and controversial ground, however, we may consider the practical aspect of the question as it presents itself to us at this moment. The teaching of creeds and religious dogmas in the Government schools and colleges is impracticable and even unnecessary. Moral education therefore must perforce have a secular basis. For Hindu boys, stories from the Ramayana and the Mahabharata will certainly prove very inspiring and instructive. Moral text-books designed to satisfy Indian conditions on the models of similar books

used in other countries may also be used with advantage. Much however must depend upon the home, the school and the personality of the teacher. His Excellency Sir George Clarke's speech referred to at the beginning of this article, has duly emphasised these points and deserves a careful perusal at the hands of all those who take any interest in this subject. A boy will be honest, truthful, and obedient by the indirect and imperceptible influence exercised on him by his surroundings rather than by direct precept though the latter has its own uses to a limited extent. A game of cricket played in the proper way will do more in this connection than a number of religious sermons or moral discourses. It is thus possible in all educational institutions to create a moral atmosphere and to impart moral education both indirectly and directly and steps must be taken to achieve the end desired in a systematic and thorough-going manner.

The third and the last question discussed by the Conference was hygienics. There can be no two opinions about the desirability of diffusing a general knowledge of the laws which regulate individual and public health. Much of the unhealthiness and mortality of our towns and villages is to be traced to ignorance, though poverty is not less responsible. Even in the higher classes of our society the laws of health are unknown and diseases and deaths are often caused by impure air, impure water, ill-ventilated houses and dirty surroundings. If the value of the laws of health is early impressed on the minds of pupils, personal and public health will vastly improve and the problem of sanitation will be more easy of solution. Care will however have to be taken to prevent this subject from being an object of cram; otherwise the aim of hygienic instruction will be frustrated and

the remedy will be worse than the disease. A scheme for this purpose must be carefully drawn up, suitable to the various standards in the high school. But will not moral instruction, civics and hygienics consume more time and energy on the part of pupils and increase the already heavy burden of their studies? I think, as suggested by the Government in their now famous letter to the Bombay University, chemistry should be replaced by hygienics at the Matriculation, though candidates need not necessarily be examined both in that subject and civics. If necessary, their knowledge may be tested and certified to by the heads of schools.

On the whole, the organizers of the Conference are to be congratulated on the success with which they brought before the public mind such important questions. Its meetings were presided over by persons well-known for their deep interest in the cause of education. The Director of Public Instruction took a leading part in the discussions and His Excellency the Governor did it the inestimable favour of opening its proceedings with an excellent and well-thought out speech. Though the resolutions of the Conference lacked definiteness and therefore much of its discussion is likely to end in nothing practical, yet, there has been much clearing of ideas and our educational policy cannot but be affected for the better on account of the discussion. Let us hope that Government will take the earliest opportunity to give effect to some of the suggestions made at the Conference.

V. G. KALE.

SOME CURVES.*

FELLOWS of the University, Ladies and Gentlemen! From the earliest times up to about 60 years ago, a curve was always understood to be capable of mechanical construction, whereas to-day the notion of a curve is more general and may be defined as follows: Let OA and OB (Fig. 1) be two perpendicular

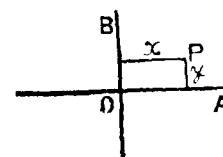


FIG. 1.

straight lines drawn on this board, and let x and y denote the perpendicular distances of a point, in the plane of the board, from OB and OA respectively; then a curve is specified, as soon as we know the law according to which x and y depend on a continuous variable, say t . For example, according to the above definition, the equations $x = t, y = \cos \frac{1}{t}$, specify

a curve. But we cannot trace this curve in the neighbourhood of OB; for, as the curve approaches OB, the ordinate y changes more and more quickly from -1 to 1 , so that such a neighbourhood contains an infinite number of ups and downs of the curve. [The word "infinite" is to be taken in its literal sense and not in the same sense as in the phrases "infinite pains" and "infinite thanks" of common parlance. Strictly speaking, the sufferer would be past all pains, long before they became infinite; and the grateful heart would burst, long before the thanks approached infinity.]

* A lecture delivered by Ganesh Prasad, D. Sc., Professor of Mathematics, Queen's College, Benares, before the Allahabad University Society on March 10th, 1910.

The four curves (Figs. 2, 3, 4, 5) which I

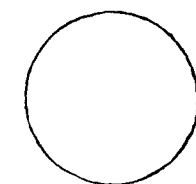


FIG. 2.—Circle.

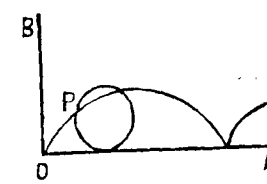


FIG. 3.—Cycloid.

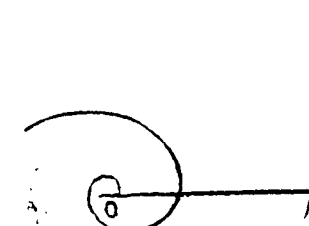


FIG. 4.
Equiangular Spiral.

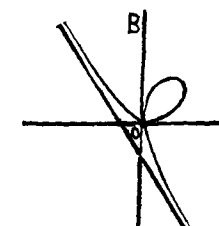


FIG. 5.
Folium of Des Cartes.

have traced on the board, viz., the circle, the cycloid, the equiangular spiral and the folium of Des Cartes, are, of course, all capable of being constructed mechanically. On the other hand, the two other curves, of which I will speak, baffle our senses of perception. I will not consider in any detail the various psychological problems that arise in this connection. It will be sufficient for the purpose of this lecture, if I restrict myself chiefly to the enumeration of some of the problems connected with the six curves and to the sketch of the history of each of these problems. I trust I will thus succeed in showing to you, how whole lives have been spent in the search after mathematical truths; how Mathematics, the exactest of sciences, is not without its romance; and how great is the enthusiasm with which it is capable of inspiring its true votaries.

1. The most important problem connected with the circle, viz., the problem of its quadrature, may be thus formulated: By employing a scale and a compass, to construct a square

which is exactly equal in area to a circle of given diameter. As the area of the circle is $\pi \times (\text{radius})^2$, where π is the ratio of the circumference to the diameter, it is obvious that the study of the number π is essentially connected with the problem of the quadrature. Thanks to the researches of Prof. Lindemann on the character of π , we know now that the problem is insoluble. But as this number continued to exercise a remarkable fascination on thinkers during a period of more than 4000 years, I will give you an outline of its history.

2. The earliest attempts at the solution of the problem of the quadrature were made by the ancient Egyptians, the Hindus and the Hebrews. The *Rhind Papyrus*, which is a mathematical handbook of the ancient Egyptians and which was composed in the reign of King Ra-a-us (about 1800 B. C.), contains the following rule for squaring the circle: Shorten the diameter by $\frac{1}{8}$ of its length; then the area of the circle is equal to the area of the square of which the diameter, thus shortened, is a side. The *Sulvasutras*, which are now admitted to be at least 3000 years old, contain the following rule: Prolong the half of the side of a square one third of the excess of half the diagonal over half the side; then the area of the square is equal to the area of the circle of which the prolonged line is the radius. Last of all the *Talmud* contains the following statement: That which measures three lengths in circumference is one length across.

The approximations to π given by these rules are respectively 3.16, 3.09 and 3. These approximations appear to us very rough. But that is no reason why we should look upon them as empirical. It is probable that they were obtained by the application of the same fundamental principle as that used later by

Archimedes, Aryabhatta and the European investigators of the Renaissance.

3. Archimedes was born in Syracuse in 287 B. C. and was killed in 212 B. C., by a Roman soldier on the capture of that town by Marcellus. Archimedes used the principle that the circumference is greater than the perimeter of an inscribed polygon and less than that of a described one. Although handicapped by his ignorance of the Hindu system of notation, he succeeded in calculating the perimeters of 96-sided regular polygons, and thus found that π lies between $3\frac{1}{7}$ and $3\frac{1}{4}$. Therefore it is to Archimedes that we owe the familiar approximation $\frac{22}{7}$. Very little is known of Aryabhatta who, with the help of 384-sided regular polygons, succeeded in finding the equally familiar, but much better, approximation 3.1416. It is, however, generally believed that this great mathematician, who, as the reputed inventor of the current system of notation, may be classed as one of the greatest benefactors of the human race, was born near Patna about 470 A. C. The approximation of Aryabhatta remained the best known approximation right up to the middle of the 16th century.

4. Among the investigators of the Renaissance I may mention Cardinal Nicolaus von Cues, who was the first European investigator of modern times to attempt the quadrature. The famous approximation $\frac{355}{113}$, which is better than Aryabhatta's, was discovered by Adrianus Metius. A few years later, with the help of a regular polygon of 2^{10} sides, Adrianus Romanus obtained π correct to 15 decimal places; and last of all, in 1606, Ludolf van Ceulen, Professor at the University of Leyden, obtained the first 35 decimal places in the value of π by using a polygon of 60×2^{10} sides. This was looked upon by

Ludolf as the greatest achievement of his life, and the 35 decimal places were engraved on his tomb at Leyden, where they could be deciphered up to the beginning of the last century. The stanza * on the board gives the value of π correct up to 30 decimal places, if for each word we put down the number of letters in it.

5. With the French mathematician Vieta began a different period in the history of the problem of the quadrature. Vieta was the first man to give an exact formula for π by means of an infinite product. The famous formula of Wallis, who was Professor at Oxford, is of the same type as Vieta's. Wallis's formula is the following:

$$\frac{\pi}{4} = \frac{2}{1} \times \left(\frac{3}{2}\right) \times \left(\frac{4}{3}\right) \times \left(\frac{6}{5}\right) \times \left(\frac{8}{7}\right) \times \dots$$

By using this formula we get closer and closer approximations to π the farther the multiplication is continued. An exact formula of a different type was given by Gregory by the infinite series named after him, viz.:

$$4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \dots\right).$$

With the help of series similar to Gregory's but better adapted to calculation, Machin obtained the first 100 decimal places in the value of π , and in 1873 Shanks carried the approximation to 707 decimal places.

6. About the middle of the 17th century the leading mathematicians, including Huyghens and Newton, felt convinced of the insolubility of the problem of the quadrature. But they could not justify their conviction by an incontrovertible proof. The first important step towards the establishment of the insolu-

bility of the problem was made by the Franco-German mathematician Lambert, who proved in 1761 that neither π nor π^2 is a rational number. Thus according to Lambert π cannot be exactly equal to a quotient of two integers, however large be the integers that we may use. Making use of certain results of Hermite, Prof. Lindemann succeeded in proving in 1882 that π cannot be the root of an algebraical equation with rational coefficients. With this remarkable achievement of Prof. Lindemann closes the history of π .

7. Another very interesting problem connected with the circle may be very briefly mentioned here. It is this: By using a scale and a compass, to divide a given circle into n equal parts. It is evident that the solution is easy for such values of n as have for their prime factors 2, 3, 5. The difficulty arises in connection with prime values of n . It is worthy of mention that Gauss succeeded in solving the problem for $n = 17$ when he was only about 19 years old. And the satisfaction, with which, in later years, he used to look back on this achievement, is evidenced by his having expressed the desire that a 17-sided regular polygon should form part of his monument.

8. The second curve which I propose to discuss is the cycloid, i.e., the curve traced by a point marked on a circle which rolls without slipping. Thus a marked point on the wheel of a carriage traces cycloids when the carriage moves along an even road. The first important mathematician to study the curve was Galilei, who gave it the name by which it is called, and among those, who followed Galilei in investigating its properties, may be mentioned Wren, Huyghens, Leibnitz and Johann Bernoulli. It is well known to you that the principle underlying the working of

* Que j'aime à faire apprendre un nombre utile aux sages!

Immortal Archimède, artiste ingénieur,
Où de ton jugement peut priser la valeur!
Pour moi ton problème eut de pareils avantages.
 $\pi = 3.14159\ 26535\ 89793\ 23846\ 26433\ 83279.$

an exact clock is the isochronism of its pendulum. Now it was known to Huyghens that the isochronism in the case of the circular pendulum is only an approximate one. In other words, Huyghens knew that the deviation from isochronism is greater the greater the amplitude. And he succeeded in showing that, if the bob were constrained to move down a cycloidal arc (instead of a circular arc), the time of oscillation would be strictly independent of the amplitude. In virtue of this property the cycloid is called the tautochrone.

9. Another very interesting property of the cycloid was first discovered by Johann Bernoulli who published the following problem in the *Acta Eruditorum* of June, 1696: "If in a vertical plane two points A and B are given, to prescribe a path for the moveable point M so that, starting from A under the influence of its own weight, it may reach B in the shortest time." Bernoulli gave 6 months' time for the solution of this problem, and promised to publish his own solution should no other solution reach him in that period. Some extracts from Bernoulli's letter to the *Acta Eruditorum* of January, 1697 will bear quotation, as they show how different were the manners of the learned in those days. Bernoulli begins as follows: "To the most intelligent mathematicians of the whole world, Johann Bernoulli, public Professor of Mathematics, presents his compliments. Since experience shows that nothing leads noble minds to work for the increase of knowledge more than the propounding to them of difficult and, at the same time, useful problems, by solving which they may acquire a famous name and an eternal memorial, therefore I hoped to earn the thanks of the mathematical world, when, following the example of men like Mersenne, Pascal, Fermat, Viviani

and others, I propounded a problem to the most distinguished analysts of the whole world. The allotted time is past and no trace of a solution has appeared. Only the famous Leibnitz wrote to me that he had untied the knot of this beautiful and new problem, and requested me to extend the allotted time up to the next Easter Festival, so that in the meanwhile the problem might be made known in France and Italy and no man might have occasion to complain of want of time." Bernoulli complies with Leibnitz's request and offers a prize of which he writes as follows: "It is true, indeed, that this prize is not gold or silver, for gold and silver tickle only mean and mercantile souls from whom we can expect nothing for Science which may be praiseworthy or useful. However, since virtue is itself the most beautiful wages, and the desire for fame a powerful spur, we offer as prize, what a noble man desires, viz., honour, praise and sympathy, by means of which we will celebrate the genius of this great Appollo in public and in private." Only four men succeeded in solving the problem, viz., Leibnitz, Jacob Bernoulli, Marquis d'P Hospital and Newton. It is interesting to note that, although at this time Newton had almost retired from mathematical activities—in fact he was Warden of the Mint in London—he solved Bernoulli's problem the same day he received it.

10. Before passing on to the consideration of the folium of Des Cartes, I will say a few words about the equiangular spiral, which was discovered independently by Des Cartes and Toricelli, and which owes its name to the property that it cuts at a constant angle every straight line drawn from a fixed point called the eye or pole of the spiral. The remarkable fact about this spiral is that almost all the

curves ordinarily derived from it are identical with it. For example, its caustics of reflection and refraction are identical with it. These properties were discovered by Jacob Bernoulli, who was so enthusiastic about them that he looked upon the equiangular spiral as the emblem of the immortality of the soul, and left instructions in his will that an equiangular spiral should be engraved on his tomb with the epigraph: "Eadem mutato resurgo."

11. In a letter addressed by Des Cartes to Mersenne in 1638 is found the equation of what we call the folium. This is the oldest reference to the curve, and we may, therefore, safely attribute its creation to Des Cartes. But, strange to say, the true shape of the curve was unknown to the distinguished founder of Co-ordinate Geometry. For he thought that the curve consisted of four equal folds, one fold lying in each quadrant. Among the probable reasons for this mistake may be counted the horror of infinite values, and the vagueness as regards the significance of the signs of positive and negative when used in connection with the co-ordinates x and y . Whatever be the true cause of the difficulties of Des Cartes, this is certain that the shape of the folium remained unknown until 1691, when it was found by Huyghens and Marquis d'P Hospital. The curve attained considerable celebrity on account of a special article on it in the *Encyclopedie Methodique* of D' Alembert.

12. From such simple curves as the circle and the cycloid, the spiral and the folium, the transition to such transcendental curves as Weierstrass's curve and Peano's curve is very great. But equally great is the difference between the character of mathematical thought as it was in the beginning of the 19th century

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and as it is to-day. In the first decade of the 19th century, the old leaders of mathematical thought had no idea of the restrictions under which some of their cherished theorems and processes held good. Great was the surprise of old Langrange when Cauchy pointed out to him a case in which Taylor's series does not represent the function. Still greater was the sensation created by Fourier's announcement that a number of different curves pieced together can be represented by a single analytical expression. But the most sensational discovery of the 19th century in the domain of Pure Mathematics was reserved to be made by Weierstrass, Professor at the University of Berlin. In 1861 Weierstrass proved by an example that a continuous curve need not possess a tangent at any point on it. This example was published for the first time in 1874 in a paper of Du Bois Reymond, one of the pupils of Weierstrass. In order to give you an idea of the incredulity with which Weierstrass's discovery was first received by many eminent mathematicians of his time, I need only mention the fact that Philip Gilbert, a famous Belgian mathematician, had the hardihood to write the following sentence in a paper communicated to the Academy of Sciences of Brussels as late as 1873: "If a function $f(x)$ is continuous from $x = A$ to $x = B$, then, in general, the quotient

$$\frac{f(x+h) - f(x)}{h}$$

tends to a limit, finite, determinate and different from zero; so that the values of x , for which this does not hold, are isolated, exceptional, and separated from one another by determinate intervals."

13. In 1890 it was proved by Professor Peano of Turin that two functions $\phi(t)$ and

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$\psi(t)$ can be so chosen that the curve, specified by the equations $x = \phi(t)$, $y = \psi(t)$, fills the whole of a square area. This is Peano's curve. It passes through each and every point of the square, its double points in any portion of the square, ever so small, being infinite in number.

14. I will conclude this lecture with a few remarks on two interesting questions which must naturally suggest themselves to you. It being admitted that Weierstrass's curve and Peano's curve are incapable of being mechanically constructed, is it also impossible for man to picture to himself what they are like? This is a very difficult psychological question. The capacity of picturing a curve to oneself differs from man to man. There are many men who cannot picture to themselves what a parabola or an ellipse is, although the circle presents no difficulty to them. Thus, although there is at present not a single human being who can picture to himself such a curve as Weierstrass's, it is quite possible that a future generation may be able to do so. The other question is this: Is such a transcendental curve as that of Weierstrass likely to be of any use in the applications of Mathematics to Physics? According to so eminent a representative of mathematical physics as the late Prof. Boltzmann, the answer should be in the affirmative. In fact Prof. Boltzmann has himself shown that a certain continuous curve, called by him the H-curve, is of great importance in the theory of gases, although like Weierstrass's curve it has no tangent at any point on it. Let us hope that with sharpened powers of observation and a keener intellect, the civilized man of the next century will be able to think in Weierstrass's and Peano's curves

as easily as our forefathers thought in circles and ellipses.

A BLOW TO SECONDARY EDUCATION.

IT is the turn of Secondary Education now. They have already done for higher education. The new University Examinations, and the courses of studies prescribed for them, have made higher education caviare to the general. Access to the University, if it has not been actually blocked, has been rendered as difficult as it well might be. It used to be a reproach that too many graduates were being manufactured every year and that these only strengthened the ranks of the discontented and disappointed. Thanks to the new order of things—to the Universities Act and the Regulations framed thereunder—Higher education has been made attainable only by a few. Having effectively provided against the apprehended congestion at the top, attention is now being turned to secondary education, which occupies an intermediate position. The education which a pupil receives after he leaves the Elementary stage, until he is qualified to enter the University, commonly goes by the name of Secondary education. The Government of Madras are at present considering whether they should not raise the fees of pupils in secondary schools. They have been apparently concerned for some time past that too much of public money was being spent on this branch of education, and have been thinking whether an increased share of the burden should not be borne by the parents of the pupils and by those who are philanthropically inclined. With great solicitude for the interests of the general tax-payer, they would seem to have decided that they should no longer suffer the public funds to be drawn upon to the same ex-

tent as before, on account of this branch of education, and that the time has arrived when some satisfactory arrangement should be made. They accordingly called upon the Director of Public Instruction to convene a small committee of representative educationists in view to formulating definite proposals. This Committee fell in readily with the views of the Government already formed and decided that secondary school-fees should be raised. It is the proposals of this Committee that are at present under the consideration of Government. For some time it was all a mystery as to who constituted this Committee and what was the nature of its recommendations. But the speech of the Hon'ble Mr. Hammick, C.I.E., delivered at the Local Legislative Council, fully explains the views of the Government in regard to this question and the scope of the Committee's recommendations.

The Secondary School course commences in the 1st Form. At present a pupil of this class pays Rs. 15 a year. In the 2nd Form, he is required to pay Rs. 18 and when he is promoted to the Third, he has to pay Rs. 22 a year. Instead of these rates varying from year to year, it is now proposed to levy a uniform fee of Rs. 22 a year, during the three years he takes to proceed from the 1st to the 3rd Form. And in the 4th Form, he now pays Rs. 30, in the 5th Rs. 34 and in the 6th Rs. 38. Instead of this also, it is now proposed to levy a uniform rate of Rs. 42 a year. The new proposals come to this, that instead of Rs. 157, which a pupil paid during the six years he took to proceed from the 1st to the 6th Form, he will be called upon to pay Rs. 192. The increase of Rs. 35 distributed over six years—works out, on an average, to Rs. 6 a year. Considered from another aspect, a pupil in the 1st Form, according to the present proposals, will have to bear a 50 per cent. increase in his school-

fees. Remembering that the 1st Form is the first year of the secondary school course, this increase by itself is apt to deter many a youth from pursuing the course. The gradation in the rate of the proposed increase is so arranged that while a pupil in the 1st Form has to bear an enhancement of Rs. 7 a year, the enhancement in the case of one in the 4th Form is Rs. 12 a year.

And what are the grounds on which this increase in the rates of fees is sought to be justified? We gather from the elaborate statement made by the Hon'ble Mr. Hammick, that one of these grounds is that education in the higher grades must be made self-supporting. This is, indeed, a large question—the question of the responsibility of the State in regard to higher education, and we do not at present propose to enter into a consideration of the same. It is to be noted that even secondary education is coming to be regarded as on a par with higher education in determining the measure of financial support which it is to receive from Government. However, it is claimed that it is the concern of the State to see that the education that is given in secondary schools is sound, that proper subjects are taught, that schools are kept up to a proper standard, and due provision is made in schools for the health, recreation and discipline of the pupils. The control of the pupils is in the hands of teachers, and these have to be of the right sort, in regard to character and qualification. All this efficiency means a heavy cost, and is the Government justified in paying for this efficiency from the funds of the general tax-payer? It is contended that there is little justification for the demands that are now made on the finances of the State. The argument is plausible enough. The interest which the Government at times evinces on behalf of the general tax-payer is really amusing. The other day, when it was

proposed to grant a small increase of salary to the low paid subordinates of Government, the general tax-payer was called in for aid, and stout champions of his interest stood up to protest against the proposal. And now, when it is proposed to raise fees in secondary classes to secure thereby half a lakh of Rupees more a year, it is contended that this amount is one which the general tax-payer could ill afford to find for such a purpose. Indeed, the regard for the general tax-payer at times becomes outrageous.

But a special ground is also alleged in support of the proposal. In 1906, the Government of India suggested that there should be a model Government High School in each district. The Government of Madras now want to take up 19 schools under Government management. This step would involve an additional cost of half a lakh of Rupees. They are prepared to incur an expense of one lakh of Rupees on this account, but want the other half a lakh to be paid for by the pupils themselves or by those who could afford it on their behalf. This half a lakh is too much for the Government to bear. In all, a sum of Rs. 21·37 lakhs is spent on non-European Secondary Schools. (These figures are from the latest Administration Report of the Director of Public Instruction).

The Government schools proper cost only Rs. 61 lakhs, the Board, Aided and Unaided schools cost, respectively, Rs. 3·63 lakhs, Rs. 12·90 lakhs and Rs. 4·20 lakhs. The total expenditure from public funds is Rs. 2·28 lakhs and the fee receipts come to Rs. 14·64 lakhs. Thus, while the public funds contributed 16 per cent. fees yielded 66 per cent. and private resources 18 per cent. (These figures are from the speech of the Hon'ble Mr. Perraju. The latest Administra-

tion Report, however, states that 68 per cent. of the total expenditure was covered by fees). In Bombay, 35 per cent. of the total expenditure was met from public funds, in the United Provinces 42, in the Punjab 37 and in Bengal 22. The proportion of school-fees to the total expenditure on secondary education in the several provinces was as against the 66 or 68 per cent. in Madras, Bombay 48, Punjab 48, United Provinces 39, and Bengal 57. Thus the proportion of fee income to the total expenditure is the largest in our Presidency. And yet, there has been as yet no proposal to raise the fees in the other provinces, even on account of the model secondary schools which the Government of India would appear to be enamoured of. Each pupil in this Presidency pays on an average Rs. 16, and still the Government want to raise the fees, because they would not give away half a lakh from the public funds to meet the increased expenditure. The average fee for a secondary school pupil in the other provinces is Rs. 12·3 in Bengal, 12 in the Punjab, 10·1 in Eastern Bengal. A higher average obtained only in Bombay where it was 17·9. The above figures must speak for themselves.

It is also claimed for the increased fees that they are necessary for the spread and improvement of education, that the quality of secondary education is at present anything but satisfactory, and that the increased fees would help to secure increased efficiency. In answer to this kind of argument there is very little that could be urged. That in the attempt to improve secondary education by raising school fees, it is likely to be stifled, is the fear of those whose interest in the spread and improvement of education cannot for a moment be questioned. It was emphasized by one of the speakers in the vigorous

debate that was held over this question in the local Legislative Council, that the Government had not realised the depth of public feeling that was aroused by the proposal, and that no single question had agitated the public mind as this one. He urged also that in view of the cost of living that had increased considerably of late, this increased cost of school education would have a most disastrous effect. Another pleaded for the backward classes who would particularly suffer under the new scale of fees. The spokesmen of the Mahommedan community protested against the proposal in the interests of that community. It was also made clear that the Indian Press in the Presidency generally was against the proposal. The Government have promised to consider the several points urged against their proposal. It remains to be seen what they are ultimately going to do. But whatever they may do, it is remarkable that they should have ignored the public and their representatives altogether, till a debate was raised in the Legislative Council, when they had necessarily to defend the step they had been trying to take unnoticed by those outside. In a matter of such vital importance, the public were entitled to the confidence of the Government, and the way in which the head of the Educational Department spoke of public opinion, in the course of the debate, was, to say the least, disappointing.

A GRADUATE.

WORKING OUT OF THE SCHOOL-FINAL SCHEME.

THE following comments are made on the School Final Scheme and School-leaving Certificate, in the hope that they may be of some use to the public.

2. The reasons for not preparing boys for the Matriculation Examination are amongst others, the following :—

(a) It does not qualify candidates for public service, even if they pass it;

(b) The School Final Certificate, if completed by the School Final Board presided over by the Director, qualifies candidates both for admission into colleges at the option of a college Principal and for entrance into public service. To the successful Matriculation candidate, only the University course is open.

(c) There seems to be a prevalent impression in the school world that the new scheme must be adopted because the worth of a pupil is judged by three years' progress instead of by a merely written examination held for five days as was done before or for four days as will be done hereafter.

3. The advantages of the Scheme and certificate are as follows :—

(a) It lessens the load of the Matriculation Curriculum for purposes of a public written examination. Geography, History of India, Science, Drawing and Physical training are insisted on for class-teaching without their forming parts of the public examination to take place from the fourth Monday in March, 1911.

(b) It allows of choice of a number of optional subjects—one, two or more for each boy. Two at least, for each candidate, are ordinarily introduced in Madras and elsewhere. Thus one boy may take up a group made up of (1) Algebra and Geometry + Physics, or (2) one made up of Algebra and Geometry + Chemistry, or (3) Physics and Chemistry + History of England, or (4) Physics and Chemistry + Sanskrit or an Indian vernacular, or (5) Precise Writing and Indexing + Book-keeping, or (6) Shorthand + Typewriting, or (7) Commercial Practice and Geography + Trigonometry, or such other combination of two or more subjects included in Group C of G. O. No. 427, dated 21st July, 1909.

4. The number of subjects taught in a school may thus depend on (a) the choice of subjects by pupils as advised by their parents or guardians; (b) the qualifications of available teachers, and (c) the accommodation, furniture, apparatus including what is required for enabling pupils to perform experiments for themselves, maps and books.

5. I spoke to the Superintendent of the Christian College High School Department, the Headmaster and the President of the Muthialpet High School, the Headmaster, High School Department, Wesley College, Royapetta, and the teachers of Pachaiyappa's College, High School Department. I had the advantage of receiving advice at the hands of Professor Lakshmi Narasu Naidu Garu. I also consulted teachers, parents and pupils.

6. Details of each institution are valuable; but, it is enough to give the outlines of groups together with *fresh sums* expended on adjustment to the needs of the scheme, (i.e.,) sums adding facilities to those already available.

(a) *The Christian College.* In Form IV, the Compulsory subjects of Group (A) together with Science and History of Group (B) + History of England of Group (C) are taught, (i.e.) in addition to English, Vernacular Composition and Translation, Elements of Mathematics, and of Science, Histories of England and India are taught.

This forms the basis of a division of boys into groups from Form V. Mathematics and Science; Physics and Chemistry; History and Tamil, Telugu or Urdu (Sanskrit, Canarese, Malayalam; &c. being abolished); Precious-writing and Book-keeping.

This institution has spent about Rs. 3000 on Chemistry and Rs. 2000 on Physics, the

number of divisions in Forms VI and V being 3 and 5 respectively. The School works 5 hours—3 in the forenoon, for 4 equal periods of 45'—3 in the afternoon of 40' each.

(b) Next to this comes the *Muthialpet High School* which has spent Rs. 2000 on Chemistry alone. No. of divisions in each of the Forms IV, V and VI being 2. It has two teachers for each of the subjects—Mathematics, Science, History; for example, a Physics L.T. and a Chemistry L.T. for Science. It began practical experiments for boys last year and has begun to enlarge the scope this year. The President means to appoint two technically qualified B.A.'s for technical subjects. (It may be also mentioned that a religious teacher to impart general ideas on the concentric system from Forms I to VI has been appointed and working out a scheme from some time past to the satisfaction of even Mahomedan and Christian pupils who are allowed freedom of conscience but still like it for its unoffending and tolerant basis).

This school proceeds nearly on the same lines as the Christian College.

(c) *The Pachaiyappa's College* has divided boys into three Groups from Form IV, no technical subjects being taught in Form IV this year.

Mathematics and Science (i.e.) Physics specialised; Specialised Physics and History of England; History of England and Sanskrit or any Indian vernacular.

Owing to large funds required for Physics and Chemistry of the Intermediate Course, no group with Chemistry as an optional subject is formed. The Pundits are retained as before, drill and gymnasium conducted out of school hours—7 periods of 45' each.

Specialised Physics in Mathematics and Science is, in connection with Elementary Science, an extension,

Specialised Physics in Physics and History of England means Matriculation Syllabus with such additions or modifications as are needed to fit pupils for the Intermediate course. No mention is made of Elementary Chemistry as it must be and is taught as a subject in Group B. For the present the number of teachers remains the same as before.

(d) *Wesley College, Royapetta*, teaches general notions of Physics and Chemistry for all. The groups are Algebra, Geometry and Science; History of England and Sanskrit or an Indian vernacular; Specialised Physics + Algebra and Geometry; Specialised Chemistry + Algebra and Geometry.

7. Some facts may be mentioned for special notice—

(a) Even schools that had 6 working hours reduce them to 5½ or even to 5.

(b) Boys must be given time for physical exercise.

(c) Teachers must be given higher pay and prospects. The Headmaster and the President of the Muthialpet High School made special mention of their having raised the grade of teachers and determined to improve it further as well as to pay equally with L.T.'s, B.A.'s with knowledge of technical subjects.

(d) Vernacular Composition and Translation are handled by class teachers, as far as possible.

(e) Headmasters teach only about 10 periods in the week.

8. The general principle underlying all classification hitherto sketched is that while boys who are satisfied with technical subjects may take them up, there is a large body of opinion leading to the practice of encouraging the desire of pupils to place themselves in the advantageous position of being Matri-

culated, i.e. entered on the records of a college, or of entering service. Any institution not sufficiently heeding this is destined to have the minimum number of pupils that know they will not proceed higher. Most of them are not sure that they will not enter on an academic course. Circumstances change. Helpers of various kinds may come in later on. Even with difficulty, parents will do their best to let their children pass the Intermediate and one or more degree-examinations.

9. Every school is not placed on the same footing as the institutions abovementioned. Each school may yet make its own arrangements according to its conditions. The schools mentioned hitherto, except one school having one division in Form VI, have four or five; except one with 2 divisions in each of Forms V and IV, the rest have about four.

10. The question now is—what is to be done with the large number of schools in Madras and in the mofussil that own only one division in each of the higher forms and command no full-timed headmaster? If managers of schools see for themselves that a full-timed headmaster doing 2 hours' teaching work is necessary and must be arranged for, it is well and good. Otherwise the department will compel. This apart, let the case of a school containing 2 divisions in Form IV, one in Form V, and one in Form VI, be taken together with the actual staff of a headmaster working 20 periods (of 45' each) and 4 assistants (26 period each). The staff consists of a History Tamil L.T. There are 2 Mathematics teachers knowing only Tamil—one recognised from before the Educational Rules and one specially exempted by the Director, one Science L. T. and one History B.A. (Malayalam).

The distribution of work as seen in the timetable shows that the Tamil Composition and

Translation are taught by class teachers. Pundits are not generally at present capable of handling them. So, a Telugu-knowing B.A., if not an L.T., has to be employed to take Telugu Composition and Translation for 6 periods—2 in each of the higher forms and to teach English in Form III.

The Drawing-master is engaged for 28 periods, the number of periods having to be increased for its importance and use in every subject.

Owing to the importance of handwriting, a separate Copy-master must be put in sooner or later especially up to the 3rd Form. For the present, there is no provision.

The most important point is that the teachers after deliberating amongst themselves have found it necessary to have at least three groups under the existing conditions. They are—

- (a) Mathematics + Specialised Physics.
- (b) History + Sanskrit or a vernacular, either Tamil or Telugu.
- (c) History + Physics.

The same number of teachers with different qualifications is free to make their own arrangements in the matter of grouping subjects as well as of distributing work.

The vital point is one of investment of funds for Elementary Science wherein is included Elementary Chemistry, for Physics, for maps and books, for suitable accommodation with equipments for experiments.

Elementary Chemistry requires Rs. 500 at least. Physics requires Rs. 1000; Specialised Physics requires from Rs. 1200 to Rs. 1500. Managers may know that, in Chemistry, provision must be made for constant replacement while in Physics there is only slight repair for machines.

Local purchases bring the amount to twice the cost of things got from Europe. Also, a German firm of manufacturers, Messrs. Mirc

& Co., supply chemicals at a much cheaper rate than British ones.

11. Professor Lakshmi Narasu Naidu Garu has made for the Intermediate at Pachaiyappa's machines for experiments by 60 candidates—40 being able to do them at one and the same time.

They have all been made in Madras. With a knowledge of details rarely equalled here, he gets a carpenter to do some portion of the work, another technical man to prepare another part of an instrument. In this way, the whole apparatus is fitted. There is enough of Indian talent for work, provided there is direction. Unfortunately people think that we have no highly talented workmen. The purpose for which this is mentioned is to show that, if we have Science teachers of his stamp in High Schools, the cost of apparatus may be made much less. But, so far as is yet known, there is no school in the City of Madras that makes its own. Even Pachaiyappa's High School with Professor Lakshmi Narasu Nadidu Garu in the College has ordered for Physics apparatus from Europe* to the extent of about Rs. 1200, for the present in addition to its previously ready and large stock. High School Science teachers with zeal in their work and love for it as such, will do well to profit by the guidance he willingly gives and to work out the details for themselves.

12. Responsibility thrown on managers and teachers is increasing. The weight of it seems even to be threatening. Nevertheless, when Government have come forward to formulate a scheme that is educative without public written examinations in a number of subjects, a scheme that is capable of promoting the health and strength of pupils by increased drill and gymnasium, sports and

* Philip Harris & Co., Birmingham.

games, a scheme that allows freedom to each school to frame its own syllabus, it is the duty of managers and teachers to work out the scheme to a successful degree by constant watchfulness and by annually increasing expenditure on items like pay and prospects of teachers, library, play-ground, reading rooms for teachers and boys and arrangements that while, preventing pupils from remaining too long in crowded school-rooms, give them enough food for reflection and self-help and enough of leisure for preparation of teachers to cope with the growing needs.

13. The public expect schools to rise equal to the occasion. They should not be mushroom schools. Secondary education has been in existence for over half a century. It has been making progress in its standard of instruction, notwithstanding the prohibitive cost of buildings in over-congested areas. The present demands are, after all, what the public can be reasonably expected to bear.

14. With these facts and comments helping the formation or the confirmation of a whole idea, the request to be pardoned for the mass of detail is made. It is detail that facilitates the work of all concerned with a school time-table and with management.

15. The least that may be considered now with reference to the scheme is provision for at least three groups:—(a) Mathematics and Physics, Elementary Science being compulsory and requiring investment, even if specialised Physics is ignored; (b) History and Second Language; (c) History and Physics. The latter (b) and (c) require books and maps and a Telugu-knowing B.A., L.T.—

Maps and Books, Rs. 300.

Elementary Chemistry, Rs. 500.

XVI

Elementary Physics, Rs. 500.

Specialised Physics requires Rs. 570 more.

Without this increased expenditure of Rs. 750, students will not get admission into the first group of the Intermediate Course. Public opinion will be that such a school as cannot command the facility tends to become inferior. The consequence will be that they will withdraw at the next favourable opportunity. This article is partly intended to take the place of a short speech before gentlemen of managing committees whose moral and material support of a sympathetic character teachers depend on.

16. The carrying out of even a tentative time-table attended with many-sided considerations is possible, only if they are pleased to order for the required apparatus and equipments of an up-to-date nature.

17. This short paper does not cover the ground traversed by Inspectors in their inspection remarks. They are more or less only a matter of ordinary course apart from the new scheme.

18. Managers have now a chance of showing that they enlist the active sympathies of wealthy and of charitable, literate, yet poor gentlemen. Teachers have equally their own chance of proving that, in the discharge of their duties, they are impartial by not giving greater consideration to children of officials and influential parents. What is more, the spirit of office must enable members of the teaching profession to use their discretion and intelligence in the choice of subjects and in the education of pupils entrusted to their watchful care and active work of a wearying profession unless backed up by zeal and physical exercise.

C. R. SRINIVASA RANGACHARY.

THE CONVOCATION OF MADRAS.

The Hon'ble Mr. Justice Abdur Rahim, M.A., Bar-at-Law, delivered the following address to the Graduates admitted at the recent Convocation of the Senate of the University of Madras :—

Mr. Vice-Chancellor and Fellows of the University—I should like, with your permission, to say one word by way of preface before I address myself to the Graduates. When His Excellency the Chancellor—whose absence to-day owing to indisposition we all deplore—intimated to me his desire that I should deliver an address at this Convocation, I was at some loss to realize what exactly I was expected to say. Of all the members of the Senate I am afraid I am the one who can claim the least familiarity with the history, the traditions and the work of the Madras University. I am however somewhat re-assured to find that I should be quite in order if I tried, as a student talking to his fellow-students, to give expression to some of those thoughts which on an occasion like this naturally crowd themselves into the mind of one who has travelled a good way in that journey of life which has opened so full of hope and promise for those who have just been admitted to their degrees. And I have endeavoured to approach the discharge of my duty in that spirit. If, however, I am going to allude here and there to questions on which opinions may differ, I desire it to be understood that whatever observations I may happen to offer on such topics are purely academical. My apology for indulging in those observations at all is that they naturally occurred to me in connexion with the task assigned to me of exhorting the candidates for degrees to conduct themselves suitably unto the position to which they have attained. Otherwise I would not have presumed to hover even for a brief moment anywhere near a sphere occupied by the distinguished statesmen, educationists and reformers whom I see around me.

Graduates of the Year,—My first duty as spokesman of this Convocation is to accord to you the warm congratulations of the authorities of the Madras University on the dignities which have just been conferred on you. And let me assure you that I fully sympathize in the feelings of joy and of pride with which the ceremony of to-day will, I am sure, be associated in your minds. It is but natural that you should experience a certain degree of legitimate elation on this occasion. You have won your distinctions by hard and conscientious work. I am sure, there is no one in this hall, who does not realize the labour and the anxiety, the mental and physical strain, involved

in the passing of those various examinations, the success in which has entitled you to your degrees. You have toiled through wearisome days and sleepless nights, and many of you, I fear, have had to undergo considerable privations—and to these men I wish to offer my special congratulations—for the sake of the recognition with which the University has crowned your efforts this evening. It would be churlish, and I am certain unjust, to minimise the value of your labours. And the fact that so many men, eminent in diverse activities of life, are here to do you honour should assure you that the public and the Government of this Presidency have confidence in your devotion to the cause of learning and in all those qualities of character and intellect which it implies.

I will briefly tell you what pursuit, such as yours, does imply. It implies a desire to learn of what has been said and achieved by great men in the past and in the present, of the wisdom and the lessons in life, which have been handed down to us, 'the heirs of all the ages,' to learn how to read the mysteries of the moral and the physical world, to learn what strengthens and vivifies life, individual and social, and what destroys it. It implies further a habit of mind which dwells with joy on all that is noble and great in man, a capacity and willingness to be enwrapped in the magic of the universe, as sung in the wondrous songs of the poets, to enter at pleasure the domain of pure reason in order to master the processes by which mind and nature work. In the words of the Prophet of Arabia: *Lakillī amrāqī manavā*, 'To each man, what he desires.'

For it cannot be that you have listened to the melodies of Jalaluddin Rumi or of the Upanishads and not mused on the relation that exists between the individual and the universal life, or communed with Shakespeare and Kalidasa and not realized the majesty, the beauty and the tragedy of human emotions and passions, or that you wandered in the 'Rose-garden' of Saadi and did not gather the moral lessons fresh sprung from the realities of life, or been in the company of Wordsworth and have not felt life's simple and quiet pathos. Nor could you have studied all which science has wrought beyond the expectations of Ibn Sina and Bacon, beyond even the dreams of the thousand and one nights and failed to conceive that dignity of man which entitles him to be called *Ashraf-ul-mulkokkhath*, 'the noblest of God's creation.' It is the intellect of man which has mapped out the entire universe with the accuracy of a field surveyor weighing the mighty stars in the scales of science, measuring each vibration, each motion, as it occurs millions upon millions of miles away, to

tell us within a day and a minute of the approach of a new world or of some erratic wanderer of the Heavens. Has not science by compelling those forces of nature, which man in his infancy imagined; were meant for his destruction, to subserve the needs of life, demonstrated the falsity of the grovelling creed of the fetishist and dispelled the gloom of the sceptic?

Balhavayat becnath fee sudoor-ullaze'ni yootoolqilm
"Nay, these are clear proofs to those who have been gifted with knowledge."

The University of Madras has to-day expressed her satisfaction that your pursuits have been such as I have described. At the same time the authorities of this University do not disguise from themselves the fact that you are young, that the student's life does not afford sufficient time or opportunity for completing the process of assimilation, nay the special preparation necessary for passing your examinations must have to some extent retarded such process and that, above all, when you leave this hall, to bear your part in life, you will be faced with ever new combinations of facts and circumstances not dealt with in the books. Is it not therefore natural that the University should be anxious that you should acquit yourselves well in life, conversation and conduct. She has bestowed on you high titles, she has made you free of the realm of culture, learning and thought. Her reputation and her prestige are bound up with your behaviour and your good name. She can hardly even claim an existence apart from her graduates. Her great privilege is to confer distinctions on those who deserve; this day the University of Madras stands forth as guarantor of your high deserts. Whatever else you may be in after-life, a Judge, an administrator or a humble clerk, a merchant-prince or a small trader, whether you practise Law, Medicine or Engineering, or devote yourselves to the noble task of teaching the young, whether you look after the welfare of the agriculturists, or betake yourselves to the farmer's life, remember, this University knows you only as her graduates. You belong to a distinct brotherhood, an order by itself. Herein lies the significance of this evening's ceremony.

Need I tell you what is expected of a man of education? He raises the expectation that in him the higher instincts of humanity are fully developed, inspiring his speech and his action, and nothing which is mean and degrading can be associated with his life and conduct. He must be *muhazzib*, 'man of good manners,' and *alim*, 'the man of knowledge.' He is the true *sharraf*, gentleman. Nor is it a mere figure of speech to say that 'knowledge is power.'

But the power which the educated man is expected to exercise over his surroundings is different from that which is associated with mere wealth or the command of physical force. Until we arrive at the age when there shall be no uneducated man in a society, the educated class must in their lives be the centre for diffusion of knowledge, enlightenment and good behaviour. Hafiz says :—

Bur yeen ravakh zabarjad navishtah undh bazir
Kay juz nikoyi ahlei k'urum nak'ihad mandh.

"This is inscribed in gold on the face of the universe: nothing endures but the good deeds of the enlightened."

Now, I should like to say something with reference to a criticism which is sometimes levelled at the educational system with which the Universities of India are identified. The matter was the other day forced upon our attention by the utterances of an eminent Christian divine, who not only commands the devotion of his flock, but enjoys the respect of numerous non-Christians in this presidency for his many admirable qualities, not the least among which is his sincere sympathy with the people. The Lord Bishop of Madras, at a public meeting, is reported to have characterized the education given in the Government colleges and schools in India as 'godless.' This is very strong language of condemnation, and I may tell you that, if I thought that the condemnation was deserved, I would have humbly begged of His Excellency the Chancellor to excuse me from undertaking the task of this evening. I would have ventured to tell him 'Sir, these youths have been brought up in a godless system; they may be very clever, ingenious and knowing men, and the Madras University may be right in bestowing on them titles of Bachelors and Masters of Arts and of Sciences; all the same, there can be no justification for me in the name of an University which chooses to put its half-mark on a godless system of education, to exhort the products of such a system to support and uphold the cause of morality.'

In the colleges maintained by the Government, you have not, it is true, been instructed in the tenets of any particular religion. But unless the epithet godless is to be used in some especial sense, it cannot be a true description of the effect, which your education must have had on the moral and spiritual sides of your nature. I do not think it is possible at the present day to assert that the well-recognized code of morals and good conduct has no hold upon a man of culture, unless it be associated in his mind with a particular religious sanction. I admit, however, it would be a matter of serious concern, if the teaching of our schools

and colleges tended to sap the religious beliefs of our young men. But I feel sure that if I were to assert that you are not good Hindus, Christians or Muhammadans by reason of your having had the best modern education which is available in this presidency, you would one and all repudiate the charge. So far as Hinduism is concerned, I think it is a fact too palpable to be ignored that English education has either led to, or been concomitant of, its revival. No doubt an outside observer may say 'Oh! no, this new religious movement is not a revival of Hinduism, but it is something different, it is Christianity without Christ or Muhammadanism without its conception of one God, the perfect Creator and Lawgiver, or something of a mixture of Christianity, Muhammadanism and Buddhism, or a mere collection of philosophic speculations and moral maxims and not a religious system at all.' But in a matter like this, I should be inclined to regard the phenomenon in the light in which the educated Hindus themselves regard it. According to them it is but a reversion to the religion of the Vedas, the Upanishads and the Gita, and I believe many European thinkers confirm them in this view. As regards the Muhammadans, who have been educated under the present system, I know they yield to none of their co-religionists in their devotion to the teachings and ideals of Islam.

The home life and its surroundings admittedly play the most powerful part in the moulding of a man's character. I will just tell you what the home life is of a young man in a well-regulated Muhammadan household, of which I can claim to speak with some knowledge. Every Muhammadan child has his ears filled with the cry of 'God is great and there is no God but God, the God who to him is the embodiment of the highest perfection; he is taught not to begin any work or duty of the day or any undertaking of life, great and small, but in the name of 'God, the Kind, the Merciful'; he learns to thank the Almighty, whenever his efforts are crowned with success and to trust in Him all the more if he fails; to bend the knees of devotion every now and then, each day; every day he repeats and pines with loving reverence on the words of the *Koran* whose divine eloquence has an abiding place in every Muhammadan's heart; he is brought up to find the keenest pleasure in the practice of the most rigid self-denial for one month in each year, and the practice of charity and kindness towards his neighbours is impressed upon him as a legal duty and a high spiritual privilege. Thus brought up a Muhammadan youth can be trusted never to swerve from his faith. And I may fairly assume

that a Hindu boy at home is similarly trained in the practice and tenets of his own religion.

What happens then, when side by side with such training and teaching a Muhammadan or a Hindu youth is introduced in the lecture-room of his college into regions of science, philosophy and poetry? His religious beliefs, so far as experience tells me, are not shattered. He does not think that the scientist, the philosopher and the poet have any thing better to teach him of the inner meaning of life than Muhammad, Buddha or Sankaracharya. He does not find that the teachings of his spiritual master is in any way inconsistent with the discoveries of science or the speculations of philosophy. He seeks to reconcile the two and is at least himself satisfied that he has done so. He eagerly avails himself of all the results of the modern movements of thought in order to justify his belief in his own religion. The success of his attempt may perhaps be open to criticism from the point of view of those who are not of his persuasion, but you cannot call him irreligious. It may be that a Hindu or a Muhammadan, educated under the modern system does not agree in every matter of detail with the old not agree with the old Moulvi any more than a Pandit of the present day looks upon life in exactly the same light as a Christian of the Crusades or of the days of the Inquisition. But that is only natural.

It should be remembered that the East has been the home of all great religious movements, and if I read history aright, the age most fruitful in philosophic speculation and scientific research has been the most spiritually active in the history of an oriental nation. For instance, the brightest period of the Abbaside Caliphate is famous only as marking the commencement of that intellectual activity among the Muhammadans which for several centuries made them the recognized upholders of the cause of learning and propagation of the great Muhammadan Schools of Theology. The founders of these schools of spiritual thought lived in an atmosphere instilled with a spirit of the most eager metaphysical speculations and the freest dialectical controversies and surcharged with a scientific impulse which immensely advanced the study of Mathematics, Astronomy and Physics and laid the foundation of the sciences of Chemistry and Botany. They themselves were devoted students of the new learning, so that in the language of a living poet: 'Islam was nurtured in the arms of philosophers'. If we turn to India, we meet with the same phenomenon. That page in the

history of India, which records the renaissance of learning and of art during the reign of the Moghuls, marks also a period of keen spiritual inquiry and religious fervour. It was the self-same intellectual awakening which gave immortal expression in marble to man's aspirations towards the beautiful and the sublime and produced savants like Abul Fazl and Faizi, poets like Urfi and Khusrav, Talib and Zuhuri, which led to the construction of observatories, the laying down of irrigating channels and permanent roads, the founding of colleges, libraries and dispensaries and the elaboration of a method of organized internal government upon which the genius of British statesmen has built the wonderful fabric of the present day, which also inspired Akbar with the idea of finding a common basis for all the great creeds of the world and directed the energies of Alamghir to the compilation of a code of Muhammadan religion and law, which, for its vastness, comprehensiveness and accuracy is as memorable and enduring a monument of learning as the 'Taj' is the most perfect expression of the Moghul's love of the beautiful.

During nearly a century and a half, which witnessed the weakening and decay of the Moghul dynasty, anarchy and plunder reigned in the place of peace and civilization. Personal ambition of the rebel and the cult of the free-booter had full play. At that critical moment it was that the new spirit of the West assumed the guidance of India's destiny. With the advent of the English, the face of India was brightened with all that science and progress of thought had achieved during the period, when the gloom of disorder brooded over this land. The natural and the inevitable result was a quickening of India's intellectual life, and there can be no doubt that the decision of the British statesmen of the day to encourage the study of Western sciences and literatures has largely contributed to its development. But English schools and colleges would have been of little avail, if the new impulse had failed to arouse an adequate response in the religious sympathies of the people. Some resistance it was bound to encounter from that blind force of bigotry, which lurks in every society, but the great minds of the time soon caught the Western idea, and having infused it with a religious purpose scattered it broadcast in the land. The movement which among the Muhammadans is succinctly expressed as the Aligarh movement and among the Hindus of the North is associated with the names of Raja Ram Mohan Roy, Pandit Iswar Chunder Vidyasagar and Keshub Chunder Sen was religious in its inception and has developed more and more

as it found co-operation in the sentiments of the people. To-day we find the *Nadwatul-Ulama*, 'the assembly of the learned,' standing on the same platform of progress as the Aligarh College; the triumph of Syed Ahmed may now be said to be complete. That brilliant band whom Sir Syed gathered round himself and some of whom are still among us carrying on his great mission, eminent scholars, theologians and jurists, commentators of the *Koran* and orators, historians, and men gifted with the true insight of the statesman, were all devout Moslems and deeply versed in the principles and tenets of Islam. And I should here like to mention the fact that neither Syed Ahmed nor his fellow-workers were educated in an English school or college, and few, if any of them, knew English at all. But it is impossible to over-estimate the value of the work they have done, and are still doing, in advancing the cause of civilization by their writings, speeches and researches, all replete with the true spirit of the age. We are apt to measure the momentum of progress and enlightenment in a community by the results merely of the University examinations. Nothing however, is more wide of the truth.

The great service which English schools and colleges have rendered is to introduce into the country a knowledge of the technique of modern arts and sciences. But all that I am concerned to point out is that the desire for progress which is now so marked among the people was not created by English schools. It was generated by the mere contact with a progressive civilization. It could not be helped. It is the function of the Indian educational system to take note of these moving forces and to divert their flow into well-defined and ample channels.

To return to my theme:

In the East intellectual activity has never been divorced from religious devotion. In fact you can hardly find a materialistic age properly so called in the history of the East. Religious activity may have been dormant at times, but those were also periods of intellectual stagnation. Nor does it seem that the accession of material prosperity in a particular age in the life of an oriental nation tended to destroy the spiritual forces. As illustration of this phenomenon, a student of history can add many instances to the two I have already mentioned. The same lesson is borne in upon us in the lives of individuals. For example, history tells us of kings and emperors of the East deserting their thrones to end the rest of their days in meditation and prayer. Hearken to Omar Khayyam himself, who has expressed in undying verse, the

scepticism, which, at times, haunts the cultured mind, no less of the man of the West than of the child of the East, how he sums up his musings:—

*Aye vakif asrar zameer huma kus
Dur halut yijz dastaghir huma kus
Ya rub thoo mera thowbah-dah o' yuzr pizeer
Aye thowbah-dah o' yuzr pizeer huma kus.*

"O thou: who knowest the secrets of the hearts of all,
Protector of all in their hours of helplessness:
O Lord: grant me repentances and accept my excuses:
O thou: who grantest repentance and acceptest the
excuses of all."

An oriental mind finds no rest except in the lap of the Infinite. Is it otherwise with the cultured mind of the West? I doubt it.

At all events, there is to my mind no reason to fear that the present system of education tends to make of the Indians a godless people. The Indians themselves have no such apprehension. They might at first have entertained some vague suspicion that the aim of the Government in introducing English education was to convert their children into Christianity. But they have long ceased to entertain such misgivings.

I hope, however, I have said nothing which should induce the supposition that I do not regard our present system of education as being susceptible of considerable improvements. I am one of those who look forward to the time when the people and the Government will find it feasible to establish in India Universities on the model of Oxford and Cambridge. The boy who, in his plastic days, is brought up at home where his place in the household and its surroundings is assigned and well-defined must, generally speaking, be at a great disadvantage, however well versed he may be in his books, when he is suddenly face to face with the unaccommodating realities of life. He cannot, generally speaking, have at his command all those resources of the strength of character, tenacity of purpose and of that training in the law of give and take, the great moral code of practical life, which is generally produced by life in a Western University. That is why the success of Aligarh College has been so remarkable. If we had similar institutions all over India both for the Hindus and the Muhammadans, what a source of strength they would be to the cause of civilization and good Government!

I wish now to advert for a moment to a subject, which a few years ago would have been considered quite irrelevant in an assembly like this, but which I regret to find is at the present day considered to be an appropriate topic of discourse in addressing the students. But do not misjudge me. Do not

think that because I am going to say something in this connexion, that I consider it at all possible that any of you are capable of having any sympathy with the behaviour of those deluded youths who have taken to the perpetration of inhuman crimes with the result that many lives, which might have been useful to society, have been blasted.

I do not entertain the slightest doubt, in spite of the fact that there is some vague notion to the contrary afloat in many minds, that no real connexion exists or can exist between English education, such education as you have received, and anarchism, or any other form of crime against society and the Government. And I venture to think that we would easily get rid of many misconceptions, if, in judging of the present, we took care to remember the lessons of the past. Looking at things with the eye of a student of history, to me it has been a marvel—and I have always regarded the fact to be a great proof of English statesmanship—that India should have enjoyed such unbroken peace and for so long from one end of the peninsula to the other. History tells us of three great empires, the Roman, the Muhammadan and the English, and though, as a Muhammadan, I am naturally proud of what my co-religionists achieved in the building of empires, but it must be conceded that the British State-craft has far surpassed both the Romans and the Muhammadans, in the art of administration. Let us look back to the past for a while. Ever since the end of the seventh century when the foundation of Muhammadan empire was laid, through all the centuries during which that empire expanded from Spain to China, and from the heart of Africa far up into the north, to the present day, when the burden has largely shifted on to other shoulders, there has hardly been a year, I might even say a month, when the Muhammadan rulers have not been fighting some rebel within or some foe without. They took the 'unrest' of the day as part of the ordinary burden of the empire. The word 'assassin' itself, as is well-known, is an Arabic word, and was first applied to a desperate band of men who called themselves Muhammadans and were persuaded by those who guided them to believe that their nefarious mission was in the interest of religion. But Muhammadan governments had no difficulty in dealing with them and in stamping out the evil from the body politic. You have read the history of India and you know that even in the days of the most powerful and most enlightened Moghul emperors, there was some trouble, or some insurrection somewhere to be dealt with. It is said that English education has excited ambitions which are quite new to the

people. I venture to think that such a notion ignores the true facts of history. Individual ambition in the pre-British days was even more rampant and knew no limits whatever. Now-a-days personal ambition is, generally speaking, content to accommodate itself within the limits defined by the constitution. There is a further fact which must also be borne in mind. In India nothing seems to be easier than to organize a caste or to set up a cult. *Suttee* and *Infanticide* and even *Thuggee* prevailed in this country in the name of religion and similarly, rebellion against the Government of the day always found its lever in some reported saying of an ancient sage uttered centuries or even a thousand years ago, in circumstances which could have no resemblance to the present and intended to apply to a wholly different state of things. If we were to suppose a man determined to cause trouble to the Government, he would pounce upon some of its weak points and errors—and no human Government can ever claim perfection—seek for men who are the most pre-disposed to listen to him, play upon their weaknesses their prejudices and even their very virtues until he has his instruments ready to carry out his designs. The rebel has his own methods, his own scheme, and is generally astute enough to choose weapons best suited for his purpose. But the machinations of the rebel can never succeed with the people of this continent so long as the Government under which they live afford them absolute security of person, property and of honour and give ample scope and facility for the development of their energies. That is why the enemies of the British Government have totally failed to evoke the sympathy of the people. Then, it may be asked, how is it that the organizers and the instruments of these conspiracies against the Government are men and boys who have been educated under the present system. Grant the fact to as is assumed in the question though only for the purpose of discussion, the answer to my mind is obvious. It must be conceded that rebels against the authority of an established Government would generally speaking be men of some energy, intelligence and resources, and if we further assume that it is the energetic and the intelligent men of a particular community who resort to education, the present phenomenon to my mind becomes largely explicable. Here I would repeat what I have already indicated that it is a mistake to suppose in the case at all events of the people of India that the English schools and colleges which generally attract the most clever and enterprising youths of the country are a sort of factory where the intelli-

gence and the energy of the people are being manufactured. Nor do I know of any system of education, and I must admit that I fail even to conceive of one which can claim that the lives of all who have come within its influence conform to the standard which I have elsewhere tried to sketch for you. Unfortunately we must count upon a certain number of dismal failures in life even among the educated. These fallen men will, I am sure, have the deepest sympathy of all of us and each one of you when you meet with some weak, misguided youth inclined to err, can try to keep him to the right path, the path of humanity of straightforward conduct and manly rectitude.

Graduates of the year,—I should urge upon you before you settle down to your respective professions or business to spend a year or at least six months in travelling. That time, believe me, will be well spent. Travelling has always been considered an important factor in one's education, and your education must remain seriously defective unless you see something beyond your own village and Madras. Much of what you have read in the books will carry only a partial significance to you unless you see things for yourselves. If, for instance, you are interested in the history of India, you will be able in a few days spent among the ruins of Delhi to picture the successive ages of the Muhammadan period as narrated by the historian. If Ruskin, Wordsworth and Shelly have bred in you a love for the beauty and grandeur of nature go right into the Himalayas, the abode of the *Rishis* of old, you will almost imagine that you saw them plunged in contemplation and meditation in the midst of the unfading glory of the everlasting snows. If you wish to realize the unbroken tradition of Hindu religion as handed down through centuries, visit the temples and ghauts of Benares, and if you want to understand the true spirit of *Islam*, go and watch the Muhammadans at prayer on the occasion of an *Id* in the Jumma Mosque of Delhi or the great mosque in Calcutta. If you happen to be interested in the progress of the country, see the people of diverse creeds and races in their own homes, observe their customs and manners how far each has advanced, wherein they differ and wherein they agree, what makes for their progress and what retards it. Then go to Europe and there alone you will realize the full significance and scope of modern civilization. The man of the West speaks of the magic of the East, but to an Oriental, the West has an equal fascination. If you spend some time in Europe, you will then understand that civilization consists in raising the entire level of society to which all the classes must contribute and not in the intellectual emi-

nence of the few. There you will see all those processes unceasingly at work from day to day, hour after hour, by which human life acquires beauty, harmony and dignity, making it easier for us to realize the vast possibilities of the human race as pictured in the vision of the Prophet and the poet. If you wish to see the poetry of life as it is actually lived, you are sure to find it in a genteel English home.

I believe that, with many of you, caste and narrowness of means are a hindrance to travel. But I should be much disappointed if there are not some among you who are not hampered by such difficulties. It strikes me further that if some rich philanthropists in concert with enterprising men of business were to organize a tour at least in India and Burmah for the graduates of our Universities, much of the difficulties of the kind I have mentioned could be met. What a service such men would render to the cause of true education!

Graduates of the Year.—It is customary on occasions like this to address to the candidates some words of general advice which may have bearing on their future careers. I would satisfy myself in this connexion with beseeching you in the beautiful words of Hafiz:

*Nasihat gosh kīn jānan keh az jān
dost tur dārūd
Javanan saādatmūd pūd peer dānā ra.*

"Listen to advice. Ye beloved:
All promising youths hold dearer than their lives,
The word of the old and the wise."

You have no doubt learnt much, but you have to learn more, a great deal more, and gradually the conviction will force itself upon you that even a man's whole lifetime is all too short for mastering even a single branch of human knowledge. The spirit of the present age differs from that of the past in no respect more than this; we take fewer things on trust than our ancestors generally did. We are not inclined to allow that the last word has been said except in very limited matters of knowledge. There may be some abstract propositions which are correct for all times and in all circumstances, but there is hardly a problem which life will present to you that can be solved by a maxim so self-evident as 'two and two make four.' You will find that all general rules and theories have to be considerably modified in applying them to actual facts. The laws of the physical and the moral world may be immutable, but facts are never the same. Life means change. Our entire surroundings are undergoing constant changes though not always palpable, and the

greater the distance of time, the greater the change. What is Time, but the measure of a succession of changes. On the other hand it is also true that nothing is altogether new under the sun. And thus it may be said that wisdom, no less than knowledge, broadens down from precedent to precedent.

An educated man availing himself of the wisdom and knowledge of the past has an advantage, when called upon to deal with problems of the present day, over the uneducated who has merely his unaided intelligence and the slow and very costly experience of actual life to guide him. The key of learning on the other hand has to be guided to the place where it will fit and has often to be adapted before it will open the door which lies athwart the path of every-day life. There is no 'open sesame' in the scheme of actual life; often the most approved theory will be found infructuous if you have failed to notice and to provide for one small but stubborn fact. That is why you will find the accustomed eye of the experienced so useful in detecting for you your difficulties. Do not therefore be ashamed to seek advice whenever you are in need of it, and in this way you will avoid some at least of the errors which beset the path of the inexperienced. For the rest you must of course rely on your own judgment and faculty of observation which it is one of the aims of education to develop.

Mr. Vice-Chancellor, Ladies and Gentlemen, —I should have liked to conclude my address without striking a single melancholy note. I have rejoiced to see so many of my countrymen being admitted to-day as members of this renowned University, and I heartily wish them all good luck and prosperity. But it grieves me to note the fact that among seven hundred and more graduates, there are only twelve Muhammadans.

Fellow Students,—I will now say good-bye to you and bid you to be of good cheer; go and meet life with courage, fortitude and self-reliance; above all, remember God loves the Righteous:
Allāhoo guhabbel mōhsineen.

Reviews and Notices.

A SIMPLE GRAMMAR OF MODERN ENGLISH, BY AN INSPECTOR OF SCHOOLS. (LONGMANS, GREEN AND Co.)

This is an attempt at presenting the elementary facts of Grammar in the inductive method, and the book is intended for the elementary classes especially to pupils learning English as a foreign language. Dry definitions are avoided and an effort is made to help the student in drawing inferences for himself. Great stress is laid on the *teaching* aspect of Grammar and the book will be found to be of value to elementary teachers. The large number of exercises at the end of each chapter and the copious illustrations, some of them judiciously selected from standard literature enhance the value of the book.

THE ELIZABETHAN SHAKESPEARE: THE MERCHANT OF VENICE; LOVE'S LABOUR LOST, EDITED BY W. H. HUDSON. (GEORGE G. HARRAP AND Co.) 2s. 6d. net each.

The publishers deserve all congratulation on the production of this valuable edition of Shakespeare's plays. The two numbers of this series which we review here testify to the excellence of the plan and are a good augury of the volumes yet to come. Erudition and research have done their best to make these two volumes very valuable handbooks to Shakespearean study. University students, as well as laymen cannot do better than use this series for a proper appreciation of the masterpieces of Shakespeare's dramatic genius. The learned and elaborate introduction to each play, the discussion of the sources, the duration of the action, the date of composition, early editions of the play and other questions, a knowledge of which is necessary for a comprehensive study of a play of Shakespeare, and the glossary of words and list of Variorum readings at the end—no word of praise can be too much for the excellence with which all this work has been done.

A very wise choice has been made in selecting the first folio for the text of the play and a faithful adherence to it has prevented the repetition of many an error due to the misguided and overzealous enthusiasm of Shakespearean commentators in the past.

The notes are of a high order displaying keenness of perception, width of scholarship and sobriety of judgment. Observations on character and artistic niceties relieve the somewhat inevitable monotony of "Notes."

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The 'get-up' and general execution of the volumes, which have each a valuable portrait of Shakespeare as frontispiece, do immense credit to the publishers and we await the other numbers in the series with interest.

They are among the best editions of Shakespeare's plays and we strongly recommend their use to University students as well as laymen who may have the privilege of studying some of the masterpieces.

THE ESSENTIALS OF ENGLISH SYNTAX, BY FLORENCE M. SNELL, M.A. (LONGMANS, GREEN & Co.) 2s.

The Essentials of English Syntax, by Florence M. Snell is a very welcome addition to text-books on English Grammar. As the title indicates, only such aspects of Grammar as are of value to the construction of sentences and the arrangement of words are emphasised upon. A practical interest is awakened in the young reader as all the facts presented in these pages have a direct and obvious bearing on composition. There is not the attempt to force down a series of cold lifeless principles enunciated with scientific precision, which only a love of Grammar for its own sake can perhaps appreciate with any interest.

Another wholesome feature of the work is the inclusion of a number of fine extracts from standard literary authors for purposes of grammatical study. It is not too much to expect that they will serve the double purpose of elucidating grammatical principles and inspiring a love of literature. The large number of literary extracts in the Appendix will be found to be of special value in this direction.

We would strongly recommend the manual for the use of the High Schools in our Presidency.

THE STUDENT'S HANDBOOK OF GEOGRAPHY WITH 164 MAPS AND DIAGRAMS, BY GEORGE PATTERSON. (THE CHRISTIAN LITERATURE SOCIETY FOR INDIA, LONDON, 1909.)

The author of this book was for many years a professor of history in a first-grade college in Madras. He was known to be a clear expounder of historical facts, and we find ample proof of this capacity in the book before us. Though the book is essentially a compilation, it has many good features about it. The presentation is lucid and scientific. Each continent is first described as a whole, attention being paid chiefly

to its broad physical characteristics. Undue detail has been avoided. Only such places as are directly connected with the historical, social, or economic life of each country or people find mention. The book contains many illustrations. We have much pleasure in recommending this book to all students and teachers of geography.

A GEOGRAPHY OF INDIA—PHYSICAL, POLITICAL AND COMMERCIAL, BY GEORGE PATTERSON. (THE CHRISTIAN LITERATURE SOCIETY FOR INDIA, LONDON. 1909.)

This is a companion volume to the Student's Handbook of Geography by the same author. It may be regarded as an enlargement of the chapter on India in the above-mentioned book. By giving a somewhat wide interpretation to the term geography, the author has briefly treated of many subjects which are not usually found in text-books of geography. All political, statistical, commercial information has been brought down to the end of the year 1907. The book is nicely got up, and contains many illustrations and maps, of which some are coloured. The book will be found useful both by students and teachers.

EXPOSITION AND ILLUSTRATION IN TEACHING, BY JOHN ADAMS. (MACMILLAN AND CO., LIMITED, ST. MARTIN'S STREET, LONDON. 1909.)

This book forms one of the manuals for teachers published by Messrs. Macmillan and Co. It attempts to lay down the psychological principles which underlie the art of exposition. Criticisms are made of the illustrations frequently employed in the course of teaching. The theoretical principles laid down in the book are of great value, but we fear they are likely to be forgotten the moment the teacher is face to face with his class. In teaching the teacher has to let himself go, for the practical interests of the moment must dominate everything. All the same, the teacher who has made a study of this book will know what blunders he commits and how he may rectify them.

JAPANESE EDUCATION—LECTURES DELIVERED IN THE UNIVERSITY OF LONDON, BY BARON DAIROKU KIKUCHI. (JOHN MURRAY, LONDON. 1909.) 5s. net.

This book embodies the substance of lectures delivered in the University of London under the Martin White Benefaction as a part of a scheme

of sociological teaching. Fifteen of these lectures were devoted to Japanese education, especially elementary and secondary education, from the pedagogic point of view, while nine treated of Japanese Educational Administration. In the work before us the whole has been recast and the two courses have been merged so as to avoid repetitions. Some important changes that were introduced in elementary and normal education, when these lectures were being delivered, have been incorporated into the book. Many matters which would be interesting from sociological points of view have been introduced. The book is replete with information on all points connected with education in Japan. Every teacher must get himself acquainted with what has been done in Japan. The remarkable progress achieved in half a century by a country, which in the past received much of its inspiration for progress from India, serves as an object-lesson on what can be achieved by a Government and its people in the way of progress even within a short period of time. We wish that this book of Dr. Kikuchi will find a place in the library of every educated Indian, and it ought certainly to be added to every college and public library.

THE FERGUSON COLLEGE MAGAZINE: VOL. I, No. 1.

We have much pleasure in welcoming the first number of this newly-started English periodical excellently executed and published by Wamand Govind Kale, M.A., at the Fergusson College. It is now twenty-five years since the College was started and it has all along been an integral part of the educational system of the Bombay Presidency, turning out numerous graduates every year. It is well they have started this magazine to stand as an accredited organ of the College, recording all important events in connection with the College and all that is notable in the lives of the past and future students of the College. We wish the magazine every success.

ST. JOSEPH'S COLLEGE, TRICHINOPOLY: ANNUAL RECORD. 1909-10.

We have received a copy of this annual report. It gives an account of the work of the College during the year under review. There are illustrations of the newly-extended College buildings, the laboratory and science buildings, the College museum, lists of prize-winners during the year, and of graduates who were educated in the College. The get-up of the pamphlet is excellent.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—Mr. G. Venkata Subbarayudu Sastri, Inspector of Schools, Second Circle, has combined privilege leave and furlough for six months from the 15th April 1910 or such later date as he may avail himself of it.

Mr. M. Venkataratnam has furlough for eighteen months in continuation of the ensuing summer vacation of the Training College, Rajahmundry.

Mr. H. W. Callaghan, Assistant Inspector of Schools, Trichinopoly district, and Acting Assistant Inspector of Schools, South Arcot district, is appointed to act as Deputy Superintendent, Reformatory School, Chingleput, during the absence of Mr. J. W. Coombes on leave or until further orders.

Mr. N. R. Krishnamma is appointed to act in the Ninth Grade of the Provincial Educational service, vice Mr. Callaghan.

Mr. J. Vittal Pant, Assistant Inspector of Schools, Anantapur district, is appointed to act in the Ninth Grade of the Provincial Educational Service with effect from the 1st February 1910 in the vacancy caused by the employment of Mr. V. R. Venkataratnam Aiyar as Acting Inspector of Schools, Sixth Circle.

Shaik Mirala Vapuchi Maricayar Usman Sahib Bahadur, B.A., B.L., is nominated to be an Ordinary Fellow of the University of Madras.

Mr. M. Kameswara Rau Pantulu, Assistant Inspector of Schools, Godavari district, is to act as Inspector of Schools, First Circle, during the absence of Mr. J. A. Yates on leave, or until further orders.

Mr. G. Venkata Subbarayudu Sastri, Inspector of Schools, Second Circle, is to act in the Indian Educational Service, vice Mr. J. A. Yates, on leave or until further orders.

The Director of Public Instruction is pleased to make the following appointments:—

Mr. P. Krishna Aiyar, sub *pro tem.* Supervisor of Elementary Schools, Perungulam, to act as Sub-Assistant Inspector of Schools, Nanguneri Range, in the probationary class vice Mr. M. H. Venkatesvara Aiyar on other duty or until further orders—to join as soon as possible.

Miss M. F. Prager, sub *pro tem.* Sub-Assistant Inspectress, Tinnevely Girls' Range to be sub-*pro tem.* Sub-Assistant Inspectress, North Arcot-Salem Girls' Range, in the third class vice Miss Mergler, who has resigned her appointment. To join expeditiously handing over charge to her head-clerk.

Miss M. A. Jupe, Sub-Assistant, Trichinopoly-Madura Girls' Range and Acting Assistant Inspectress, West Coast Girls' Range, to be Sub-Assistant Inspectress, Tinnevely Girls' Range, vice Miss M. F. Prager, without prejudice to her present acting appointment.

Mrs. Engler, Sub-Assistant Inspectress, Ceded Districts Girls' Range, now acting in the Trichinopoly—Madura Girls' Range, to be Sub-Assistant Inspectress of the latter range, vice Miss M. A. Jupe.

Miss Th. Lazarus, Acting Sub-Assistant, Ceded Districts Girls' Range, to be sub *pro tem.* Sub-Assistant Inspectress of the same range in the third class, vice Mrs. Engler.

Mr. M. H. Venkateswara Aiyar, Sub-Assistant Inspector of Schools, Nanguneri Range, to act for the Sub-Assistant Inspectress, Tinnevely Girls' Range in third class, vice Miss Jupe on other duty or until further orders. To join as soon as possible handing over charge to the Supervisor at the headquarters.

Mr. A. Visvanatha Aiyar, Sub-Assistant Inspector of Schools, Chittoor Range, and Acting Sub-Assistant, North Arcot-Salem Girls' Range, to act as Sub-Assistant Inspector of Schools, Conjeeveram Range, vice Mr. S. Venkatasubba Aiyar on leave or until further orders. To join expeditiously on relief.

This cancels the posting of Mr. K. Amirta Rau to the Conjeeveram Range.

Hindu High School, Triplicane.—The Hon'ble Mr. Justice Krishnaswami Iyer presided on the occasion of the recent prize distribution to the successful students of the Hindu High School. The meeting was largely attended. The Headmaster read the report submitted by him to the Secretary of the School Committee. The Chairman distributed the prizes and made a long speech.

National High School, Trichinopoly.—The annual distribution of prizes took place recently in the presence of a large gathering. Mr. M. Young, I.C.S., Collector, presiding.

After giving away the prizes, the Chairman remarked that it gave him great pleasure to visit that institution on that occasion and to preside at its prize giving. He had read in a previous report that the principal objects of that school were to foster true patriotism, to develop character, and to teach religion on national lines. Those were excellent objects and deserved every encouragement from the public. The results produced by the school at the public examinations appeared to be good, and the report that they heard read that evening was interesting in several details. He advised the students to work hard and win prizes and improve their intellect. There were many splendid mottoes inscribed on the walls of the school—all of them particularly useful for them. They would do well to realise their significance and act up to them. He would be glad to render every help he could and hoped that very useful indigenous institution might continue to prosper.

Mr. G. Sesha Iyengar thanked the Chairman for his especial kindness for coming from his *Jambundiy Camp* to preside at the function, and for the promise of his help to promote the interests of the institution.

Grants for Education.—On the recommendation of the Director of Public Instruction the following amounts of Provincial contribution for education are sanctioned to the undermentioned District Boards for 1909-1910:—

Anantapur, Rs. 3,030; Arcot (North), Rs. 7,140 excludes Rs. 2,470 on account of the Yeomiah and Orphan school, Arcot, which seems to be paid from a separate provision; Arcot (South), Rs. 3,850; Bellary, 2,340; Coimbatore, Rs. 6,770; Cuddapah, Rs. 5,880; Godavari, Rs. 34,280; Kistna, 30,340; Korapat, Rs. 11,210; Kurnool, Rs. 11,430; Malabar, Rs. 15,750; Nilgiris, Rs. 930; Salem, Rs. 30,600; Tanjore, Rs. 9,150; Trichinopoly, Rs. 8,720; Vizagapatam, Rs. 24,870. Total—Rs. 2,06,290.

The last Matriculation Examination.—The Legislative Council Meeting of the 5th instant have sanctioned the granting of certificates to those candidates whose names appeared in the second Matriculation pass list of last year, putting them on the same footing as those whose names appeared in the first list.

Government Mahomedan Girls' School, Mylapore.—The first anniversary of the school was held on the 30th ultimo at 5-30 p. m., in the General Doctor's House, Bazaar Road, Mylapore, with Lady Benson in the chair. A number of European and Mahomedan ladies were present. After a short prayer and recitation, the report for the last year was read by the Head Mistress in Urdu, and the translation of the same in English was read by the Assistant Inspectress of Girls Schools. Before distributing prizes to the successful girls, Lady Benson made a speech advising them and appealing to the Muslim community to help the generous and painstaking Moulvi Sultan Mahmud Saheb with subscriptions to meet conveyance charges of the girls and the cost of religious instruction. Lady Benson then distributed the prizes consisting of jewels, silk cloths, boxes, toys, etc. The President was garlanded, *atar* and rose were distributed, and the meeting terminated.

Educational Conference at Tiruppattur.—Mr. H. O. Kershaw, the Inspector of Schools of the Fifth Circle, convened a Conference of all Principals of Second Grade Colleges and Headmasters of Secondary Schools in his Circle with the object of explaining to them the method of working out the newly introduced scheme for the award of School Leaving Certificates. The Conference met at the Municipal High School, Tiruppattur, on the 30th and 31st March, and as many as twenty heads of institutions responded to the call.

The President, in opening the Conference, said that he had great faith in the excellence of the scheme and that he was certain that with the loyal co-operation of Headmasters it was bound to prove a great success. The salient features in the working out of the scheme were then considered, and among the main points discussed were the system

of assigning marks for work done by pupils at school, the scope and standard of efficiency to be aimed at in regard to the subjects not comprised within the scope of the public examination prescribed, the grouping of optional subjects, and the broad principles upon which the moderation of school marks may be expected to be made. A few books were recommended as suitable for consultation on some of the more important subjects, and an indication was also made as to how the time-table might be framed so as to combine economy with efficiency.

At the conclusion of the Conference, Mr C. T. Parthasarathi Mudaliar, the Headmaster of the Chittoor Secondary School, on behalf of the teachers present, thanked the President for the trouble taken by him in explaining the scheme to them and the great interest he evinced in bringing about the Conference. He pointed out that meetings of this kind, besides their educative value, had the advantage of making the Headmasters acquainted with one another, which was calculated to produce very beneficial results, and he suggested that such Conferences might be held annually, so that teachers might compare notes and devise schemes for further improvement. This idea was heartily applauded by the President who assured the Conference that, as far as he was concerned, he would do all that lay in his power to make the Conference a regular institution.

Victoria College, Palghat.—A contemporary learns that the Government have decided to take up the Victoria College, Palghat, under their own management from next year. This is a part of a scheme under which Government wants to establish a Model High School in each district. The Victoria College will be retained as a fully equipped college with two Intermediate classes and the scheme is awaiting the sanction of the Secretary of State for India.

The Mahboob College, Hyderabad: Striking advice to students by the Resident.—At a largely attended prize distribution, held at the Mahboob College, the Hon'ble Sir Charles Bayley made a long speech in the course of which he said: I feel it my duty, to say a few words to you on a still more important matter than that of discipline, which has come into fatal prominence for the last three years. That is the terrible evil of boys and young men uniting themselves in what is sometimes called political agitation. I am glad to say that we have not heard of boys from this College taking part in seditious movements; but as you all know the danger came very close to us and we cannot shut our eyes to it. How real the danger is the history for the past three years shows and perhaps no more conspicuous or sad incident of it could be found than what is revealed in to-day's newspapers of the terrible fate which has overtaken those implicated in the murder of Mr. Jackson at Nasik or those three that have been sentenced to

death and three to transportation for life. That the sentences are fully deserved, no one who has read the evidence can doubt, but it is impossible while abhorring the crime not to feel some pity for the miserable misguided youths. The cruelty of the murder of the misery brought on the families of the murdered man and of the murderers,—of the suspicion which may have fallen on many others—of the restriction and repressive measures which the murder has caused. There have been many others like it. The justification, offered for crimes like those, is that these have been committed for the good of the country. Where does the good of the country come in? If you desire the good of India, work for it, work with your heads or your hands, but do the work of men and not that of miserable assassins. To parents I say, I beseech you, from the character of your children, by habits of discipline fit them for their station in life, and above all, shield them from political contagion. Remember that the older and more respectable among you stand aloof from these movements, and the methods and those who incite the young men of to-day to crime are either wrong or are miserable cowards, who urge others to do that, which they have not the courage to do themselves.

COCHIN.

First meeting of the Teachers' Association, Tripunittura: 4th, 5th and 6th April.—This meeting was the first of its kind in the State and the whole programme was gone through pretty satisfactorily and very much interested the teachers. About 30 schools were represented, the number of teachers present being about 100.

4th April. Business began with the convener's (Mr. N. Gopalakrishna Aiyar, B.A., Headmaster, Sirkar High School, Tripunittura) opening speech welcoming the teachers of the several schools. Votes were then taken for appointing a Chairman and a Secretary. Mr. N. Gopalakrishna Aiyar obtained 71 votes for the Chairmanship and he was declared the Chairman of the Association. Mr. A. Natesa Aiyar, B.A., L.T., teacher, High School and Mr. K. S. Ramaiah, teacher, High School, both obtained 24 votes each for the Secretaryship and Mr. Ramaiah declaring that he was willing to withdraw, Mr. Natesa Aiyar was made the Secretary. Mr. K. S. Ramaiah further proposed that Mr. A. Natesa Aiyar be the permanent Secretary of the Association, and it was carried.

In the forenoon three Arithmetic lessons were given:—1. by Mr. K. N. Krishna Menon, teacher, Karicode School for Class II; 2. by Mr. C. Kochugovinda Menon, teacher, Free Primary School for Backward classes, for Class I; 3. by Mr. C. P. Subramania Aiyar, B.A., L.T., teacher, High School, for Class IV.

In the afternoon Mr. C. P. Subramania Aiyar read a very interesting and instructive paper on the methods of teaching Arithmetic with black-board demonstrations wherever necessary. After this, a dis-

cussion on the co-education of boys and girls was opened by Mr. K. Ravi Varma, B.A., Headmaster, Caste Girls' School, but after some observations by some of the teachers it was thought advisable to drop the subject as it was not one directly touching the profession.

5th April. This day opened with an English lesson in the Direct Method for Class II by Mr. C. Raman Menon, B.A., L.T., First Assistant, High School. The lesson was very instructive and the ease and the naturalness with which the lesson was managed excited the interest of many of the teachers. Mr. K. Ravi Varma then gave an object-lesson on the camel for Form I, and Mr. L. V. Narayana Aiyar, B.A., History teacher, High School, gave a Geography lesson for Class IV.

In the afternoon Mr. L. V. Narayana Aiyar delivered a lecture on the importance of Geography and on the principles underlying the teaching of the subject. After this, Mr. K. Narayana Menon, Malayalam Pandit, High School, read a paper on "How to teach Malayalam" and pointed out several faults now observed.

6th April. In the forenoon two papers were read: one by Mr. K. S. Ramaiah on "Discipline," and the other by Mr. K. Ravi Varma on "Kindergarten." Mr. Ramaiah said that his was the first of a series of papers that he was writing on 'Discipline' and after defining the term 'Discipline' pointed out the necessity of discipline, the signs of good discipline and the qualities essential in a teacher for maintaining good discipline. Mr. Ravi Varma's paper on 'Kindergarten' was the whole system in a nut-shell and very much interested the audience as the system is just now being introduced into the schools of the State.

In the afternoon a discussion on 'How to teach English in the Primary Classes' was opened by Mr. S. Ananthanarayana Aiyar, Headmaster, Karingachira School and several teachers spoke on the subject.

Mr. Gopalakrishna Aiyar then announced that the affiliation of all the neighbouring schools to the High School was ordered by the Darbar and that he would give them more definite information later on.

The Chairman then delivered his closing speech in which he touched on all the items of business done during the three days and in the most winning words encouraged the teachers to hearty co-operation. The speech, which was pretty long, was in fact a treat to the audience.

Cheers were then proposed to H. H. The Maharajah, Mr. Pope, the Special Educational officer, and the Chairman, which brought the business to a close.

The Association meets again in the 1st week of July.

BOMBAY.

Moral Teaching in Schools.—The Bombay Educational Conference closed its session after several

prominent educationists had spoken on moral teaching and hygiene. The Honourable Mr. Sharp, Director of Public Instruction, in summing up the discussion said: "Neither in two hours nor in two months would this or any other Conference be likely to settle the question of whether moral teaching should have a religious or a secular basis. It is a question on which men are likely to continue to differ to the end, but so far as the Education Department is concerned there is no desire to force one basis or the other on those unwilling to receive it. Those bodies whose circumstances permit them to base their teachings upon religion are quite welcome to do so. Those whose circumstances are different must be content to find some other sanction."

Grant Medical College, new buildings opened —

The annual distribution of prizes to the successful students of the Grant Medical College, Bombay, took place recently when opportunity was also taken to open the new buildings of the new Lecture Theatre, the Coroner's Court and Pathological and Police Surgeon's Laboratories in connection with the Public Morgue and Hospital Mortuaries, and also of Students' Hostel. The ceremony of opening these buildings as well as of presenting the prizes was performed by His Excellency Sir George Clarke. His Excellency made a long speech in the course of which he said: "Prizes are useful only if they operate as incentives to fresh and greater exertions, as I am sure they will in this case. The great prizes in life can be won only by those who continue to work and to study long after their college period has ended. As I have told you, you have selected an arduous profession in which the careless and the idle can take no place. It is a profession which above all others requires energy, concentration, and strength of purpose. It needs also true sympathy with suffering in every form. All of you may do great good to your country and to your fellow citizens if you devote yourselves whole-heartedly to one of the finest and noblest of careers. If you permit yourselves to be drawn aside into politics which can be useful only if they are made the subject of close and earnest study, you will fail absolutely in attaining success as alleviators of the preventible suffering of the people of India. It is this success and the happiness it will assuredly bring that I cordially wish to all the students of Grant College."

PUNJAB.

Aims of Training Colleges.—The following remarks of the Principal of the Central Training College, Lahore, are worth noticing:—

"They (the aims of a Training College) comprise much more than instruction in the art of teaching. It is the easiest thing in the world to familiarise students with certain teaching devices; it is one of the most difficult of problems to give students a firm grasp of educational principles and get them to apply them in their own way. Yet the latter must be done if the work is to be effective, if the

college is to turn out intelligent teachers rather than mechanical instructors. The problem is not merely to give students a clear, distinct, accurate and complete notion of the essential characteristics of a good lesson; it is to awaken and develop what we may term an intellectual sensitiveness to what is good and what is bad in teaching, to develop, as it were, 'a teaching conscience' so that the teacher will not only immediately perceive when he is working on wrong lines, but feel constrained to mend his ways and alter his methods. Further we have to impart correct ideas without stifling the individuality of the student. Their lectures and reading must influence their opinions; but we do not wish them to cease to think for themselves. We want them to be personalities, not human machines; men who form their own opinions, not men who blindly follow the directions of others. They must acquire the views of others, but they must reflect on those views and apply them in their own way. Training must not stamp out personality."

A truly national institution.—Every one of the professors engaged for the Dyal Singh College, Lahore, is an Indian. Thus it will be a truly national institution in more senses than one. As regards efficiency the qualifications of the professors are so high that it will not lie in anybody's mouth to say that the Dyal Singh College will be less efficient than institutions which are manned, in part at least, by second and third rate men from England.

D. A. V. College Students and Politics.—At the prize distribution of the Dyananda Anglo Vedic College, Lahore, Dr. Sir Protul Chander Chatterji presided. In addressing the students on the subject of "Students and Politics" he said:—

"I do not ask you to forego your love of country and nation nor expect you to do so, nor can the acquisition of sound political notions be regarded as anything but a gain, for the mind cannot be a blank on a subject of such importance and must imbibe some ideas. When you are of sufficient age to understand the bearing of a question you may devote some of your spare time that is the time which is needed for the performance of your primary paramount duty of diligently going through your college course, to the study of political and economic questions under proper guidance. But active participation of students in politics is fraught with terrible dangers, which have been clearly and practically demonstrated by unhappy sequel of the political agitations carried on in the last three or four years. I need not go into further details as these results are now universally deplored. You are the rising hope of India, the best asset of the Indian nation, will you neglect your students and imperil your life and liberty by pursuits for which you are not yet fitted and which might warp your immature judgment and lead you to courses of action calculated to do irreparable damage to the very cause you seek to advance? The political agitation of the last few years and their consequences are object

lessons, which you might well lay to heart when you feel tempted to break loose from bounds of parental or collegiate authority."

CALCUTTA.

A removal.—The laying-in of the foundation-stone of the Nator Maharaja's High School new building by the Sub-Divisional Magistrate, Mr. W. L. Scott, I.C.S., has taken place with great eclat. The officials and gentry of the town attended. The history of the school was narrated in speeches made in praise of the proprietor's liberality and munificence, specially as a friend of education. The cost of the removal of the school to the new site is estimated at Rs. 50,000.

The Bengal Literary Conference.—At the third sitting of the Bengal Literary Conference held at Bhagalpur under the presidency of Babu Sarada Charan Mittra, it was resolved that in order to perpetuate the memory of the late Mr. R. C. Dutt, a Literary and Historical Museum should be established in Calcutta. It was further resolved that subscriptions should be invited from all parts of India, and accordingly a Committee including representative men from all the Indian provinces with Babu Sarada Charan Mittra as President was appointed in furtherance of the scheme. The Gackwar of Baroda has recently consented to be the Patron of the Memorial Fund and subscribed Rs. 5,000 towards the cost of the proposed scheme.

Dacca Jagannath College.—The Senate having proposed, on the recommendation of the Syndicate, that the Jagannath College, Dacca, be affiliated to this University in Sanskrit up to the B.A. Honours Standard, His Excellency the Governor-General in Council is pleased, under section 24 sub-section 5, of the Indian Universities Act, 1904, to direct, in modification of the orders contained in the Home Department letter No. 182, dated the 16th of March, 1909, that, with effect from June 1909, Sanskrit (Honours Course) shall be included in the list of subjects in which the affiliation of the Jagannath College, Dacca, to the standard of the B.A. Examination is permitted.

New Patrons of the Central Hindu College.—The Maharajahs of Gwalior and Bikanir have consented to become patrons of the Central Hindu College, Benares.

A real sacrifice.—Mr. C. A. Wodehouse, M.A., who had been Professor at Elphinstone College, Bombay, and Deccan College, Poona, but resigned his appointment only last year, has offered his services free to the Central Hindu College, Benares, and has been appointed Honorary Professor of English. The Hindu community is deeply grateful to Professor Wodehouse for his signal service to the Hindu College rendered at great sacrifice.

Delhi High School.—The first distribution of prizes to the boys of the Bengali Boys' High School at Delhi took place recently. The President addressed the meeting and spoke a few words of advice to the little boys. Sweets were distributed to the boys and the gathering dispersed.

Presidency College.—Sir Edward Baker is to be warmly congratulated on the decision he has arrived at in regard to the Presidency College. As things stand, the vast majority of the students of the College live either with their parents or other relatives. Of over nine hundred students prosecuting their studies in this College barely 250 or so live in the Hindu Hostel. If the College was removed from its present site and made wholly residential, all these nine hundred students would have to reside on the College. How many of them would be able to afford the increased expenses which this would involve? It is a mistake to think that it is only the sons of wealthy men who join the Presidency College. Many, if not most, belong to the middle class, and not a few manage with difficulty to pay the monthly college fee. To compel all these students to incur a monthly expenditure of Rs. 35 or so which the residential system would necessarily involve is in reality to deny them the chance of having their education in the Presidency College.

Report on Public Instruction in Bengal.—The Report on Public Instruction in Bengal was issued recently. It opens and closes with the declaration that the dominant factor in education in Bengal is finance. Large expenditure is needed on the colleges. These in their turn cannot become efficient unless extensive improvements are introduced into secondary schools, and behind this need lies "the vast and unwieldy problem of primary education." Mr. James, who has written the report, affirms that its contents should be "an eloquent plea for more money for education." In his last paragraph however, he supplies the not unnecessary reminder that the success of education depends more on the devotion and high-mindedness of individual workers than on money. Nevertheless, money is essential, and he asks for "the utmost that can possibly be given."

University lecturer in Philosophy.—Babu Krishna Chandra Bhattacharya, M.A., Professor, is appointed University lecturer in Philosophy at Rajshahi for a period of two years.

A Government grant.—The Government of Bengal has made a grant of Rs. 5,000 a year to the funds of the Association for the Advancement of Scientific and Industrial Education of Indians.

Premchand Roychand Studentship.—The full studentship of Rs. 7,000 has been awarded to Babu Radha Kumud Mookerji, M.A., of the National Council of Education on the acceptance by the Syndicate of the thesis submitted by him.

ALLAHABAD.

A generous gift.—During the gathering of old boys at Aligarh College in the Easter Holidays, Nawab Vicar-ul-Mulk announced that the anonymous donor of one lakh, who gave this princely donation through the Nawab of Rampur, was the Maharajah of Gwalior. Trustees, old boys, staff and students passed hearty and respectful thanks to the Maharajah.

An appointment.—The Secretary of State has appointed Mr. C. P. Lloyd, B.A., to be a member of the Indian Educational Service and to hold the post of Professor of English in the Muir College, Allahabad.

Foreign Notes.

GREAT BRITAIN.

Manchester University and Artisans' Tutorial Classes.—A scheme for the provision of tutorial classes was inaugurated in April, 1909, by a Joint Committee consisting of representatives of the Manchester University and of workpeople's organisations, with the Vice-Chancellor as Chairman and Mr. J. R. Clynes, M.P., as Vice-Chairman. The response was even better than the Committee expected. The demands on the University, especially in the Department of Economics, were so great that it was difficult to meet them adequately.

NINE CLASSES AT WORK.

The scheme provides for a close and detailed course of study extending over three years. Committees have taken up the work and classes have been formed at Blackburn, Bolton, Chorley, Colne, Manchester (two classes), Nelson, and Oldham (two classes). Of the nine classes which are at work seven are studying Industrial history, one is studying Modern history, and one Natural history. It is too early to give a detailed report on the work of each class. It has been necessary for the lecturers to familiarise themselves with the methods of work and to endeavour to introduce among the students methods of steady application to study and preparation of essays. The Committee gratefully recognise that it is only possible to carry on the work of the classes through the generous co-operation of the various local bodies such as education and library committees, and in Manchester the Governors and High Master of the Grammar School, in providing rooms which are not only accessible but are especially adapted to the requirements of students.

Professor Herdman's instructive advice to students.—In an eminently instructive address which Professor Herdman delivered at the distribution of prizes at the Holt Secondary School, Liverpool, recently, he advised the boys to 'Think, Read, Work—that is, Think hard, Read much, and do something with your hands.' The advice is eminently suitable not only for school-boys

but for their elders as well and we therefore need make no apology for giving below a few passages from the address in which Professor Herdman amplifies it.

'For the first thing I want to tell you is *Think*—think often and think hard. I don't mean merely passing thoughts that float into one's brain and out again without producing much effect—what we may call 'snippets' of thought; but long, consecutive, story-like thoughts, or arguments, such as enable you to think a thing out for yourselves, or to consider a subject from different points of view. Youth is the time for *long thoughts*, and such thoughts are most valuable to you in your youth, and may influence your whole future life. They enable you to form opinions and to realise your own tendencies and capabilities. It is in course of such long thoughts that ideas occur to you, and original ideas were never of greater importance in the world than they are just now.

'The second word I have to say to you is *Read*. Read all you can. And as I told you not to think snippets, so I would now tell you not to read little snippets. Read books rather than magazines, and read more serious newspapers rather than frivolous trash. You will soon come to enjoy the more solid reading—like the long thoughts. It will store your mind with the thoughts and actions of great men in the past and the present, and will give you more to think about, and will enable you to think better—and that is one of the main objects of education. You see I take it for granted that you want to educate yourselves. Remember that your education is a process that ought never to stop. It is not confined to school time or school life and you can do much for yourself by taking every opportunity of reading books on many subjects.

'With all your thinking and reading you must, however, not become impractical. * * * There, *Do something practical*. Get into the habit of making things with your hands, make cakes or coffee; make a flying-machine, a motor-boat, or a steam-apparatus, or a collection of natural objects—I don't care what it is so long as it is something real and concrete, something more than words and thoughts. In this complicated body, our nerves and muscles and sense-organs are so wonderfully interwoven with one another that practical work such as cooking and carpentry and games of skill react upon our nervous system and help in our education.'

Sanskrit scholarships at Oxford.—Mr. Justice Neville, on the 12th March last, sanctioned several alterations in the scheme for the management and regulation of the Boden foundation in Oxford the effect of which will be to debar Indian students from holding these scholarships in future.

The scheme of 1860 provided (amongst other things) for a professorship of Sanskrit at a salary not exceeding £1,000 a year and four scholarships

of £50 per annum each tenable for four years and open to all matriculated members of the University who were not less than 25 years of age. The scheme is now to be varied in such a way as to provide:—1. that no person shall be eligible whose vernacular is an Indian language, and 2. that the holder of a scholarship must remain at one or other of the Oxford Colleges during the whole time for which it is tenable.

The greatest disadvantage under the new arrangement will be to those Indians who are genuine students of Sanskrit at Oxford and who have no intention of joining the bar. The decision of the Court however reasonable it may be from other points of view, will put a serious obstacle in the way of the laudable ambition hitherto cherished by such men as these.

Mr. Lever's gift to Liverpool University.—Mr. W.H. Lever, who succeeded the late Sir Alfred Jones as Chairman of the Liverpool School of Tropical Medicine, has presented the £91,000 which he was awarded as damages in the soap libel actions to Liverpool University.

'As I never at any time intended that this money should go to me, I have decided to assist the University,' he said. 'I have arranged with the owners of the old Bluecoat School for a lease for a number of years, and during that time the University will have the option of purchasing the school for the sum of £24,000.'

'I also desire that the School of House and Town Planning, the School of Tropical Medicine, and the School of Russian Studies shall be assisted, and accordingly I propose to transfer my £60,000 worth of shares in the Bromboro Port Estate Company to the University.'

'As these shares are not now paying a dividend, I have arranged that for ten years I will guarantee to pay 3 per cent. on the £60,000, which will make £1,800 a year for ten years.'

Dr. E. Hobson elected as Sadlerian Professor of Mathematics.—Dr. E. Hobson, F.R.S., Fellow and Mathematical Tutor of Christ's College, Cambridge,

has been elected Sadlerian Professor of Mathematics. He was educated at Derby School and Christ's College and was Senior Wrangler in 1878. He has been Stokes Mathematical Lecturer since 1884 and has published numerous works on scientific subjects. He received the honorary degree of Doctor of Science from the Universities of Dublin and Manchester and was awarded by the Royal Society in 1897 the Royal Medal for Mathematical Research. He is President of the Section of Mathematics and Physics at the British Association for the present year.

FOREIGN (GENERAL.)

Interesting particulars of the World's Universities.—A German academic journal gives some interesting particulars regarding the number and strength of the world's universities. It appears that there are 125 universities, and that in 1908 no fewer than 228,732 students attended their lectures. The great Berlin University is at the head of the list with 13,884 students and is closely followed by Paris with 12,985. The third place is occupied by Budapest with 6,551, then Vienna with 6,205, Germany, with 21 of these great seats of learning, and a total of 40,000 students, is at the top, followed at a long distance by France with 16 universities and 32,000 students. Great Britain comes next with 15 Universities and 25,000 students, followed by Austria-Hungary with eleven and 30,000. Italy has 21 universities, but only 24,000 students, Russia nine and 23,000, Spain nine and 12,000, Switzerland seven and 6,500, Belgium four and 5,000, Sweden three and 5,000, Roumania two and 5,000, and Holland five and 4,000.

A fund for the benefit of teachers in United States.—It is announced that Mr. Andrew Carnegie has given the sum of 3,000,000 dols., (over £600,000) to establish a fund for the benefit of teachers engaged in the ten leading cities of the United States. It is understood that the interest accruing from the fund is to be utilised for sending selected teachers abroad to study educational methods in other countries, and for other purposes beneficial to teachers.

ADDISON'S ESSAYS—(Selected from the *Tatler* and the *Spectator*), edited with Introduction and Notes for Indian Students, by E. H. ELLIOT, B.A., late Junior Professor of English, Presidency College, Madras.

[In the Press.]

A PAMPHLET ON COMMERCIAL EDUCATION, by S. VAIDYANATHA AIYAR, Head Master, Govt. School of Commerce, Calicut. Price As. 2 including postage.

Srinivasa Varadachari & Co., Triplicane and Esplanade, Madras.

The Educational Review.

The Convocation of the University of Madras for conferring degrees was held this year on the evening of the 31st ultimo. Degrees were conferred on over seven hundred candidates. Owing to indisposition His Excellency the Governor of Madras, the Chancellor of the University, could not preside, and the proceedings were opened by the Vice-Chancellor. When the formal business was over, the address* to the graduates was delivered by Mr. Justice Abdur Rahim. The address was noteworthy in many ways. It indicates the author's great acquaintance with Arabic literature and his enthusiasm for the past glory of Mahomedan civilization. The criticism levelled against the widely prevalent opinion that the education given in Government schools and colleges is godless is well deserved and opportune. "In the colleges maintained by the Government," said Mr. Justice Abdur Rahim, "you have not, it is true, been instructed in the tenets of any particular religion. But unless the epithet "godless" is to be used in some especial sense, it cannot be a true description of the effect, which your education must have had on the moral and spiritual sides of your nature. I do not think it is possible at the present day to assert that the well-recognised code of morals and good conduct has no hold upon a man of culture, unless it be associated in his mind with a particular religious sanction. I admit, however, it would be a matter of serious concern if the teaching of our schools and colleges tended to snap the religious beliefs of our young men. But I feel sure that if I were to assert that you are not good Hindus, Christians or Mahomedans by reason of your

* Reproduced elsewhere in *extenso*.

having had the best modern education which is available in this presidency, you would one and all repudiate the charge. So far as Hinduism is concerned, I think it is a fact too palpable to be ignored that English education has either led to, or been a concomitant, of its revival. No doubt an outside observer may say 'Oh! No, this new religious movement is not a revival of Hinduism, but it is something different; it is Christianity without Christ, Mahomedanism without its conception of one God, the perfect Creator and Lawgiver, or something of a mixture of Christianity, Mahomedanism and Buddhism, or a mere collection of philosophic speculations and moral maxims and not a religious system at all.' But in a matter like this, I should be inclined to regard the phenomenon in the light in which the educated Hindus themselves regard it. According to them it is but a reversion to the religion of the Vedas, the Upanishads and the Gita, and I believe many European thinkers confirm them in this view. As regards the Mahomedans, who have been educated under the present system, I know they yield to none of their co-religionists in their devotion to the teachings and ideals of Islam." This seems to us to be a fair representation of the state of affairs which is often represented in dark colours by religious zealots, who view with suspicion all attempts towards spiritual progress.

An Educational Conference was held in Bombay during the first week of the current month under the auspices of the Director of Public Instruction and the Bombay Teachers' Association for considering the question of moral education and how it may be furthered by the introduction of moral lessons, civics and hygiene into the curriculum. The proceedings were

opened with a speech by His Excellency Sir George Clarke, Governor of Bombay, who presided over the Conference. Sir George Clarke laid stress on the personality of the teacher. Direct moral teaching to be of any value, must depend on the teacher. Direct moral teaching may be made attractive and impressive by illustrative methods. If such teaching is dull it must evidently be useless; if purely formal it will degenerate into the committing to memory of copy-book maxims which may not be connected in a boy's mind with the realities of life. Can anything unintelligently committed to memory have any moral or educative value? Direct moral teaching must depend mainly upon the personality of the teacher. The teacher can arouse interest only in what he feels interest. Personal enthusiasm and conviction are needed for effective moral teaching. Training colleges cannot be expected to inspire teachers with enthusiasm for what they teach. In these circumstances we must employ indirect methods. Discipline, good games, cultivation of good habits, the example and personal influence of the teacher will form potent factors. Moral lessons of vital importance may be inculcated by means of stories drawn from Indian life, history, biography, mythology and literature. Whatever may be the basis of moral instruction, the greatest factor in moral education as in all other kinds of education is the teacher himself, whose personality and influence can be both inside and outside the class-room immensely powerful for good or evil. The Bishop of Bombay and Mr. Tribhovandas Mangaldas Nathubhoy made appeals for moral instruction on a religious basis. Lady Muir Mackenzie who also dealt with the basis of moral education would desire to see less stress laid on examin-

ations. She would like to have fewer examinations in book-learning and to apply spiritual and moral tests to school and college students. True education was, as Mr. Roosevelt told the members of the Cairo University, not a matter of curriculum but of wisdom and sincerity of character, which was more important than mental subtlety. Principal Paranjpe pleaded for a secular basis for moral instruction. Lady Muir Mackenzie hoped for the rise of the ideal teacher who by the example of his own high-mindedness and perfection in morals will set a glorious example to his pupils. But we dare to ask if such superior moral effort is ever likely to be possible without political freedom.

The Board of Education in England has recently issued a new circular giving general instructions as to the kind of provision that should be made in secondary schools for manual instruction as required according to the Regulations. No definite rules are laid down as regards the amount of time that should be devoted to this subject or the amount of work that would be regarded as normally satisfying the regulations. The object of the Board is to see that pupils, at some stage of their secondary school career, receive definite and systematic instruction of a progressive kind such as will enable them to observe with accuracy, to acquire a certain amount of manual dexterity, and to exercise forethought and intelligence in the adaptation of means to ends. The kinds of work suggested for pupils below the age of twelve are those that require neither special work-room nor elaborate apparatus, e.g. basket-work, modelling in clay and plasticine, and card-board work in connection with geometrical drawing. For older pupils a further

development on similar lines is required, including a course of wood-work and if possible, metal-work for boys, and for girls needle-work together with the subsidiary processes of designing, cutting out, &c. Gardening for both boys and girls is recommended as combining good manual training with healthy outdoor exercises. The chief aim of all these suggestions is that the training given should be practical and that the work done should be directed towards the production of actual things.

Two papers of great interest to teachers of science were read at the Boston meeting of the American Association for the Advancement of Science. In his presidential address to the Physics Section Prof. K. E. Guthe discussed reforms needed in the teaching of physics. He proposed two questions: may not the preparation which professors give future teachers be faulty? and may not the professors' teaching be capable of improvement? He thought that both these questions should be answered in the affirmative. The system adopted in the teaching of physics in many American colleges and universities is in his opinion more adapted to train professional physicists than future high-school teachers. The two should receive a different training. The ideal high-school teacher is one who has passed through a complete and thorough graduate course. At the present time the great majority of American high-school teachers do not go beyond graduation, and Prof. Guthe deplors all attempts to crowd so much physics into the under-graduate course that the physicist finally turned out lacks the general culture which an undergraduate course should give. He would insist upon more problem work in

connection with the elementary course. The laboratory work given with the elementary course is frequently insufficient and a somewhat advanced course, not in special lines, but covering the whole field will do an untold amount of good. Finally, there should be a general review of the whole subject from a higher point of view than is possible in the elementary course. Prof. Guthe advises future teachers of physics to take also a course in meteorology, a short course in dynamo-electric machinery, and an elementary course in instrument-making, all of which might properly be given in the physics department. Such a graded course will produce, he thinks, teachers to whom may be left without hesitancy the question as to how physics should be taught in the high-school.

In the address to the Educational Section Prof. John Dewey raised the question of how far the science teaching in schools has up to the present time been educational in the true sense. Those that are much interested in securing for the sciences the place that belongs to them in education feel a certain amount of disappointment at the results hitherto attained. The glowing predictions made respecting them have been somewhat chilled by the event. Of course, this relative shortcoming is due in part to the unwillingness of the custodians of educational traditions and ideals to give scientific studies a fair show. Yet in view of the relatively equal opportunity given to science to-day compared with its status some decades before, this cause alone does not explain the unsatisfactory results. Neither have students flocked to the study of science in the numbers predicted nor has science modified the spirit and purport of all education in a degree commensurate with the claims made for it. One

influential cause, the remedy for which most lies with scientific men themselves, is that science has been taught too much as an accumulation of ready-made material with which students are to be made familiar, not enough as a method of thinking, an attitude of mind, after the pattern of which mental habits are to be transformed. This criticism does not merely mean that in scientific instruction text-book and lecture are not enough and that the student must have laboratory exercises. A student may acquire laboratory methods as so much isolated and final stuff, just as he may so acquire material from a text-book. One's mental attitude is not necessarily changed just because he engages in certain physical manipulations and handles certain tools and materials. This process of turning laboratory technique to intellectual account is even more pressing than that of utilization of information derived from books. Only to a comparatively slight extent has the teaching of science succeeded in protecting the so-called educated public against recrudescences of all sorts of corporate superstitions and silliness. The great majority of those who leave school should have some idea of the kind of evidence required to substantiate given types of belief, and they must go forth with a lively interest in the ways in which knowledge is increased and a marked distaste for all conclusions reached in disharmony with the methods of scientific inquiry.

"The modern warship seems symbolic of the present position of science in life and education. The warship could not exist were it not for science—mathematics, mechanics, chemistry, electricity supply the technique of its construction and management; but the aims, the ideals in the service of which this marvellous technique is displayed are survivals

of a pre-scientific age, that is, of barbarism. Science has yet had next to nothing to do with forming the social and moral ideals for the sake of which she is used. Even where science has received its most attentive recognition, it has remained a servant of ends imposed from alien traditions. If ever we are to be governed by intelligence, not by things and by words, science must have something to say about *what* we do, and not merely about *how* we may do it most easily and economically; and if this consummation is achieved, the transformation must occur through education, by bringing home to men's habitual inclination and attitude the significance of genuine knowledge and the full import of the conditions requisite for its attainment. Actively to participate in the making of knowledge is the highest prerogative of man and the only warrant of his freedom. When our schools truly become laboratories of knowledge-making, not mills fitted out with information-hoppers, there will no longer be need to discuss the place of science in education."

We draw the attention of our readers to an article on the English Association published in another part of our current number. The English Association has been in existence for three years and has about 1600 members. Its objects are defined as follows:—

(a) To afford opportunities for intercourse and co-operation among those interested in the study and teaching of English literature and language.

(b) To promote the due recognition of English as an essential element in the national education.

(c) To discuss methods of teaching English and the correlation of School and University work.

(d) To encourage and facilitate advanced study in English literature and language.

These objects are to be attained by means of meetings and publications. The educational work is carried on largely by means of publications. Three times a year a bulletin is also issued giving the official record. The annual subscription is only five shillings. Viscount Morley is President, Lord Curzon is one of the Vice-Presidents, and Miss Elizabeth Lee is the Secretary.

It is desired to open branches of this Association in different centres in India. We think it would prove highly beneficial to have a branch of the Association in Madras. We are sure that if the English Section of the Madras Teachers' Guild should interest itself in the matter, it would not be difficult to form a branch in Madras. Not only would the English Association form a centre of combined effort for those engaged in teaching English but affiliation with it would lend the English Section of the Guild an amount of influence which the latter can never hope to acquire by independent work.

A joint conference on the Teaching of Geography in Schools, arranged by the Geographical Association and the Federated Associations of London Non-primary Teachers, was held last month in London, at which Mr. H. J. Mackinder delivered a lecture on "The Regional Method in Geography." He sketched out a four-year course of geography for secondary schools, in which he showed that the treatment of the subject-matter must be regional, progressive, and concentric. The

first year of the course must be devoted to the study of the home district so as to enable the pupil to acquire the fundamental concepts of geography by direct experience. This should naturally be followed in the second year by the study of the climatic conditions and attendant human activities in the region of the pupil's native country. In the third year of his study the pupil must be made to apply his knowledge to the continent of which his country forms a part and thence in the fourth year to the countries of the whole world. Throughout the whole course the correlation of geography with other subjects must not be forgotten, and no one can prove a successful teacher of geography who does not possess a knowledge of elementary geology, elementary physics and history. Such a course as this could be used to connect cause and effect, to correlate human interests and physical forces in different parts of the world, to realize the play of political forces and to develop the powers of thinking in terms of the world. In this connection we must not forget to note that the idea of causation has led the teachers of geography to pass so far beyond the limits of their subject into other scientific subjects that geography has been overburdened with much extraneous matter. The introduction into the teaching of geography of various ideas and theories from allied sciences such as astronomy, meteorology, pneumatics, geology, etc., has tended to make geographical instruction nothing more than a hotch-potch of scientific facts more or less connected together, and especially has this been the case when the teachers of geography have not had any training in the physical sciences.

UNIVERSITY OF CALCUTTA

Intermediate Examination, 1910.

Arts and Science.

GOLDSMITH—THE TRAVELLER, edited with Introduction and Notes, by J. M. Hensman, B.A., Principal, Kumbakonam College. Recommended by the Text-Book Committee, and approved by the Director of Public Instruction, Madras.	0	6	0
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do. Notes, by Prof. J. Horne	1	0	0

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No. 5.

MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

52. [M. BHIMASENA RAO.] Place a straight line of given length on the circumferences of two circles so as to subtend a given angle at one of the points where the circles intersect.

69. [K. S. SRINIVASACHARI, B.A., L.T.] Given the two diagonals and the angles of a quadrilateral. Construct it.

[As pointed out by M. BHIMASENA RAO in the issue for August 1909, question 69 reduces itself to question 52].

Solution by A. V. Telang.

Let P and Q be the centres of the two given circles and A one of the points of intersection. Suppose BD is the required line subtending at A an angle equal to the given angle.

Let the perpendiculars from P and Q on AB and AD respectively intersect in O.

Since OP and OQ bisect AB and AD at right angles, O is the centre of the circle BAD.

Because BD and the angle BAD are given, the radius of the circle BAD is known. Hence the locus of O is a circle with A as centre.

Again the angle POQ is equal to 180° —the angle BAD, and therefore is known.

Since P and Q are given and angle POQ is

XVI

known, the locus of O is a circle. Hence the point O is the intersection of two loci and is thus known in position. Hence the following construction.

Construction. Find the radius of the circle circumscribing a triangle with a base equal to the length of the given straight line and the vertical angle equal to the given angle.

Let the given circles of centre P and Q intersect at A. With A as centre and a radius equal to the radius found out above describe a circle.

On PQ describe a segment of a circle containing an angle equal to the supplement of the given angle.

Let these 2 circles intersect at O.

Draw AB and AD perpendiculars to OP and OQ respectively. Then BD will be the line required subtending at A an angle equal to the given angle.

71. [M. BHIMASENA RAO.] In a given triangle ABC inscribe an equilateral triangle DEF such that if the circumcircle of the triangle DEF cut the sides BC, CA and AB in D', E' and F' the lines DE', EF' and FD' are concurrent. If O be the point of concurrency and T the centre of the circle DEF show that OT²

$$= \frac{y^2z^2 + z^2x^2 + x^2y^2 - xyz(x + y + z)}{3(x + y + z)^2}$$

where $x = OA$, $y = OB$ and $z = OC$.

Solution by G. V. Telang.

Let ABC be the given triangle.

Find a point O such that angle BOC

= angle COA = angle AOC = 120° .

In the triangle ABC inscribe a triangle DEF such that its sides FD, DE and EF may be parallel to OA, OB and OC respectively. Then it is easy to see that the triangle DEF is equilateral.

Let DO, EO and FO produced meet CA, AB and BC in E', F' and D'. Then these will lie on the $\odot$ DEF.

Proof. Let AO meet FE, DE and BC in L, K' and a.

Let BO meet DF and EF in H and L' and let CO meet ED, FD and AB in K, H' and c respectively.

Since H'K, K'L, L'H are parallel to the sides of the equilateral triangle DEF, triangles OHH', OKK' and OLL' are equilateral. Join H'K.

Now $OH' : OK' = FL : DH$

$$= \frac{FL}{FE} : \frac{DH}{DF} = \frac{Oc}{Cc} : \frac{Oa}{Aa}$$

$$= \Delta AOB : \Delta BOC = OA : OC$$

$$(\because \angle AOB = \angle BOC).$$

$$\therefore OA : OK' = OC : OH'.$$

Therefore the points A, C, K', H' are concyclic.

$$\therefore \angle OH'K' = \angle OAC.$$

Again because $\angle H'DK' = 60^\circ$

and $\angle H'OK' = 120^\circ$, O, H', D, K' the points are concyclic.

$$\therefore \angle OH'K' = \angle ODK'. \therefore \angle OAC = \angle ODK'.$$

$\therefore$ triangles ODK' and OAE' are similar.

$$\therefore \angle OE'A = \angle OK'D = 120^\circ.$$

$$\therefore \angle DFE = 60^\circ = \angle DFE.$$

$\therefore$ E' lies on the $\odot$ DEF.

Similarly it can be proved that D' and F' lie on the $\odot$ DEF.

It was proved that $OA : OK' = Oc : OH'$.

In like manner it can be proved that

$$OA : OK' = OB : OL'.$$

$$\therefore OA : OK' = OB : OL' = Oc : OH' = h^2 \text{ (say)}.$$

$$\therefore OK' = \frac{h^2}{x}, OL' = \frac{h^2}{y}, OH' = \frac{h^2}{z}.$$

Since FH is parallel to OA, $FH : BH = OA : OB$.

$$\text{Now } FH = FH' + HH' = \frac{h^2}{y} + \frac{h^2}{z}.$$

$$\text{And } BH = OB - OH = y - \frac{h^2}{z}.$$

$$\therefore y \left(\frac{h^2}{y} + \frac{h^2}{z} \right) = x \left(y - \frac{h^2}{z} \right)$$

$$\text{whence } h^2 = \frac{xyz}{x+y+z}.$$

Each side of the equilateral triangle DEF

$$(a) = \frac{h^2}{x} + \frac{h^2}{y} + \frac{h^2}{z} = \frac{h^2}{xyz} (yz + zx + xy).$$

And the square on the radius (a) of the circle

$$DEF = \frac{a^2}{3} = \frac{h^4}{3a^2yz^2} (yz + zx + xy)^2.$$

Now $OT^2 =$

$$r^2 - (OH \cdot OL' + OK \cdot OH' + OL \cdot OK')$$

$$= \frac{h^4(yz + zx + xy)^2}{3x^2y^2z^2}$$

$$= \left\{ \frac{h^2}{z} \cdot \frac{h^2}{y} + \frac{h^2}{x} \cdot \frac{h^2}{z} + \frac{h^2}{y} \cdot \frac{h^2}{x} \right\}$$

$$= \frac{h^4(yz + zx + xy)^2}{3x^2y^2z^2} - \frac{h^4(x+y+z)}{xyz}$$

$$= \frac{h^4 \{ (yz + zx + xy)^2 - 3xyz(x+y+z) \}}{3x^2y^2z^2}$$

$$= \frac{y^2z^2 + z^2x^2 + x^2y^2 - xyz(x+y+z)}{3(x+y+z)^2}$$

on substituting the value of h^2 .

73. [M. BHIMASENA RAO.] ABC is a triangle. AD, BE and CF are drawn perpendicular to the sides BC, CA and AB whose middle points are L, M and N. AD and MN intersect in X, BE and NL in Y, and CF and LM in Z. Show that LX, MY and NZ are concurrent at the symmedian point of the triangle.

Solution by G. V. Telang.

As X, Y and Z are the middle points of AD, BE and CF, the proposition is reduced

to showing that the straight lines joining the middle points of the sides of a triangle to the middle points of the corresponding altitudes intersect at the symmedian point (Schlomilch's theorem.)

Let the tangents at A, B, C to the circle ABC meet in P, Q and R. Then AP, BQ and CR meet at the symmedian point K of the triangle ABC.

Let AP intersect BC at H. Through K draw IJ anti-parallel to AB. Then IJ is bisected at K and is parallel to PQ. Therefore AH is divided harmonically at K and P.

Through K draw SKT parallel to AD meeting BC at S and AL at T, L being the middle point of BC.

Then because KT and PL are parallel $KT : PL = AK : AP = KH : HP = SK : PL$
 $\therefore KT = SK.$

Let LK meet AD at X.

Then because $KT = SK$, $AX = DX$,

LK passes through the middle point of AD.

Similarly MK and NK pass through the middle points of BE and CF.

88. [P. S. SUNDARAM IYER.] If ABCD be the line passing through the centre of two circles and A'B'C'D' any circle cutting them orthogonally, then the four lines AA' BB' CC' and DD' will be concurrent.

Solution by G. V. Telang.

Let O and P be the centres of the given circles, and Q that of the circle cutting them orthogonally. Join PD' and QD' and produce DD' to intersect the orthogonal circle in R.

Now $\angle PD'D = \angle PDD'$ and $\angle QD'R = \angle QRD'$.

Since the angle PD'Q is right-angled, the lines PD and QR are at right angles.

Similarly it may be proved that each of the lines AA', BB' and CC' intersect the orthogonal circle in a point which if joined

to its centre Q will be at right angles to the line ABCD. Since one and only one straight line can be drawn perpendicular from Q to the line ABCD, AA', BB', CC' and DD' intersect the orthogonal circle in the same point, i.e., they are concurrent.

QUESTIONS FOR SOLUTION.

94. For the words from 'difference' to the end in the first sentence, read "square on the difference between AM and AN."

111. [K. KRISHNAMACHARI, B.A.]

ABC is a triangle of given area; $A_1B_1C_1$ is its pedal Δ ; $A_2B_2C_2$ is the pedal triangle of $A_1B_1C_1$ and so on up to n triangles. Find the sum of all the triangles so formed.

112. [K. KRISHNAMACHARI, B.A.]

O is the ortho-centre of a triangle ABC and K that of its pedal Δ . Show that $KO^2 = 2a_a^2 + R^2 \cdot \pi \cos 2A$ where a_a is the in-radius of the pedal triangle and R the circum. radius of the given triangle.

113. [K. KRISHNAMACHARI, B.A.]

Show that the three circles, each of which passes through two of the angular points of a given triangle and through the ex-centre corresponding to the remaining angular point, pass through the ortho-centre of the triangle formed by joining the ex-centres.

114. [G. V. TELANG.] A', B' and C' are centres of squares described on the sides BC, CA and AB of a triangle ABC. Show that the lines AA', BB' and CC' are equal and perpendicular to the sides of the triangle B'C'A'.

115. [G. V. TELANG.] E, F, G and H are the centres of squares described on the sides AB, BC, CD and DA of a quadrilateral ABCD; show that EG is equal and perpendicular to FH.

116. [G. V. TELANG.] If the inscribed

circle of a triangle passes through the circum and ortho-centres, show that the perimeter of the triangle is $\sqrt{6}$ times the diameter of the circum-circle and determine the angles of the triangle.

117. [G. V. TELANG.] If P, Q, R be taken on the sides AB, BC, CA of a triangle such that $AP=BQ=CR$, show that the least value of the area of the triangle

$$PQR \text{ is } \Delta \frac{1}{2} \left[1 - \frac{1}{4} \frac{(ab+bc+ca)^2}{abc(a+b+c)} \right],$$

Δ being the area of the triangle ABC.

118. [G. V. TELANG.] AB is the diameter of a semi-circle. Through C a point in AB a perpendicular CD is drawn to AB. Draw a chord AEF cutting CD in E and the semi-circle in F, so that the quadrilateral CEFB may be a maximum. [Casey's sequel to Euclid, Ex. 33 at page 151 (7th edition)].

[The Editor solicits contributions on problems of interest to teachers and pupils of High School classes.]

HOW TO CLASSIFY AND CATALOGUE A LIBRARY

BY REV. HENRY HUIZINGA, PH. D.

THIS is often a perplexing question, and unless answered satisfactorily a library loses half its value. Many persons without any outside help, invent some scheme that suits only their peculiar fancy. Very often most important points are left out of consideration. One large public library that I saw had arranged all its books in alphabetical order according to authors. Next to having no system at all this is the worst possible system. Books on a given subject are not found together but are scattered throughout the library. Another librarian after arrang-

ing all his books in order upon the shelves grouping them according to the subjects proceeded to number them from 1 to 1000. Afterwards he added to his library and found that he could not put the new books in their right places and keep up the serial numbering. He then adopted the happy idea of leaving a lot of numbers blank at the end of each group. This works fairly well for a time but when the numbers run out—

The following scheme is based on the Dewey Decimal System, so widely used in libraries in America. This article is specially written so as to be a plain guide to an ordinary Indian clerk in charge of a library, who can by its help arrange and number the books of any ordinary library. A good system includes (1) arranging and grouping all the books in logical order according to subjects; (2) marking each book so as to indicate clearly and easily the class to which it belongs, as well as the place it occupies on the shelves; (3) writing a catalogue that will show in an instant what books on a given subject or by a given author are to be found in the library.

The decimal system divides the entire field of knowledge into ten classes as follows:—General Works, Philosophy, Religion, Sociology, Mathematics, Science, Useful and Fine Arts, Language and Literature, Geography and Travels, History. This would be sufficient for a small library of a few hundred books. But each of these classes may be sub-divided into ten, giving us 100 classes, which is suitable for the largest libraries. It is as follows:—

LIBRARY CLASSIFICATION.

GENERAL WORKS—

1. Cyclopedias
2. Library Catalogues
3. Manuscripts

4. Coins and Stamps
5. General Periodicals
6. Commercial Catalogues
- 7.
- 8.
- 9.

10. PHILOSOPHY & METAPHYSICS—

11. Mental Science
12. Mesmerism
13. Logic and Dialectics
14. Ethics
15. Ancient Philosophers
16. Modern Philosophers
- 17.
- 18.
- 19.

20. RELIGION, DICTIONARIES—

21. Bibles
22. Commentaries
23. Doctrinal and Evidences
24. Devotional and Practical
25. Homiletical, Sermons
26. Institutions, Church, &c.
27. History
28. Missions
29. Non-Christian
30. SOCIOLOGY—

31. Statistics
32. Political Science
33. Political Economy
34. Law and Administration
35. Associations and Lodges
36. Commerce and Communication
37. Education
- 38.
- 39.

40. MATHEMATICS—

41. Arithmetic
42. Algebra
43. Geometry
44. Trigonometry
45. Analytical Geometry
46. Calculus
- 47.
- 48.
- 49.

50. SCIENCE—

51. Astronomy

52. Physics
53. Chemistry
54. Physiology and Medicine
55. Geology
56. Biology
57. Botany
58. Zoology
- 59.

60. USEFUL & FINE ARTS—

61. Engineering and Building
62. Agriculture
63. Manufacture and Trades
64. Shorthand
65. Drawing
66. Sculpture, Painting and Photography
67. Music
68. Games and Amusements
- 69.

70. LANGUAGE & LITERATURE, DICTIONARIES—

71. English Grammar and Composition, &c.
72. English and American Literature, Works on
73. Poetry and Drama
74. Fiction
75. Essays and Reviews: Prose
76. Readers and Selections of Literature
77. Modern European: French, German, Italian, &c.

78. Indian
79. Latin, Greek, Hebrew and other Languages
80. GEOGRAPHY & TRAVELS—

81. Rome
82. Greece
83. England
84. Europe
85. India
86. Asia
87. Africa
88. America
89. Maps and Atlases

90. HISTORY—

91. Rome
92. Greece
93. England
94. Europe
95. India
96. Asia
97. Africa
98. America
99. Biography

It will be well to take note of a few things. Let the librarian and all who use the library get a grip of the scheme and learn the main divisions by heart. The units for General Works, the tens for Philosophy, the twenties for Religion, the thirties for Sociology, the forties for Mathematics, the fifties for Science, &c., &c. When one remembers that forties are Mathematics, it is easy to recall that 40 is General Mathematics, 41 is Arithmetice, 42 is Algebra, 43 is Geometry, &c. Note that the eighties and nineties follow the same order by countries, so that when 83 is the Geography of England, 93 is the History of England. Remember always that the *round* numbers are the general works on a particular subject, including dictionaries. Thus a Religious Dictionary is 20, a Mathematical Dictionary is 40, a Dictionary of the English Language is 70, a Geographical Dictionary is 80, &c. But a Latin Dictionary I would place under 79 so as to have all the Latin books somewhat together.

MISCELLANEOUS.

The very first class number 0, is for general or miscellaneous works. A very common mistake is to put any unusual book, such as a Government Administration Report, under the Miscellaneous classification. Almost every book can be put into some definite class, and a really miscellaneous book is rare.

A few spaces have been left blank in the foregoing classification. These can be filled in with other classes as the librarian wishes and if there is need.

HOW TO ARRANGE THE BOOKS.

Now the first thing to do is to arrange all your books into classes as given above. If never previously arranged it may be best to first arrange them in ten piles on the floor

using the first or general classification only. Then sort out each class into its sub-divisions and place them on the shelves. Now take up each sub-division, and arrange all the books in that sub-division in chronological order, according to the date of publication, the oldest books first. Some books have no date of publications entered: these are usually very old books and may be placed first.

HOW TO NUMBER THE BOOKS.

When all the books in the library have been arranged we must number them. The classification given above tells us the class number of each book. For example, every work on Arithmetic is given the class number 41, and all the books on that subject are numbered 41^1 , 41^2 , 41^3 , &c., in the order that you have arranged them on the shelf. This number will be entered inside the book on the front cover, and also on a small label to be pasted on the back of the book. The upper number is known as the *class number*; the lower, as the *serial number*.

LABELS.

This label should be cut rectangular, not too large say, about $\frac{3}{4} \times 1$ " and the figures neatly written. It will be found convenient to rule a sheet of paper into rectangles and to write the numbers before cutting and pasting them on the books. By ruling between the rectangles with double lines in red ink an eighth of an inch apart and cutting between them you obtain a pretty label with a red border. I place the serial number below the class number, and not after it with a hyphen, as might be done, for this reason: it is important to have the label as narrow as possible especially for the thin books. Otherwise the label will go over to the sides of the book and the number will not readily

appear when the book stands on the shelf. With the serial number directly under the class number it will always be right in the centre of the back. In addition to the label on the back each book should have a label inside, bearing the name of the library as well as the class and serial number. This is best pasted exactly in the middle of the inside front cover.

ANNUAL VOLUMES IN A SERIES.

When you have a special series of books of a given kind that are being added to year by year it is well that they come together on the shelf, and not with other books of the same class in between

CAPITAL LETTERS AND NUMBERS.

For example, the annual volumes of the Madras University Calendar will come under Education, a branch of Sociology, and receive the class number 37. But other books on Education will also be numbered 37 and as these are added from time to time they will come in between the University Calendars. To obviate this add a capital letter to the class number for the series. 37^M , 37^M , &c. is the way I number the Madras University Calendar, and they come after the regular education books.

BOUND VOLUMES OF PERIODICALS.

The same thing can be done with periodicals that you get bound, whether general or special. The Baptist Missionary Review is numbered 28^B , 28^B , &c. The Review of Reviews will be numbered 5^R , 5^R , &c. The question what to do with the new books that are acquired will be considered a little further on.

CATALOGUES AND REGISTERS.

Having now arranged and numbered your books, the next thing is to prepare catalogues or registers. First in the Accession Register, in which books are entered in the order in which they are purchased. If none has been kept in the past, the old books may be entered in any order convenient. The Accession Register should be ruled off in columns indicating (1) Accession number, (2) Date of purchase, (3) Title, (4) Author, (5) Class number and Serial number, (6) Publisher, (7) Year, (8) Cost, (9) Remarks. It should be a strong leather-bound book, with paper of the best quality. It need never be renewed. The names of all the books should be neatly recorded in this book and every column filled in, usually as soon as a book is purchased.

TITLE CATALOGUE.

Next it is necessary to make a classified catalogue according to Titles. Have a good blank book with columns for (1) Class and Serial number, (2) Title, (3) Accession number (4) Author. This is usually sufficient for the Title Catalogue, for the remaining information required can be obtained from the Accession Register. In the Title Catalogue write all your books in the same order as they are placed on the shelves beginning with the first group. At the end of each sub-division it will be well to leave as much space, or as many pages, say, as that group has taken up. This will allow for new books to be added in their order. Each new class number should invariably begin at the top of a page. Should the space get full in some parts after a number of years a new book can be opened and used for all books received after that date. In the Title Catalogue both the title and the author's

name should be written exactly as they appear on the Title page of the book. The honorary degrees and titles of an author should be written. If the title of the book is a very long one, only the important part need be written, provided it is clear.

AUTHOR CATALOGUE.

Thirdly an Author Catalogue is desirable, where authors' names are entered in alphabetical order, with columns for (1) The Title, (2) Class and Serial number. In the Author Catalogue the surname of the author should be written first and then the given name, *e.g.* Longfellow, Henry W. Omit all honorary degrees and titles from authors' names in the Author Catalogue. As it is important to have these in exact alphabetical order, a loose leaved book with a separate page for each author is essential. A good stationer's shop can supply such books of any description in which leaves can be added or re-arranged as desired. A pilot file can well be made to serve the purpose. Should the ordinary bound book be preferred the authors can be arranged in alphabetical order leaving a space or a number of empty pages at the end of each letter of the alphabet. This will ensure all the authors whose names begin with a certain letter being placed together, though not in exact alphabetical order; *e.g.*, Addison may come after Arnold.

A very useful feature of the Author Catalogue is the entering in of all separate articles, essays, dramas, and poetical pieces of each author, with the volume and the place on the shelf where these may be found. Suppose a person wants to read Longfellow's *Evangeline*. It is found in Longfellow's complete works, but that book may be out, and yet that particular poem may perhaps be found in half a dozen other books. For ex-

ample, *Masterpieces of American Literature*, class 76 has it in full. If an entry is made in the Author Catalogue under Longfellow, this piece can be found in an instant.

In any system of classification there will be room for difference of opinion, as to where to classify a certain book. A life of Christ might be classed under Biography 99, but usually appears under Religion Doctrinal 28. A life of Paul would come under Religion, History 27. But in general the plan herewith given is so simple that any person of ordinary intelligence can use it. It may be well to end with a few cautions.

DON'T.

Don't put a Dictionary of Religious knowledge under the same class as a Dictionary of the English Language.

Don't put Methods of Teaching Mathematics under Education but under Mathematics. If it deals with various branches of Mathematics put it under 40; if, say, with Algebra only, put it under 42.

Don't put Alford's Commentary of the Greek Testament among your Greek books. Put it among other commentaries.

Don't put any book in the class of General Works unless you are sure that there is no other place for it. The following works are not Miscellaneous but belong under the classes indicated:—

Madras University Calendar,	37 M.
Civil Court Manual,	33
History of Petroleum,	63
Madras Census Report,	31
Asylum Press Almanac,	31

NEW BOOKS.

It will be now easy to put new books in their proper places. As has been seen the class number of each book in a particular sub-

division is the same, and the books are given serial numbers beginning with 1 in each subdivision. Suppose you have 25 books in Arithmetic. The last book in that subject will have the number $\frac{41}{25}$, and if a new

book on Arithmetic is added it will be numbered $\frac{41}{26}$. Thus the system is expan-

sive and as new books are added in the different classes they will all find their natural places. Any group can grow as much or as little as you please.

CHRONOLOGICAL ORDER.

The chronological order will not always be strictly observed, though an old book is not likely to be introduced after a more recent one has been acquired. If a number of old books are obtained by gift or in some such way, the books in certain sub-divisions may be renumbered if thought desirable. Ordinarily it will lead to less confusion if they are treated as new books.

EDUCATION IN BURMA.

BY AN ENGLISH VISITOR.

EDUCATION in Burma was until the English annexed the country wholly in the hands of the Buddhist monks; and still the greater number of Burman boys are taught in the monasteries, more especially in Northern Burma. No education at all was given to Burman girls before the American Missionaries went to Burma at the beginning of the nineteenth century; and only of recent years has the Government of Burma interested itself in female education. Burmans say that a boy is an animal until he enters a monastery as a

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Buddhist monk; and that no woman can set her foot on the ladder leading to "Ne'ban" until she is born a man. Even to-day, when everything is changing, every Burman boy goes into a monastery, if only for a few days. At the age of twelve, he is received into the Buddhist priesthood, puts on the yellow robe and lives in the monastery, keeping monastic vows for days, weeks, or perhaps, Lents. A Lent is a wet season, and the wet season lasts in Burma for six months and the time spent as a monk is counted by Lents. Burman parents, corrupted by Western competitive methods of education and commerce, often instruct their sons to apply for leave to return to the world after a very brief sojourn in a monastery; but still no Burman parent would allow his son to omit the ceremony of initiation, which is, according to Buddhist ideas necessary for salvation. Until a boy is received as a priest, he is but an animal, they say; but having put on the yellow robe he may progress so far during his present life that when he dies, he may enter "Ne'ban." Or he may renounce the world altogether and remain in the monastery, keeping many lents there, and then he will be a "Phongyi," which means "Great Glory."

In order to understand education in Burma it is necessary to begin with the Buddhist religion. In some hilly parts of Burma are tribes that worship spirits; and in these places boys have no education at all, unless they become Christians and go to Missionary schools; but the greater part of Burma is priest-ridden, and there the Buddhist monks have it all their own way. It may be well, therefore, to describe the admittance of a Burman boy into a monastery.

Burmans who have large houses and plenty of money, invite priests to their own homes

for the ceremony of initiation; but the ordinary Burman parent makes use of a room in the monastery compound, a place used for ceremonies connected with the worship of Buddha. This place is boarded and raised from the ground about six feet, and reached by wooden steps. The parents of the boy who is to put on the Yellow Robe, decorate this room with silk hangings and carpets, and there they receive relations and friends, beginning early in the morning to dispense tea, sweets, the national dish called "leh'pet" (made of leaves, garlic, nuts, etc.) betel, cigars, fans, and flowers. The boy is dressed in a gay cloth, called a "loungeyi," and his face and bare body are smeared with white paint. His hair is tied in a knot at the top of his head, and he wears many gold chains round his neck and many rings on his fingers. The jewellery is often lent for the occasion, and the boy walks about "as proud as a peacock." His sisters make much of him, looking on him as a superior being, and he is followed by a little crowd of admiring children.

The feasting goes on all morning, but in the afternoon, the room is prepared for the priests who will admit the boy into the monastery. To each priest presents must be given, so the number of officiating priests is generally limited to two or three. The gifts are placed on a carpet, and consist of baskets of rice, curry-stuffs, fruit and other things, and to each priest is given a new Yellow Robe. Before the priests arrive, a man who acts as sponsor for the boy divests him of his finery, leaving only one gold chain, which is to be removed when he puts on the Yellow Robe. His head is closely shaved, and he is dressed in a white cotton cloth. His body and arms are bare, and so also, are his feet.

The priests arrive and sit on the floor behind the gifts that they will receive, and the

boy kneels before them, with his sponsor and his parents. A white cord is passed round the boy, the priests and the presents, and this is done to ward off evil spirits and bad influences. A priest explains to the boy the rules he will have to keep while he is in the monastery, the hardest for the neophyte being no doubt, the long fast from noon till daybreak. At half past four in the morning, and again at eleven o'clock, the boy may eat as much as he likes; but after noon he must take nothing but betel and sherbet. A growing boy finds this rule a great penance, but it is strictly enforced and no doubt the boy eats much when he returns to his father's house after a few days or weeks spent in the monastery. The older monks chew betel, in fact they are always chewing, and their mouths when they grow old and have only a few stumps left are a sickening sight to witness. But the boy who has not learnt to like betel and tobacco must go hungry to bed, and be up with the birds for breakfast.

The Precepts kept by Buddhist monks are explained to the boy, and he bows to the priests, touching the ground with his forehead. Then the gold chain is removed, and he is dressed in the Yellow Robe. The priest teaches him to intone the Precepts of Buddha; and after bowing to the priests, he sits on the floor and his parents bow before him and worship him. His mother cries, feeling both proud and sad, but he feels himself a man, for he has before him all the things that are allowed to a priest—a mat with a pillow inside it, a begging bowl and a tin box holding amongst other things a razor—symbol of manhood! The attendants of the priests collect the presents and carry them away, the parents and the visitors go

home, and the boy is a little lonely perhaps for a few days. But soon he will go to the priest who received him into the monastery, kneel down and ask for leave to return home; and permission to put off the Yellow Robe having been given, he will run home and be received there with much rejoicing.

In the monastery schools instruction is given free by the monks, for thereby they acquire "merit." The boys go to school at the age of eight, and remain until they can read, write and do a little arithmetic. They learn many prayers and their entire education is religious, stories about the previous lives of Gautama the Buddha, being given to them for reading and writing lessons. From the beginning, the boys are soaked in the religion of Buddha; and for re-creation they read or hear the so-called "Birth Stories." Their school-books until lately were made of dried palm-leaves, cut into strips about fifteen inches long and two and a half inches broad. The strips are placed between boards of similar size and kept in place by bamboo pegs, which pass from board to board, the whole being tied up with a cord or a thick piece of cotton. Sometimes the covers of the books are ornamented and gilded, and such books belong to the monastery and are carefully kept in strong boxes. Modern elementary text-books have been introduced into some monastery schools by the English; but still in jungle districts the leaf books are used. The boys lie flat on the floor, face downwards, and have their slates and books before them, and as repetition is the basis of the system of instruction in vogue in monastery schools, the boys intone their tasks aloud, in shrill, high-pitched voices. The noise is great indeed when fifty boys recite their tasks at the same time; but the monk-master closes his eyes and only looks up when

the noise lessens, for then he knows that the boys are idle or asleep. The monks set the tasks on a black piece of wood, and use a soap-stone pencil; and the boys either copy these tasks in writing or commit them to memory. First the letters of the alphabet are taught, then small words, and finally sentences; and all the tasks set have a religious significance. The first book put into a boy's hand is called "The Great Basket of Learning." It is scratched with a style on the dry palm leaves, and consequently is expensive. The meaning of the Burmese letters is explained in this book, for each letter of the Burmese alphabet has a story. When a boy has mastered "The Great Basket of Learning" and knows a little grammar, and a great many Birth Stories, he leaves school, and very soon afterwards he forgets all he has learnt except the prayers to be recited before the images of Buddha. Boys who remain for a time in the monastery as priests, learn Pali, also to speak fluently and to argue. Above all things, the boys learn to be polite and to show respect for teachers and parents. When asking the master for anything in school, the pupil kneels down, and this habit seems to impress on the youngest boy a certain respect for his elders, at any rate. Burman children are remarkably polite, bright and pleasant.

During the time of the Burman kings, a yearly examination was held in Pali at Mandalay; and the present Government of Burma is anxious to see such examinations held there again. But the old is fast giving way to the new in Burma; and Burman fathers now want their boys to learn English which is the business language of the country, not Pali in which so much ancient wisdom is buried.

The policy of the Government of Burma is

to assist monastery schools by grants of money, and by sending to them trained teachers, also up-to-date school books. Such assistance can be obtained by any monastery school that has twelve pupils of whom five can read and write their vernacular according to the second lowest standard. The assisted schools are visited by Government Inspectors, and are more or less under the supervision of the Commissioner of the district. However, many monastery schools prefer to remain independent of the Government, and to go on in their old way; and to such schools the most devout Buddhists continue to send their sons.

The games played by the boys are interesting. For instance, they use a ball, about the size of a cricket ball, made of wicker work. The boys form a circle, and the ball is kept in the air by the heads, shoulders, feet—in fact all parts of the body. Hands are not used; but the ball is caught on the knee, the sole of the foot, the head, and the player who lets the ball fall is ruled out of the game.

Canoes are more popular than ponies, and Burmans talk of "riding" a canoe, not of paddling it. Boat racing is for grown up people, but the boys love a boat race and will go any distance to witness it. That boys learn any good at such races is very doubtful because so much betting goes on up the creeks, lakhs changing hands within a few days. Since the Chinese settled in such large numbers in Burma, betting has increased there, and although the Burmans are not a speculative people they lack stamina and are apt to imitate others instead of following their own traditions.

The first attempt made to introduce Western education into Burma dates from about 1830, when the American Baptist Missionaries and the Roman Catholics established schools

in the country. In 1866 Sir Arthur Phayre tried to make education in Burma more systematic, but little was done before 1868 when some Government schools were established, and "grants in aid," were introduced. Since that time rapid progress has been made in education on English lines.

In 1880 the scheme of education was revised. Annual provincial examinations were instituted under a Departmental Board of Examiners, and the standards in schools inspected by the Government were termed Lower Primary, Lower Secondary, Middle Secondary and Upper Secondary, or High. Town schools were established, supported from Municipal Town or District Cess Funds, and the same system was introduced into the larger village schools throughout Burma. The Government has now Normal Schools for training teachers, Engineering and Survey schools. The Rangoon College is affiliated with the Calcutta University; and there is some talk of establishing a Burma University. The American Baptist Mission has a large College for one thousand young men and boys in Rangoon which is very popular with the Korens, people who were the slaves of the Burmans until the English took over the country.

Annual examinations are held by Government Inspectors; and an Inspectress visits the schools for girls to look after the needle-work. As Burman girls are not purdah, their schools are inspected by men at the present time; but there is some talk of increasing the number of Inspectresses.

Gratuitous monastic schools still form the backbone of national instruction in country districts; and some of these receive a Government Grant and admit trained teachers as assistants.

Missionary schools receive a Governmen

Grant if they comply with regulations concerning fees, accommodation, discipline, &c., but in no case does the Grant exceed in such schools the amount contributed by the Missionaries themselves.

A great deal is done by the American Baptist Mission for the Indian emigrants. Thousands of Indian coolies migrate to Burma to do the work that Burmans are too proud and too lazy to do themselves. Formerly Burmans lived by agriculture only. Now many European rice and timber mills have been opened, and in these places no Burman will do coolie work. The lowest wage paid to a coolie in Burma is ten rupees a month; so each year more and more Indian coolies go to Burma. These coolies can afford to pay school fees, and are anxious to have their children educated. In Lower Burma excellent schools for Indian boys and girls have been opened by the American Missionaries; and these schools receive grants from Government. Both Tamil and Telugu are taught, and the teachers are Indians who have been educated in India. The Kindergarten system is used in these schools with great success, and the girls are taught sewing and singing. Some Indians of a better class may be found in these schools; but most of the children are the sons and daughters of coolies who in India could give to their children no education at all. Many languages are talked in Burma, but a knowledge of Urdu will carry a visitor through the country. English is spoken in towns, but not in villages; yet in each village is someone who understands Hindustani.

The Chinese have in Rangoon excellent schools of their own, and the Missionaries are now conducting schools for girls with great success. Burman girls are naturally

clever, and they are eager to learn and to pass examinations. Very pretty they look in the school-room, wearing a pink or blue loungyi (cloth) a white jacket reaching a little below the waist, and perhaps a silk scarf over the neck and falling to the knees. Their neat black hair is fastened across the top of the head in a broad band, and a little above the forehead on the left side is a spray of natural or artificial flowers. The girls daub white paint on their faces, and "do themselves up" with red and black paint for lips and eyebrows, and this spoils them to a great extent, and only in the distance do they look pretty. They will not bear close examination. The marriageable age for both men and women in Burma is twenty-two or twenty-three, so the girls can remain at school for six or even seven years.

In Burma a man lives in the house of his wife's parents until he can afford to have a home of his own; and women have much freedom; in fact the Burman girl is said to be the freest in the whole world, going where she pleases, choosing her husband and ruling her home.

Education has made remarkable progress of late years among the Korens, people who live in the jungles and hills of Lower Burma, and who were not allowed to learn to read and write before the English went to Burma, because the Burmans thought that such knowledge would make them too independent. Among the Korens the Missionaries have made many converts and now these people support their own schools. Whole villages of them have adopted the Christian religion, and established schools and chapels which they manage themselves with the help of the Missionaries. These remarkable people will no doubt one day play an important part in

the history of Burma. Burmans can no longer despise them, for many of them are educated people, and they are said to be more loyal to the English than the Burmans are at heart, having received from the English the priceless gift of independence.

Things are rapidly changing in Burma at the present time. Old things are passing away and new things are beginning. The country was for many years off the beaten track; but to-day it is visited by people from all parts of the world. Americans take a great interest in Burma: and to American colleges young Burmans are going to-day for education and training.

THE SCOPE AND FUNCTION OF POETRY.

POETRY is the language of the heart and the imagination. The feelings and emotions of the heart, heightened and intensified by the imagination, throw for us the glamour of beauty and loveliness over all things of the earth, soften their edges and surround them with the light of an unwonted charm and splendour. They cover the common things of earth with a conflagration of beauty, lift us and raise us out of ourselves and our sordid surroundings and make us feel that affinity with higher powers that we all somehow realise though only rarely and dimly. It is in this environment of intense feeling and heightened imagination, in this atmosphere of beauty and loveliness that

"With an eye made quiet by the power
Of harmony and the deep power of joy
We see into the life of things."

The divinity of poetry consists in this, and in so far as it helps man to realise this higher life and enables him to live in it more and

more, it is far and away the greatest factor, in moulding his life and destiny.

The agency of poetry is language, language "rifted with the ore of thought." Poetry is thus, great thought in great language—language so used as to extract out of it the extreme possibility of expression and great thought such as makes its appeal primarily to what is fundamental and universal in man. The subject-matter of poetry is all that men think and feel the prime instincts and first principles of man. We hear about us unconsciously the very grandeur of our existence. 'Staled by frequency, shrunk by usage' it is often rendered commonplace. It is the function of poetry to restore to us in all their pristine purity, the feelings and affections of the heart. Touched with the charm of poetry, they come upon us with all the fullness and freshness of a new discovery, startling the imagination and stimulating the intellect, opening out new vistas of thought and feeling and drawing out what is noblest and best in us. They enable us to think more, feel more, act more and therefore to live more, for poetry is life, life at its highest and best. I ascribe to poetry therefore, as its most characteristic merit and excellence, in a large measure, the power of intense suggestiveness, suggestiveness both by force and felicity of expression and by greatness and sublimity of thought, such as shall satisfy the highest ethical and æsthetical faculty of man and make its most unfailing appeal pre-eminently to the heart and the imagination.

It has to be distinguished as such from prose, which is the language of ordinary life and the vehicle of scientific expression and whose distinctive province is therefore something very practical. Not that prose cannot occasionally transcend this humble sphere and leap up as in the hands of DeQuincey to a

pyro-techenic display of all the possibilities of the English language, nor yet as in the hands of Ruskin weave itself into a fabric of great splendour and beauty, a magic web, radiant and resplendent, gorgeous with all the colours of sunset, crimson and purple and gold, but that such instances are in their very nature exceptional, and tend but strongly to establish the primordial principle of distinction between prose and poetry.

Prose is after all something pedestrian, if not also plebeian, a mere makeshift of the naturally incapable and inarticulate, while poetry is the very cream of language, the perfection to which human utterance can reach in felicity and suggestion, in terseness and economy, in perfect propriety and beauty of expression, in a word in all that tends to make the language of men, Divine.

The greatness of poetry is in this perfection in the attainment in the highest degree of an ethical and æsthetical satisfyingness of thought and expression. But it is more. The charm and sweetness of poetry consists in the creation of a new atmosphere altogether, a stranger surrounding purer and rarer, a magical environment where all things tend to beauty and perfection. When Swinburne says

"With stars and sea-winds in her raiment
Night sinks on the sea"

who does not feel the beauty of the dying of the night, the pale glimmer of the stars, the low moan of winds and the ceaseless surging of the waves. We feel even as a new-liberated spirit moving from earth to heaven, the strangeness and the immensity of this region of endless space, peopled but by stars and sea-winds, the night sinking far below us on the sea, the hope of a new day rimming the horizon and the growing noise and tumult of the world heard but faintly as a far-

off echo in the rushing of the winds. It is in worlds like these the height and altitude of man's nature is reached and he moves like a god among the godly things of the universe. All things strike us here not only with the charm of words but overwhelm us with their whole existence, with all their allied and kindred excellences, with a world of unapprehended glory and loveliness, hovering over their earthly actualities transfusing and interpenetrating their existence and playing as the very aroma round a flower. Verily we see here disclosed to us

"The light that never was on sea or land
The consecration and the poet's dream."

It is the poet's particular province as it is his peculiar privilege, as a seer, *vates* or prophet to see this aspect of things, their inner essence and eternal truth and embody them for ever in undying and imperishable verse. For here as elsewhere, oft-times it happens without pressing its conclusions to an extreme, that the obvious is the unreal, and the real is the invisible.

It is an erroneous opinion attributable in the main to Bacon and the so-called utilitarians, that poetry is fantastic falsehood cleverly dressed up to excite pleasure. Apart from the vulgar view and commonplace consideration that poetry should excite pleasure—a cheap enough requirement which even common and worthless things often well fulfil—there is a radical and fundamental error in this view of poetry in that it not only does not recognise its higher and more serious aspects, but actually formulates a most alarming and dangerous proposition that a mere tissue of falsehoods however cleverly worked up, could be the basis of great thought and activity and be a perpetual source of pleasure and entertainment to the highest and most refined minds of all time. It

is true that there is a certain glamour about the grandiose and grotesque things of the imagination of a Baron-Manchausen-kind, which excite the sense of wonder and delight in old and young and high and low, but this delight in wild improbabilities is not in improbabilities as such, but in the richness of imagination and rankness of pleasurable and pictorial detail that shoot forth in all the native luxuriance of the mind and give us both a superiority over the sordid things of life and also so to speak a mystic and mysterious acquaintance with the wildness and strangeness of what is unknown.

A sound and healthy mind does certainly take a delight in this, even as we may oftentimes shape our fancies to the shifting forms of clouds and imagine them now this and now that, but to consider such imagining, the veriest and merest fantasy, to be the essence of poetry, is certainly the most ridiculous error that even oblique-eyed imbecility could be guilty of.

The province of poetry is something very different or else its hold upon mankind would be most shifty and insecure. Very far from being a fabric of falsehoods, it is rightly regarded as much higher truth than even the truth of physical science. The poet instinctively takes hold of the very soul and essence of things, the higher and imperishable part of them, in a word, their "aspect more sublime." The scientist on the other hand concerns himself only with their external aspects and all his knowledge gives him no key to unlock the heart of things. There is thus a higher and a lower truth and while the botanist gives us number of the petals, the poet gives us the very smell and sweetness of the flower. The physiologist understands the functions of the various parts of the human body but it needs a poet to touch "the fountains of our tears."

Again the physicist who analyses colours into component parts understands not the disposition of them. It is the poet who seizes on the truth and significance of the picture itself, its beauty and loveliness, its genius and its truth and touches at once the heart and the imagination, the highest thought and feeling of man.

Further, the highest truths and conclusions of the physical sciences themselves interesting as they are in their own way, are at best unprofitable and vain, if they are not, as Matthew Arnold points out, so touched and transformed by the humanist, the scholar, the poet, the student of human nature, as to relate them to the sense in man for conduct and the sense in man for beauty. There is something altogether self-condemnatory in the remoteness of the conclusions of the physical sciences and in the method adopted to arrive at them, to what is nearest and dearest to man. Poetry has no need to resort to elaborate experiments, to retorts and alembics and to all the aids and appliances of modern mechanical ingenuity. The love of poetry is such a part of human nature and so perennial in the human heart, that the poet has only to state and to affirm and his words forthwith find a direct unfailing passage to the heart, move and manipulate it and modulate it to all the changing tones and cadences of the poet's subtle instrument and the winged thought carrying with it its own quickening energy and sustaining strength, becomes a part for evermore of the highest heritage of mankind.

Of such power and force and merit are all
 "The thoughts whose sweetness yieldeth proof
 That they are born for immortality"

such thoughts as

"Men are we and must grieve when even the shade
Of that which once was great is passed away."

Nothing is more pathetic in life than the

decay 'of that which once was great' and this elemental sadness finding a deep and touching echo in our hearts hallows the very memory and consecrates the very ruin of great things. Man feels here the tragic sadness of the perishableness and mutability of things. His own particular sorrow mingles with it and is merged in it, till his thoughts restricted no longer to himself, gain a breadth of view and largeness of interest that are most salutary and ennobling.

Again, with what convincingness and force comes the jubilant song of Morris :

"Love is enough; though the world be a-waning
And the woods have no voice but the voice of complaining,
Though the sky be too dark for dim eyes to discover
The gold cups and daisies fair-blooming thereunder,
Though the hills be held shadows and the sea a dark wonder,
And this day draw a veil over all deeds passed over,
Yet their hands shall not tremble, their feet shall not falter,
The void shall not weary, the tears shall not alter
These lips and these eyes of the loved and the lover."

Here is all the freshness, here is all the beauty of language co-ordinated to a commensurate beauty and elevation of thought, compressing within the smallest compass and the seemingly simplest expression, the very essence and concentrated seed-principle of innumerable years of human experience, touching the heart at once with a convincingness all its own and more true and unshakable than the most true and unshakable doctrines of gravity or of the indestructibility of matter. It is indeed possible and such

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things are getting to be commoner now-a-days that even these so-called unshakable doctrines are found to be hollow and untenable but it is impossible to conceive of a time when poetry of the kind quoted above will have lost its force and power of appeal, its strength and sustaining power.

The relation of poetry to philosophy may here be investigated. The study of philosophy is perhaps the noblest study on the purely intellectual side. It draws out the very quintessence of all the other sciences and on these general principles it builds its own. But so long as philosophical truths and conclusions are intended to inform the mind and not to touch the soul and the imagination, so long as they are a pure, crude, matter-of-fact statement of things, they lose spite of a certain excellence of thought, on the side of articulation and expressiveness and the defective mode of presentation entails a compromise of the power and value and abiding interest of the philosophic thought. Further as a science, though the noblest it is subservient to life, while the fine arts are the *object* of life. They have a higher ennobling and sustaining power, a greater and more forcible appeal to the sense in man for conduct and the sense in man for beauty. It is but right to say however that philosophy is the rough material of poetry, the matter of poetry in its crude shaping and ill-formed beginnings, looking very much like the tawny lion of Milton

"Pawing to get free

His hinder parts then springs as broke from bonds
And rampant shakes his brinded mane."

If philosophy is poetry in the rough, it is often asked if poetry is anything else, and attempts are constantly made to judge of the merit of a poet solely and entirely from the

strength and satisfyingness of his philosophy of life manifest or implied. In other words reference is constantly made to the teaching contained in one's poetry as opposed to art for art's own sake.

On the one hand it is held that art absorbed in its own high ideal, is like a soul living to itself far from mankind and is apt to get cloyed and surfeited, stunted in its growth and sickly, effete and inept, brilliant but ineffectual. On the other it is impossible to see what art there can be in a too obviously offensive kind of moralising, where the author is too sedulously improving upon each occasion and seeking to impose his own particular and narrow code of morality upon the world at large. As Shelley says "a poet participates in the eternal, the infinite and the one: as far as relates to his conceptions time and place and number are not." It is a compromise of the poetic character which ought to bear about it the elements of the eternal so to be bound down by limitations of a particular time and place. It is a dethronement of poetry from its high pedestal and noble purpose, to sort it with theology and philosophy and all the thousand "little systems" of man. Poetry so circumscribed, "cribb'd, cabbin'd and confin'd," is but a travesty of that high art whose appeal is perennial and perpetual, as mighty as the powers that sustain and as glorious as those that adorn. Nature the true mentor to whom all great poets consistently look up, does not teach or preach. Whether we look at the star-spangled heavens or the ocean in its grandeur and sublimity, at the lark that 'sings at heaven's gate' or 'the wild-weed flower that simply blows' we see everywhere the same joyousness of mere existence the

simple delight at the fullness, the freshness, and innocent enjoyment of life causing the harmony, the music of existence, even as the stars that move in their own natural orbit are said, by poets and astronomers alike, to cause that celestial harmony, the music of the spheres. "We hate poetry," says Keats "that has a palpable design upon us. Poetry should be great and unobtrusive." Or again, we may ask with Tennyson

"Is there any moral shut
Within the bosom of the rose?"

It has been customary to divide poetry into that which is characterised by 'natural magic' and that by "moral profundity," and again into thought poetry, sound poetry, and colour poetry. This last classification into thought, sound and colour poetry is too arbitrary and leaves out of account poetry of such vital importance as love poetry and nature poetry, the one which appeals to the feeling, and the other to the mind as a picture. Nor has it any clear advantage over the old mechanical division into lyrics, elegies, narrative poetry and descriptive poetry. But mere classifications are after all of but secondary importance and in our pursuit of elaborate systems it is possible that we lose sight of the primary and fundamental principles of poetry.

Ruskin defines great art, as that which consists "in the suggestion by whatever means of the largest number of the noblest ideas." The words here put in italics, seem to contain the very gist of the matter. The suggestiveness, apart from the means whereby such a suggestion is made, is the all important characteristic of poetry. The suggestiveness may be as has been remarked in the opening paragraphs of this essay, either by force and felicity of expression or by greatness and

sublimity of thought, but in either case, it shall be such as shall satisfy the ethical and æsthetical faculty of man and make its most unfailing appeal pre-eminently to the heart and the imagination. All art must be ultimately ethical and must have an exalting and ennobling influence on the life of man; but it is equally certain with all the force of accumulated truth and experience of mankind for centuries, that it must before everything else, be highly suggestive. The thought itself may not be there at all, but may be hovering over the words, even as the noblest thoughts hover over a waterfall or other sight of beauty and splendour in nature or in art, and pass from mind to mind imperceptibly and unconsciously and be seen and felt only in its power to quicken and vivify the imagination, to stir it and startle it, make us think more, feel more, act more and thereby to live more. It is this kind of poetry that Milton describes as that "where more is meant than meets the ear," and it is this too that comes nearest to realising the highest achievements of the kindred arts of music and of painting in both of which such suggestiveness is of the utmost importance.

The poet sees things as they are, no doubt, but he sees them through a kind of glory. This glory which clings like an aureole round the things seen in the poet's vision, is something too evanescent to be caught and set down plump and fat; it hovers over the earthly actualities of things and comes and goes at its own sweet will "visiting the earth" as Shelley says "with an inconstant glance" like to

"The hues and harmonies of evening
Like clouds in starlight widely spread
Like memory of music fled

Like aught that for its grace may be
Dear and yet dearer for its mystery."

They that lay too much stress on the thought contained in poetry are only allowing their prosaic tendencies to intrude upon and over-ride their better judgment and are most egregiously losing sight of this mystery this glamour, the weird charm of poetry which is its most glorious and distinctive characteristic.

When Coleridge sings of Mount Abora and 'the damsel with the dulcimer' or of that dome of pleasure whose shadow "floated midway on the waves" that "sunny pleasure-dome, with caves of ice!" or Rossetti gives us in his *Blessed Damozel* that mystic acquaintance with the deeply spiritual and highly poetic things of the imagination in the lines

"The wonder was not quite yet gone
From that still look of hers"
"It was the rampart of God's house
That she was standing on
By God built over the sheer depth
In which is space begun."

we see the weird beauty of suggestiveness hovering over these shadowy things and building for us in the air and to the mind's eye, the very things as they appealed to the imagination of the poet.

But perhaps the most striking and beautiful example of the effect of suggestiveness among the more familiar poems in the English language, is that delightfully simple and beautiful poem of Scott, called *County Guy*. Scott shows here, says Goldwin Smith, "a true lyrical power of awakening by suggestion thoughts which would suffer by distinct expression." It would be well to recall this poem to the mind of the reader and

the poem is so beautiful that no apology is needed for repeating it here.

"Ah County Guy the hour is nigh
The Sun has left the lea
The orange-flower perfumes the bower
The breeze is on the sea
The lark his lay who thrilled all day
Sits hushed his partner nigh
Breeze, bird and flower confess the hour
But where is County Guy?—

The village maid steals thro' the shade
Her shepherd's suit to hear
To beauty shy, by lattice high
Sings high-born cavalier
The star of love, all stars above
Now reigns o'er earth and sky
And high and low the influence know
But where is County Guy?"

The words are exceedingly simple and the feeling worked to the last point of fineness and fragility almost as soft as silk and as brittle as glass, so much so that the slightest breath or the least careless handling would break it at once into a thousand fragments. Here is no profound moralising, nothing of pedagogy or philosophy and yet how exquisite is the suggestion, how intense the feeling, throbbing, thrilling, quivering on the lips!

Suggestiveness is thus the most indispensable quality of poetry independent altogether of even the thought that is primarily and in the first instance contained in the verse. There are also other qualities which because they intensify and accentuate the power of suggestiveness, claim a very important and only slightly subordinate place. They are the power of language and the power of imagination. A simple ballad often touches the heart with an irresistible all-moving force, but it is not great poetry if it is not characterised by these two qualities. Swinburne tells us that "the two primary and essential qualities of

poetry are harmony and imagination." Harmony is not here to be understood as mere musical sweetness; it is rather the resonance, the power, the fullness of sound set to a close-wrought, finely-woven arabesque of language, such as constitutes no small part of the excellence of Milton's *Paradise Lost* or of all Rossetti's poems. It is thus not merely the absence of all discords and sharps and flats of sound, but the most natural vibration of words, set to their own music and rolling and reverberating like the waves of the sea for ever.

Such lines as Rossetti's:

"Oh! clasp me to our bosom for a deathless dower
This close-companioned inarticulate hour
When two-fold silence was the song of love"

or Swinburne's

"Until God loosen over sea and land
The thunder of the trumpets of the night"

give us some idea of the fullness of sound and resonance of language referred to.

The function of sound in poetry is not merely to fill the pauses and interstices of thought, not merely to keep up the roll of words and the continuity of the impression, but to be a pleasure in itself to the mind and the imagination, to give an elevation and dignity to noble thoughts and itself to suggest "those ten thousand orbs involving and involved" which hover over and inter-penetrate the reality of earthly existence. Mr. Saintsbury has admirably said of this that "the greatest poetry is almost independent of meaning, though so full of it; you can attend to the sense or disregard it as you please, certain in each case of satisfaction." Mere beauty of words overwhelmed Keats with the most pleasurable sensation and every lover of poetry lingers as Keats did, with loving affection

over the charms even of single words and phrases. Who has not read with newer and newer delight and repeated to himself again and again that beautiful line of Keats's

"And still she slept an azure-lidded sleep"

and paused over the '*azure-lidded sleep*' even as Keats himself paused in delight over Spenser's '*sea-shouldering whale*'? Such concentrated charm and rounded felicity are but one mode of achieving the highest beauty of suggestion and Keats and Rossetti are specially pre-eminent in their use and mastery of this kind of excellence in words.

There is also another kind, the charm of which consists not in restraint or concentration but in the utmost freedom, *abandon* and exuberance of language, amounting almost to a frenzy, a fever of delight, an inspiration, a literary intoxication, sweeping past like a tempest, a torrent or a tornado, a veritable hurricane of words, bursting forth like the eruptions of volcanoes and the exhalations of clouds, causing as Meredith says "a sort of electrical agitation in the mind and joints." Of such effect are the inspired outflow of the soul of poets such as Shelley and Byron and Swinburne, the last of which has indeed carried the sheer intoxicating effect of language to its very last possibility and extreme most point, so much so that to read his poetry is to be once more in the presence of the elemental forces, the freshness and fury of the winds of heaven and the ceaseless roaring of the waves; to read his poetry is indeed, as I have said elsewhere, to ride the ocean waves, to catch the salt-spray in the face and undulate with the undulating tide.

The effect of such poetry is truly electrical and like a flash of lightning or a sweep of thunderstorm, it leaves the atmosphere

agitated, but pure and clear. It shakes us out of our lethargy, stimulates our mind, makes us think and feel and act. It is like a martial drum inspiring the soldier to deeds of daring and of valour, a song that nerves a nation's heart and therefore as Tennyson truly observes

'In itself a deed.'

Such is the mere effect of words, if they are so handled as to be highly inspiring and intensely suggestive. We may now consider the power of imagination as affecting and accentuating the force of suggestiveness in poetry. Imagination is one of the very highest gifts of man and an absolutely essential quality of the poetic mind. Its power consists not in concocting things but in concerting them, in so bringing the various things of life by a poet's fancy together, as to make them stand in a right and proper and true relation to one another. The poet is as a man who is standing on the top of a high rock and takes a bird's-eye view of the broad expanse of country spread forth around him in all directions. His breadth of vision is broader and greater, keener and more powerful and he sees farther and better than his fellow mortals. The rock on which he stands is his power of imagination. A sort of agerophobia possesses the mind of most men and they greatly dread the very idea of taking very large views of things. It is the poet who by the height and depth and width of his sympathies, embraces all mankind, understands the details of human nature and constantly co-ordinates them to the wider principles and larger issues of life.

Imagination is either sensuous or pictorial, of feeling or of sight. There is no essential dichotomy, no absolute division of imagina-

tion into pictorial and sensuous, for these often blend and run into one another; but the division is convenient for purposes of treatment and may be taken up accordingly.

Taking first the sphere of feeling in Imagination, we can have no better specimen of it than the fine stanza in Keats's *Eve of St. Agnes* from which the first line has already been quoted, the stanza describing the sleep of Madeline

"And still she slept an azure-lidded sleep
In blanchèd linen smooth and lavenderèd
While he from forth the closet brought a heap
Of candied apples, quince and plum and gourd
With jellies soother than the creamy curd
And lucent syrops, tinct with cinnamon
Manna and dates, in argosy transferred
From Fez; and spiced dainties every one
From silken Samarcand to cedar'd Lebanon."

Here is a profusion of the most luscious imagery, over every detail of which the poet has lingered with tender care and loving solicitude, almost as if ripe peaches and bursting grapes crushed themselves in his mouth, dissolved and in their effusive sweetness filled his soul with joy.

Or this, of imagination, sense and feeling all compact, and in itself a perfect and palmary example of the beauty of poetic truth and poetic expression, from an anonymous poet,

'There is many a white hand holds an arm
With lovers' hearts to dust consumed.'

There is not in all the tales of mediæval enchantment, of many a Belle Dame sans Merci leaving her knights haggard and woe-begone or mythological Circes turning men into swine and holding them in thralldom any more pathetic and heart-rending and more woful and tragic expression of forlorn despair, touched and transfigured by the beauty

and felicity of imagination, than this simple, direct and stern statement comparing the lovely and beautiful white hand to an urn of ashes! It is a triumph at once of expression and of art, the concentrated beauty of language suggesting the famous lines of Marlow on 'the face that launched a thousand ships' while the imagery is as felicitous, unique and unparalleled as any in all Literature.

Of the pictorial side of the imaginative faculty, we may take from Tennyson this bounding description in profuse detail of the castle of the Sleeping Beauty bursting into life again with the reviving and quickening touch of the Prince

'A touch, a kiss! the charm was snapt
There rose a noise of striking clocks
And feet that ran and doors that clapt
And barking dogs and crowing cocks
A fuller light illumined all
A breeze through all the garden swept
A sudden hubbub shook the hall
And sixty feet the fountain leapt.'

Or again, with yet more perfect finish and exquisite poetic feeling,

'And o'er them many a sliding star
And many a merry wind was borne
And streamed through many a golden bar
The twilight melted into morn.'

And lastly how exquisitely imagined and how beautifully worded is this from the first sketch of the *Lotos-Eaters* called *The Sea-Fairies* this little bit of poetry

'Sweet faces, rounded arms and bosoms prest
To little harps of gold'

in itself a most beautiful picture, with all the warmth of feeling and of life dashed over it, making its colours glow!

For pure landscape of a truly Turnerian kind, having a firm grasp of details and of the whole breadth and vast expanse of landscape in all its entirety, we may take from

Tennyson's *In Memoriam* the following stanza

"Calm and still light on you great plain
That sweeps with all its autumn bowers
And crowded farms and lessening towers
To mingle with the bounding main."

Or for richness of imagery, we may take section LXXXVI beginning "sweet after showers, ambrosial air" and ending with that fine flight of fancy

"From belt to belt crimson seas
On leagues of odour streaming far
To where in yonder orient star
A hundred spirits whisper peace."

The effect of landscapes, whether drawn from the poet's imagination or better from the wilder, richer and never-failing source of nature itself, is to attune the mind to different states of feeling, to soothe and compose it or excite and exhilarate it. They dazzle the eye with splendour, with gorgeousness and lavish profusion of luxuriant detail or with a bareness and baldness sublime in their simplicity, inspire us with a sense of ruggedness and austerity, of grandeur and eternity. We accustom ourselves, in other words, by constant communion with nature, to ideas of greatness and grandeur inherent in us but requiring to be educed by a sympathetic appreciation of like things in creation.

Wordsworth, whose enjoyment of nature was perhaps the purest and most unadulterated, has recorded for us the effect of landscapes and other sights of beauty in nature, in some of his finest poems. In one of them he says, looking at a field of daffodils,

"I gazed and gazed but little thought
What wealth the show to me had brought
For oft when on my couch I lie
In vacant or in pensive mood
They flash upon that inward eye
Which is the bliss of solitude

And then my heart with pleasure fills
And dances with the daffodils"

Again in his *Prelude* he speaks of the influence of nature in

"Purifying thus

The elements of feeling and of thought
And sanctifying by such discipline
Both pain and fear,—until we recognise
A grandeur in the beatings of the heart"

But far the best expression, of the influence of the beauties of landscape, their power of repeating the delight, of setting the mind to think and of suggesting great and ennobling thoughts, is in his *Tintern Abbey* and the passage though familiar will bear quoting as it is the most succinct, perfect and complete account of the influence of the beauties of nature.

"These beauteous forms

Through a long absence have not been to me
As is a landscape to a blind man's eye:
But oft in lonely rooms and mid the din
Of towns and cities, I have owed to them
In hours of weariness, sensations sweet
Felt in the blood and felt along the heart
And passing even into my purer mind
With tranquil restoration:—feelings too
Of unremembered pleasure: such perhaps
As have no slight or trivial influence
On that best portion of a good man's life
His little nameless unremembered acts
Of kindness and of love. Nor less, I trust,
To them I may have owed another gift
Of aspect more sublime; the blessed mood
In which the burthen of the mystery
In which the heavy and the weary weight
Of all this unintelligible world
Is lightened: that serene and blessed mood
In which the affections gently lead us on—
Until—the breath of this corporeal frame
And even the motion of our human blood
Almost suspended, we are laid to sleep
In body and become a living soul
While with an eye made quiet by the power
Of harmony and the deep power of joy
We see into the life of things."

Stress is laid here on at least three important ways in which nature affects us. The first is in the repeated delight the contemplation of nature gives us, its usefulness not being exhausted by one application, the second is the tranquil restoration which enters into and unconsciously colours the whole existence of man and lastly the communion with the higher aspects of things it induces.

In the first place it bears testimony to the fertility and inexhaustibility of the delights offered in nature, the mere thought of which brings back the pleasurable scene to the mind again and again. The delirious bound of the waterfall, "filling the hills with hollow thunder and the vales with winding light" or of "the live thunder leaping from peak to peak and rattling the crags among," shows us the stormy tempestuous side of nature brimming with life and vitality, as this, its softer, gentler phase

"'Twas twilight and the sunless day went down
Over the waste of waters."

In the second place, the feeling that comes upon the mind in the presence of nature is a certain awe and reverence at the grandeur, the complexity, the inextricable mysteries of nature, that must always haunt and yet always elude the grasp of man. Amid all that is sickly and unsound in modern religious systems, this reverence for an unknown power whose altars are "the mountains and the ocean, earth, air and stars" is perhaps the noblest and the most abiding, the one form of religion, if it can be so called, that from the first dawn of the world to this day has entered into, influenced and ennobled the life of innumerable multitudes of men.

In the third and the last place with a mind lifted out of its sordid surroundings we rise to a contemplation of the purer

and lovelier aspect of things. Our thoughts unfettered and our feelings unrestricted have full scope for freedom and expansion, and such lively appreciation of the beauty of things draws out our sympathy and affection and makes us *feel*. So much so indeed, that we are, as Landor says "what suns and winds and waters make us."

Nothing gives to man a longer lease of purer life than the quiet and innocent enjoyment of the beauties in nature, in art (which is man's nature) and in the common things of life, in noble deeds, in noble feelings, in beautiful forms and faces. Again and again it has been truly observed that

" 'Tis life whereof our nerves are scant
'Tis life not death for which we pant
More life and fuller that we want."

Poetry more than anything else draws out our existence at all points, endows us with greater and greater capacities for feeling and thought and action, enables us in short to realise the highest destinies of human existence. Shelley, dying at thirty said that he had lived longer than his father and grandfather put together. It was literally so, because he had compressed within those thirty years, thoughts and feelings at once above and beyond the reach of his two ancestors. "We must count life by heart throbs," says Philip James Bailey and adds "he lives most, who thinks most, feels the noblest, acts the best."

The greatest poet is he who endued in the highest degree with the power of language rich, resonant and vibrating, and the power of imagination luxuriant, grand and noble, so strikes his mighty instrument, as to evoke in human hearts newer and newer thoughts, high ennobling and pure, such as shall strengthen and sustain human life and—as to feel is

to live—enable us "to live long life in little space" and "keep our souls in one eternal pant."

The function of poetry is thus the noblest and when all else of human activity shall pass away, when creeds shall crumble and kingdoms rot to dust, when "thirteen hundred years of empire end like a shepherd's tale," and all the pomp and glory of the world 'be one with Nineveh and Tyre' the poet's song shall soar again and sing its undying song of love, to throbbing hearts and aching brains, to newer and newer races of men, to all the countless generations yet unborn!

Verily has it been said

"The Seasons change; the winds they shift and veer

The grass of yester year
Is dead; the birds depart, the groves decay;
Song passes not away.
Captains and conquerors leave a little dust;
And kings a dubious legend of their reign,
The swords of Cæsars they are less than rust:
The poet doth remain."

T. B. KRISHNASWAMI.

GEOGRAPHY OF THE BRITISH INDIAN EMPIRE. SYLLABUSES FOR FORMS IV, V AND VI.

INDIA.

FORM IV.

I. Position, size, shape, boundaries and relation to the rest of Asia.

II. Coast line, regular: only a few openings and islands: absence of good harbours: shallow coast and ships lying at a distance.

III. Configuration—(a) Himalyan Wall, its relation to the Mid-world Mountain System, offshoots, passes and peaks: their effects on climate and character of the people: their importance as natural defences: cp. The Great Wall of China.

XVI

(b) The Indo-Gangetic plain: its position and extent: its cause, character and influence on the people. Its importance.

(c) The Deccan Tableland: position, size, shape and high edges. Slope.

(d) The coast strips: The E. and W. coasts compared as regards position, size, shape, rivers, rainfall, productions and character of the people.

IV. The chief rivers and lakes, their importance: when swollen and how, rivers of N. and S. India compared. The chief uses of rivers.

V. (a) Climate: the different factors that determine the climate of a place: the climate of S. and N. India compared: the different seasons in India

(b) Rainfall: S.-W. and N.-E. Monsoons. Their influence on climate: when occur: areas benefited by them: rivers swollen by them.

VI. Productions: A.—Vegetation (to be connected with V). (a) Mountains (1) Trees such as teak, sal, devadar, etc. (2) Plants, tea, coffee, etc. centres of production.

(b) Tablelands: cotton, tobacco: opium, kambu, cholam, ragi, etc.: centres of production.

(c) Plains: rice, wheat, sugarcane, indigo, jute, tobacco, etc., fruits, spices: centres of production.

N.B.—The description and uses of each should be taught.

B.—Animals: (a) wild (b) domestic (c) silk-worm; chief centres (d) birds (e) reptiles.

C.—Minerals: gold, precious stones, copper, lead, iron, coal, graphite, salt, building stones, marble, mica, oil, etc.: centres of production.

VII. Industries and manufactures (to be connected with VI). Agriculture, mining, fishing, cotton, jute, sugar, silk, metal-work, leather, tobacco: centres of each.

VIII. Trade: exports and imports (to be connected with VI & VII). Chief countries carrying on trade with India. What things India sends to and gets from them. The chief routes between England and India.

IX. Means of communication: roads, railways, and canals: chief railways of India.

X. Population (to be connected with V & VI). Densely-populated areas: exceptions to be explained. Cp. The densely populated areas of England.

XI. Government Political divisions (to be connected with Civics).

XII. The detailed study of the Political divisions as sketched above: Madras, Bombay and Bengal.

INDIA.
FORM V.

I. As in Form IV. Relation to Africa and Australia. Cp. The British Isles.

II. As in Form IV. The effect of coast line on climate, people and commerce. Cp. Europe: reasons for the shallow coast: details of coast line and chief harbours.

III. (a) As in Form IV. How the Himalayas formed: their important ranges: the comparative heights of peaks.

(b) As in Form IV, compared with the western part of the Great European Plain as regards position, extent, slope, rivers, climate, productions and character of the people.

(c) As in Form IV. The E. and W. Ghats compared. History and nature of its soil.

(d) As in Form IV. The various causes of their fertility: the Circars and the Carnatic compared.

IV. As in Form IV.

V. (a) As in Form IV. The differences between the climate of N. and S. India explained. The different seasons of India compared with those of England and the differences explained.

(b) As in Form IV. The full effects of the Monsoons on climate, agriculture and population. How the prosperity of India depends upon them.

VI. A.—As in Form IV. How cultivated and when. The different systems of irrigation.

B.—As in Form IV and compared with those of England.

C.—As in Form IV. How they are mined and their uses.

VII. As in Form IV. Indian agriculture compared with American, European and Japanese. Inferiority of Indian to American and European wheat; need of scientific method and preservation of manures; profound ignorance of the cultivators as to the use of right soil, bone and fish manure.

VIII. As in Form IV.

IX. As in Form IV. Important junctions: chief steamer routes.

X. As in Form IV. The various elements of population. The prevailing religions and languages and where professed and spoken.

XI. As in Form IV, with some details.

XII. As in Form IV. The Native States.

INDIA.
FORM VI.

I. As in Form V. Ancient and Modern name; reasons for the same: a continent rather than a country and reasons for the same.

II. As in Form V. Conditions of a good harbour and how far the chief harbours of India satisfy them: the shallow openings: their advantages and disadvantages: the chief islands and their importance.

III. (a) As in Form V. The detailed ranges of the Himalayas and their importance.

(b) As in Form V. The various factors which make it so important such as rich soil, hot and damp climate, etc. Bengal, 'the land of promise' dense population: the seat of ancient civilisation. The great kingdoms of ancient N. India. Cp. Lombardy, Egypt, Mesopotamia, etc. which played an important part during the 'River Age.'

(c₁) Malwa tableland.

(c₂) As in Form V. Cp. Australia, Africa, Spain, Arabia.

(d) As in Form V. The effects of their fertility: the seat of ancient Dravidian civilization: the three great kingdoms of S. India. Tanjore "the Garden of S. India" The greatness of the Chola Kingdom. Cp. தண்ணீரும் காவிரியே தார் வேந்தன் சோழனே, மண்ணாவதும் சோழமண்டலமே, சோழவளநாடு சோழடைத்து etc.

IV. The different stages of rivers: how deltas are formed; erosion and corrosion. The three great rivers of N. India compared with one another.

V. (a) As in Form V. The influence of forests on climate: the policy of Government towards the same: the influence of climate on people: England and India compared: discussion of the climate of some selected places in the light of the various factors that determine the climate of a place.

(b) As in Form V. The causes and effects of the Monsoons. Areas of heavy, moderate and poor rainfall and reasons for the same.

VI. A.—As in Form V. The conditions of the growth of various crops and how far the different parts of India fulfil them.

B.—As in Form V. The climatic conditions of rearing silkworm, how reared and how silk is manufactured. A simple and profitable industry for India.

C.—As in Form V. Why mining has not advanced as in Europe and Japan. How it can be developed.

VII. As in Form V. The conditions of the different industries and how far the different regions of India satisfy them: the ancient industries of India, the famous muslins of Dacca "the webs of woven wind," the silks of Benares, etc., causes of their decay. How the industries can be improved and developed. Need of compulsory Primary and Technical education. Cp. Germany.

VIII. As in Form V. Ancient trade very lucrative. The ancient and modern trade routes between India and other countries: the E. I. companies. Rise of the British dominion in India.

IX. As in Form V. The chief considerations of Government in extending the railways: the chief canals.

X. As in Form V. The chief races of India: where found: how and when came: their race marks; their customs and character.

XI. As in Form V, with some more details.

XII. All the provinces including Burma and Ceylon.

OUR ENGLISH LETTER.

LIVERPOOL, May 1910.

The National Association of Manual Training Teachers have just held their annual Conference in Liverpool, and attention has thereby been drawn to the remarkable advance that has been made in the twenty years since the Association was founded. It now ranks as the premier society of its kind in Europe. Its object is to make manual training part and parcel of the ordinary educational curriculum, and its success is evidenced by the fact that 95 % of its members are to-day not merely qualified to teach, but are actually engaged in giving practical hand-work instruction in schools recognized by the Government. The initiation of manual training into English schools is to the credit of a Joint Committee of the City and Guild of London Institute, the Drapers Company and the School Board for London who for several years prior to 1890 had conducted classes in wood-work at a cost of over £1,250 a year. They also began the training of teachers to give the necessary instruction. The prophetic words of the first President of the Association have been abundantly verified: "I see a wide area of usefulness which this Society may occupy. Manual Training stands in the front of the revolution which

has enthroned the new education. It is typical of the change. Let those who advocate it, those who direct it, its officers and workers, take counsel among themselves, so that they not only protect the line of their advance, but continue to improve their instruments and weapons, using them for the benefit of the children of to-day, and thus enabling the men and women of to-morrow to think and act with more precision, and with stricter devotion to accuracy and truth."

To-day the Association has a monthly paper devoted to the spread of its principles. This has now passed its hundredth issue, and has steadily gained in usefulness, dignity, and artistic worth. The work of editing and managing such a paper is obviously considerable, and it says much for their devotion to the cause that men have been found to undertake such arduous labour without any monetary reward. The success of the paper too says as much for their ability as the conduct of it says for their zeal.

Other propagandist work is carried on. In addition to the yearly Conference, there is also a Summer School held annually at the Municipal Technical College, Brighton. There are special courses for Elementary and Secondary school teachers. Instruction is given in such subjects as clay-modelling, blackboard and brush-drawing, cardboard-modelling, wood-work, metal-work, carving, and the making of apparatus for games: and lectures are given daily on 'pedagogy with special reference to handwork subjects.'

There is much claimed for the new movement if such it may still be called. They say that manual training is necessary in order to develop certain centres of the child's brain, and to afford scope for acquiring manual dexterity at the age when such dexterity must be acquired if it is to reach a reasonably high standard. It also affords scope for exercising the child's constructive faculties, and thus tending to secure self-expression. Moreover it is claimed that it makes other school-subjects more real to the child, by bringing into relation with every possible subject the third dimensions, and gives the child something of the feeling that it is growing up not merely as an individual but as a member of a community which it must serve by the production of things generally useful.

Sir John Cockburn has been President of the Association since Sir Philip Magnus resigned in 1903, and he is one of the most ardent supporters the movement has. "A bridge has been formed," he says, "to span the gap between the Kindergarten and the Technical School, and soon there will be no break in the continuity of hand-learning."

ing from Infant School to University. The triumph has been great and rapid, not only on its own merits, but because it is a movement connected with the inflowing tide of affairs. It is in partnership with a number of forces which have already established themselves as essentials of the age in which we live. From these it gains strength, and in turn, as educational foundation, provides for their stability and permanence. It is no accidental or unrelated phenomenon, but is one of a co-ordinated series of movements bringing education into touch with the actual requirements of the 20th century. It signifies the severance from the fantastic theories and *a priori* vapourings of the schoolmen, and marks the realisation and adoption by educationalists of Bacon's inductive methods. It sounds a note which harmonises with the major chord of an epic of construction, and links up education with the progressive age of steam, steel, and electricity." We do not think anything further need be said on the subject for the present.

The Report of the Board of Education was published a fortnight ago. The matter of the revision of school accommodation has attracted more attention than any other. Ten square feet of floor space is henceforth to be regarded as the minimum. But it is doubtful whether the rule can be made retrospective. Much has been made by certain Unionist members of this another case of the 'persecution' of the voluntary schools, but opinion is really in favour of Mr. Runciman who is only demanding what should have been asked years ago. The comparison of the new demand with floor space required in Secondary Schools might perhaps astonish some who have been making much of the new regulation.

The Report also deals at length with the question of the supply of Elementary School teachers. At present an idea is being disseminated that a large proportion of qualified teachers are out of employment, and that the number is on the increase. The Report points out that out of 4384 men and women who completed the course in 1908, 4069, i.e. over 92 per cent., were known to have secured appointments within twelve months, while some of the others were pursuing their studies at the University. In fact, according to the Board of Education, there is likely in the near future to be a considerable shortage of teachers. Mr. Marshall Jackman, President of N. U. T., complains that the figures for 1908 have been given, though later figures are available. And he quotes the L. C. C. training Colleges: 525 left in July 1909, and in the following

October 352 were reported out of employment. He complains further that the young teachers are put at a great disadvantage. If they obtain work outside the schools for which they have been trained, the Government demands a re-imbursment of the money spent on their training. So they fall between two schools. The mischief is the employment of unqualified teachers of whom there are 18,000 in England and Wales. It is much to be desired that the Board will have the courage of its convictions, and gradually or summarily remove from the State-supported schools all teachers who are without either an academic or a professional qualification.

Professor Sadler has been addressing the Secondary Schools Association on the subject of endowed schools. In his reply to the vote of thanks, he said there was danger on either hand and we must steer between them: on the one hand, the autonomous Grammar School of the past, which meant "a crabbed headmaster who had gone on so long that no one dared say him nay, who, after being a public nuisance, became a public institution, on the other hand the steam-roller of an uninspired bureaucracy. What would have been the Board of Education's report on the school of Dr. Arnold while yet unknown to fame? I can imagine much criticism of the Thucydides lesson and the neglect of accurate scholarship, a warning lest the weekly essay should be overtaxing the weaker members of the class, a paragraph on the sense of duty that compelled the Inspectors to call the attention of the governing body to the total neglect of scientific instruction, and a private note to the Chairman urging that the Headmaster should rigidly abstain from all public political utterances. Nowhere in the report would it appear that the Inspector had been at Rugby on a Sunday, or heard Dr. Arnold preach in the school chapel." This is excellent.

Mr. J. A. Smith of Balliol has been elected Waynflete Professor of Moral and Metaphysical Philosophy. His predecessor Mr. Thomas Case, (whose Christian name used to be altered without being shortened) had held office for twenty-two years. Mr. Smith's election was hardly expected, but he is a safe, if somewhat colourless man. Dr. Rashdall, whom the irreverent call "the Sophist" was among the candidates.

Reviews and Notices.

THE SCHOOLMASTER'S YEAR-BOOK AND DIRECTORY, 1910.—A REFERENCE BOOK OF SECONDARY EDUCATION IN ENGLAND AND WALES. LONDON: THE YEAR-BOOK PRESS, C/O SWAN SONNENSCHNEIN AND CO., LTD., 1910. 7s. 6d. net.

This is the eighth annual issue of what is regarded by many members of the educational profession as an indispensable source of information. It is divided into three parts, containing respectively, general information, alphabetical lists of secondary school-masters, and a list of secondary schools. The educational particulars given in this book are guaranteed to be accurate and up-to-date. The section dealing with country and borough education authorities contains important alterations. More than 14000 names are contained in the directory and the list of secondary schools numbers about 1,500. The review of the year is the feature which would be found of great interest by Indian teachers. The book deserves to be in the libraries of all Teachers' Associations in India.

THE SCHOLAR'S BOOK OF TRAVEL, PARTS I, II, III, AND IV. GEORGE PHILIP AND SON, LTD. LONDON. 1910. 1s. 3d. each.

These books consist of literary extracts from the best books of travel, each selected as describing some important scene or physical feature. Each extract is of sufficient length to give a complete picture of what it treats of. The reading of these passages will improve the literary capabilities of the students while stimulating at the same time the geographical imagination. We have no doubt that the reading of such books of travel gives the pupils a more lasting interest in, and better knowledge of, geography than the poor text-books of geography which have been prepared to suit some examination syllabus. The illustrations and maps are as they should be. We have much pleasure in commending these books to our readers.

CHAMBERS'S TWENTIETH CENTURY GEOGRAPHY READERS. BOOK VII. THE REGIONS BEYOND, BEING THE WORLD OUTSIDE EUROPE AND THE BRITISH EMPIRE. W. & R. CHAMBERS, LIMITED, LONDON AND EDINBURGH. 1s. 6d.

We have not had the pleasure of examining the other books of this series, but we are glad to say that we have been very favourably im-

pressed with the book before us. It contains very good reading matter all directly bearing upon the geography of the world outside Europe and the British Empire. The coloured illustrations form a noteworthy feature of the book.

CHAMBERS'S TWENTIETH CENTURY GEOGRAPHY MANUALS, No. VII. THE REGIONS BEYOND, BEING THE WORLD OUTSIDE EUROPE AND THE BRITISH EMPIRE, WITH ILLUSTRATIONS AND COLOURED AND UNCOLOURED MAPS. W. & R. CHAMBERS, LIMITED, LONDON AND EDINBURGH. Paper, 3d.

This book forms a companion volume to Book VII of Chambers's Twentieth Century Geography Readers. It contains in outline the geographical information concerning the countries described in the corresponding Reader. While the Reader furnishes a course of reading containing descriptions of lands and peoples, the Manual forms a text-book and atlas which can be used by the pupils before and after the oral lesson.

PHILIP'S MODEL GEOGRAPHY. THE BRITISH ISLES. GEORGE PHILIP AND SON, LTD. LONDON.

We do not see in what way this book is a model geography. It forms very dry reading and looks as if it has been prepared to meet the requirements of some examination. We cannot say that we have been favourably impressed with the book.

TIRE AND BEGIN AGAIN. W. & R. CHAMBERS, LTD., LONDON AND EDINBURGH. 1d.

This book forms one of Chambers's complete tales for infants, and will prove useful for infant standards.

THE TWENTIETH CENTURY TAMIL DICTIONARY.

This is, indeed, a monumental work. We do not believe a similar enterprise was attempted in the field of Tamil literature by any scholar in recent years. Mr. Ramanathan, the author, has achieved a distinction which few will be disposed not to envy. The author has given striking proof of his erudition, energy and talents in the work before us. That it is truly encyclopædic in its character will be readily admitted by even the most fastidious critic. One cannot but wonder how the author has managed to collect such a voluminous mass of words, phrases and expres-

sions bearing on the numerous arts and sciences, how he has laid the large field of Tamil literature under obligation to him, and what splendid resources have been within his reach in successfully accomplishing the great task he had set to himself. Indeed, one has only to glance at the title page to discover the versatility of the author. Of the departments of knowledge in which the author has received marked recognition at the hands of learned bodies in Western countries, there is quite an imposing list on the title page. The High Court of Madras, only the other day, admitted him as a Solicitor, having regard to his high attainments, and under exceptional circumstances. It is remarkable that while still young the author has such achievements to his credit in the branches of law, authorship, philology, ethics, archaeology and literature. Of contemporary opinion, we have been struck with the weight and variety of testimonials which have already been pouring in. The Lord Bishop of Madras has written a foreword to the work, and the esteem and regard which His Lordship has for the author and his work may be judged from his observation that Mr. Ramanathan in this work has aimed at doing for Tamil what Dr. Johnson did for the English language. The work is dedicated to Sir Ralph Benson.

MADRAS SECONDARY SCHOOLS.

FEE REGULATIONS.

The Madras Government have approved the following revised fee regulations for Colleges and Secondary Schools under public management and they will be substituted for the existing rules given in Chapter VIII of the Madras Educational Rules:—

FOR COLLEGES AND SECONDARY SCHOOLS.

Fees in all Colleges and Secondary Schools under the management of Government or of a Municipal Council or of a Local Board shall subject to the exceptions hereinafter provided be levied according to the following regulations:—

In institutions under private management the rates and levy of fees will be left to a large extent to the discretion of the Managers, but Managers may be required to levy reasonable fees, and will not be permitted to compete improperly by unduly lowering the fees or permitting any method of payment other than that prescribed in these rules.

The school year for fee purposes shall be divided into two terms—one the long term, commencing from the re-opening of the school after the Summer Vacation and continuing till the Christmas holidays, and the other the short term, commencing after the Christmas holidays and extending to the beginning of the Summer Vacation.

Every pupil shall be liable to pay the whole fee for each term during any part of which his name is on the rolls of an institution whether such fee be paid in one sum or by instalments.

The following will be the standard rates of ordinary fees:—

Institutions and Departments.	For the long term.			
	In advance.	By five equal instalments.		
I. COLLEGE DEPARTMENT.				
(1) <i>Presidency College</i> —				
B.A... { Part I	35	37	8	0
For each group of Part II	35	37	8	0
Intermediate	55	58	12	0
(2) <i>Other Colleges</i> —				
B.A... { Part I	33	35	0	0
For each group of Part II	33	35	0	0
Intermediate	52	55	0	0
II. SCHOOL DEPARTMENT.				
Forms IV, V and VI	26	4	0	
Forms I, II and III	13	12	0	
Preparatory classes III and IV	6	4	0	
Preparatory classes Infant I and II	3	2	0	
Course for supplementary certificates under the Scheme for the award of the Secondary School-Leaving Certificates.	15	0	0	
	(subject to a maximum of Rs. 30.)			

Institutions & Departments.

Institutions & Departments.	For the short term.			
	In advance.	By three equal instalments.		
I. COLLEGE DEPARTMENT.				
(1) <i>Presidency College</i> —				
B.A... { Part I	21	22	8	0
For each group of Part II	21	22	8	0
Intermediate	33	35	4	0

(2) *Other Colleges*—

	RS. RS. A. P.			
	For the long term.	By five equal instalments.	For the short term.	By three equal instalments.
B.A... { Part I	20	21	0	0
For each group of Part II	20	21	0	0
Intermediate	31	33	0	0
II. SCHOOL DEPARTMENT.				
Forms IV, V and VI	15	12	0	
Forms I, II and III	8	4	0	
Preparatory classes III and IV	3	12	0	
Preparatory class Infant I and II	1	14	0	
Course for supplementary certificates under the Scheme for the award of the Secondary School-Leaving Certificates.	9	0	0	
	(subject to a maximum of Rs. 18).			

Note.—The rates of fees for college classes will come into force in July, 1911.

The rates of fees for schools will come into effect from July, 1912.

The following scale of standard rates in schools will come into force from July, 1910 till July, 1912—

	For the long term.				For the short term.			
	By five equal instalments.	RS.	A.	P.	By three equal instalments.	RS.	A.	P.
Forms IV, V and VI	23	12	0		14	4	0	
Forms I, II and III	12	8	0		7	8	0	
Preparatory classes III and IV	5	0	0		3	0	0	
Preparatory classes Infant I and II	2	8	0		1	8	0	

The rates prescribed are minimum rates and fees may be levied at higher rates at the discretion of the Management.

In addition to ordinary fees, special fees may be levied from pupils attending classes in subjects not included in the ordinary curriculum, or for the use of the library or reading room, or for any other special convenience.

In the case of the admission into Form I, II, III or IV of a pupil who does not produce a certificate of attendance at a recognised Secondary school, an entrance fee equal in amount to the year's fee of the Form or class next below that into which he is admitted shall be levied in addition to the ordinary fees. Provided that, if the Headmaster is satisfied that

previous to admission a recognised Secondary School was inaccessible to the pupil, this entrance fee may be reduced or remitted.

If a pupil fails to pay his fee or instalment of fee on the day fixed for payment in these rules a fine may be imposed not exceeding one anna for each rupee of fee due; and if the fee or instalment of fee be not paid within ten days from the day fixed for payment the pupil's name shall be struck off the rolls. If re-admitted he shall in addition to the amount due at the date of his dismissal pay a fine not exceeding two annas for each rupee of fee due.

If a pupil leave a College or Secondary school during a term he shall have no right to claim a remission of any portion of the term fee but the controlling authority may return or remit such portion as may be considered equitable.

In institutions of a professional or special character fees shall be levied at such rates as may from time to time be sanctioned by the Director or as may be prescribed by any rules sanctioned by Government for them. Fees in all institutions may be levied for Mahomedans and Uriyas and from girls and backward classes and castes at half the standard rates.

2. Add the following to Rule 44 of the Madras Educational Rules, namely:—

"No pupil who has not attended a school in the first term shall be admitted in the second term unless the head of the institution is satisfied among other things that the non-attendance of the pupil in the first term was due to unavoidable circumstances. Such admissions shall be scrutinised by the inspecting officer at his inspection of the school."

3. In Rule 32 of the Grant-in-Aid Code insert the words "ordinary and entrance" before the word "fees" in line 5.

4. In Appendix F to the Grant-in-Aid Code insert the words 'ordinary and entrance' before the word "fees" at the top of the left hand column.

Indian Educational Notes.

MADRAS.

THE TENALI ELEMENTARY EDUCATIONAL EXHIBITION.

(FROM A CORRESPONDENT.)

In connection with the anniversary of the Teachers' Associations of this Range, an exhibition was arranged for and it was opened recently with great eclat in the Government Girls' School, Tenali, by M. R. Ry. G. V. Subbarayudu Sastry Garu, B. A., Inspector Schools, 2nd Circle. The local District Munsiff on behalf of the Reception Committee, gave a welcome address to the visitors. Almost all the teachers of the Range with many visitors from the other parts of the District as well as from Bezvada were present. The distinctive feature of the undertaking was that arrangements were also made for the free feeding of the teachers, and for their accommodation.

A lecture on the scope of Nature Study in Elementary Schools was given for two hours by M. R. Ry. V. Narasimharayudu Garu, B. A., L.T. of the Training College, Rajahmundry, and he dwelt fully on the importance of Nature Study in schools and advised that to the three R's, the three H's (head, heart and hand) should be added. The lecture was well appreciated.

This was followed by a Magic Lantern Exhibition on Physiology and Astronomy from the Inspector's lantern.

SECOND DAY.

Two model lessons, one on Digestion by M. R. Ry. K. Ramakrishnamachari of Bapatla A. B. M. Training School, and the other on Postal System, by M. R. Ry. C. Dakshinamoorthi of the Guntur A. E. L. M. Training School for Boys, was given with full illustrations—

A lecture on 'Bird Life' was delivered by M. R. Ry. C. Venkatasubrahmanyam, B. A., L.T., the local Sub-Assistant Inspector of Schools, and the organiser of the Exhibition. He dwelt fully on the habits of birds, and exhorted that observation should form the chief item in schools. The lecture was clear and impressive to the teachers.

A model lesson in Arithmetic by M. R. Ry. V. Rangachari of the A. B. M. Training School, Bapatla, was given to the teachers.

This was followed by a lecture on Popular Astronomy by M. R. Ry. S. Krishnamachariar, B. A., Sub-Assistant Inspector of Schools, Ongole Range. It was well illustrated, and the subject was clearly brought home to the teachers.

A magic lantern and gramophone exhibition was given by the Rev. S. D. Bawden of Ongole after 7.30 p. m.

THIRD DAY.

A model lesson on the formation of rain was given by M. R. Ry. K. Veerabhadra Chariar of the Local High School. The teaching was clear and impressive, and the pupils well appreciated the subject.

A written lecture on the Contagious Diseases and Village Sanitation by M. R. Ry. U. Seetaramaswami Naidu, L. M. S. of the local Hospital, was read. He dwelt fully on the causes of the diseases and the medicines that should be given.

A competition in Drawing was held between Drawing Masters, and Elementary School Masters separately before the audience to encourage the art of drawing among the masters.

A Model Lesson in Geography, on mountains and rivers in the Presidency was given by a lady teacher, Mrs. V. Suvartu of the Chirala A. E. L. M. Girls' School. It was fully practical and up to date.

The Assistant Inspector of Schools, Guntur District, M. R. Ry. T. S. Mahommed Hussain Sahib, B. A., gave a lecture on Elementary Education, past and present. It was very witty and delighted the audience. The lecture may be said to be a model lesson as he so explained the teaching of the various subjects of the Elementary School Curriculum that the teachers, without any tediousness understood all the details.

It was followed by a Cinemograph Exhibition which was quite new to the teachers.

Opportunities were given to the teachers for showing to the audience, any new steps in education, they have taken, such as, Flag Drill, Recitation, accompanied by action and dramatisation.

The Exhibition was open all the three days to the teachers except when the model lessons and lectures were given. On the third day from 3 p.m. to 6 p.m., the Exhibition Hall was open specially to the ladies of the town, and the hall was then superintended entirely by ladies.

Every attempt was made by the Superintendents of the Hall to explain wherever was necessary. The Exhibition was on the whole a success. The British Exhibits, and the Sloyd ones from Mysore were very instructive; while those received from the teachers roused enthusiasm. All the Sub-Assistant Inspectors of the District, and most of the Headmasters of schools, were present, and the idea of starting an Exhibition in their own places was engendered in them. It is hoped that ere long such exhibitions will become common things, and improve the tone of elementary education that is urgently needed for the country.

Departmental Notifications.—The Hon'ble Mr. Justice J. E. P. Wallis, is appointed to be an Ordinary Fellow of the University of Madras with effect from the date on which his present tenure of the office of Vice-Chancellor ceases.

The Hon'ble Mr. Justice J. E. P. Wallis is appointed Vice-Chancellor of the University of Madras.

Mr. T. Madhavan Nair, M.D. (Edinburgh), is to be an Ordinary Fellow of the Madras University.

Elementary Teachers' Conference, Hospet.—A most successful Conference of Elementary teachers of the Hospet Range was held at the Secondary School premises recently with Mr. Herbert Champion, Inspector of Schools, III Circle, in the chair. Mr. B. C. Smith, I.C.S., Sub-Collector, Mr. Cooper, the District Board Engineer, the District Munsiff, Tahsildar, and other prominent gentlemen of the place and the Assistant Inspector of Schools were present, as also about 225 teachers. The proceedings began with the opening of an exhibition consisting of exhibits of clay-models, drawings, cardboard models, relief maps, etc., prepared by the teachers and pupils, some of which were excellent. A programme of recitations, action songs, musical drill and singing was gone through, and prizes were given to several pupils who took part in it. The Sub-Assistant Inspector then read a brief report on the working of the Teachers' Associations in the Range. Some of the leading gentlemen spoke to the assembled teachers in the vernacular, exhorting them to do their duty towards their pupils as their own children. The President, in his short speech, explained the difficulties in the way of an inspecting officer in introducing the new scheme of studies and thanked the Sub-Assistant Inspector for having successfully brought about the Conference.

The proceedings closed with three cheers for the King-Emperor, the President, and the other distinguished visitors. In the afternoon there was a discussion on the new scheme of studies.

The Assistant Inspector of Schools, Bellary District, explained the utility of the scheme, asking the teachers to follow it as far as possible.

Indian Institute of Science: Madras Government further contributes Rs. 50,000.—The Madras Government has further sanctioned Rs. 50,000 from the Provincial Funds for the Indian Institute of Science at Bangalore, making a total contribution of one and a half lakhs originally asked for by the Director of the Institute.

How much does England spend on Secondary Education?—Mr. Runciman put a question in Parliament on the subject. Here are the figures of the total amounts of grant voted by Parliament in respect of Secondary Schools in England and Wales (exclusive of grants on account of local science and art scholarships in each of the past five financial years):—

	£
1905-6	402,500
1906-7	571,500
1907-8	647,000
1908-9	647,000
1909-10	791,250

From the above table one will see that in years the grant has risen from Rs. 60,37,500 to Rs. 1,18,68,750 or more than 58 lakhs. These figures are interesting in view of what is spent on Secondary Education in Madras.

Institution of an examination in Oriental learning.—Regulations have been framed by the Senate of the Madras University for institution of an examination for titles in Oriental learning.

Some donations.—The Hon. the Maharaja of Bobbili, K.C.I.E., has been pleased to make a donation of Rs. 100, and Mr. S. Kasturiranga Aiyangar, Editor and Proprietor of the *Hindu*, Rs. 25 to the funds of the Depressed Classes Mission Society of India. The Mission now maintains two day and two night-schools, with a total strength of nearly 150 pupils at Perambur, Chakkilipalayam and Vyasarpady Parcheri.

Secondary School-Leaving Certificates: The defects of the system.—The following G.O., dated 9th ultimo has been issued by the Government of Madras in the Educational Department with reference to a letter dated 17th February addressed to Government on the defects of the new School-Leaving Certificate System by the Hon'ble Mr. T. V. Seshagiri Aiyer, B.A., B.L., High Court Vakil, Madras:—

"The Hon'ble Mr. T. V. Seshagiri Aiyer brings to notice that, as a result of the Resolution of the University of Madras to substitute the Secondary School-Leaving Certificate for the Matriculation as a passport of admission to College classes, he has reason to believe that the strength of the secondary classes in independent High Schools, i.e., High Schools not attached to Colleges, has been diminished considerably, the students leaving these institutions in large numbers to seek admission to High Schools attached to Colleges while the upper forms of the schools attached to Colleges are being overcrowded. He states that the impression has gained ground that students with school-leaving certificates from unattached High Schools will be subjected to an additional test before they are admitted into Colleges, but that those undergoing tuition in a High School attached to a College will be admitted as a matter of course to the College department without further examination. He accordingly suggests either that each High School should be taken as attached to some College in its neighbourhood so as to give the students of these institutions the same facilities for entering the College as if they were taught in the High School department of the College itself, or that seats should be given on the Board which is to issue the school-leaving certificates to a large number of headmasters of unattached High Schools.

2. The point had already been considered and has now been considered again. But the Governor-in-Council regrets that he is unable to take action on the lines suggested by the Hon'ble Member at present. The main reason in very many cases for establishing a High School in a particular locality has been that the pupils could not conveniently be sent away from their homes to distant places. In so far as this reason is valid it will operate against pupils leaving a school in one locality to seek admission into the school department of a College in another locality. Where however a school and a

colleges are situated in the same place it may not be an evil that the two institutions should be forced to amalgamate as the concentration of effort in regard to secondary education would unquestionably lead to the achievement of better results with resources at present available. His Excellency the Governor-in-Council considers that the officers of the Educational Department and the Syndicate of the Madras University may be relied upon to see that no school or college is overcrowded; and also that College authorities will not be so blind to their interests as to refuse admission to promising students from outside schools. The result of the working of the new scheme will, however, be carefully watched.

3. The Governor-in-Council is obliged to the Hon'ble Mr. T. V. Seshagiri Aiyar for his suggestion that each High School should be treated as attached to some college in the neighbourhood as a means of counteracting the apprehended tendency on the part of students to leave High Schools and seek admission to the High School department of Colleges. The suggestion will be borne in mind, and, if Mr. Seshagiri Aiyar's fears are realised, it will be considered what steps can be taken to give effect to it. But it must be observed that it would scarcely be within the province of the tutelary authority to give effect by direct action to such a policy, the wishes of the Managers of the schools and Colleges must be considered, the arrangement must be made by them, and officers of the Government Educational Department could only offer suggestions or guidance. The Governor-in-Council thinks, however, that it is too early yet to judge whether any such tendency that may exist among the students will not right itself without Government interference.

4. As regards the alternative suggestion, namely that the Board for the award of the Secondary School-Leaving Certificates should be enlarged by the appointment as members of a large number of Headmasters of High Schools, the Government consider that such a course would be impracticable; for unless each High School were represented on the Board the desired result would not be attained, and even in that case it would not be certain to be attained."

TRAVANCORE.

The Law College.—The Travancore Government have directed that the Law College be transferred from the Educational to the Judicial Department, and that its control should pass from the Director of Public Instruction to the High Court. The receipts and disbursements on account of the College will be transferred from the Educational Section of the State Budget to the Judicial Section. In future, the Principal of the College will communicate with the High Court in all matters affecting the institution.

A Teachers' College.—Educational reforms are going on briskly in Travancore. The latest is the

creation of a Teachers' College with a Principal with European training qualifications. The order of the Darbar on the subject is published in a recent issue of the Gazette.

CALCUTTA.

A University of India at Benares.—A petition is being circulated for presentation to the King-Emperor praying for the grant of a charter for the establishment of a University of India at Benares. This is regarded as a great improvement upon Mrs. Besant's original scheme for a Hindu University. The proposed University will be open to all classes and creeds and will supply the necessary essential elements both in secular and religious education. A provisional board of trustees has been formed, consisting of Mrs. Besant as President, and including among the members Sir N. G. Chandavarkar (Bombay), Sir Subramaniya Aiyar (Madras), Sir Pratab Chandra Chatterjee (Lahore), Dr. Ashutosh Mukerjee (Calcutta), Mr. Hirendra Nath Dutt (Calcutta), and Sardar Pertab Singh (Lahore).

State Scholarships.—The *Calcutta Gazette* publishes the following notification:—

Candidates are invited to apply for two State Scholarships of the annual value of £150 each, tenable for two years in the United Kingdom of Continental Europe, one for the special study of Sanskrit and the other for Arabic, the course of which will be decided by the Secretary of State for India.

These scholarships are open to well-qualified students with a genuine taste for oriental studies and to gentlemen already employed as Professors of Sanskrit and Arabic in India.

Selected candidates will be provided with a free second class passage to Europe and also with a return passage if they complete the full period of residence unless compelled by sickness to return earlier.

The Bhumihar Brahmin College: Munificent donation by the Maharajah of Darbhanga.—The Maharajah of Darbhanga has through the Commissioner of Tirhut Division offered Rs. 50,000 as donation to the Bhumihar Brahmin College, provided he is not asked anything for any college at Patna. He promised a further donation of Rs. 70,000 conditional on the authorities changing the name of the college to Tirhut or Mithila College.

The Jagannath College, Dacca.—The Senate having proposed, on the recommendation of the Syndicate of the Calcutta University, that the Jagannath College, Dacca, be affiliated to the University in Sanskrit up to the B. A. Honours Standard Sanskrit (Honours Course) is included in the list of subjects in which the affiliation of the Jagannath College, Dacca, to the standard of the B. A. Examination is permitted.

The Bengal National College amalgamated with the Technical Institute.—At a recent meeting of the National Education Council held in College premises at 166, Bow Bazar Street, it was settled that the Bengal National College be amalgamated with the Technical Institute in Circular Road.

Scientific Education in Bengal.—The Association for the Advancement of Scientific and Technical Education, Bengal, is sending this year the sixth batch of 60 students to foreign countries and the total comes up to more than two hundred. Of these 44 have already returned and found useful employments or started business on their own account. Of the 60 selected this year, scholarships have been awarded to 18 and passages to the remainder. The number going abroad shows a decrease of 40 as compared with last year but there has been an increase on the other hand in the total amount of scholarships. There are six scholarships of Rs. 5 each, eight of Rs. 50 each and four of Rs. 25 each. No less than eleven students are going to England; America is the destination of four, and Germany and Japan of one each. Great care has been taken in the selection of the scholars, as will appear from the fact that the greater number are distinguished graduates in Science. Of the 43 students who are being helped by passages only 22 are bound for America, 12 for England, 5 for Japan, and 2 each for France and Germany. The Mahomedan, Assamese, Behari, Utkal and Indian Christian communities are fairly represented in the list of selected candidates. The subjects selected by the students traverse, as usual, a large field of useful arts and handicrafts.

The Education of Women in Eastern Bengal.—The education of women made pretty good progress last year in Eastern Bengal, 'the increase in the number of girls at school being almost as great in the single year as in the entire quinquennium of 1902-7 (24,493 as compared with 30,037). More than 800 new girls' schools have been opened, and it is anticipated that 'at the present rate of spontaneous progress Eastern Bengal and Assam will soon have a larger aggregate number of girls' will soon have a larger aggregate number of girls' schools, as well as girls at school, than the older province of Bengal.' A still more noteworthy fact is that 'Mussalman girls accounted for 71.6 per cent. in the increase in the total number of girls in Eastern Bengal.'

Burdwan Raj College.—At the distribution of prizes to the students of the Burdwan Raj College the Maharaja of Burdwan, who presided, gave some advice which might be condensed in the well known phrase, "spare the rod and spoil the child." He thought boys in the college and school were not properly punished. Being very kind-hearted he himself was averse to severe punishment for ordinary little mischief, but when boys took to politics no clemency should be shown to them. Parents and guardians should see that boys did not grow up

criminals and anarchists. The Maharaja's good taste and his selection of such an occasion for delivering such a homily must be admired.

BOMBAY.

Tata Education Scheme.—The working of the Tata Education Scheme during the years it has been in existence shows that the scheme has been the means of enabling brilliant students to achieve conspicuous distinction in different walks of life. Since its inauguration 30 students have availed themselves of its benefit. Twenty-two have finished their courses and entered professional and other careers and eight are now pursuing their studies in Europe. Of these twenty-two, sixteen are Parsis and the rest Hindus. Seven of them have entered the Indian Civil Service.

A Scholarship.—His Highness the Maharajah of Bhavanagar has presented a sum of Rs. 12,000 to Kaikhasro Pestonji Senor, who has taken his M. A. and B. Sc. degrees, to enable him to proceed to England to study Metallurgy, Geology, and Mining.

Education in Baroda.—Baroda is progressive in all branches of the administration, and particularly so in education, says the "Indian Spectator." From the administration report for 1908-09 we learn that it is proposed to establish a Science Institute in that State with a view to the creation of a Science University. Plans for the building have already been sanctioned, and advantage has been taken of suggestions by Dr. Travers. The building is estimated to cost about three lakhs. A technical school commenced work at Naosari in September 1901: it commemorates the Silver Jubilee of H. H. the Gackwar. Several students are sent abroad for instruction in various branches of knowledge.

A Government School of Agriculture.—The Bombay Government have proposed to open a School of Agriculture from 10th June for the children of Indian agriculturists. Boys who have completed their fourth Marathi standard will be admitted to this school.

Mr. B. D. Petit's Speech on Commercial Education.—Mr. Bomanji D. Petit presided over a meeting held in the Byramjee Jeejeebhoy College Hall, for the distribution of scholarships and prizes to the successful students of the Institution. The Principal, Mr. P. D. Pavri, read his annual report, and Mr. Bomanji Petit, after distributing the scholarships and prizes, delivered an interesting address on the importance of higher commercial education, and the urgent need of a Faculty of Commerce and Degrees in Commerce to be instituted by the Bombay University. He said:—

LADIES AND GENTLEMEN,—It has given me great pleasure to respond to the invitation of the trustees

to take part in the interesting function of the prize distribution this afternoon, and I tender my heartfelt thanks to the trustees for the same. As I do not wish to take up much of your time, I will come straight to the subject which is of great interest to all present here, viz., that of commercial education, and begin by saying that in this matter conservative England had to take its lead from other countries of Europe. When France and Germany were making fast strides to develop their commercial greatness, England was slumbering, and it was only when it found its commercial monopoly destroyed and commercial greatness in danger that it awoke to its sense of responsibility, realised the importance of methods adopted in other countries, and devoted its attention to the furtherance of commercial education, so as to try to regain the lost advantage. The cogency of the argument cannot but strike and appeal to any one who gives serious thought to the subject that the specialization in study is as important in the branch of commerce as it is in that of law, medicine or engineering.

PUNJAB.

Education Grants.—The Government of India, with the sanction of the Secretary of State, have decided that the Special Imperial Grant made to the Government of the Punjab for University and Collegiate expenditure, shall be continued to the local Government for a further period of three years, and that the amount allotted to the Punjab will for the future be as follows:—For Colleges Rs. 20,000, for University administration, inspecting and travelling Rs. 10,000. The assignment of Rs. 30,000 is accordingly to be placed at the disposal of the Punjab Government under the Land Revenue head.

Revised inter-collegiate rules.—A Conference of the Principals of various Colleges affiliated to the Punjab University met a short time ago and revised the inter-collegiate rules relating to admission and study in various colleges. The revised draft, which aims at strengthening discipline, has been approved by the Syndicate and Senate, and the new rules have come into force with effect from 1st May.

Secondary School fees raised by 50 per cent.—The Punjab Education Department is retrenching expenses on education. Recently fees in the secondary department of Government schools have been increased by 50 per cent.

Sirdar Dyal Singh College.—The opening ceremony of the above institution was recently performed amid great enthusiasm. The attendance was fairly large and included Indian and European ladies. Sir Louis Dane, who was present, made a long speech and among other speakers was the Rev. Dr. Ewing, Vice-Chancellor of the Punjab University. There were messages of good wishes from Mr. Dadabhai Naoroji,

Babu Surendranath Banerjee, Mr. G. K. Gokhale, Sir Garudas Banerjee, Pandit Shibnath Shastri, Mr. Justice Chandavarkar and others. Altogether it was a brilliant function. It is pleasing to learn that more than 70 students have already joined the College.

INDIA (GENERAL).

Mr. W. Orange, Director-General of Education, employed in England.—Mr. W. Orange will leave India in July to take up his appointment as Chief Inspector of Elementary Schools under the Board of Education in England. The question of selecting his successor will now be taken up, and it is not improbable that the suggestion for creating an Educational portfolio will receive due consideration.

Director of Public Instruction: N. W. F. Province.—Sanction has been given to the appointment of a Director of Public Instruction in the North West Frontier Province and the appointment will be made without delay.

Foreign Notes.

GREAT BRITAIN.

Education in England: Criticisms of a German Professor.—Professor Rogozinski, of Ulm, a German educational expert who was formerly lecturer at the University of Liverpool, is about to publish a long treatise dealing with the differences between the British and German educational systems. His conclusions, based on an intimate knowledge of English schools of all kinds may be summarised as follows:—English schools and educational methods are in every respect inferior to German schools and educational methods. The organisation of English schools is lacking in uniformity. English teachers to whom is entrusted the education of the young, are wanting in thorough scientific pedagogic training. The consequence of these defects is that English children cannot be educated with the necessary thoroughness. Premature specialisation and the exaggerated system of value attached to examination, as well as the one-sided devotion to sport, tend to diminish the value of the English educational system. Professor Rogozinski declares that young Englishmen and women, when finishing their education in school have not received the education and training necessary to citizens of a civilised nation. He also declares that the existence of different classes is repulsive to German feeling.

Women at Oxford University.—In the course of the coming term at Oxford a statute will be brought forward to regulate the condition of women students. The proposal is to establish a deputation

which shall supervise the women's colleges which have sprung up during the last thirty years and the home students, of whom there are a considerable number. The present position of the ladies is somewhat anomalous, since they attend lectures and are admitted to the University examinations, but are yet officially unrecognised by the University authorities. The change now contemplated would do something to make their treatment more logical but it is perhaps unfortunate that it should be mooted just at a time when the thorny question of women's degrees is looming once more on the horizon. Many will probably vote against the establishment of a deputation on the ground that formal recognition of women would make the withholding of the degree from them more difficult than before. No doubt there is much foundation for this view, but we cannot embark upon the controversial topic of degrees for women here. It should be remembered however that the degree means much more than the right to wear a hood and to write two mystic letters after one's name by virtue of having attained a very moderate standard of learning. As Lord Curzon admitted in advocating concession to the ladies' demands, the question is not so simple as might appear at first sight; but we shall hope to discuss the question more fully in the near future, when it comes to the forefront of practical politics.—*The Outlook*.

Teachers and Politics.—The schoolmaster does not cease to be a citizen, nor is he as yet a civil servant and so debarred by the rule of the service from offering himself as a candidate or appearing on the hustings. Among the many debts that the profession owes to Arnold was his outspoken vindication of the schoolmaster's claim to make known his opinions on political matters. Since Arnold's day this claim has been generally allowed, though Arnold's great example has not been followed so often as we could have wished. Yet one Harrow master stood for Parliament while still a master; another, whose life has just appeared, was a stalwart correspondent of the *Times* on the Unionist side, and a Winchester master was twice Mayor of the city. It is hardly necessary to add that the semi-public position which a schoolmaster holds demands of him both tact and discretion in the exercise of his liberty of prophesying. Good feeling no less than policy will prevent him at the present moment from dilating in a history lesson on the national glories of Bright and Cobden, or from denouncing the chairman of his governors as a socialist and land-grabber. A Liberal headmaster who was appointed as Bishop to a very Conservative diocese was asked how he liked the change. 'Very much,' he replied; 'my clergy are capital fellows, but we do not talk politics.' Secondly, it is still possible, as Prof. Sadler showed in the Address on which we commented in November, to keep education outside the sphere of party politics; to demand of either side that it shall receive proper consideration in the forthcoming session; and to press for educational

reforms on which the profession, however much they may differ in politics, are virtually agreed.—*The Educational Times*.

Lord Curzon gets the Degree of LL.D.—Glasgow University will confer the honorary degree of LL.D. on Lord Curzon on June 9.

A Congress of the Universities of the Empire.—It is announced in the *London University Gazette* that the Senate has decided to invite representatives of the Universities of the Empire to a Congress to be held in London in the year 1912.

The Oxford and Cambridge Hostel.—The students of the Oxford and Cambridge Hostel gave a farewell address to the Rev. N. H. Tubbs, their sub-warden, recently in their common room. Mr. Tubbs, who has been very popular with the students of the Hostel, is going to Agra as Principal of the St. John's Collegiate School. Mr. Kamalakanta Varma, B.A., as Senior Prefect, read the address, which was beautifully printed, several other speakers followed and dwelt on the qualities of the head and heart of the departing sub-warden. Mr. Tubbs in reply said that he felt his departure from the Hostel very keenly, but he was convinced that it was his duty to go to Agra. The students living in the Hostel were mostly College men, and did not require so much looking after as school-boys. In his opinion Indian schools were very sadly neglected at the present day and much useful work could be done in guiding these young minds along the right paths of useful citizenship. The School being the lowest ring of the ladder was the proper place to begin work in. Besides there were thousands who never entered College and so had to go without the benefits of a proper training. He expressed a hope that some of his audience would devote their lives, even at a sacrifice, to the noble profession of teaching, as that was the line along which India in her present condition needed the services of her intelligent, able and sober sons most. 'Measure thy life by loss and not by gain.'

Later in the evening, the Warden was 'At Home' to the hostellers in honour of the splendid success the Hostel has had in the Muir College Inter-Hostel Tournament. All the cups, Hockey, Football, Sports and Tennis, have been won by the Hostel.

The Centenary of David Livingstone.—The celebration of the centenary of the birth of David Livingstone seems to have been begun in good time in Scotland, for the event did not occur till the 13th of March, 1813. A movement has been set on foot to purchase the house in which he was born at Blantyre near Glasgow, to preserve it from ruin and to utilise it as a Memorial. At the time of his burial in Westminster Abbey, Punch predicted

that no erection of a material kind would be necessary to perpetuate his name,—“Let marble crumble, Here is Living-Stone.” As the first man to cross Africa from sea to sea, and as the explorer and philanthropist who did more than anyone else to open the centre of the Dark Continent to civilisation and to stay the horrors of the slave trade, he is not likely to be soon forgotten. It may be remembered that Livingstone's travels brought him as far as India. In 1864 he himself navigated the little vessel that had been built for the exploration of the Zambesi River, from Zanzibar to Bombay, running before the monsoon and arriving just ahead of it. He was both skipper and engineer, and his crew consisted of three Europeans,—stoker, carpenter and seaman,—and nine Africans who had never seen the sea before. He started on the voyage of 2,500 miles with fourteen tons of coal, and the vessel was so small that no one noticed its entrance into Bombay harbour.

AMERICA.

Death of Mark Twain—Mark Twain, the famous American novelist, humorist and lecturer, whose

death is announced by Reuter, was the assumed name of Samuel Langhorne Clemens who was born at Florida in Missouri on the 30th November, 1835. Clemens became a printer at 13 and changed his profession several times being successively a pilot, a reporter and an editor. His publications were numerous. He wrote ‘The Jumping Frog’ in 1867; ‘The Innocents Abroad’ in 1869; ‘Roughing It’ in 1872; ‘Sketches New and Old’ in 1873; ‘Adventures of Tom Sawyer’ in 1876; ‘Punch; Brothers, Punch’ in 1878; ‘A Tramp Abroad’ 1880; ‘The Prince and the Pauper’ in the same year; ‘The Stolen White Elephant’ in 1882; ‘Life on the Mississippi’ in 1883; ‘The Adventures of Huckleberry Finn,’ 1885; ‘A Yankee at the Court of King Arthur,’ 1889; ‘The American Claimant,’ 1892; ‘The £1,000,000, Bank Note,’ 1893; ‘Pudd’n-head Wilson,’ 1894; ‘Tom Sawyer Abroad,’ 1894; ‘Joan of Arc,’ 1896; ‘More Tramps Abroad,’ 1897; ‘The Man that Corrupted Hadleyburg,’ 1900, and ‘Christian Science’ in 1907. Mark Twain was honoured by the University of Oxford with the degree of Doctor of Literature. He visited India in the nineties and made a lecturing tour through the country. As a humorist his position is unique.

MILTON: SAMSON AGONISTES

WITH

EXHAUSTIVE INTRODUCTION, COPIOUS NOTES AND INDEX

BY

E. E. KELLETT, M.A.

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The Educational Review.

The German Government is convinced that education will be the determining factor in the future of the nation. The State considers that it is to its own advantage to have, above all things, a high average level of knowledge and ability. Accordingly attendance at the elementary school is for rich and poor alike compulsory in every German State. The curriculum in German elementary schools is of the simplest. Originally the three R's, religious knowledge, and singing were the only subjects taught, to these have been added the elements of geography and history to stimulate interest and encourage patriotism, and, for pupils of the upper standards, a certain amount of natural history. The compulsory school age is from six to fourteen, and the school buildings are for the most part airy and good. The Germans have succeeded in attaining a high excellence in elementary education.

The organisation of German secondary schools is as complete as in the case of elementary schools. All subjects are taught in form and every boy is compelled to take all subjects prescribed by the syllabus of his school. The education of a boy in secondary schools may proceed upon any one of three lines. It may be classical as in the Gymnasium, semi-classical as in the Real-gymnasium, or modern as in the Oberrealschule. Although there is no longer any very close attention paid to composition in Latin and Greek the classical Gymnasium still holds its own in Germany. In 1908 seventy-seven per cent. of the fresh men who matriculated at Prussian Universities came from Gymnasien. In the Real-gymnasium no Greek is taught and

modern languages, mathematics and science receive greater attention. The Oberrealschule is purely modern in its curriculum, and excludes both Greek and Latin. All these schools are established by the State or by the State in conjunction with the municipality. They all have a nine years' course, usually beginning at the age of ten. Their fees range between £5 and £6 per annum.

The German University system is characterised by *Lehrfreiheit* and *Lernfreiheit*. There is no prescribed course of studies of any kind and no compulsory attendance. The German student has almost complete freedom as regards his studies and his behaviour. The freedom allowed to students in the choice of their subjects and the general lack of supervision and interim examinations react favourably upon the results of their work. Only those Germans who have pronounced and genuine intellectual interests go to the universities and they carry into life an active interest in some branch of knowledge which they frequently pursue as long as they live. To this is due the very large amount of original research carried on in Germany.

We, Indians, have many lessons to learn from Germany, especially in the matter of education. We urgently need a compulsory system of elementary education with a modest and simple curriculum.

We have not infrequently laid stress on the necessity of inculcating patriotism and the training of boys in patriotism. We are convinced that many of the noble traits in individual life arise from deep patriotic feeling. We are glad to note that the Hon. E. Lyttleton, the Headmaster of Eton College, one of the leading educationalists

of the day, has discussed this question in a very able manner. He defines patriotism as the desire to ascertain what the country needs and to supply it as far as possible. It consists in setting personal inclinations aside and recognising that there are incessant claims upon each individual which must take precedence of all desire for comfort, ease, wealth and even fame. No one will deny that the essence of patriotism consists in one's subordinating one's personal inclinations to what one conceives to be the highest demand of one's country's welfare. Different men may form different ideas of the needs of their country, but without the subordination of the self to the interests of the country there can be no genuine patriotism. Patriotism may be narrow in its scope but for the elevation of a country it is absolutely necessary. Just as the family life develops the child to feel that the welfare of his family is his own, so should a genuine school education develop in the mind of the boy the feeling that the welfare of his country is his own. In India owing to the system of caste the influences of the family are very narrow in their scope. At school there is a mingling of the members of different castes, but the beneficial influences of this commingling are not very perceptible. In casteless countries the boarding system serves to draw out the spirit of unselfish desires and of wholesome endeavour in action along with others. The spirit of caste does not seem favourable to the development of a cosmopolitan spirit, of which the spirit of patriotism is but a partial aspect. Our elementary education must be put on a basis to destroy the spirit of caste, which our home life at present tends to develop. It is suggested that some form

of compulsory service for his country will make the boy feel his obligations to it. "People often talk," says the Hon. E. Lyttleton, "in educational matters as if the casual intermittent exhortation of an adult were more potent for good than the silent unintermittent suasion exercised by a system established by the whole nation with one consent and rigorously upheld by every one whom a child learns to respect, and into which he learns that he himself will be incorporated willy-nilly when the time comes. There ought to be no doubt in any body's mind that as an auxiliary to the home training of all classes of boys some form of compulsory service is absolutely essential." It is difficult to say what is the compulsory service that is likely to achieve this result?

It was feared in some quarters that the institution of the new School Secondary schools and colleges. Final Examination in the place of the old Matriculation Examination would tell on the strength of the sixth forms of those secondary schools which are unattached to colleges. We are glad to note that any grounds for such fear that might have existed last year have entirely been removed by what has happened at present. The strength of the sixth form in unattached schools is as strong as before. It is not unlikely that principals of colleges would subject pupils from unattached schools to a severer test than those from schools attached to colleges. We do not hesitate to say that the instruction imparted in many unattached schools in this presidency is far better than that given in attached schools. They have hitherto produced very good results and are likely to do so hereafter. The students that distinguish themselves in colleges

are not often those that come up to the college classes from the schools attached to them. To obviate any difficulties that may eventually arise from schools not being attached to a college, a system of affiliation has been proposed. Any compulsory system of affiliation is not likely to prove beneficial to the unattached high schools, but a system of voluntary affiliation of certain schools with one or two colleges will be productive of benefit both to the schools and the colleges concerned. We can see no objection to Hindu or National schools voluntarily affiliating themselves with a Hindu college like the Pachayappa's College. Such an arrangement will prove beneficial to the college as well as the high schools concerned. On all matters of importance all the affiliated institutions can act in concert with the college and often oppose a united front to a common enemy. That union is strength is a truism which is as much true in the school world as in any other department of life. In this matter logic-chopping is no good; the fruit must be tested by the deed. Let a number of high schools voluntarily affiliate themselves with a college whose interests do not clash with their own and those of the country, and see what fruit the affiliation bears.

There seems to be no end to the undeserved attacks on the Indian student. We are told that much of the so-called unrest in India is due to the lack of moral and religious education in schools. We are not sure that those that write and speak vehemently against the unrest in India have really gauged the situation. Those that are thoroughly conversant with the Indian student know how little there is in him that is blameworthy. The Rev. Dr.

Ewing, the Vice-Chancellor of the Punjab University, is the principal of one of the leading first grade colleges in Lahore, and as such must be thoroughly familiar with the aspirations, ways and means of the Indian student. In a speech that he delivered on the opening day of the Dyal Singh College he said: "We hear at times words of sharp criticism uttered with reference to the Indian student. It is my deliberate conviction that he is being blamed for much that he is in no sense responsible for. It has been my principle during the past 22 years to live in terms of the closest relationship with the Punjab student, and I wish to take this opportunity of saying that I believe him to be quiet as diligent, respectful to teachers and in general as amenable to discipline wisely exercised as students of any other land." We can asseverate that this is the opinion of every teacher in India. If there is any unrest, that is to say, any practical attempts to realise a higher ideal of life, it is the natural consequence of the illuminating influence of education, a result which every thoughtful man who has the good of India at heart will naturally court. How can this result be antagonistic to all that is noble and high in the life of an individual? He who follows the illuminating guidance of reason can never do anything that is against the growth of spirituality. Those who talk of moral instruction in schools are not satisfied with the questioning spirit that is characteristic of the educated Indian. The aim of modern education, in which so much stress is laid on the heuristic method, is to destroy the spirit of blind belief and slavish acceptance of authority. India at present needs a great deal of healthy scepticism, which will enable its youth to cut off the

Intermediate Examination, 1912.

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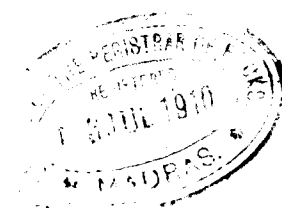
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JUNE 1910.

No. 6.

MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

106. [M. BHIMASENA RAO.] Given the base, and the vertical angle, construct a triangle such that the rectangle under the sides shall be equal to n times the rectangle under the straight lines drawn from the vertex to two fixed points in the base.

Solutions by M. S. Sundareswaran & G. V. Telang.

If BC be the base and A the vertex of the Δ , and if D and E be the fixed points in the base, $AB \cdot AC = 2 R \cdot h$ where R is the circum-radius and h the altitude of the ΔABC .

$AD \cdot AE = 2 R' \cdot h$ where R' is the circum-radius of the ΔADE .

$$\therefore 2R \cdot h = 2n R' \cdot h$$

$$\therefore R' = \frac{R}{n}.$$

Construction :—Describe a segment on BC, the given base to contain an $\angle =$ the given $\angle$. Describe a $\odot$ passing through D, E and having a radius $= \frac{R}{n}$ to cut the first segment on BC in A. Join A B, AC.

Then ABC is the Δ reqd.

105. Given the base and the vertical $\angle$, construct a Δ such that the rectangle contained by the two sides may be equal to n times the square on the straight line joining the vertex to a fixed point in the base.

XVI

Solution by M. S. Sundareswaran.

This is only a special case of 106, when D and E coincide. In this case BC is the tangent to the $\odot$ through D and the vertex of the Δ . Hence after describing a segment on BC to contain the given $\angle$, describe a $\odot$ to touch BC at D and of radius $\frac{R}{n}$ cutting the segment on BC in A. Join AB, AC. Then ABC is the Δ required.

103 & 107. [G. V. TELANG AND M. BHIMASENA RAO.] Through any point K straight lines each intercepted by two of the sides of a triangle and bisected at K are drawn meeting the third sides in P, Q & R. Then (i) P, Q & R are collinear; (ii) the product of the ratios of the segments of the lines made by P, Q and R is equal to unity; (iii) the line PQR is parallel to the polar of K with respect to the given triangle.

Solution by G. V. Telang.

Let LM, MN' and NL' be drawn so as to be bisected at K meeting AB, BC and CA respectively in R, P and Q, the points LL', MM' and NN' being on BC, CA and AB.

$$(i) \frac{PB}{PC} = \frac{AM \cdot BN'}{AN \cdot CM}; \quad \frac{QC}{QA} = \frac{BN \cdot CL'}{AN \cdot BL'}$$

$$\text{and } \frac{RA}{RB} = \frac{AM' \cdot CL}{CM' \cdot BL} \text{ taking the trans-}$$

versals MNP', QNL' and RM'L in turn.

$$\begin{aligned} \frac{PB}{PC} \cdot \frac{QC}{QA} \cdot \frac{RA}{RB} \\ = \frac{AM \cdot BN \cdot BN \cdot CL \cdot AM \cdot CL}{AN \cdot CM \cdot AN \cdot BL \cdot CM \cdot BL} \\ = \frac{AM \cdot BN \cdot BN \cdot CL \cdot AM \cdot CL}{BL \cdot BL \cdot CM \cdot CM \cdot AN \cdot AN} \\ = \frac{CA \cdot BA \cdot AB \cdot CB \cdot AC \cdot BC}{CB \cdot BC \cdot AC \cdot CA \cdot AB \cdot BA} \\ (\because NM', LN' \text{ and } ML' \text{ are } \parallel \text{ to } BC, \\ CA \text{ and } AB) \\ = 1. \end{aligned}$$

$\therefore$ P, Q and R are collinear.

$$(ii) \frac{PN'}{PM} = \frac{BN'}{CM} \cdot \frac{AC}{AB}; \frac{QL'}{QN} = \frac{CL'}{AN} \cdot \frac{BA}{BC};$$

$$\frac{RM'}{RL} = \frac{AM'}{BL} \cdot \frac{BC}{AC}$$

$$\frac{PN'}{PM} \cdot \frac{QL'}{QN} \cdot \frac{RM'}{RL} = \frac{BN' \cdot AC \cdot CL' \cdot BA}{CM \cdot AB \cdot AN \cdot BC}$$

$$\frac{BA \cdot AM' \cdot BC}{BC \cdot BL \cdot AC} = \left(\frac{AC \cdot AB \cdot BC}{AC \cdot AB \cdot BC} \right)^2 = 1.$$

(iii) Let P' Q' R' be the polar of K with respect to the Δ ABC, meeting KP, KQ and KR in P' Q' and R' respectively.

Since $KM = -KN'$, $KP = 3KP$; similarly $KQ = 3KQ$ and $KR = 3KR$
 $\therefore$ the line PQR is $\parallel$ to P' Q' R'.

108. [M. BHIMASENA RAO.] The lines OA, OB, OC divide the sides BC, CA, AB of a triangle in the ratios $m:n$, $n:l$, $l:m$ respectively. If AO meets the circumcircle of the triangle in D, show that

$$AO \cdot OD = \frac{lmn}{(m+mn+nl)^2} \{a^2l + b^2m + c^2n\}.$$

Solution by G. V. Telang.

Let AOD intersect BC in E. Through O draw GOH', HOK' and KOG' parallel to AB, BC and CA respectively, the points G, G', H, H', K, K' being on BC, CA and AB.

$$\begin{aligned} \text{Now } \frac{\Delta AOB}{\Delta BOE} &= \frac{\Delta AOB}{\Delta BOC} \times \frac{\Delta BOC}{\Delta BOE} \\ &= \frac{l}{n} \times \frac{m+n}{m}. \end{aligned}$$

$$\therefore \frac{AO}{OE} = \frac{l(m+n)}{mn} \quad \therefore \frac{AO}{AE} = \frac{l(m+n)}{mn+nl+lm}$$

$$\text{Again } \frac{OK'}{EB} = \frac{AO}{AE} = \frac{l(m+n)}{mn+nl+lm}$$

$$\text{and } BE = \frac{ma}{m+n}$$

$$\therefore OK' = \frac{alm}{mn+nl+lm}.$$

Similarly it can be proved that

$$OH = \frac{aln}{mn+nl+lm}$$

$$\therefore OH \cdot OK' = \frac{a^2lmn}{(mn+nl+lm)^2}$$

In like manner it can be proved that

$$OK \cdot OG' = \frac{b^2m^2ln}{(mn+nl+lm)^2}$$

$$\text{and } OG \cdot OH' = \frac{c^2n^2lm}{(mn+nl+lm)^2}$$

Now we know that

$$AO \cdot OD = OH \cdot OK' + OK \cdot OG' + OG \cdot OH'.$$

[Casey's Elements of Euclid, p. 231, Ex. 8].

$$\begin{aligned} \therefore AO \cdot OD &= \frac{a^2lmn}{(mn+nl+lm)^2} \\ &+ \frac{b^2m^2ln}{(mn+nl+lm)^2} + \frac{c^2n^2lm}{(mn+nl+lm)^2} \\ &= \frac{lmn(a^2l + b^2m + c^2n)}{(mn+nl+lm)^2}. \end{aligned}$$

109. [M. M. VENKATACHARI.]

TA and TB are tangents to a circle, angle ATB being obtuse. TCD is a chord such that $\angle BTC$ is the supplement of $\angle ATB$. A tangent AP is drawn to the concentric circle touching CD. AQ is drawn parallel to TB such that it is equal to the intercept on TB made by AD and AC. PA and PQ are produced to meet TB at M and N. Shew that the ΔMNP is isosceles.

Solution by G. V. Telang.

Since AP and CD touch the concentric circle $AP = \frac{1}{2}CD$.

Again AQ = the intercept on TB made by AD and AC = $\frac{1}{2}CD$ (vide Question 95 in December 1909 issue).

$$\therefore AQ = AP.$$

But AQ is $\parallel$ to TB.

$\therefore$ the ΔMNP is isosceles.

110. [K. KRISHNAMACHARI.]

A conjurer arranged 27 different stones in 3 rows, A, B and C, of 9 each. He asked a boy to think of one of the stones and to point out the row A, B or C in which the stone lay. This being noted, he re-arranged the stones in 3 other rows D, E and F of 9 each, so that the first 3 stones of D were the last stones of C, B and A respectively, the next three of D were the last but one stones of C, B and A, and the last 3 of D were the last but two of C, B and A and so on till the rows E and F were formed. Again he learnt from the boy the row D, E or F in which the stone lay. Then, for the last time, he re-arranged the stones in 3 other rows G, H and K of 9 each, the process by which G, H and K were obtained from D, E and F being the same as that of D, E and F from A, B and C. Now the boy was asked to state the row G, H or K in which the stone lay. This done, the conjurer picked up the right stone. How was this accomplished?

Solutions by K. S. Srinivasachari, B. A., L. T., M. S. Sundareswaran, the Proposer, M. M. Venkatachari, and M. A. Sayanan.

For the sake of easy reference we shall number the stones.

A	1	2	3	4	5	6	7	8	9
B	10	11	12	13	14	15	16	17	18
C	19	20	21	22	23	24	25	26	27
D	27	18	9	26	17	8	25	16	7
E	24	15	6	23	14	5	22	13	4
F	21	12	3	20	11	2	19	10	1
G	1	4	7	10	13	16	19	22	25
H	2	5	8	11	14	17	20	23	26
K	3	6	9	12	15	18	21	24	27
	X			Y			Z		

Let us call the first three columns in the last arrangement X, the second three Y and the last three Z.

It is easily seen that all the stones in A, B, C are those in X, Y, Z respectively. Again the stones in D are those in the last columns, those in E in the middle columns and those in F in the first columns of X, Y, Z.

So the boy's first statement shows whether the stone is in X, Y or Z, the second gives the particular column in it and by the help of the third it is easy to pick out the stone. For example if the boy gives the rows C, D and H, C shows that the stone must be in Z, D shows that it is in the last column and therefore the required stone is the last stone in the middle row.

112. (K. KRISHNAMACHARI, B. A.)

O is the orthocentre of a Δ ABC and K that of its pedal Δ . Show that $KO^2 = 2a^2 + R^2 \pi \cos 2A$, where a is the in-radius of the pedal Δ and R the circum-radius of the given Δ .

Solutions by D. P. Varadaraja Iyengar, B. A., L. T., K. S. Srinivasachari, and M. S. Sundareswaran.

The orthocentre of a Δ is the in-centre of its pedal Δ ; and the distance between the in-centre and orthocentre of any Δ is given by the formula $IO^2 = 2r^2 - 4R^2 \cos A \cos B \cos C$ (Vide Hobson's Trig: p. 197(4)) with the usual notation.

The $\angle$ s of the pedal Δ are $180 - 2A$, $180 - 2B$, $180 - 2C$ and the circum-radius is $\frac{R}{2}$.

Hence applying the above formula to the pedal Δ , we get $KO^2 = 2a^2 - 4\left(\frac{R}{2}\right)^2 \cos(180 - 2A) \cos(180 - 2B) \cos(180 - 2C) = 2a^2 + R^2 \pi \cos 2A$.

113. [K. KRISHNAMACHARI, B. A.]

Show that the 3 $\odot$ s each of which passes through two of the angular pts. of a given Δ and the ex-centre corresponding to the remaining angular point passes through the orthocentre of the Δ formed by joining the ex-centres.

Solutions by D. P. Varadaraja Iyengar, B. A., L. T., S. V. Venkataraya Sastri, B. A., L. T., K. S. Srinivasachari, and M. S. Sundareswaran.

Let I be the incentre, and I_1, I_2, I_3 the 3 ex-centres.

That I, I_1, I_2, I_3 being right $\angle$ s, the $\odot B I_1 C$ passes through I. Similarly $\odot C I_2 A, \odot A I_3 B$ pass through I; and I is the ortho-centre of the $\Delta I_1 I_2 I_3$.

117. [G. V. TELANG.] If P, Q, R be taken on the sides AB, BC, CA of a Δ such that $AP=BQ=CR$, show that the least value of the area of the ΔPQR is $\Delta \left[1 - \frac{1}{4} \frac{(ab+bc+ca)^2}{abc(a+b+c)} \right]$ where Δ is the area of ΔABC .

Solutions by D. P. Varadaraja Iyengar, B. A., L. T., S. V. Venkataraya Sastri, B. A., L. T., K. S. Srinivasachari, and M. S. Sundareswaran.

Let $AP=BQ=CR=X$. From R and C draw RX and $CY \perp$ to AB.

Now the area of the $\Delta ARP = \frac{1}{2} AP \cdot RX$;

and $\frac{RX}{CY} = \frac{AR}{AC} = \frac{b-x}{b}$.

Again $\Delta ABC = \frac{1}{2} AB \cdot CY$.

$\therefore CY = \frac{2\Delta}{c}$. $\therefore RX = \frac{2\Delta(b-x)}{bc}$.

$\therefore \Delta ARP = \frac{1}{2} x \cdot \frac{2\Delta(b-x)}{bc} = \frac{\Delta x(b-x)}{bc}$.

Similar expressions for Δ s BPQ and CQR can be obtained.

$\therefore$ The area of ΔPQR

$= \Delta - \frac{\Delta x(b-x)}{bc} - \frac{\Delta x(c-x)}{ca} - \frac{\Delta x(a-x)}{ab}$

$$\begin{aligned} &= \frac{\Delta}{abc} [abc + x^2(a+b+c) - x(ab+bc+ca)] \\ &= \frac{\Delta}{abc} [x^2(a+b+c) - x(ab+bc+ca) + abc] \\ &= \frac{(a+b+c)\Delta}{abc} \left\{ x^2 - x \frac{(ab+bc+ca)}{a+b+c} + \frac{abc}{a+b+c} \right\} \\ &= \frac{(a+b+c)\Delta}{abc} \left\{ \left(x - \frac{ab+bc+ca}{a+b+c} \right)^2 + \frac{abc}{a+b+c} - \frac{1}{4} \left(\frac{ab+bc+ca}{a+b+c} \right)^2 \right\}. \end{aligned}$$

This is a minimum when $x = \frac{ab+bc+ca}{a+b+c}$

and the minimum value of ΔPQR

$$\begin{aligned} &= \frac{(a+b+c)\Delta}{abc} \left\{ \frac{abc}{a+b+c} - \frac{1}{4} \frac{(ab+bc+ca)^2}{(a+b+c)^2} \right\} \\ &= \Delta \left[1 - \frac{1}{4} \frac{(ab+bc+ca)^2}{abc(a+b+c)} \right]. \end{aligned}$$

QUESTIONS FOR SOLUTION.

119. [K. KRISHNAMACHARI.] Add the digits of a given number, and if the sum be a number of more than one digit, add the digits of this sum and proceed in this way until you arrive at a single digit. Show that this digit is what remains when the given number is divided by 9.

120. [D. P. VARADARAJA IYENGAR, B. A., L. T.] The age of a lady who was unwilling to give out her age was elicited from her in the following way: she was requested to form a number by putting together the date and month of her birth (both in figures as 118 if it be 11th August); then to double the number, to add 5 to the result, then to multiply the sum by 50, to add her present age to the product, and then to tell you the final result. If 250 be subtracted from this result the last two digits of the number left expresses the age of the lady. Explain this method algebraically.

121. [K. S. SRINIVASACHARI.] Sum the series

$$(1) 1 + x + x^2 + x^4 + x^5 + x^{16} + \dots \text{to } n \text{ terms.}$$

$$(2) 1 + \frac{x}{4} + \frac{x^2}{4^2} + \frac{x^4}{4^4} + \frac{x^8}{4^8} + \dots \text{to } n \text{ terms.}$$

$$(3) 1 + \frac{x}{4} + \frac{x^2}{4^2} + \frac{x^3}{4^4} + \frac{x^4}{4^8} + \dots \text{to } n \text{ terms.}$$

(Suggested by Question 111).

122. [S. V. VENKATARAYA SASTRI, B. A., L. T.]

Sum to n terms the series $\sin A + \frac{1}{2^2} \sin 2A$

$$- \frac{1}{2^4} \sin 2^2 A + \frac{1}{2^6} \sin 2^3 A - \frac{1}{2^8} \sin 2^4 A + \dots$$

SCHOOL GARDENING.

"The principal value of a garden is not understood. It is not to give the possessor vegetables and fruit, but to teach him patience and philosophy and the higher virtues—hope deferred and expectations blighted, leading to resignation and sometimes to attenuation. The garden thus becomes a moral agent, a test of character, as it was in the beginning."

CHAS. D. WARNER.

THE motto that has been fixed to this article speaks for itself, and any amount of explanation would indeed be considered superfluous.

During recent years and more so during the past few months much discussion has been taking place in all the educational quarters of this Presidency about the subject of "Gardening in Schools." Some there are, who are of opinion that their poor young ones are to become gardeners! There are some who hold that the education of the children has been considerably going down in value by the introduction of queer things! There are others who seem to be possessed of a spirit of resignation that 'whatever happens, happens for the good.' But few there are, who do not seem to doubt the value of School Gardening as a really educative

subject and as such it should be introduced in all schools.

The purpose of this short article is to point out in brief the educative value that results from the introduction of gardening in schools and to show how such results may be obtained by the proper formation, management and administration of such gardens, and how these may be made the very starting point itself in the education of the young.

School Gardening is not a new subject for introduction. Wherever there has been a school, there has been a garden attached to it or attached to its playground. What we now propose to do is simply to give a new impetus, a new interpretation, a new significance and a new value to such gardens.

Site of the gardens.—These ought to be very close to the school; in fact they should form part of the school buildings themselves. In the case of schools situated in the middle of towns, there may be some difficulty to make suitable gardens, but at the worst these gardens may be formed to border at least one side of the playground. But many of the rural schools are situated outside the villages where plenty of space is available for gardening, and even if the schools are in the midst of the village, it will not be difficult to get some plots of ground near the school for the use of the children. The necessity for having them close to the school will be better understood by calling these school gardens as an open-air laboratory—as opposed to indoor laboratory such as those of Physics and Chemistry—where, the young ones are interesting themselves in the work of experimentation and observation on plant life throughout the varying seasons of the year. True it is, that in this laboratory they

do not pretend to be analysing mixtures, salts and solutions or to be finding out the wave length of the infra-red rays, but in their own humble way they are, as it were, analysing the *living* child-like plants and not *dead* mixtures and solutions.

Scope of the gardens.—In this connection we have to consider two aspects of the question—the scope for the teacher to exercise his influence and the scope for the taught to be influenced by the teacher. It is plain that the scope afforded to the teacher should naturally depend on whether gardening is made compulsory on all children. Secondly, it should depend on the interest he takes in his work, and thirdly on the surface of ground that is available for his purpose. The last two conditions can easily be overcome inasmuch as that a true teacher is one who interests himself as well as his pupils and that it is not impossible to get plots sufficient for gardening. But the first condition is one that cannot be so easily overcome as the other two. If gardening were made optional, then there is very little chance of the successful teacher exercising his influence over his young ones. The second aspect of the question is whether gardening is to be taught as such—an end in itself—or simply as a means to an end and that end is the harmonious development of all the natural powers—of head, heart and hand.

Who should teach gardening.—If School-gardening should be understood as a means to an end and not an end in itself, the question naturally arises “Who should be teachers of gardening? Shall we have men technically qualified—men who are brilliant gardeners, men who can raise good vegetables,

nice looking flowers and wonderful crops, but men who have not the qualifications of a teacher? Or shall we have men with very little technical knowledge, but certainly men who have “ideals in education, a love of nature and the ability to teach.” “Not that technical knowledge is not highly necessary; but in no wise is it so necessary as the touch of human nature in the teacher—one who can see the wonder and the beauty always in little things and can lead the children to see them with him. After all it is not so much what the child does in the garden so long as he is kept working and interested—so long as the appreciation of the beautiful is stirred in him and the capacity to take pains and to stick at a job until it is done.”

Spirit of the movement.—This new movement should be regarded as a great blessing in disguise. Every one knows that India is mainly an agricultural country, and the introduction of Gardening as a school subject at any rate in all rural primary schools will make these practically useful and no doubt ere long a time will come when every rural school master will be “looked up to by all villagers as an authority and fully consulted in all matters pertaining to their trade—as to the introduction in the village of a new crop, a new agricultural implement and new ways of tillage for crops ordinarily grown.”

“There is no more health-giving, profitable and interesting pursuit than gardening. It brings one to the very lap of Nature and once the joy is felt of attending to the flower or growing vegetables, a desire for increased knowledge becomes intense.”

At the same time this new movement should prove a touchstone to the natural vanity of parents who are no doubt inclined

to say that their children are sent to school to learn and to read and write and not to dig and labour. Also children should be shown the value of labour and the dignity that goes along with it.

Formation of the garden.—A good type may consist of (1) A flower garden; (2) A vegetable garden; (3) A field garden. In the flower garden flowers of various hues, in some order, may be raised. In the vegetable garden all the common vegetables of the village and if possible of the district too, may be grown to show the difference in produce that would result from careful cultivation. In the field gardens different crops may be grown to show the effect of tilling and manuring different soils.

The arrangement of these three is a matter of choice. No doubt, it would be a good thing to have the flower gardens on the borders and the vegetable and the field gardens in the middle.

Division of the garden—The garden may be divided into a number of small plots. These plots should at least be 6 ft. by 3 ft. There should be an intervening space of 1 ft. between every two plots. There should be one plot for each child if that is possible; if not at least one for two children and not more. There must be a big plot reserved for demonstration lessons which are to be given by the teacher—operations as “grafting, budding, layering, pruning, sowing seeds, watering and syringing.” There must be one or two experimental plots to make the children grasp the scientific principles that underlie gardening—for e.g. value of different soils, value of manuring, deep ploughing, etc.

There may be a lawn in the centre of the garden where all the children and their masters may occasionally gather together to

discuss their several gardening experiences. This lawn may as well serve the purpose of an occasional museum where little boys display fruits of their different labour.

Management of the garden.—Of course the teacher in charge of the garden should be the general supervisor. But some arrangements may be made among the boys themselves—such as making some senior boys to look after the work of eight or ten young boys. “The garden tools are another highly important consideration, and here it is the truest economy to buy small sizes of the proper make, and on no account to be tempted by inviting-looking, but generally worthless sets of tools for children’s use. The necessary tools are the trowel, hand-fork, small hoe, rake, spade, digging-fork, watering-car, syringe, basket for rubbish. In the management of school-gardens nothing is of more vital importance than regulations sufficiently stringent to ensure that every tool taken out shall be returned to its proper place by the person who took it out and returned clean.” This surely would give them a training in orderliness, cleanliness and economy. And it is needless to say that carefully well balanced accounts must be kept by the manager as well as his little assistants. This would give the small boys some training in book-keeping.

Working of the garden.—For this we shall have to start from the class-room. For class-room studies ‘bulbs’ are the most simple ones and they can be grown easily in pots or in test tubes and these should be the very first lessons in gardening. Children would regard the learning about the bulbs more as a pastime than work. Various bulbs may be grown and their properties shown to children. The next step should be purely lessons on plants of the most informal nature. Lastly

they should be led on to the cultivation of the plot—i.e., gardening itself. Wherever practicable, the young child should be set at liberty to choose and treat his own plants, and even if he fails in his treatment, it does not matter much as the failure would be a great lesson to him as men learn more through failure in life. Then every one should have a definite scheme for the working of the garden during the varying seasons of the year. He must have a regular diary to record the dates of sowing, seedling, blooming, &c. Also he must have an account-book as to the money he has spent for the year.

Relation to school museum.—It is a recognised fact that museums in schools play an important part in the education of the young, and these museums should consist of articles which are the productions of the pupils themselves and not things that are bought in the market, as surely school-gardening would yield some crops, some plants or some peculiar things which will serve as helps, in education.

Relation to school excursion.—School excursions are becoming now-a-days very common in colleges and several high schools, and they are being gradually introduced in elementary schools. A good teacher would not confine his teaching to the school-garden but take the boys out into the country and show them the different soils and different crops and thus rouse their inquiring spirit and observing nature.

Relation to future home-gardening.—These school-gardens should be patterns for future home-gardens. These should be a sort of incentive to older villagers. Then there is no doubt better gardening will be done. And gardening, though a love for it is not

easily created, will become one of the most delightful of hobbies in after life.

Educational value.—It is very often said that sound instruction must be real—based on children's own observation, experiment and inference—and that the instructor's business is simply to supervise and suggest. But we know, as a matter of fact, how far the teaching is real in our schools. Also, we hear of making the teaching of the young to be as far as possible in harmony with the natural conditions of the young. This school-gardening is no doubt the most easy of all the ways of nearing those conditions. There is no doubt that these school-gardens will introduce freshness and vitality in the inner school-life. There will be more freedom and more fresh air for the young children. These gardens provide a lot of healthy and interesting occupations, both mental and physical, which should be of immense use to the children.

First of all, it provides materials for nature study lessons. Boys may be made to note the interdependence of plant and animal life; weather records and seasonal changes; friends and foes among birds; and common insect pests. Some common animals as frogs and toads can be studied under natural conditions.

There is a cry now everywhere for the introduction of manual training in schools. School-gardening no doubt involves a certain amount of manual skill and dexterity of hand.

Besides, the æsthetic faculty of the children in the grouping of flowers, plants and vegetables is developed in a most natural way. School-gardening yields an opportunity for scientific work of experimenting on soils and manuring. Lastly, without pointing a

moral, one may venture to say that children learn valuable lessons in the sequence of cause and effect and that

"Nature, a mother kind alike to all
Still grants her bliss at labour's earnest call."

S. G. S. MANYAM.

HOW TO CATALOGUE A LIBRARY.

IT is one of the strange coincidences of life that, at the very time when I was maturing a scheme for the cataloguing of my private library, an article should appear in the May issue of the *Educational Review* on that very subject. With much of what the author says I agree, though I have not come across that very unsophisticated librarian who classifies his books in the alphabetical order of the authors' names, or of those of the books. Nor can I appreciate some of the writer's "Dont's." I fail to see why a Dictionary of Religion should not be classed under "Dictionaries," nor a treatise on the Method of Teaching Mathematics under "Education." The whole thing depends upon the point of view of the classifier, and indeed, in an elaborate system of classification, the same book is often found under different heads. But these after all are matters of detail.

Now to my system of cataloguing. It is more particularly suited to small private libraries, such for instance as those which school-masters, who seldom suffer from superfluous wealth, may be expected to possess. I claim for my plan simplicity and—more important than that—an artistic character, both of which points I hope to make clear in the sequel.

Let us for example take a library of 500 volumes, accommodated, let us say, in two almirahs. I place the shelves in each

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almirah at increasing intervals from the bottom to the top, so that while the height of the lowermost compartment may be fifteen inches, that of the uppermost may be but six inches. Now, I arrange my books from the top shelf to the bottom shelf according to the height of the books,—apparently a much more profitless method than the alphabetical order laughed at by Dr. Haizinga. But a little patience, Dear Reader. Well in this fashion, first I finish one almirah and then the other. I go over the shelves again and during the revision I bring together on each shelf related books, that is, books related by subject or topic. Now this arrangement, I claim, gives the almirah an artistic look, so to say. It does away with the irregular proportions and the broken contours which at present often disfigure our book shelves. Sometimes you have to house a very tall book on a very low roofed shelf so that you are reduced to all kinds of shifts, all unsightly and none satisfactory. But in my arrangement the tallest need not bend, nor the shortest look dwarfed.

To look on shelves filled in this orderly fashion does please your eye and satisfy your soul. You love this restful harmony and, for its sake, love your library all the more. Æsthetics need not be divorced from books, nor even from such a prosaic thing as a cupboard for books. And in our Hindu homes, more especially in our studies and libraries, not a source should be lost of æsthetic enjoyment. In every educated man's house, no matter how humble his pretensions to a library life, either as a vocation, or as a hobby, his study or library should be the best fitted and the most artistic corner of the dwelling. That will induce in him a pride in his library and a love for books, which

must in its wake bring in beneficent results to the owner. Our boys must be trained to this feeling as early as possible. They must be given a quiet corner of the house and a shelf or two, and enough money to make them as pretty as they can with clean books, tidily arranged and carefully dusted day after day. I should like also to see prizes given in schools for the best student—libraries in the homes of the pupils. But this is digressing into another, though related, subject.

But the height of books, it will be said, is a very infertile principle for classifying books. I admit the objection, but for a proper classification I rely on the catalogue. And this is how I do my catalogue. After arranging the books on the principle of height, I number them consecutively, beginning with the first book on the topmost shelf of the one almirah and ending with the last book of the bottommost shelf of the other almirah. I do not attempt any elaboration of the numbers into $\frac{A}{1}$ or 144 C, etc. I take a note book that will take about 1000 names, that is, about twice the actual number of the books. I classify the books into Pedagogics, English Literature, Tamil Literature, Mathematics, History, Geography, Agriculture, Science, Philosophy, Religion, Reference, Periodicals, Miscellaneous. I do not trouble myself too much with perfecting this classification. Perfection is perhaps impossible nor necessary. What is wanted is a working, business classification. The classification is for my use, and it is enough if I knew where to lay my hands when I wanted a book. Of course at the same time I do not want to be absurd in the grouping of the books, though I would not mind a little absurdity if that would conduce to greater

facility of reference. For instance in my classification, I detach *Agriculture* from *Science*. This, not because I do not know that agriculture is a science—and it is an art besides—but because my own personal interests necessitate repeated references to agricultural books, and to make such references easy I give books on Agriculture a place of their own. I should not, in a case like this, sacrifice convenience for the sake of logical consistency or fear of the visitor's criticism. Should a visitor carp at your cross classification, smile at him blandly, which is as much as to say that you think him a philosophic fool, though you do not call him one, just to avoid a breach of the peace and steer clear of the I. P. C. On these principles, then, the classification given above is as good as any that could be thought of, and certainly we don't want the refined complexities of the American decimal system.

Now, I allot so many pages of the notebook to each subject, the number of pages varying in proportion to the quantity of books in my possession, actual and prospective. The first batch of pages I dedicate to Pedagogics, which to me is more important than other matters. And I run my eyes over the backs of the books from 1 to 500, and as I come upon pedagogic books I enter their numbers and names in the catalogue, so that the first five entries under this head may stand as follows:

Serial No.	Order of Book.	Name of Book.	Name of Author.
1	16	Education.	Herbert Spencer.
2	16	Education as a Science.	Bain.
3	74	Teachers' Hand-book of Psychology.	Sully.
4	77	Teaching and Management.	London.
5	121	Cyclopedia of Education	"
*	*	*	*

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This simple list, I venture to think, serves all the essential purposes of a catalogue, though devoid of elaboration. And extreme simplicity, in my experience, is an absolute requisite in catalogues of private libraries, as all attempts at the production of elaborate catalogues break down as soon as they are begun, and the library has to get on without any catalogue whatever, to the annoyance of the owner. Reference to the needed books is made difficult, while loss of books is made comparatively easy.

I have imagined a library of 500 books, but even 1000 books can be catalogued on the same principles and with the same advantages. And when you acquire fresh books, they will be relegated to shelves of the proper height and registered in the catalogue after the last name in the department to which the book belongs.

As regards the numbering of the additions, you must take in the aid of the letters of the alphabet. Thus if I had to add three books between 75 and 76, I would label them as 75A, 75B, 75C. Our resources in this direction are practically unlimited, as our

Courts of Justice have taught us by the numbering they adopt for their legal "Exhibits." If by any good luck our thrifty schoolmaster should run his additions down to 75Z, he can start again another series as 75AA, 75AB, &c., and another series, and still another. But of this however there need be no fear. Should, however, the unexpected happen, as it sometimes does, it can only be in the course of some years, by which time the books would require a fresh census taken of them and the browned and ragged catalogue loudly call for substitution.

C. T. PARTHASARATHI MUDALIAR.

LITERARY ACTIVITY AMONG MODERN INDIANS.

WANT of originality is a common charge laid at the door of our countrymen who pass out year after year successful from the Indian Universities. While the powers of acquisition of such men are readily acknowledged, their powers of production are said to be not equally remarkable. The truth of this observation is acknowledged by one party of critics as incontrovertible while there is another party which stoutly refuses to acquiesce in such a disparagement of the vitality of the Indian intellect.

It may interest our readers to know to what extent the criticism is borne out by facts and we shall therefore dwell for a few minutes on the few forms in which the literary activity of our countrymen has been of late manifesting itself.

A distinguished Vice-Chancellor of the Calcutta University once remarked that a good deal of the energy of the Indian student is spent in the acquisition of a foreign tongue,

viz., English whose genius is very different from that of any of the vernaculars with which such a student is familiar. As such an acquisition involves repetition and imitation to a considerable extent, these two habits which get ingrained while young, tend to kill out all originality in the Indian student. We think that the observation of the learned Vice-Chancellor is pregnant with truth. It serves no useful purpose to deny the defect when pointed out to us and it seems far wiser to find a remedy to get rid of a malady than to justify its existence.

Conspicuous authorities among Englishmen have borne ample testimony to the wonderful powers of assimilation which even amidst grave natural disadvantages some of our countrymen have possessed as regards the English tongue, both in speech and in writing. It would thus appear that it is not so much want of inherent capacity in the Indian that is responsible for any dearth of originality as it is the system of education with which he has to contend against tremendous odds.

It may interest us to see in what way our distinguished countrymen have thus far manifested their literary activity in the English language.

There is no doubt that poets or writers of original works of fiction in English are very few among our countrymen. With the exception of a very few names whose numbers may all be counted on one's fingers' ends, we doubt if there are any more among our countrymen who can be classed with the recognised English poets and prose writers of the present day. The difficulty of idiomatic expression in English may serve as an adequate justification for the paucity of such writers among us as already observed.

We think that the difficulties for a foreigner

like the Indian to attain eminence in that field are sometimes of an insurmountable nature. The customs, the habits, the home life, and the popular superstitions of the Englishmen can only be understood by us after a long residence among Englishmen in their own homes and since that advantage is not within the easy reach of most of us on account of a variety of causes, either the quality or the quantity of the above kind of literary productions by our countrymen cannot approach to that of their English brethren. This is a fact which a critic can ill afford to ignore in forming an estimate of the literary worth of our people, from the above standpoint. It may moreover be doubted if this kind of literary activity is necessarily of the supremest kind.

But there is another field of literature in which our countrymen have shown more activity and with greater credit. It is in the field of journalism. We are not concerned at present with the tone of those writings which breed sedition and other unhealthy feelings thus corrupting the minds of the readers. We have to take into account only the higher kind of journalism in English as conducted by eminent Indian journalists, who have been, during the past half a century or more, rendering the greatest amount of service to both the people and the Government by representing the grievances of the former faithfully to the latter in moderate language and with equal faithfulness interpreting the intentions of the rulers to the ruled offering at the same time, with due loyalty, their honest and healthy criticism on the measures of the Government.

It must be said in all fairness that the literary productions (from the pens of various Indians) which appear in English in the

successive issues of these journals are fine specimens of English writing, deserving therefore of all praise and credit in thankful recognition of their worth.

We may also take into account the research work which some of our countrymen have been making in the field of antiquities as this is by no means an inferior kind of literary activity. The fruits of their labours are by no means cheap and the workers in that field are happily increasing and they also deserve our gratitude and esteem.

We cannot but acknowledge with a sense of disappointment that writers of books in the various branches of knowledge such as Philosophy, Physics, Chemistry, Astronomy, Medicine, Engineering, etc., in the English tongue among our countrymen is inappreciably small. The facilities for such kind of activity are also meagre in this country and the day may be yet very distant when our countrymen can come up to the level of their English brethren in this field of literary activity.

It must not be ignored however that a very great amount of literary activity of the most satisfactory kind has been manifested by our countrymen in original production both in prose and in poetry in their own vernaculars. The Bengali, the Mahrathi, the Tamil, Telugu and Kannada languages have had numerous accessions to them from the pens of mighty literati of late and the enrichment of these vernaculars by the infusion of Western ideas into them due to the influence of Western literature and science on the minds of those writers, has doubtless been a source of great and lasting benefit to the people speaking those tongues. This seems to be a field which our educated brethren may well

enter with advantage to themselves and to their country.

We cannot close our observations without inviting the attention of our readers to another form of literary activity into which our young and fresh graduates are tempted for the sake of lucre. This form manifests itself in the shape of writing notes, keys and other productions of the kind professing to make the attainment of knowledge "easy." The famous dictum of the Greek mathematician who told his sovereign point blank that "there is no royal road to Geometry" ought to be constantly borne in our mind and we should always remember that the acquisition of true knowledge and wisdom is not possible unless we learn "to scorn delights and live laborious days." No less an authority than the Director of Public Instruction of the Madras Presidency has issued a circular to the headmasters and other heads of educational institutions in the Presidency warning them against the use of such books by students on pain of withdrawal of the Government grant thus clearly indicating his unqualified condemnation of such a series of books and the consensus of opinion among the recognised educational authorities also points to the same undesirable character of such a series of books, which ultimately lead boys to habits of cram and desultory reading thus landing them in disaster. It goes without saying that young graduates ought to realise the gravity of their situation and refrain from putting their hand to such an unworthy literary work—which not only tends to ruin the younger generation but also wastes so much good energy on the part of such authors which might be utilised in other desirable forms as depicted in the fore-

going lines with greater profit to themselves and the country.

B. RAMESVARA IYA.

A PLEA FOR AN "EXAMINERS' REPORT AND HINTS TO TEACHERS" IN CONNECTION WITH THE MATRICULATION EXAMINATION OF THE MADRAS UNIVERSITY.

The Examination and its results.—The disastrous results of the last Matriculation Examination and the consequent public agitation in the Press are still quite fresh in the minds of all who are interested in the progress of our youngsters. Such results are not novel in the history of the Madras Matriculation though the results of the last examination are said to be the worst on record. For many years past thousands of young men appeared for successive examinations but only a few hundreds of them were declared to have passed therein. The anxiety of many capable and energetic teachers who exert themselves to the utmost year after year to bring their pupils to the standard of efficiency required by the University but see that their efforts are in vain is in no way less than that of the poor Indian parents of the middle and the poor classes who see their boys ploughed in successive examinations but have to find funds out of their poor income for repeated trials at this examination which, as things stand at present, is the only entrance to the Arts Courses, Public Service, or Technical Education.

The University Committees of enquiry.—Committees were more than once appointed by the University to enquire into the causes of the abnormal failures, enquiries were held by such Committees, their reports were

carefully read by the University and reviewed, there was some shedding of tears in the newspapers and educational journals and the matter was thus disposed of from time to time. The two bodies responsible for the results are (apart from boys' exertion) the teaching staff and the examining body and each of these throw the blame on the other, the Committees of enquiry invariably defending the latter. But no attempt seems to have been made to go into the root cause of the evil.

The University Vacation Lectures to teachers.—The public would be very ungrateful indeed to the University if they did not acknowledge the attempts made by that body to improve the tone of the teaching staff by way of giving vacation lectures. Such lectures have had a very beneficial effect on the efficiency of teachers in High Schools. But the wide gulf existing between teachers and examiners is rendered wider year after year especially owing to the fact that the questions set at the University examinations have no resemblance whatever to those set at school examinations and are sometimes said to be vague and out of the way.

The root cause of the evil of bad results.—The High School teacher who has not been an examiner cannot gauge the standard of knowledge required of his pupils. Nor does he know the defects in the answers given by them in the University Examinations and consequently he cannot possibly make any attempt to rectify such defects in his pupils thereby enabling them to face another test better prepared. Thus teachers and examiners go on parallel lines which never meet together and the poor pupils are left in the middle having no means of knowing which line to follow. The poor victims at

first follow their teachers faithfully but lose their confidence in them after the first failure; the second year they try to follow the examiners, whose track is indeed invisible to them, the only course open being to neglect their text books and hunt after question papers set at schools which are largely represented on the Examining Board; failure at this trial and the very fact that they have only one more left to them are sufficient to disturb their mental stability and thus bring about a third failure.

A suggested remedy.—With a view to enable teachers and examiners to understand the requirements of each other a suggestion was offered sometime back in an article dated the 20th February last by "a Teacher" which appeared in "The Hindu" of the 22nd idem. The suggestion was that after the publication of the results of an examination the Assistant Examiners in every subject should be required to draw up a report describing the important defects noticed by them in the answer papers and submit the same to the Chief Examiner concerned who should make a summary of such reports adding hints to teachers wherever necessary. The Syndicate should collect such summaries from all the Chief Examiners and publish them for the information of teachers. No attention appears to have been paid to this suggestion and it is quite probable that it was lost sight of at the time when the question of moderating the results was the main point which engaged the attention of the University authorities.

The suggestion not a novel one—the latest Cambridge Report.—It may be observed that this suggestion is by no means a novel one and that the practice is followed by one of the oldest and the most renowned universities in the world, the Cambridge University.

The "Hints to Teachers from the Examiners' Reports on the Cambridge Local Examinations of 1909" published on pages 181—184 of the *School World* for May 1910 cannot have failed to interest every teacher and make him jealous of the special advantages enjoyed by the teachers preparing pupils for the Cambridge Locals. The merits and defects of the answers given by candidates and the manner in which the several papers set on different subjects of the compulsory and the optional branches were answered are clearly set forth in sufficient detail and useful hints are added here and there for the guidance of teachers.

The value of such a report.—No better recommendation can be had in support of such a report than the fact that the need for it has been recognised by the authorities of one of the most renowned universities in the world. Its value to teachers cannot be gainsaid. Apart from the facility which it affords to teachers to know the deficiencies of their pupils (and indirectly their own) and rectify such deficiencies before the next examination it also enforces much care and interest on the part of Assistant Examiners in going through answer papers and thus saves many candidates who are said to be ploughed owing to indifference in checking answer papers. Further it enables headmasters of schools to supervise the teaching imparted by their assistants in different subjects and enforce a progressive march with the time. By giving an idea of the average capacity of candidates and showing how the questions set at an examination are handled by a majority of candidates it enables the Syndicate to fix the standard of difficulty of questions to be set at subsequent examinations.

The need for such a Report from the Exami-

ners of the Madras University.—Examinations by a public body are believed to be the only successful means of assessing the work done by pupils in schools and colleges. No sane man would therefore find fault with such a body for ploughing boys who do no work in schools and colleges and make no progress whatever in their education. But there are some pupils who really take much interest in their work and yet fail to satisfy the Examiners. Is it not necessary that such pupils should be given an opportunity to know their deficiencies and rectify them before a subsequent trial? Again failures at examinations are believed to have a moral effect on the failed candidate who will, it is said, by the experience gained by disappointments and the consequent effort enforced on him to better equip himself for future trials, be prepared for a useful citizen who will have to meet with many disappointments in life without being disturbed. But will failure at an examination and not knowing the causes therefor have such an effect on the failed candidate? Will it not make him lose confidence in his teacher, in the University and in himself in the end? Will such a discontented young man become a useful citizen? The answers to these questions will be evident to those who have watched the effect of repeated failures at the Madras Matriculation Examination on the minds of our young men.

Conclusion.—It is earnestly hoped that this important subject will engage the attention of expert educationists in the Presidency who are interested in the progress of thousands of young men and who will therefore urge the matter for the consideration of the University.

C. NAGAPPA.

OUR ENGLISH LETTER.

LIVERPOOL, June, 1910.

During the month of May the world was suddenly plunged into mourning. We have no doubt that out in India you have felt the difference the King's death has made. But really to appreciate it, it was necessary to be in England and in London. We suppose that no sovereign was better loved in his capital: certainly no sovereign has been so deeply lamented in his death. It was not merely that during the week of the funeral there were in London nine ruling monarchs—besides your correspondent. The week was memorable by reason of the scenes that attended the Lying-in-State. And no one who was there will forget the Tuesday when the gun-carriage came down the Mall to the strain of the 'Flowers of the Forest,' and the sad procession swept round at the Duke of York's steps to the majestic music that Chopin wove into his Funeral March. There was really more of simplicity and pathos in that first rite. The note on Friday was one of regal splendour and martial pomp. But the demeanour of the vast crowds who lined the streets saved the procession from degenerating into a mere pageant. In a solemn silence that was practically unbroken along the four miles of the route, the procession passed. The people were wonderful. It was they, and not the kings, who were the most striking feature of the day.

The political truce has already ended. A few days, and we shall once again be in the thick of a great conflict. In the meantime the Educational Settlement Committee have published their conclusions, which, one fears, will hardly be the conclusion of the whole matter. The Committee is a representative one, presided over by Sir Thoms Acland, and having as its Secretaries Mr. Thomas Harvey and Professor Sadler. It numbers among its members Canon Scott Holland, Professor Inge, Sir W. Robertson Nicoll, Silvester Horne, Dr. Moulton, and Prin-

cipal Selbie, in addition to distinguished representatives of all branches of the teaching profession. One would imagine that such a Committee would be able to find a basis of agreement, if such be possible, and we have no doubt they would succeed, were it not that we are most shamefully at the mercy of Extremists in this matter. Thus we have already been told that the Anglican representatives are either Broad Churchmen or Liberals, and scholastic rather than pastoral.

The Committee have been considering how to promote and maintain religious teaching as an integral part of the national system of education, and to work on non-party lines for an educational settlement which will respect all forms of conscientious belief. They have attempted to solve the "single-school-area" difficulty in this way. Access to an elementary school under public management shall be brought by the Local Education authority in reach of every child. Wherever it is impossible to have more than one school, that is to be one provided by the local authority. The existing non-provided school is to be transferred voluntarily. (Otherwise a new building will have to be erected by the authority.) Wherever schools are thus transferred, facilities are to be given for religious instruction in accordance with the original trust to be continued to those children whose parents so desire. In districts where two schools can reasonably exist, provision is to be made for the recognition of alternative schools, after the demand for places in provided schools has been met. The cost of these denominational school buildings must be forthcoming from voluntary subscriptions as at present, but the maintenance will be at the cost of the community. In these schools there is still to be a majority of foundation managers. The religious freedom of the teacher is to be secured by the provision that "no teacher employed is to be compelled as a condition of his employment to subscribe to any religious creed, or to belong to any specified

XVI

religious denomination, or (except in the case of a teacher employed to give religious instruction only) to give any religious instruction." In transferred denominational schools the head teacher is not to be free to give any religious instruction other than that provided by the local education authority.

What is to be said upon the Committee's proposals? The eagles are already gathered together ready to fall upon the *corpus vile*, but we prefer to point out one or two of the good features of the proposals. The main provision is indisputably sound. Every child must have the chance of going to a State school, undenominational and under public control. The denominational schools are not to be starved out of existence, but they must no longer be, as in 8,000 districts to-day, the only school accessible. Moreover the system of "contracting-out," which is educationally so objectionable, is avoided. And the concession, made by Mr. Runciman in the last of those Bills whose unsightly remains litter the Board of Education Office, is no part of the scheme. Mr. Runciman, you will remember, was willing to allow the 'right of entry' into Council schools. This was complicating the complications by enlarging the vexed area, and it is now abandoned. Such are some of the strong points in the proposals. The weak points we will leave for time and others to reveal.

The women are renewing their assault upon Oxford. This time they are making a flank, and not a frontal, attack. In congregation on May the 10th, a statute for regularizing the position of women students was promulgated. The proposal was to establish a new "Delegacy for the Supervision of Women Students," to consist, like other delegacies, of 21 members, to be in this case the Vice-Chancellor and Proctors, nine members of Convocation, and nine women: one of the women is to be the principal of the home students, and the other eight to be elected by an electoral board. The Principal of Brasenose was the *advocatus diaboli*: is not that the

phrase? Your correspondent's Latin was ever weak. According to the Principal, the object was to establish real control on the part of the University over the admission of women students to the privileges of studying and being examined in Oxford. The results would be beneficial in several directions. No colleges or halls could then be established without the approval of the University. No hostels or lodging houses could be set up without sanction. The home students, at present outside all efficient control, would be subjected to real discipline. He anticipated the objection to the anomaly that a considerable number of the delegates would not be members of the University, by pointing out that the University members would always be in a majority. The Rector of Exeter, who supported his neighbour from B. N. C., thought that those who were not members of the University should have been put into the position of a consultative committee as had been done in the case of the University Extension Committee on Tutorial Classes for working men. He was also of opinion that more general control over the education of women should have been given to the delegacy.

The spokesman of the opposition was the President of Corpus, who branded the delegacy as consisting of women and their friends. Such a delegacy could not guarantee any efficient control on the part of the University. In his view there was no call for any delegacy: existing agencies could secure all that was necessary in the way of discipline. This statute meant the creation of machinery that was not only unnecessary but dangerous. But Dr. Case was unable to convince his congregation: when the house divided, the preamble of the statute was carried by 159 votes to 28.

The Oxford University Tutorial Classes Committee have reported on their first year's working. The work has been carried on in eight centres—towns such as Oldham, Rochdale, and Swindon—with very satisfactory results, so far as the attendance and industry of the students are concerned. In all there were 237

students, nearly all of them men, which is somewhat remarkable and unexpected. 60 per cent. were under 34 years of age, and roughly 60 per cent. came from one of three groups of trades—engineering, textile and building. It is said that the essays of the students improved considerably during the session, some of them reaching the standard of first class men in a Final Honours School at Oxford. Two of the chief difficulties were those of overtime and undertime. Some of the men were hindered in their studies by having to work on into the evening hours at their trade, while others fell out of employment.

The Reformers have failed at Cambridge in their attempt to reconstitute the Senate and reform the electoral roll. They would have been better advised not to bring forward any scheme, in view of a serious division of opinion in the Syndicate. The members of the Senate cannot be summarily robbed of the privileges they have paid for. ("Naturally the Greeks wouldn't want to lose the tombstones they'd paid for," as Barrie's Scottish hero says commenting on the Greeks' heroism at Marathon). And if reform that is to keep the University abreast of national movements is to come at all, it will come easier from a Senate with a non-resident element than from one which is merely a caucus of permanent officials, who often cannot help fighting for their own hand rather than for the good of the University as a whole and the nation at large.

Dr. Merry has been succeeded as Public Orator by Mr. Godley. There never has been a more successful Public Orator than Oxford possessed in Dr. Merry. In ordinary conversation he was remarkable for his shrewd and somewhat caustic wit. It was all wit and no humour, while his Sub-Rector was full of humour, but did not much indulge in wit. And this power displayed itself in his public orations in an uncanny felicity of phrase. He hit off a situation or a man in a sentence with a skill that was almost Tacitean. It is fitting that his successor should share this gift. Who does not know the *Lyra Fivola* and Second Strings? His Ode on a

Distant Prospect of Drill College, written just after the Rhodes Bequest is one of the best things he ever did.

Another Headmastership is falling vacant. Dr. Wood is leaving Harrow this term. And we can hope for the institution of a régime which will enhance the prestige of this historic school. We suppose no one will contend that Harrow has witnessed its best days under Dr. Wood. But its day is not yet done. Dr. Wood will no doubt find his biographer who will do him more than justice. Let us so hope.

G. O. No. 271, Educational, d/ 21st May 1910, enhancing the standard rates of fees in Colleges and Secondary Schools.

GOVERNMENT OF MADRAS. EDUCATIONAL DEPARTMENT.

READ—the following papers:—

I

G.O., No. 645, EDUCATIONAL, DATED 14TH DECEMBER 1909.

ABSTRACT.—Requesting the Director of Public Instruction to convene a Conference of the representative educationists and place before it for discussion the proposals for raising the rates of fees and report the matter further to the Government.

II

Letter—from the Hon'ble Mr. A. G. BOURNE, D. SC., F.R.S., C.I.E., Director of Public Instruction, Madras.

To—the Secretary to Government, Educational Department.

Dated—the 19th February 1910.

No—R.C. 7397 of 1909.

I have the honour to report that, as directed in G.O., No. 645, Educational, dated 14th December last, I convened a Conference of the gentlemen named below to consider the question of revising the present standard rates of fees in colleges and secondary schools:—

(1) The Rev. Father J. D. W. Sewell, S.J., St. Joseph's College, Trichinopoly.

(2) The Rev. C. H. Monahan, M.A., of the Wesleyan Mission.

(3) The Rev. Dr. D. Downie, of the American Baptist Mission.

(4) The Rev. E. M. Macphail, B.D., Madras Christian College.

(5) Rao Bahadur M. Rangachariar Avargal, selected by the Trustees of Pachaiyappa's Charities.

(6) M.R.Ry. S. Venkobachariar Avargal, Native College, Madura.

The Hon'ble Mr. J. H. Stone and the Hon'ble Mr. P. S. Sivaswami Aiyar, who had consented to join the Conference, were unable to be present.

2. A copy of the resolutions passed at the Conference is herewith submitted together with a revised draft of the Fee Regulations containing the rates of fees as finally accepted by the Conference. These rates appear suitable, and I have no objection to their being accepted. They may come into effect from the first working day after the Summer vacation of this year, except in the case of the B.A. classes in which they may have effect from the first working day after the Summer vacation of 1911 in view of the fact that the first B.A. class under the new regulations will only then be formed.

3. In regard to resolution No. 5, which was carried by a majority, I did not consider that special rates of fees for the Presidency College were any longer necessary and did not therefore include them in my proposals. If, however, Government is inclined to accept the resolution, I would suggest, agreeably to the resolution, that the rates be fixed at 12½ per cent. higher for the Intermediate and B.A. classes. It would then be desirable, I think, to offer scholarships to a few students of unusual merit, and I shall propose a scheme later for the award of such scholarships.

ENCLOSURES.

(1)

Proceedings of the Conference held in the Office of the Director of Public Instruction for considering the question of raising school fees.

PRESENT:

(1) The Rev. Father J. D. W. Sewell, S.J., St. Joseph's College, Trichinopoly.

(2) The Rev. C. H. Monahan, M.A., of the Wesleyan Mission.

(3) The Rev. Dr. D. Downie, of the American Baptist Mission.

(4) The Rev. E. M. Macphail, B.D., Madras Christian College.

(5) Rao Bahadur M. Rangachariar Avargal, M.A., selected by the Trustees of Pachaiyappa's Charities.

(6) M.R.Ry. S. Venkobachariar Avargal, Native College, Madura.

1. Read Resolution No. 15, dated 19th January 1910, of the Trustees of Pachaiyappa's Charities saying that they are of opinion that any raising of the fees for secondary school education will be detrimental to the interests of education in this Presidency.

Recorded as the resolution was not supported by any member of the Conference.

2. Resolved that this Conference agrees with the views of the Government that the time has come for raising the fees in secondary schools and colleges.

3. Read proposed Rules 93, 94, 95, 96, 97, and 98—Approved.

4. Read proposed Rule 99.

The proposed division into four stages or departments and a common fee for each division or department was after some discussion unanimously approved.

The proposed rates for secondary schools were considered too high and a modified scale was proposed instead by the Rev. Mr. Monahan as shown below:—

	Rs.
Lower preparatory ...	5 a year.
Upper preparatory ...	10 do.
Lower secondary ...	20 do.
Upper secondary ...	40 do.

An amendment was introduced to the effect that the fees proposed by the Rev. Mr. Monahan for the lower and upper secondary sections might be raised by Rs. 2 each a year.

The amendment was carried by a majority, the minority being for the rates proposed by the Rev. Mr. Monahan.

The rates proposed for the B.A. and Intermediate classes were also unanimously approved.

The proposed entrance fee in the case of the admission of a pupil into Form I, II, III or IV who does not produce a certificate of attendance at a recognised secondary school was after some discussion unanimously approved, and the insertion of the words "reduced or" before the last word, viz., "remitted," of the rule was suggested and adopted.

5. The Rev. Mr. Macphail moved the next proposition in connection with proposed Rule 99 which was as follows:—

"In view of the position of the Presidency College and the large expenditure from public funds upon it, a proportionately higher fee should be charged in it than in other colleges, as has been done in the past."

After some discussion the majority of the Conference supported the proposition and it was passed.

6. Read proposed Rules 100 and 101—Approved.

7. Read proposed Rule 102—It was decided to omit the proviso introduced in the second sentence of this rule as leading to unpleasant inquisitorial inquiries.

8. The proposal that the increased rates should have effect from the first working day after the Summer vacation of 1910 was approved.

(2)

Revised Draft.

THE FEE REGULATIONS FOR COLLEGES AND SECONDARY SCHOOLS.

93. Fees in all colleges and secondary schools under the management of Government, or of a Municipal Council, or of a Local Board, shall, subject to the exceptions hereinafter provided, be levied according to the following regulations.

In institutions under private management, the rates and levy of fees will be left to a large extent to the discretion of the Managers, but Managers may be required to levy reasonable fees and will not be permitted to compete improperly by unduly lowering the fees or permitting any method of payment other than that prescribed in these rules.

School year.

94. The school year for fee purposes shall be divided into two terms—one, the long term, commencing from the re-opening of the school after the Summer vacation and continuing till the Christmas holidays, and the other, the short term, commencing from after the Christmas holidays and extending to the beginning of the Summer vacation.

Fee for what period payable.

95. Every pupil shall be liable to pay the whole fee for each term during any part of which

his name is on the rolls of an institution whether such fee be paid in one sum or by instalments.

Fee how payable.

96. The fee shall be paid either in one sum or in instalments at the option of the pupil. If paid in one sum, that sum or, if paid in instalments, the first instalment shall be paid not later than the fifth working day of each term and the other instalments not later than the 15th of the four succeeding months in the case of the long term and of the two succeeding months, in the case of the short term.

Fees of new pupils.

97. The fee or the instalment thereof payable shall be paid by a new pupil before his name is enrolled. A pupil shall not be enrolled or admitted after the beginning of a term until after he has paid all the instalments of fees, which he would have had to pay had his name been on the rolls from the beginning of the term.

Fee receipts.

98. A receipt signed and dated by the Headmaster or by some one deputed by him shall be granted for every payment of fee made. The receipt shall show among other particulars the class in which the pupil is reading.

Standard rates.

99. The following are the standard rates of ordinary fees:—

Institutions and departments.	For the long term.		For the short term.	
	In advance	By five equal instalments.	In advance	By three equal instalments.
B.A. { Part I ...	RS. 33	RS. 35 0 0	RS. 20	RS. 21 0 0
{ For each group of Part II ...	33	35 0 0	20	21 0 0
Intermediate ...	52	55 0 0	31	33 0 0
Forms IV, V and VI ...	26	4 0	15	12 0
Forms I, II and III ...	13	12 0	8	4 0
Preparatory classes III and IV ...	6	4 0	3	12 0
Do Infant, I and II ...	3	2 0	1	14 0
Course for supplementary certificate under the scheme for the award of the Secondary School Leaving Certificates.	15	0 0	9	0 0
	(subject to a maximum of Rs. 30)		(subject to a maximum of Rs. 18)	

The rates prescribed are minimum rates and fees may be levied at higher rates at the discretion of the management.

In addition to ordinary fees, special fees may be levied from pupils attending classes in subjects not included in the ordinary curriculum, or for the use of the library or reading-room, or for any other special convenience.

In the case of the admission into Form I, II, III or IV of a pupil who does not produce a certificate of attendance at a recognised secondary school, an entrance fee equal in amount to the year's fee of the form or class next below that into which he is admitted shall be levied in addition to the ordinary fees. Provided that, if the Headmaster is satisfied that previous to admission a recognised secondary school was inaccessible to the pupil, this entrance fee may be reduced or remitted.

Fines.

100. If a pupil fail to pay his fee or instalment of fee on the day fixed for payment in these rules a fine may be imposed not exceeding one anna for each rupee of fee due; and if the fee or instalment of fee be not paid within ten days from the day fixed for payment, the pupil's name shall be struck off the rolls. If re-admitted, he shall, in addition to the amount due at the date of his dismissal, pay a fine not exceeding two annas for each rupee of fee due.

Remission of fee.

101. If a pupil leave a college or secondary school during a term, he shall have no right to claim a remission of any portion of the term fee, but the controlling authority may return or remit such portion as may be considered equitable.

Exceptions.

102. In institutions of a professional or special character, fees shall be levied at such rates as may from time to time be sanctioned by the Director or as may be prescribed by any rules sanctioned by Government for them. Fees in all institutions may be levied from Muhammadans and Uriyas and from girls and backward classes and castes at half the standard rates.

This notification shall have effect at each institution from its first working day after the Summer vacation of 1910, except in the case of the B.A. classes, in which the revised rates of fees will have effect from the first working day after the Summer vacation of 1911.

(3)

To rule 44 of the Madras Educational Rules, add—

"No pupil who has not attended a school in the first term shall be admitted in the second term unless the head of the institution is satisfied among other things that the non-attendance of the pupil in the first term was due to unavoidable circumstances. Such admissions shall be scrutinized by the inspecting officer at his inspection of the school."

(4)

Rule 32, Grant-in-Aid Code, in line 5—insert "Ordinary and entrance" before "fees." Same insertion in Appendix F before "Fees" at the top of the left-hand column.

Order—No. 271, Educational, dated 21st May 1910.

The Government approve the increased rates of fees for colleges and secondary schools under public management which have been recommended by the Committee.

(2) In the case of colleges the new scale of fees will come into force from July 1911 when the B.A. classes under the new Regulations will first be formed. In the Presidency College the rates will be about 6½ per cent. higher than the standard scale.

3. The Director of Public Instruction will be requested to submit proposals at an early date for the award of a few scholarships at the Presidency College to poor students of more than average ability.

4. In the case of secondary schools the Government do not consider it advisable to introduce the enhanced rates of fees to the full extent at once. A note will therefore be appended to the standard scale of fees now approved to the effect that it will not come into force until July 1912 and that meanwhile a lower scale representing an enhancement to the existing scale of fees of about 50 per cent. of the increase proposed by the Committee will be enforced in secondary schools under public management with effect from July 1910.

5. The following notification will be published in the *Fort St. George Gazette*:—

NOTIFICATION.

The Government have approved the following revised fee regulations for colleges and secondary schools under public management and they will

be substituted for the existing rules given in Chapter VIII of the Madras Educational Rules:—

FEE REGULATIONS FOR COLLEGES AND SECONDARY SCHOOLS.

93. Fees in all colleges and secondary schools under the management of Government, or of a Municipal Council, or of a Local Board, shall, subject to the exceptions hereinafter provided, be levied according to the following regulations.

In institutions under private management, the rates and levy of fees will be left to a large extent to the discretion of the Managers, but Managers may be required to levy reasonable fees and will not be permitted to compete improperly by unduly lowering the fees or permitting any method of payment other than that prescribed in these rules.

School year.

94. The school year for fee purposes shall be divided into two terms—one, the long term, commencing from the re-opening of the school after the Summer vacation and continuing till the Christmas holidays, and the other, the short term, commencing after the Christmas holidays and extending to the beginning of the Summer vacation.

Fee for what period payable.

95. Every pupil shall be liable to pay the whole fee for each term during any part of which his name is on the rolls of an institution whether such fee be paid in one sum or by instalments.

Fee how payable.

96. The fee shall be paid either in one sum or in instalments at the option of the pupil. If paid in one sum, that sum, or if paid in instalments, the first instalment, shall be paid not later than the fifth working day of each term and, in the case of payment by instalments, the other instalments shall be paid not later than the 15th of the four succeeding months in the long term and of the two succeeding months in the short term.

Fees of new pupils.

97. The fee or the instalment thereof payable shall be paid by a new pupil before his name is enrolled. A pupil shall not be enrolled or admitted after the beginning of a term unless he has paid all the instalments of fees, which he would have had to pay had his name been on the rolls from the beginning of the term.

Fee receipts.

98. A receipt signed and dated by the Headmaster or by some one deputed by him shall be granted for every payment of fee made. The receipt shall show among other particulars the class in which the pupil is reading.

Standard rates.

99. The following will be the standard rates of ordinary fees:—

Institutions and departments.	For the long term.			For the short term.		
	In advance.	By five equal instalments.		In advance.	By three equal instalments.	
I. COLLEGE DEPARTMENT.	RS.	RS. A. P.		RS.	RS. A. P.	
(1) <i>Presidency College</i> —						
B.A.... { Part I ...	35	37 8 0		21	22 8 0	
{ For each group of Part II ...	35	37 8 0		21	22 8 0	
Intermediate ...	55	58 12 0		33	35 4 0	
(2) <i>Other Colleges</i> —						
B.A.... { Part I ...	33	35 0 0		20	21 0 0	
{ For each group of Part II ...	33	35 0 0		20	21 0 0	
Intermediate ...	52	55 0 0		31	33 0 0	
II. SCHOOL DEPARTMENT.						
Forms IV, V and VI ...	26	4 0 ..		15	12 0	
Forms I, II and III ...	18	12 0 ..		8	4 0	
Preparatory classes III and IV ...	6	4 0 ..		3	12 0	
Do. Infant, I and II ...	3	2 0 ..		1	14 0	
Course for supplementary certificate under the Scheme for the award of the Secondary School-Leaving Certificates.	for each subject. (subject to a maximum of Rs. 30.)	15 0 0		9 0 0	(subject to a maximum of Rs. 18.)	

NOTE.—The rates of fees for college classes will come into force in July 1911.

The rates of fees for schools will come into force in July 1912.

The following scale of standard rates in schools will come into force from July 1910 till July 1912:—

	For the long term.			For the short term.		
	By five equal instalments.			By three equal instalments.		
	RS.	A.	P.	RS.	A.	P.
Forms IV, V and IV	23	12	0	14	4	0
Forms I, II and III	12	8	0	7	8	0
Preparatory classes III and IV...	5	0	0	3	0	0
Preparatory classes Infant, I and II ...	2	8	0	1	8	0

The rates prescribed are *minimum* rates and fees may be levied at higher rates at the discretion of the management.

In addition to ordinary fees, special fees may be levied from pupils attending classes in subjects not included in the ordinary curriculum, or for the use of the library or reading-room, or for any other special convenience.

In the case of the admission into Form I, II, III or IV of a pupil who does not produce a certificate of attendance at a recognized secondary school, an entrance fee equal in amount to the year's fee of the form or class next below that into which he is admitted shall be levied in addition to the ordinary fees. Provided that, if the Headmaster is satisfied that previous to admission a recognized secondary school was inaccessible to the pupil, this entrance fee may be reduced or remitted.

Fines.

100. If a pupil fail to pay his fee or instalment of fee on the day fixed for payment in these rules, a fine may be imposed not exceeding one anna for each rupee of fee due; and if the fee or instalment of fee be not paid within ten days from the day fixed for payment, the pupil's name shall be struck off the rolls. If re-admitted, he shall, in addition to the amount due at the date of his dismissal, pay a fine not exceeding two annas for each rupee of fee due.

Remission of fee.

101. If a pupil leave a college or secondary school during a term, he shall have no right to claim a remission of any portion of the term fee, but the controlling authority may return or remit such portion as may be considered equitable.

Exceptions.

102. In institutions of a professional or special character, fees shall be levied at such rates as may from time to time be sanctioned by the Director or as may be prescribed by any rules sanctioned by Government for them. Fees in all institutions may be levied from Muhammadans and Uriyas and from girls and backward classes and castes at half the standard rates.

2. Add the following to Rule 44 of the Madras Educational Rules, namely:—

"No pupil who has not attended a school in the first term shall be admitted in the second term unless the head of the institution is satisfied among other things that the non-attendance of the pupil in the first term was due to unavoidable circumstances. Such admissions shall be

ment on the results of the Indian administration during the past fifty years of British rule in India, which is published in the *Fort St. George Gazette* of the 1st March 1910, where it is remarked, your Excellency will permit me to quote from it a sentence—

‘Much of the educational progress of the past fifty years has been due to the efforts of private persons, missionaries, and others, who from motive of charity and public spirit conduct or endow schools, which earn grants in aid from the public funds; without these private agencies, the progress, more especially in secondary schools, could not have been nearly so great.’

‘Here is a recognition of the fact that the public have voluntarily come forward to help the cause of education. But for their liberal aid, the progress of the secondary schools in this presidency would not be as great as it is. I beg leave to refer to the recent utterances of Mr. Justice Krishnaswami Aiyar who is a temperate though a staunch educational reformer. He pointed out in his Presidential address at the Triplicane High School anniversary that 68 per cent. is the expenditure on secondary schools—

‘They were to-day threatened with an increase in the fees for secondary education and in reading the last report of the Director of Public Instruction he noticed that 68 per cent. of the expenditure on secondary education was at present met out of school fees, which was a very fair percentage. But there was another circumstance in the report which ought to make the Director of Public Instruction pause before he entered upon the scheme of raising the fees. It was stated in the report that only 85 per cent. of the standard rate of fees at present in vogue was actually being collected, and the explanation to be sought for was stated in the report. It was said that it was due to the poverty of the students, and it was found impossible by managers of institutions to collect the balance of 15 per cent.

‘That was a circumstance which ought to make the Director of Public Instruction pause before he entered upon the scheme of raising the fees to the standard rates to be adopted in the future. Even the full scale of the present standard rates has not been levied and private managers have not been able to levy it at the full rates and have never practically done so. Only 85 per cent. of the present full rate has been levied in almost all the schools and there is yet a margin of 15 per cent. and that could not be raised owing to the poverty of the pupils. He also pointed out that it would be impossible to

keep up the levy of fees upon Western education. I cannot put the case stronger than Mr. Justice Krishnaswami Aiyar has put it. If it is sought to make secondary education self-supporting, I would beg to urge upon the Hon’ble Members that secondary education, so far as I know, has not been self-supporting in many civilized countries. Almost all the civilized administrations are spending very large sums of money upon this most important duty of Government; and if it involves any considerable expenditure from provincial finance it ought not to be grudged. No attempt should be made to make secondary education self-supporting and to leave it entirely to the charity or tender mercies of the people at large. Taking the parallel case of Japan which has almost as much area as the Madras Presidency, and a population only as much as that of the United Provinces, we find that the Government spend upon education 27 millions annually, that is, 18 times as large as our educational expenditure. And here considering the whole expenditure to the State, our expenditure on education is a little over 2 annas, whereas in Japan it is Rs. 1-12-4, per head. The expenditure on education in all other countries is considerably larger than the expenditure in this province; and if the non-raising of the fees were to involve any additional expenditure to the State, the State ought not to grudge it. Local conditions are different and yet it is highly important that elementary education being in a low stage, progress of secondary education is very necessary; and for the successful administration of all departments of Government, and for all the benefits of Government activity to be complete, secondary education is absolutely necessary. I therefore, with confidence, propose this resolution, which, I hope, will meet with the approval of the Council.”

The Hon’ble Mr. Hammick:—“I may say, therefore I make any remarks on this motion, that if, on the one hand, the action which the Government no doubt propose to take would, in my opinion, either throw back secondary education, or, on the other hand, should lead to a diminution of expenditure from public funds upon secondary education, I should be the last to advocate it in this Council; but I can assure the Council that as far as the first goes, our best advice is that there will be no setback to secondary education on account of the slight change that we propose to make in the fees which are now levied in secondary schools and I have the word of the advisers of Government in assuring the Council that, so far from expecting any diminution of expenditure from public funds on

secondary education, the chances are that every year we shall see a raise in that direction.

“Your Excellency, the motion before us is—

‘That this Council recommends to his Excellency the Governor in Council that the standard rates of fees leviable in secondary schools as obtaining on the 1st January 1910 be not raised.’

‘The motion is no doubt the result of a Government Order which was issued last December, in which the Government said that they had, during the past few years, considered more than once the question of raising these fees, and that the time had come for formulating definite proposals having this end in view, and they therefore asked the Director of Public Instruction to convene a small Conference of representative educationists to consider the matter.

“Now, Sir, the Conference which met to consider this subject included such well-known educationists as the Rev. Father Sewell, the Rev. C. H. Monahan of the Wesleyan Mission, the Rev. Mr. Downie of the American Baptist Mission, the Rev. Mr. Macphail of the Madras Christian College, Rao Bahadur M. Rangachariar, selected by the Trustees of Pachaiyappa’s College and Mr. S. Vencoba Chariar of the Native College, Madura. The Advocate-General was a member but did not attend. This Committee, whose conclusions, I think, Sir, everybody in this Council will consider should carry considerable weight, agreed unanimously with the view of Government that the time had come for raising the rate of standard fees applicable to secondary colleges. They have approved of certain rules to carry out this policy. Briefly the standard fees approved by this Committee are for a year:—

	RS.
“For the infant classes	5
„ the preparatory classes	10
„ the Lower forms I, II, III	22
„ the Upper forms IV, V, VI	42
„ the intermediate classes	83
„ the B. A. classes P. I	53
„ each group P. II	53

“It is well, Sir, that the Council should clearly understand that the change the Government contemplates has been, as I say, referred to a representative Committee of educationists and unanimously approved by them.

“I think, Sir, that it is perhaps well to explain briefly to the Council that the Government do not fix any fees for secondary schools other than the schools managed by Government or by Municipal or Local Boards. In these schools,

which are known as schools under public management, the rates of fees fixed as standard fees or fees above that rate must be charged. In schools under private management, the Government fix no rates of fees. This was clearly laid down in 1891, when the Government said: ‘The Government regards the existence of a compulsory rate of fees as a condition of either aid or recognition as hurtful to the cause of education, and resolves to abolish the system from the close of 1891. For the purpose of estimating the necessities of schools and colleges receiving aid, provision will be made in the Grant-in-Aid Code for an assumed scale of fees to apply to such schools.’

“It is of course quite proper for the State to limit aid so as to compel school managers to levy fees and to lay down a scale of fees as proper to be levied. It is of course quite proper for the State to apply such scales so as to effect such limitation. This however should be done without forcing all managers to conform to a rigid scale. This is what our standard rate of fees effects. These fees are merely used as regards aided schools as a standard; that is to say, the grant to an aided secondary school is considered as supplementing the income guaranteed from endowments, subscriptions, donations and other private sources over and above any expenditure which is incurred by the school managers on scholarships or which defrays any difference between the fees calculated at standard rates and those actually collected. The result merely is that supposing a school of 100 boys, 50 of whom are given free scholarships and 50 pay the standard rate of fees, the income that school is supposed to get from fees, when calculating the grant to be given from public funds, is the income derived from the fees paid by 100 boys at standard rates. That amount would be deducted from the other sources of income possessed by the school together with the fees calculated at standard rates and the Government grant calculated upon the remainder.

“Now, Sir, I suppose nobody in this Council will question the desirability of making education, especially in the higher grades, self-supporting, or as nearly so as possible, by means of payment by pupils in the shape of school fees. It is obviously desirable that this should be so not only that the public funds available may thus go further, but also that the private funds which supplement pupils’ payments may go further also. We, as a Government, have to take care of the application of further funds and must make provision to that end. I may say that

at the present time, this consideration is of great importance, when these very gentlemen, who object to the Government considering whether the time has not come when pupils in higher schools may not be called upon to pay a trifle more for their education, are urging upon us universal free education—that is, mind you, education paid for from public funds. I say, Sir, that especially at this time is Government bound to see whether some step cannot be taken towards making the higher-grade of education less dependent upon public assistance than it is at present. Has not the time come when the wealthier men in this country should do more than is done for the endowment of secondary education, and when parents should recognise more than they do their responsibilities in this matter and when the Government, as the guardian of the rate payers' money, should surely take a very small step towards diverting the direction of the public assistance to education towards the elementary schools rather than towards the upper grade institutions?

“Now, Sir, as part of the policy laid down by the Government of India after full consideration of the matter in all its bearings, we are bound in the interest of the community to see that the education given in secondary schools is sound. We are bound to see that proper subjects are taught and that these schools are kept up to a proper standard. We have to see that due provision is made for the instruction, health, recreation and discipline of the pupils, that teachers are suitable as regards character, number and qualification. We have to see that our schools are sufficiently diversified in character to promote diverse types of secondary education corresponding with the needs of practical life. Now, Sir, all this means money. It means that the cost of the secondary schools all through the country will be very much greater in the next decade than it was in the past, and the simple question before this Council is whether it is not right, whether it is not just, that part at all events of this additional cost should be met by those who are to profit by the improvements we are carrying out. Is the heavy additional expenditure entailed by the improvements of the staff of our schools, of the buildings, of the play-grounds, of the apparatus, to be all paid for by the general tax-payer? Or are we right in carefully considering whether some of the additional expenditure cannot properly be met by the pupils themselves, so as to leave more money in the Educational Budget available to meet the crying needs of the educa-

tion of the poor of the country? This is really the whole point before the Council.

“In 1901, the Simla Educational Conference recommended the advisability of laying down stringent rules for the recognition of secondary schools, and as a consequence of those recommendations the Government of India in 1906 suggested among other things that there should be a model Government high school in each district. I need not, Sir, now take up the time of the Council by explaining how it was that in the decade between 1880 and 1890 Government surrendered their control and management of so many schools throughout the presidency. It is, I think, generally admitted now that the policy followed then was a mistake. However that may be, the Government has now determined as a beginning to take under their own management 19 schools in various districts in the presidency. But to do so without an altogether undue burden on the tax-payer, it is absolutely necessary to raise to some extent the fees charged in these schools. This fact brought into immediate consideration the necessity which, as I have shown above, has been forced upon the Government, for some years past, of to some extent raising the fee income in the schools under public management. We then re-examined with some care the existing state of our educational finance. We found that the total cost of education under all heads in the budget was Rs. 41.12 lakhs for the current year. We found that to manage the schools we proposed to make Government schools as model schools would involve an expenditure from public funds of about 1½ lakhs if fees continued at existing rates, and we did not consider we were justified in sanctioning this. The Committee I have referred to at the beginning of my remarks was therefore appointed, and we are now considering their proposals. If we accept the proposals of that Committee, the probability is that the cost to the tax-payer of the model schools under Government management will amount to something about Rs. 90,000 or more, and we do not consider that we are justified in saddling the public funds with a much greater charge than this. The Government are of course not bound to accept the rates proposed by the Committee, which has reported recently, but I may point out to the Council the exact effect of those proposals as affecting pupils studying in secondary schools up to the sixth form, and I think the Council will agree with me in considering the additional charge which it is proposed should be thrown upon these pupils is not an exorbitant nor one likely to lead to schools

being closed or reduced in grade. The Government has no desire to see any step taken which will work injuriously to the spread of education or harm the finances of existing schools. The result of introducing the Committee's rates will be that the total cost of going from the first form through a secondary school to the sixth form in six years would in a public managed school be raised by Rs. 36 or an increased average yearly payment of Rs. 6 or As. 8 a month. I do not think the Council need be under any apprehension that this small increase will reduce the number of pupils in the schools. I do not myself believe this small rise in fees will have any such effect. I would again state to the Council the policy that has been consistently followed by the Madras Government in this matter, it cannot be better stated than it was in the Order of 1891. The Government then said: 'The expediency or rather the necessity of making education as far as possible self-supporting by means of fees paid by the students cannot be questioned. As stated by the Education Commission, 1882, economy in the application of the funds, private and public, available from other sources for the furtherance of education demands that the fee revenue of schools shall be sedulously fostered and increased, so far as this is consistent with the continued spread of education.' This is our present view, and it is with this view that we have taken into consideration the question of raising to a very small extent the standard rates of fees used in calculating the grants from public money in aid of secondary education. I do not think, Sir, I need say more. I have, I think, shown to the Council that our educational expenditure is rising so rapidly that every additional rupee proposed to be spent on higher education must be most carefully thought over, that as far as possible our public money should be devoted first towards the spread of elementary education, and second to the improved training of masters. I have shown that the requirements now demanded (and properly demanded) from secondary schools must result in making the education at those schools very much more costly than it has hitherto been. I have shown that these standard fees in no way prevent liberal-minded philanthropic men from assisting the cause of higher education by the grant of scholarships or endowments. I have shown that the Government appointed a representative Committee to consider the matter, a Committee which unanimously supported the Government in their proposals, and I think I have finally shown that, even if we adopt the rates worked out by that Committee, there is no

reason to fear any setback to the progress of higher education in this country, but rather we may hope that the increased efficiency of these schools under the new conditions will make the higher education given far sounder and more valuable than is at present the case. Also there is no reason to suppose that public funds will not be spent to a greater extent than has hitherto been the case. In these circumstances, Sir, I ask this Council to oppose this resolution. I do so because I am quite convinced that it would be a very serious mistake at this time to hesitate to take measures to increase the fee revenue of our secondary schools."

The Hon'ble Mr. Perraia Pantulu:—"Your Excellency, the Hon'ble Dr. Bourne remarked that the public need not be consulted, because the public will say that the fees ought to be reduced. He has also remarked that as a parent one would like the fees to be reduced and as a Member of the Legislative Council one would have the fees raised. I do not think that either myself or any one of those who spoke in favour of the resolution would have one conscience at home and another in the Council. If we feel that the fees ought to be raised in the interests of sound education, we will not hesitate to ask the Government to raise them. Further, private managers of schools are at full liberty to raise the fees if they feel that the time has come for doing so, but as a matter of fact, many of the private managers have not levied fees at the full extent of standard rates. Then again, your Excellency, the Hon'ble Dr. Bourne no doubt is a friend of education and he is enthusiastic about intensive education; but that must not be at the expense of extensive education. Dr. Bourne was kind enough to refer to my school and he pointed out that there were as many as six unqualified teachers."

The Hon'ble Mr. Perraia Pantulu:—"I may say that in my school also before the last inspection report there were as many as four unqualified teachers, but I may tell Dr. Bourne that in my school the percentage of those who passed the Matriculation examination was 25 with these four unqualified teachers against the presidency percentage of 11. Dr. Bourne gave a terrible warning to managers of schools in regard to unqualified teachers that the recognition of the school will be withdrawn if the matter was not remedied. I hastened at once to rectify it and I filled up the complement. Education is one of my hobbies, and it is a special hobby of mine to make secondary education not only literary but also practical and industrial; and that it is with the earnest desire of adding some industrial section to the school we have

taken so much pains to start the school. It may not be considered presumptuous on my part to say that to start a school we have very great disadvantages and difficulties. If a school is started with no endowments, it will not be recognised on the ground that it is not properly endowed. If it is properly endowed and if we seek aid, grant-in-aid is refused on the ground that there is no need for aid. Private managers have been greatly handicapped and have not been able to succeed in making secondary education not only literary but practical and useful. The Hon'ble Dr. Bourne remarked that there had been many failures in the Matriculation examination and that the quality of the teachers must be improved; but all these failures happened to be in one year. That shows that there is no doubt something wrong somewhere but we cannot believe that it is all wrong with the teachers. We cannot say that the teaching capacity of all the teachers in Government schools and private schools has gone down or deteriorated at one time simultaneously. The Hon'ble Dr. Bourne has quietly brushed aside all the statistical information which I took pains to put before the Legislative Council with regard to other provinces by saying that 'I am not concerned with the other provinces and I never looked into them.' I think that by way of comparison and illustration, certainly this Government ought to feel it absolutely necessary to look into what is going on outside this province and not rest satisfied with what they have been able to achieve within the four walls of their own province. Even the Famine Commission suggested a number of remedies; they say that the chief remedy for the poor material condition of the people is popular education and the chief remedy, as regards sanitation, is education. If we are to be content with the degree elementary education which we have been able to give to the people, then how can the beneficial results of administration in so many departments of Government be used and appropriated to the fullest benefit of the people? So secondary education is not a matter which can be relegated to the background. It is as important as primary education to the people of this presidency. I am glad to hear from the Hon'ble Mr. Hammick that the Government are going to start nineteen schools, but what are nineteen secondary schools as compared with the needs of all the districts in the presidency with so many millions of population? There will hardly be one school for every district. It will not do merely for Government to set up standard of schools for people to follow, because the standard set up for Government schools is simply impossible to be attained by private agencies. The Government should bear in mind that

their best asset is the trained intelligence of the people and the greatest blessing conferred by the British Government is acknowledged on all hands to be education and in this respect any financial considerations are out of place and only the general good of the people should be kept at heart."

The Hon'ble Mr. Hammick:—"Your Excellency, I would just take up the time of the Council only for a few minutes. I would like to say that the resolution, as it stands, is one that the Government cannot accept. All of us have at heart the education of the people and I am bound to say that no one has it more at heart than I. There is nothing that I would like to see more than the furtherance of education in this country. But when we come to consider ways and means, our difficulty begins. While the Government cannot possibly accept the resolution as it stands that the standard rate of fees leviable in secondary schools as obtaining on the 1st of January 1910 be not raised, the Government are not at all bound, as I said this morning, to accept the scale of fees which I read out in the remarks that I have already made and which were recommended by the Committee. We have not accepted the statement of the Committee, we have still got to consider it and all the remarks that have been made this afternoon will no doubt be taken into consideration by Government. Mr. Govinda Raghava Aiyar is anxious to see that the fees are levied at a slower rate than proposed and on a more graduated scale; and he also dislikes the grouping of fees made by the Committee, I could not help thinking, when I heard Mr. Govinda Raghava Aiyar speak, that he had a sneaking sympathy with the idea that the fees ought to be raised; but he suggests that we should get to it more slowly and in a slightly different fashion. All that I can say is that we will consider this matter carefully in consultation with the Director of Public Instruction. As to consulting public opinion, we have no objection whatever to doing so. We are delighted to ascertain what the views of the Honourable Members are. No doubt, as the Hon'ble Dr. Bourne points out, the moment you touch a man's pocket, he objects strongly. That is the feeling which managers of schools will have on the subject. What I wish to emphasise is the point raised by Dr. Bourne that the secondary education in this presidency—I don't go beyond this presidency—is in a most unsatisfactory condition. Time after time I see people entitled to speak on the subject coming to me and telling me, although a great many of them would not care to rise up and tell us here what they tell me, they all tell me the same story, that the state of education in the secondary schools with a very few exceptions is most un-

satisfactory. A gentleman came to see me three days ago—I won't say his name—and he is a distinguished Indian authority in this town, and he was telling that, in his opinion, the education imparted throughout the presidency especially in secondary schools, was, at the present moment, exceedingly unsatisfactory. The Government of India at the Simla Conference held in 1901 recognised that fact and are desirous that stringent measures should be taken to improve secondary education. But measures could not be taken with that end in view without considerable increase of expenditure. Dr. Bourne has referred to the question of masters. Most of them, I may say, are very much underpaid, and their qualifications are not sufficient for the work they have to do. Then, again, there is the great question of accommodation. The accommodation of several schools is exceedingly bad; there is also the question of outdoor recreation ground and there is insufficient apparatus inside the school for teaching purposes. In all these directions the Government should insist upon a great improvement. As I have said before, it is not unreasonable on the part of Government, if all these improvements have to be attended to, to insist upon a sufficient income being raised. If anybody who has got the interests of education at heart and if parents of boys will go to the schools and see them, they will be able to realise what improvements are necessary in the shape of apparatus, accommodation, etc. I may once again emphasise the point that there is no idea whatever on the part of the Government of reducing the amount that we now give for the encouragement of secondary education. The chances are that for the next decade or twenty years the sum that we now spend on secondary education will have to be very largely increased, but what we do desire is that some portion of this necessary increase should be fairly met by a small increase in fees. It is for that reason I ask the Council to throw out this resolution."

His Excellency the President:—"I do not propose to detain the Council for more than a few moments, and I should like, if I may, to emphasise what has already been said: firstly, in regard to the attitude of the Government generally in the matter of education and, secondly, in regard to the attitude towards secondary or higher education in particular. I am quite certain that there is not a single member of Government, who is not imbued with an earnest desire to see the halls of learning in this country multiply, to see that their doors are more widely thrown open, and to see that the education which is imparted within their walls is very greatly improved. But unfortunately we cannot double or

treble or quadruple the number of our schools, though we should like to do it if we had the means of doing so. We are twitted by the mover of the resolution for allotting an inadequate portion of our revenues to the purposes of education, and if I remember rightly he spoke of Japan as a country somewhat similar in conditions to this country and that in Japan they have expended a very large sum on education. I should like to ask the Honourable Member whether he would be satisfied if the Madras Government decided to allot out of their annual revenue the same proportion of their revenue for educational purposes as is allotted by Japan. I won't press the Honourable Member to answer it. But I only hope that if the Madras Government ever determine to adopt such a course I shall have ceased to be a member of it, because I find that, as pointed out by Mr. Balakrishna Aiyar, the percentage of revenue which we in Madras devote to education amounts to 7 per cent. of our revenue, whereas in Japan it amounts to as nearly as possible $1\frac{1}{4}$ per cent., so that comparing ourselves to Japan, I don't think that the Madras Government can be charged with being in any way niggardly or mean. One of our difficulties is to determine each year the amount that we are to spend on education, and then when we have decided on the amount we have the further difficulty of deciding what is the proportion which should be given to secondary education and what to primary education. We have decided to increase our grant for secondary education and we consider that we should *pari passu* raise the school fees because we have come to the conclusion that without considerable expenditure we cannot hope to improve the quality of secondary education throughout the presidency. And we are of opinion that we have reason to be dissatisfied with the quality of secondary education which is now being imparted, and I cannot believe that, in spite of the remarks that have been let fall this afternoon, that the Honourable Members of this Council are really of a different opinion. Mr. Perraaju Pantulu took exception to the fact that the results of the Matriculation examination in this year had been quoted to show that the teaching in the schools could not be as good as it ought to be and he seemed to argue that it was quite exceptional. But unless I am quite wrong in my recollection surely history has only repeated itself. It is only this year a matter of degree. We have heard for several years past of the slaughter of the innocents at the Matriculation examination. I do not quite know how they earned that particular title, but

I presume that their innocence is mainly in respect of the knowledge which they profess to have acquired. However that may be, I am perfectly convinced in my own mind that it behoves us to improve the quality of the secondary education in this presidency. The next question is for whom is secondary education intended? Who are to be benefited by it? I think we may define the class generally as those who—if they do not move at present in the higher or middle social ranks—hope to do so in the future. I will take that as a rough definition. The improvement of our secondary schools must involve us in a very large expenditure. Are we to meet that demand from the general revenues of that country? Are the beneficiaries of this policy which we are asked to adopt—are they, who are to be benefited by the better education which will be given in our schools, to contribute nothing whatever towards this improvement, from which we believe they will derive so much advantage? If they are not, it amounts to this, that a certain class in this country are to obtain educational advantages at the expense of their poorer brethren. I will ask you to consider that question from that point of view. It is the ordinary tax-payer who has to pay a proportion at all events of this expenditure. You say let him pay the whole. I regard it as neither fair nor just that the whole burden should be imposed upon the shoulders of the ordinary tax-payer. As the Hon'ble Mr. Hammick told us, this debate or discussion has been to the members of the Government a very enlightening one. We are not committed at present to any definite raising of fees. I can assure the Council on behalf of myself and my colleagues that all the remarks which we have heard to-day will be borne in mind and considered very carefully when we come to a determination upon this question. I would again ask the Honourable Members to believe that, whatever step we may decide to take will be taken in what we conceive to be the best interests of the education of this presidency."—*Fort St. George Gazette, May 3, 1910.*

Reviews and Notices.

ASTRONOMY. A HANDY MANUAL FOR STUDENTS AND OTHERS. BY F. W. DYSON, F. R. S. WITH 95 DIAGRAMS AND ILLUSTRATIONS. J. M. DENT AND SONS, LTD., 29 and 30, BEDFORD STREET, W.C. LONDON, 1910.

In this little book an attempt has been made to explain the essential principles underlying astronomical investigations, omitting all subsidiary detail. The historical order has been followed as far as possible. The reader is asked to make for himself such observations of the sky as do not require the use of a telescope, so that he might be able to infer from his own observations the movement of the Earth about the Sun, the comparative nearness of the Moon, and other common-places of astronomy. Astronomy is one of the most interesting of subjects and much practical work can be done by a student with the aid of very simple instruments. We think that the study of astronomy should become more common, and we have therefore much pleasure in commending this book to our readers.

HOME MANAGEMENT. A THREE YEARS' COURSE FOR SCHOOLS. BY WILENA HITCHING. WITH AN INTRODUCTION BY ALICE RAVENHILL, W. R. CHAMBERS, LTD., LONDON, 1910.

The authoress of this book has attempted to place at the disposal of her colleagues the fruits of her mature experience in teaching home management. By her method of instruction it is possible for every girl from ten to fourteen years of age attending an elementary school to devote with advantage and interest two weekly periods of three-quarters of an hour each, for three years, to the study of home management. The subject is to be taught, not as a special subject to a favoured minority by teachers specially equipped for the purpose, but as a part of the general curriculum by the ordinary teacher. From the details of the scheme furnished we find that instruction is to be given on the various duties and on many of the most minute details connected with home life in a most practical and, at the same time, attractive manner, while no expense is incurred either for 'special' teachers or for additional equipment. The authoress lays stress throughout the book not only on the great importance of the work, but upon its nobility, its civic worth, and its national value. Her scheme is workable throughout, and her method of presentation simple and practical. The teachers of our girls' schools would derive immense benefit from a perusal of this book.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—LEAVE AND APPOINTMENTS.—The Director of Public Instruction is pleased to grant Mr. K. V. Rama Rau, Sub-Assistant Inspector of Schools, Penukonda Range, privilege leave for two months with effect from the date of relief and to appoint Mr. R. Krishna-swami Aiyangar, sub pro tem. Supervisor of Elementary Schools, Gooty, to act for him in the probationary class during his absence on leave or until further orders.

Mr. N. Swaminatha Aiyar, Sub-Assistant Inspector of Schools, Georgetown Range, privilege leave for a month from or after the 15th June 1910. Mr. K. C. S. Anantanarayana Aiyar, Sub-Assistant Inspector of Schools, Triplicane Range, to be in charge of the Georgetown Range in addition to his own duties during the absence of Mr. N. Swaminatha Aiyar on leave or until further orders.

Miss Th. Lazarus, sub pro tem. Sub-Assistant Inspectress, Ceded Districts Girls' Range, privilege leave for a month with effect from the date of relief.

Mr. V. Krishnambramham, Sub-Assistant Inspector of Schools, Bellary Range, to act for the Sub-Assistant Inspectress, Ceded Districts Girls' Range, in the third class.

Mr. M. Seshagiri Rau, sub pro tem. Supervisor of Elementary Schools, Bellary, to act as Sub-Assistant Inspector of Schools, Bellary Range, in the Probationary class, in addition to his own duties, vice Mr. V. Krishnambramham.

Mr. J. Vittal Pant, Assistant Inspector of Schools, Anantapur district, is to act in the Ninth grade of the Provincial Educational Service, during the absence of Mr. G. V. Subbarayudu Sastri, on leave or until further orders.

Miss C. M. Lynch, Inspectress of Girls' Schools, Southern Circle, combined privilege leave and special leave for six months from or after the 6th June 1910.

Miss P. F. Parsons, Second Assistant Inspectress, Madras Girls' Range, and Acting First Assistant Inspectress, to act as Inspectress of Girls' Schools, Central Circle, during the absence of Miss Arnold on leave or until further orders.

Second Vernacular Test for Sub-Assistants.—Government have sanctioned the substitution of the Translation Text, Lower grade, of the Special Test Examinations for the examination in a second Vernacular at the Upper Secondary Examination

which under the existing rules Sub-Assistant Inspectors of Schools have to pass.

Secondary School Leaving Certificates.—The following notification appears in this week's *Fort St. George Gazette*:—

Certificate forms are now available and Headmasters of Secondary Schools can obtain them from the Inspector or Inspectress of the Circle on submission of Treasury receipts in support of the payment of the cost of certificates at five annas each.

The first public examination will be held on the 27th March 1911 and following days.

Pupils appearing for this examination will, without exception, be required to produce a certificate of attendance for the term which commenced in January 1910.

Pupils appearing for the public examination subsequently to 1911 will not, as notified in the *Fort St. George Gazette*, dated 21st December 1909 be required to produce the abovementioned certificate.

Private candidates cannot be admitted to the examination and in the case of pupils duly presented for the examination no notice will be taken in the certificate of subjects not studied in a Secondary School or in a technical school under the same management and control and recognised as a branch of the Secondary School.

Information as to the courses of study in the various subjects can now be furnished by Headmasters, who should be addressed in the first instance on any matter connected with the scheme for the award of Secondary School Leaving Certificate. Headmasters should address the Circle Inspector or Inspectress and not this office direct.

The Board has been empowered by Government to complete the certificates of pupils presented by Secondary Schools in the Native State of Pudukotai, the Province of Coorg and the Civil and Military Station of Bangalore.

Eligible for Public Service.—Candidates who failed to pass the last Matriculation Examination in the first instance, but who were subsequently declared to have passed the examination by the University and granted Matriculation certificates, will, says a G. O., be eligible for admission to the Public Service.

Vernacular Shorthand.—The following Government Order, dated 12th April 1910, has been issued:—

"The Government have perused with interest the report of the Committee consisting of Mr. C. A. Souter, I.C.S., and Dewan Bahadur L. D. Swamikannu Pillai, who were appointed to conduct the examinations in Vernacular Shorthand held on the 29th and 30th January 1910.

Five candidates from the Police Training School, Vellore, who had been prepared for the test by Mr. M. Srinivasa Rao, the Shorthand Instructor at the School, presented themselves for examination in Tamil. They were examined at 60 words a minute on the first day and at 90 words a minute on the second day. Four candidates passed each of the tests successfully and three of them passed both the tests. The Government are pleased to award the first three prizes of Rs. 40, Rs. 30 and Rs. 25 to A. Ramachandra Aiyar, S. Sawminatha Sastri and T. Krishnaswami Aiyar, respectively, who come out in that order in the test at 90 words a minute, and two prizes of Rs. 15 to A. Joseph and N. S. Ramanarasu Aiyar, who passed in one of the tests only.

The Government are satisfied of the practicality of Mr. M. Srinivasa Rao's "Tamil Shorthand Instructor" which embodies the system on which these candidates were trained and are pleased to grant him an honorarium of Rs. 500. They will also purchase as many copies of the book as the Inspector-General of Police thinks can be usefully distributed. The Inspector-General will be requested to report on this point.

Mr. M. Srinivasa Rao will be authorized to prepare manuals of shorthand in Telugu, Malayalam, and Canarese, for which it is understood he has already collected the necessary materials. The Government will bear the cost of their production. The Inspector-General of Police will be requested, if he sees no objection to the proposal, to place the services of three Sub-Inspectors at the disposal of Mr. M. Srinivasa Rao for instruction in shorthand in Telugu, Tamil and Canarese and to assist him in the preparation of the manuals.

5. The Inspector-General of Police will also be requested to report whether the attainment of facility in vernacular shorthand would be encouraged by the grant of a special allowance of Rs. 5 or 10 to such police officers as qualify in reporting at 80 words a minute.

6. The Committee's proposals to issue certificates to successful candidates and to notify in the "Fort St. George Gazette" the results of the last examination are approved.

The Government note with appreciation the services of Messrs. Souter and Swamikannu Pillai in conducting these tests.

The Law College, Madras.—In reviewing the report on the working of the Law College, Madras, during 1909, the Director of Public Instruction says:—"There was a slight increase in the strength of the College which was shared by all the classes except the special classes. The results of the Pleadership Examination were satisfactory, while those of the B.L. Examination, though fair did not compare favourably with the results obtained in any of the preceding three years. The fall in the number of absentees from the class examination and the growing popularity of the tutorial classes are noted with satisfaction."

The Training College, Rajahmundry.—In reviewing the report on the working of the Rajahmundry Training College during 1909, the Director of Public Instruction says:—"Notwithstanding an increase in the number of students under training for the collegiate and secondary grades, the total strength of the training section showed a slight decline owing to the comparatively smaller number of students admitted for training in the elementary grade. The necessity for limiting the admissions of students of the lowest grade should have been explained. The strength of the practising section also showed a further marked decline which was confined to the Upper secondary forms which were, however, quite strong enough for a practising school. The strength of the lower secondary forms showed a slight increase. The results of the L.T. degree examination, the Preliminary examination for teachers' certificates and the Government Technical examinations were on the whole satisfactory, while those of the Matriculation examination compared favourably with the average for the Presidency. The general condition of the college continued to be satisfactory."

Alterations in the University Regulations.—The Government of Madras have passed the following G.O. in the Educational Department, dated 27th May:—"The Government sanction the proposed alterations in Regulations 178, 184, 185, 186, 189 and 199 of the University Regulations as sanctioned in G.O., No. 841, Educational, dated 27th December 1906. These Regulations as now amended are printed in the appendix to these Proceedings. They shall come into operation from the commencement of the academic year for 1911-12 so as to affect the Intermediate Examination of 1913." These regulations relate to the recent changes effected by the Senate in combining the optional groups (iii) and (iv) of the Intermediate course into a new group (iii) composed of the five subjects of the present groups (iii) and (iv) out of which five subjects a candidate might choose any three. The new group (iii) will qualify for groups IV, V and VI of the B.A. courses, subject to the proviso that an undergraduate selecting group IV, V or VI, as the case may be, shall have studied in the Intermediate Course Logic, Ancient and Modern History or a classical language respectively. The paper on the history of English Literature has been omitted. Regulations 178 II and 184 II have been amended so as to allow of translation into English from a Classical or Foreign language being taken as an alternative to the present compulsory vernacular composition, on the ground that as the Regulation, as it is at present, operates to the decided disadvantage of students who wish to take up classical languages the study of which is consequently discouraged.

Scholarships in Industrial Schools.—In approving the proposals and the draft notification submitted by the Director of Industries for the award of Scholarships in the Industrial Schools under his control to the extent of Rs. 569

a month (the total No. of Scholarships being 199) the Government observe:—

"The Government approve generally the proposals of the Director of Industries for the award of scholarships in the Industrial schools under his control. They also approve the draft notification submitted by the Director containing the regulations governing the grant of the scholarships, subject to the modification indicated in the following paragraph:—The Government consider the principle laid down in Resolution 22 passed at the Industrial Conference held at Ootacamund in September 1908, that scholarships or stipends given to students in Industrial schools should be confined to members of the artisan castes or to others whose families are already engaged in the trade, of primary importance. Effect should be given to it by the insertion of the following words at the end of condition (1) in the draft notification submitted by the Director:—Scholarships in Industrial subjects will ordinarily be given only to members of the artisan castes or to others whose families are already engaged in the trade. The Director is requested to amend the draft notification accordingly and to arrange for its early publication in the Fort St. George Gazette. The attention of the Director of Industries is drawn to the delay that has occurred in the submission of his proposals and the draft notification to Government and to the necessity of publishing the notification earlier in future. The scholarship notification for 1909 was published by the Director of Public Instruction in the Fort. St. George Gazette, dated 16th February 1909, whereas the draft notification for this year was not submitted to Government by the Director of Industries until the 9th April 1910."

The Periyakulam Victoria Memorial School.—Mrs. Annie Besant, President of the Theosophical Society, recently opened the buildings of the Victoria Memorial High School at Periyakulam which the Hon'ble Rao Bahadur Ramabadra Naidu, Zamin-dar of Doddappanaiknūr and Vadagari, had chiefly been instrumental in founding and financing, the ceremony being performed in the presence of a large gathering assembled from different parts of the District, amongst them being Mr. R. G. Grieve, Inspector of Schools, and the Hon'ble Dewan Bahadur L. A. Govindaraghava Iyer.

The Madura Tamil Sangam.—The ninth anniversary meeting of this Sangam was recently held at Tanjore. The meeting opened with prayer sung in Tamil. On the motion of Mr. Pandithurai Thevar, Mr. Swaminada Vijia Thevar was voted President of the day's meeting. Mr. Vijia Ragnada Rajaliar of Kumbakonam welcomed the members and delegates in a short Tamil speech. The President being formally installed in the chair, he briefly explained the objects of the Sangam and the nature of the very useful work it has done during the nine years of its existence. The Secretary's report

of the Sangam was next read out and it showed a continued useful work and fairly sound financial basis. Then gold medals were distributed to the successful pupils at the last examinations held by the Sangham for all standards.

The President's concluding address was short, compared with such addresses in other public meetings.

A Conference of Teachers of Elementary Schools.—The Conference and the Exhibition of Teachers of Elementary Schools came off at Trivallur recently. The Conference was attended by about three hundred teachers and many visitors. There were not less than three thousand exhibits, some of them being excellent and highly instructive. The exhibits were collected from several districts through the exertions of the Sub-Assistant Inspector, Mr. P. Ramanujachariar. The teachers and visitors assembled at the Wesleyan Mission High School. Mr. J. S. M. Hooper, the President of the Committee, welcomed the teachers to the Conference, introduced Mr. L. Vibert, the Collector, to the audience, explained the object of the Conference and the Exhibition in a short speech and called on Mr. Vibert to open the Exhibition. He got up amidst cheers, applauded the object and hoped that every teacher would go greatly benefited and better informed after seeing the exhibits and hearing the lectures. He wished it a great success and hoped that this Exhibition and Conference would only be the beginning of many more to come in the district. After the usual vote of thanks the whole audience moved to the various rooms containing the exhibits. Then a model lesson and lectures on various topics were given at the Hindu Secondary School for the benefit of the Elementary School teachers. The Exhibition was certainly a great success and it reflects great credit upon Mr. P. Ramanujachariar.

CALCUTTA.

Commercial Examinations.—The results of the Government Commercial Course Final and Special Examinations, published in the *Calcutta Gazette*, would appear to indicate that much more interest is being taken in commercial education, and such technical subjects as shorthand and typewriting, by the youth of Calcutta—of both sexes—than was the case when the Government Evening Commercial Classes were first started. For the final examination five passed; one in banking and currency; two in mercantile law; two in English (modern and commercial); 14 in junior book-keeping, and 5 in advanced book-keeping. The majority of these successful students were trained at the Government Evening Commercial Classes. In typewriting five candidates (one of them, Miss Jessie Hamilton, from the Calcutta Free School) attained a speed of 45 words per minute, which is very satisfactory, and two attained 35 words per minute. The shorthand classes appear to have

been most patronised, and the passes include two who attained 120 words per minute; thirteen 100 words per minute, and 22 had got up to 80 words per minute. Among the 100 words passes are two young ladies, one from Mr. Hill's private classes and the other from La Martiniere College. Mr. Hill also passed a European candidate in the 80-words test. It is satisfactory to find young men—and women—turning their attention to technical education along lines which promise many openings for lucrative employment; and it is gratifying to notice that a very large percentage of the successful candidates were trained at the Government Evening Commercial Classes—*The Englishman*.

Indian Students to England:—The Bengal Advisory Board for Indian students has taken up the publication of a series of pamphlets containing useful information for Indian youths proceeding abroad for purposes of education. The Advisory Board has created a keen interest among Indian youths in pursuit of knowledge who have in most cases sought expert advice from the Secretary to the Advisory Board. Some days ago the first batch of students from Bengal under the advice of the Advisory Board sailed for England and the second batch of students will leave for England by the end of the current month.

The National Medical College of India:—Amongst the non-official institutions the National Medical College of India (Bow Bazaar, Calcutta) has shown great improvement. It is now a splendid institution with Pathological and other departments for Medical and Surgery under skilled professors. A separate shed where students can study practically on the dead body has been built at a large cost, practical operative Surgery and dissections have added greatly to the stability of the College. Students are now being enrolled. The fee is only three rupees monthly. There are several student-ships in each class and in addition there are Founder's Bursaries offered by Dr. S. K. Mullich, the Founder of the College to the value of Rs. 50 and Rs. 40 for those who have passed the Matriculation Examination and Rs. 30 and Rs. 25 for those who have studied up to the Matriculation. The number of students has increased to close upon 400 and it is a great problem how to accommodate the new students who are enrolling themselves. Lately a meeting was held at the Palace of H. H. the Hon'ble the Maharaja Bahadur of Durbhunga, K. O. S. I., for providing for the expansion of the Hospital and it is estimated that about Rs. 60,000 more will be required and an appeal signed by the Maharaja of Durbhunga, Naser-ul-mulk Nawab Sujat Ali Khan Bahadur, Rajah Peary Mohun Mukerjee, Rai Norendra Nath Sen Bahadur, Mr. A. Chaudhury, Barrister, has been issued to all charitable citizens throughout India, for this is not a provincial but a truly *All India* institution. The College has been visited by eminent citizens

such as the Hon'ble Madan Mohan Malaviya, the Hon'ble Subba Rao, the Hon'ble G. K. Gokhale, C.S.I., Mr. Lajpat Rai, Mr. Surendra Nath Banerjee, the Hon'ble Madhava Rao, C.S.I., late Dewan, Mysore, and others, all of whom have spoken highly of the institution.

Extension of the B. L. Course.—The Senate of the Calcutta University have decided by a large majority to extend the B.L. course from two to three years.

Change of Curriculum for Vernacular Schools: An important G. O.—It has long been recognised that the existing curriculum for Vernacular Schools in Eastern Bengal is unsuitable. The Committee appointed has modified the existing arrangement of classes in the primary course. The general revised curriculum will come into force on the 1st January 1912.

BOMBAY.

State Scholarships.—The following communique has been issued by the Government of Bombay, Education Department:—

Students who are awarded Government of India scholarships for study of Sanskrit or Arabic under terms of the Home Department resolution, dated 14th September, 1908, will be required to give a written undertaking that they will devote themselves exclusively during the tenure of their scholarship to the subject for which their scholarship has been granted. If they endeavour to study law or any other subject, which is not cognate with their proper studies, they will be liable to forfeit their scholarship.

A donation.—Mr. Dabhovakar of Bombay, who had originally decided to contribute a sum of Rs. 60,000 in the name of his mother towards the fund opened for the aid of the Sarswat students, has now raised the donation to one lakh of rupees.

The Science question in the University of Bombay:—The battle over the science question in the University of Bombay does not exhibit any signs of abating. The Senate met recently to consider the Hon'ble Mr. W. A. Sharp's motion that the science optionals be omitted from the B. A. course and that the science branches be omitted from the M. A. course. At present, as Mr. Sharp pointed out, a student in the B. A. course has to take up English, second language, history and political economy, as compulsory subjects, to which he must add one more subject chosen from a list. This list includes literature, philosophy, history, and mathematics; it also includes physics and chemistry, and natural science. The point he and the Government of Bombay lay stress upon is that, as the course stands at present, the science subjects do not receive as much attention as they should, considering the practical work connected with them.

and that, until the Science course is separated from the Arts, it is not possible to have any improvement in the scientific education of students. What Mr. Sharp wanted was that the University should once for all decide to give prominence to scientific instruction, "either by casting out the science subjects altogether to form a separate science course or by reducing the literary subjects to such an extent as to admit of the science student working up his subject more effectively." An amendment to refer the motion to the Syndicate for its proposals after it had considered the report of the Committee appointed by it to revise the Science courses, was defeated by a narrow majority, 31 voting for it and 35 against it. We dare say the matter will come again before the Senate, and we frankly see no prospect of the principle of Mr. Sharp's motion being accepted at a subsequent meeting. Probably, the chances are that a reform will be affected in the direction indicated by the Hon. Mr. G. K. Gokhale, who stated that there should be two courses for B.A. Degree, a literary course with a modicum of science, and a thorough course in science with English.—*The Hindu*.

INDIA (GENERAL).

Proposed Burma University.—The following circular has been issued by the Registrar of the Educational Syndicate:—

You will be aware that in this province University education has been, and still is, carried on under the sole direction and control of a distant University belonging to and situated in Bengal. It is now proposed to release higher education in Burma from the control of the Calcutta University and on the basis of the existing colleges, viz., the Government College and the Baptist College, to establish a University in Rangoon at those two Colleges. The full B.A. course is already undertaken and the professors are competent to deal with both the examining and the teaching sides of the University work. Additional examiners will also be obtainable in Burma, and if necessary from elsewhere.

The object of the University would be to encourage and promote learning generally and more particularly to contribute towards the moral, intellectual and material development of this province.

To do away with any necessity that may for the scientific and learned professions, such as medicine, engineering, law teaching, and also with the means of obtaining such higher education as may fit them for service under the Government or in important positions of trust, public or private.

To confer these benefits at a comparatively small cost to parents and guardians by the performance in Burma of the work of examining, and by the gradual provision in Rangoon of improved facilities for higher teaching and training the subjects mentioned.

Thus to do away with any necessity that may exist at present of sending young men or women abroad at considerable risk or inconvenience, and often scarcely supportable expense in order to obtain university teaching or professional training, or for examination in subjects which they may have studied locally.

To cultivate and extend the study of the languages, literature, history and antiquities of Burma, and especially of Pali and the texts written therein.

To afford the people of Burma a voice in the direction of their own higher education, and thus to ensure a full and proper consideration of the interests of both parents and students in regard to this most important matter.

The proposal has been placed before the Educational Syndicate and has met with its general approval and with that of a majority of educationalists in the province, and of many English and Burman officers and private gentlemen.

I am to request the favour of your opinion on the subject, and would be specially glad if you would state whether you or any of your relations or friends are likely to be in a position to send students to such a University or otherwise to assist in its establishment and support.

Indian students to America: Government Resolution.—The following Resolution has been issued in the Home Department, Simla:—

The Government of India have had under consideration the question whether certificates of identity should be granted to Indian gentlemen proceeding to America for the purposes of study as is at present done in the case of Indian students going to Japan under the orders contained in the Home Department Resolution, No. 481—492, dated the 15th November 1901. It is believed that the grant of such certificates would be of use to the holders of them, and with the approval of the Secretary of State the Governor-General in Council now desires to recommend all Indian gentlemen proceeding to America for purposes of study or otherwise to obtain before their departure from India an authoritative certificate of identity in the form appended to this Resolution signed by the head of the district (in a presidency town by the Commissioner of Police) in the case of residents of British India and by the Political Officer in that of residents of Native States. The district or political officer will endorse on the certificate of identity his opinion whether the person is or is not a British subject 'by birth' or by naturalization 'or a subject of a Native State.' Quarterly returns of the certificates granted will be submitted by the Local Governments and Administrations to the Government of India for transmission to the British Embassy at Washington and to his Majesty's Secretary of State for India, but to avoid delay the district or political officer when granting or countersigning a

certificate will at the same time send a copy of the certificate direct to the British Embassy at Washington and also send a duplicate copy of it direct to the Under-Secretary of State for India. Local Governments and Administrations are requested to take steps to secure that all reasonable facilities are given for obtaining certificates of identity and that wide publicity is given to these orders.

A Christian University in India.—The following account from a correspondent of a contemporary of a proposal for a Christian University in India in Serampore will be interesting:—

"I learn that the arrangements made towards the fulfilment of the far-reaching scheme to raise Serampore to the status of a Christian University, in accordance with the degree-conferring powers originally vested in the Serampore trio by the Danish Government, will reach their initial stage in October. The College will then be opened, it is hoped, for theological training and the work from the first will count towards the B. D. degree on a standard similar to that of London University but adapted to Indian conditions and needs. A strong staff has been secured. Besides the Principal, Dr. Howells, there are Messrs. Page, Rawson, T. H. Robinson and John Drake. All of them have had very distinguished academic careers, and are enthusiasts in the matter of higher theological education. In addition there will be Indian professors of repute for the chairs of Arabic and Sanscrit. With such a staff opportunities will be given at Serampore, it is believed, such as cannot be found anywhere in India, even apart from the degree-conferring powers. A number of scholarships will be available for graduates and others who wish to enter upon the course, some of them at any rate open without distinction of denomination. As you are aware, the accommodation for students is being considerably increased and the existing buildings are being put into thorough repair."

Foreign Notes.

GREAT BRITAIN.

The Bodleian Library: Sanscrit MSS. from Nepal.—In their annual report to Oxford Convocation, the Curators of the Bodleian Library state that the number of printed and manuscript items received during the year amounted to 81,565—the highest total on record. The large increase is due to the munificent gift of 6,330 Sanscrit MSS. from the Prime Minister of Nepal, one of the greatest donations of manuscripts ever received by the Bodleian, and which thus becomes by far the largest depository of Sanscrit manuscripts outside India. The collection represents every department

of Sanscrit literature, and many works contained in it are to be found in published catalogues. It will be kept separate from the general body of Sanscrit manuscripts, and will be known by the name of its generous donor. Professor MacDonell during his visit to India saw this collection in the possession of a Benares Pandit and bought certain manuscripts then belonging to it for the Max Muller Memorial Fund. On his return he reported the matter to the Librarian, who moved the Curators to apply to the Oxford University Endowment Fund Trustees for the necessary grant. The Vice-Chancellor, however, was cognisant of a desire of the Prime Minister of Nepal to show his kind feelings to the University, and communicated with the Chancellor, who, in turn brought the matter to the Maharajah's knowledge. The thanks of the University beautifully printed in gold at the Clarendon Press were conveyed to the donor.

Death of Professor Goldwin Smith.—With the death of Professor Goldwin Smith which Reuter announced on the 10th instant, there passed away an eminent historian and miscellaneous writer. His father was Richard Smith who was a medical practitioner at Reading in Berkshire. The young boy was sent to Eton and afterwards to University College, Oxford, where he distinguished himself for his proficiency in Classical languages. In 1842 he was given a scholarship and won the Chancellor's Prize of Latin Verse. In 1846 and 1847 he won similar prizes and was made a Fellow of University College. He then qualified himself for the Bar, but he accepted the Regius Professorship of Modern History at Oxford and continued as such till 1866. When the Civil War broke out in America in 1864 he took up the cause of the North in right earnest. In 1868 he went to the United States of America and became Honorary Professor of English and Constitutional History in Cornell University. In 1871 he went to Canada where he resided till the end of his life. His writings fill several volumes. In politics he had originally held Liberal views and sided 'with the people.' But in his later years he was one of the sturdiest opponents of Home Rule and several other Liberal causes. Professor Goldwin Smith dabbled in Theology and his views were greatly modified by the agonistic creed which was vogue in the latter half of the nineteenth century. He was indeed a prolific writer and the following are some of his most characteristic works:—*Lectures on the Study of History, Rational Religion and Rationalistic Objections, Guesses at the Riddle of Existence, Essays on Questions of the Day, and Specimens of Greek Tragedy.*

The Educational Review.

In this presidency the Education Department has set its face against all double promotions. It will therefore be of interest to our readers to know what is being done in this matter in England, which serves as our prototype in most educational matters. The London Education Committee have had under consideration the question of double or terminal promotions of scholars both from school departments and from class to class. The Committee in dealing with this matter were of opinion that, although in the best schools promotions are made at least twice in a year, the practice of having more than one promotion a year is not sufficiently general and that more frequent promotion should as a rule be made. The chief advantages to be secured from this arrangement would be that the curriculum, instead of being drawn up and adhered to for a whole year, could be better adapted to the needs of individual scholars; the clever children need not mark time, nor the slow ones be unduly pressed. Moreover, it would be an inducement for the clever children to remain at school till the age of fourteen, better facilities for staffing would be afforded, and a closer relation established between the primary and secondary systems in the passing of children more readily from the one to the other. The arguments seem to us to be sound, especially those that refer to the marking of time. Children vary in their capacity for progress, and no greater harm could be done to a clever child, than to make him keep pace with one who is intellectually dull. To make due allowance for this difference the schools

must no doubt be highly organised. But it would be difficult even for highly organised schools to act in contravention of the Department which controls education. We wish that the Department would give some heed to the excellent example set by London.

We have much pleasure in making known to our readers the good work that is being done

by the Art for Schools Association in the production of pictures suitable for schools. The progress made by the Association has been remarkable and reflects the greatest credit. Were the artistic tastes of pupils more awakened at school, the benefits conferred by loan exhibitions of pictures and other works of art would appeal to a still larger number of people. The idea of the founders of this Association was that the presence in the school room of a few good prints and photographs of beautiful and interesting works of art would so foster a love of the beautiful in the minds of the children that it would permanently influence their later years. Little has been done in this direction in our country and there are few schools which possess these aids to good teaching. The ease with which pictures and photographs are now produced has led to an enormous improvement in school text books, especially in history and geography, and they have been of immense aid to the teacher. Scenes which could at one time be described only in vague language are now brought home to the meanest intelligence by the aid of photographs. But the field with which this Association is occupied is not merely that of the ordinary school illustrations, but something wider. It aims at introducing in a cheap and beautiful form, suitable for the

walls of a school room, the classical works of the great masters of art.

We have before us the circular proceedings of the School Final Scheme. The whole affair concerning these certificates seems exceedingly cumbersome, entailing a great deal of work both to headmasters and inspectors of schools. Hitherto the attention of high school students and teachers was directed to the entrance examination of the University, and the results have not been beneficial. We fear the results will be still worse under the present scheme. The student instead of learning in an atmosphere of freedom would have to be always thinking of the leaving certificate. Certificates are expected to give an account of the merits of a boy, but the school leaving certificate will also speak of his demerits. It will, for example, say how many times a boy failed, and in what subjects he failed. The possession of this certificate will often be a source of misery than a source of pleasure. We have often known boys who frequently failed in school examinations but did excellently in the higher examinations and achieved success in life. We have only to read the pages of Ostwald's *Great Men* to see what poor figures these great men cut in their school careers. Genius is a rare gift and one so vital to the community that it must be the business of education authorities to see that nothing is done to blight its career when it is born, and that every facility is afforded to the boy or girl of genius to make a way in life. Is the school final scheme likely to effect this? Our fear is that as at present constituted the result is likely to be not at all favourable. When the announcement of a school final examination was first made, we

welcomed the idea. We thought there would be greater freedom and scope given to teachers and pupils and that we were approaching something like the German *abiturient* examination. We must confess we have been sadly disappointed. The sole aim of the scheme seems to be to place all secondary schools entirely under the thumb of the Department. We now understand why in Bombay the members of the Senate so strenuously fought against the replacement of the Matriculation examination by the School Final. Even in details the school final scheme as now set forth is not without blemish.

What Professor Sadler has to say on educational matters is always of the greatest interest. Speaking at the opening of a new high school, Dr. Sadler pointed out the existence of three great schools of thought concerning education. One believes that national well being requires a carefully stratified constitution of society with grades of station and appointed duty. Those who incline to this point of view prefer to organise national education in three main compartments, each, from beginning to end, virtually independent of the other two. According to such a plan the directing class has its own educational institutions, almost self-contained from infancy to entrance upon the practical duties of life. Another great branch of national education is assigned by it to the needs of the labouring class; and a third to those of the intermediate ranks. This view may be congenial to many minds in all grades of society and consonant with many of the facts of human nature, but its authority has been undermined partly by economic changes of the last fifty years, and still more by the

growth of an opposing view bitterly antagonistic to it. Those who hold this second view maintain that, as far as possible, every boy and every girl in the nation should start fair. The chief task of the modern State, they contend, is to equalise social opportunity. Education must do nothing to confirm and favour inherited advantages. Inequality of influence there must always be, because men are unequal in intellectual power, in force of character, and in capacity for leadership or self assertion. But nothing, the advocates of this view maintain, should be allowed artificially to emphasise these inequalities or to perpetuate them from generation to generation. This view necessitates the destruction of many old institutions and traditions before it can reconstruct society according to its own pattern. This view of the educational duty of the modern state receives much support from the scientific study of the power of environment and of the influence of skilfully planned early training. Intermediate between these two views, attempting to harmonise their contradictions and to recognise the truth which underlies each, is a third point of view, which, Dr. Sadler thinks, is the characteristically English of the three. It is neither reactionary nor enthusiastic. It does not deny the power of education, but is sceptical of the value of much that passes under that name. It believes mainly in the force of personal character, which it finds emerging in individuals in all ranks of society, though often distinctive of a considerable number of the members of particular families. It believes that the true unit of educational influence is a group of like-thinking people whose accepted way of life forms the environment in which young lives gain tenacity of association, coherent beliefs, and regularity

of habit. It is opposed to anything like mechanical uniformity in educational methods. It distrusts any changes which might produce what the Germans call an academic proletariat, an over-supply of persons trained for literary callings. On the other hand, it has no wish to uphold social exclusiveness or undeserved privilege. It sees the need of better equipping the nation for the urgent industrial and intellectual tasks of the present age. It realises the injustice done to girls and young women by failure to provide for them educational opportunities as wide and as thorough as those given to boys and young men. It recognises the power and the value of the new civic ideal which lies behind municipal effort in education. But it values continuity of tradition and variety of educational initiative. It wishes to be just to different forms of personal conviction and to recognise the merits, as well as help in remedying the defects of different types of training. Whichever view of education we may accept, we must never forget that education is not merely a system of devices for dexterously imparting knowledge within the shortest possible time, but a touching of hidden springs of imagination, of duty, and of conviction, and the subjecting of wayward thoughts, of false aims, and of inaccurate observation to firm discipline and to searching correction.

At the last meeting of the Senate of the University of Bombay there was a vehement discussion over a proposition moved by the Hon'ble Mr. Sharp, the Director of Public Instruction, to the effect that the science optionals be omitted from the B.A. course and that the science branches be

omitted from the M.A. course. The reason adduced by the Director for the adoption of the proposition by the University was that, according to the present system, students in the B.A. classes found it difficult to devote a sufficient amount of time to the study of both the language and the science portions of their course. Mr. Sharp contended that for a thorough study of scientific subjects, such as chemistry and physics, students required more time than they can usually afford to spend at present and that they should, in consequence, be relieved of all work in the languages. The best method of doing this is to separate the arts from the sciences. This proposal is the same as that of the Government. His Excellency Sir George Clarke addressed about a year ago a letter to the University in which His Excellency proposed a complete separation between the Bachelor of Arts and the Bachelor of Science. We heartily approved the proposal, and we have seen no reasons to change our view. We think that a course of training in at least one of the physical sciences is absolutely necessary to every University man, though at the same time we contend with Mr. Sharp that for a thorough study of physics or chemistry one must devote all his time completely to it. Early specialization may be bad, but specialization is absolutely necessary for a thorough study of any subject. We should like the German system to be adopted in our Universities. As in the secondary schools of Germany our students ought to be made to learn the elements of every subject theoretically and practically. The best way of doing this is to add the intermediate classes in the college course to the secondary school course and extend the college course after that period over three years and make

the student devote himself to special study. Our secondary school course must be so arranged that it must be possible for a young man after matriculating to enter upon a literary, scientific, or professional course. For example, our young men who take to the profession of law waste much time in studying unnecessary subjects; it would be far better for them if after their secondary school course, which might be well extended to a period of eight or nine years, they could devote themselves completely to the study of law and other correlated subjects. We do not deny that all would derive manifold advantages from the study of the sciences and that is why we advocate that every man who enters the University must have studied one or more of the physical sciences, but we at the same time agree with Mr. Sharp in thinking that the time available in the two year B.A. course is not adequate to study both literary and scientific subjects. It matters little whether the degree is called Bachelor of Arts or Bachelor of Science; we need not stickle for a name. In Germany they have only one degree of Ph.D. for all subjects.

At the present day athletic sports and exercises have become so popular that it is not uncommon to find enthusiasts, on the one hand, unduly praising athletics and faddists, on the other hand, unduly decrying them. In these circumstances we cannot but welcome a trustworthy statement on the subject by such an authoritative body as the Council of the British Medical Association. This statement takes for granted that a certain amount of regular bodily exercise for each individual is an essential element in any complete educational scheme, but it offers some

well considered cautions. Thus, paper-chases and school and house runs are to be distinguished from races, except so far as they include competition, in which case the boys should be selected and grouped in accordance not only with age, but also with physical strength and stamina. Provided that the competitors are selected and watched during practice, it is held, upon evidence from a great many schools, that long distance races very seldom entail risk. Rowing, boxing, and swimming are also included among exercises calling for the expert examination and supervision of those indulging in them; while competitions in long distance swimming and diving must be looked upon as dangerous for young adolescents. One point upon which the Association is specially emphatic is the neglect of an ample interval between the end of a substantial meal and the indulgence of strenuous exercise, a practice, which lies at the root of many of the evils so often attributed to over-exertion alone. An initial medical examination on entering school, followed by further examination at periodical intervals, is also laid down among the essentials of judicious school management. The Association rightly points out that the cal education and exercises of girls, no less

than those of boys, call for the application of care and forethought.

We learn that the Calcutta University has invited the opinions of the principal educationists of all denominations on a scheme to provide moral instruction on an undenominational basis to the students of schools and colleges affiliated to the University. Whatever may be ultimate nature of the scheme adopted, we fear that the mere teaching of moral precepts would not prove very fruitful, unless the teachers are men imbued with high conceptions. Moral precepts are easy to teach, but example is catching. The Moral Instruction League is endeavouring its best to provide suitable text-books. Mr. G. Gould of Leicester, a leading member of the Moral Instruction League and of the Rationalist Association of England, has written an instructive book of moral lessons to children, in which each virtue is illustrated by a story. He is said to have nearly completed a volume of moral lessons for use in Indian schools. We are not sure that the book will be found acceptable by all, for the very fact that the book is written by a rationalist will create suspicion in the minds of some. The home is the proper place for the inculcation of morality.

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MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

114. [G. V. TELANG.] A', B' and C' are the centres of squares described on the sides BC, CA and AB of a triangle ABC. Show that the lines AA', BB' and CC' are equal and perpendicular to the sides of the triangle B'C'A'.

Solutions by M. S. Sundareswaran and P. V. Krishnaier, B.A., L.T.

$$AC'^2 = \frac{c^2}{2};$$

$$A'B'^2 = \frac{a^2}{2} + \frac{b^2}{2} + ab \sin C.$$

$$\therefore AC'^2 + A'B'^2 = \Sigma \frac{a^2}{2} + ab \sin C$$

$$AB'^2 = \frac{b^2}{2};$$

$$A'C'^2 = \frac{a^2}{2} + \frac{c^2}{2} + ac \sin B.$$

$$\therefore AB'^2 + A'C'^2 = \Sigma \frac{a^2}{2} + ac \sin B$$

but $ab \sin C = ac \sin B$.

$$\therefore AC'^2 + A'B'^2 = AB'^2 + A'C'^2.$$

$\therefore AA'$ and $B'C'$ are $\perp$ to each other.

$$\text{Again } B'C'^2 = \frac{c^2}{2} + \frac{b^2}{2} + bc \sin A.$$

$$AA'^2 = c^2 + \frac{a^2}{2} - \frac{2ac}{\sqrt{2}} \cos (45^\circ + B)$$

$$= c^2 + \frac{a^2}{2} - ac (\cos B - \sin B)$$

$$= c^2 + \frac{a^2}{2} - \frac{(a^2 + c^2 - b^2)}{2} + ac \sin B$$

$$= \frac{c^2}{2} + \frac{b^2}{2} + ac \sin B$$

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but $bc \sin A = ac \sin B$.

$$\therefore B'C' = AA'.$$

Similarly it may be proved that BB, CC', are equal and perpendicular to C'A', A'B' respectively.

119. [K. KRISHNAMACHARI.] Add the digits of a given number, and if the sum be a number of more than one digit, add the digits of this sum and proceed in this way until you arrive at a single digit. Show that this digit is what remains when the given number is divided by 9.

Solutions by M. S. Sundareswaran, P. V. Krishnaier, B.A., L.T., M. M. Venkatachariar, and S. R. Venkateswara Iyer.

Let N be the given number, S_1 the sum of the digits of N, S_2 that of those of S_1 , etc., and let the last result be S_n .

Now the remainder obtained by dividing a number by 9 is the same as that obtained by dividing the sum of its digits by 9.

Hence that which remains when N is divided by 9 is the same when S_1 is divided by 9 which is the same for S_2 also, etc.

Hence the last result S_n which is a number of a single digit must leave the remainder when divided by 9; that is, it must itself be the remainder.

120. [D. P. VARADARAJA IYENGAR, B. A., L.T.] The age of a lady who was unwilling to give out her age was elicited from her in the

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following way: she was requested to form a number by putting together the date and month of her birth (both in figures as 118 if it be 11th August); then to double the number, to add 5 to the result, then to multiply the sum by 50, to add her present age to the product, and then to tell you the final result. If 250 be subtracted from this result the last two digits of the number left expresses the age of the lady. Explain this method algebraically.

Solutions by M. S. Sundareswaran, P. V. Krishnaier, B.A., L.T., K. Krishnamachari, B.A., and S. R. Venkateswara Iyer.

Let us take the most general case when the number given by putting together the date and month of her birth is one of 4 digits. Let the digits be l, m, n, p

then the number $= 1000l + 100m + 10n + p$
double the No. $+ 5 = 2000l + 200m + 20n + 2p + 5$
50 times this result $= 100000l + 10000m + 1000n + 100p + 250$.

If x , her present age be added to it and 250 be subtracted from the sum, the number left

$$= 100000l + 10000m + 1000n + 100p + x.$$

This is a number of 6 digits wherein the last digits are clearly the digits of the number giving her age.

QUESTIONS FOR SOLUTION.

122. [M. M. VENKATACHARI].

Prove that $(1 + \sin \theta)(3 \sin \theta + 4 \cos \theta + 5)$ is a perfect square.

123. [M. M. VENKATACHARI]. From any point within a parallelogram perpendiculars are drawn to the sides. Show that the area formed by the joins of their feet is constant.

124. [M. M. VENKATACHARI]. O is any point in the $\triangle ABC$. OX, OY, OZ are $\perp$ to BC, CA, AB . Then $(Bx^2 - Cx^2) + (Cy^2 - Ay^2) + (Az^2 - Bz^2) = 0$.

Hence deduce that the 3 tangents at the points of contact of 3 circles which touch two and two are concurrent.

125. [M. M. VENKATACHARI]. If y be an integral function of x of the second degree and its values be 3, 5, 7 when $x = 1, 2, 3$ respectively, find its value when $x = 4$.

126. [M. M. VENKATACHARI]. If of 4 numbers the first 3 are in A. P. and the last 3 in H. P. then they are proportionals.

127. [P. V. KRISHNAIER, B.A., L.T.] Show that $\frac{2n}{n^2 - a}$ where n is any number will give values of x satisfying the equation $ax^2 + 1 = y^2$.

128. [P. V. KRISHNAIER, B.A., L.T.] Sum the series: $-1, 1, 2, 3, 5, 8, 13, 21, \&c.$, to n terms.

129. [C. RUNGACHARI]. A conjuror asked a certain boy to think of any number, say 58. He then asked him to multiply it by 3 and divide it by 2 and tell him if there is any remainder. 58×3 is 174. $174 \div 2$ is 87 — no remainder. When the boy said that he got no remainder, the conjuror asked the boy to repeat the process and say if he got any remainder. (87×3) is 261. $261 \div 2$ is 130 — 1 remainder. When the boy said that he got the remainder this once, the boy was asked to repeat the same process once more. (130×3) is 390. $390 \div 2$ is 195 — no remainder. On the boy saying that he got no remainder this time, he was asked to say how many nines there are in the last quotient. (In 195 there are 20 nines) When the boy said that there are 20 nines, the conjuror at once guessed the right number 58. How was this accomplished?

130. [C. RUNGACHARI]. In a quarrel between two boys for 15 mangoes, a mediator finding that one of the boys was right and

the other in the wrong, settled the quarrel as follows:—He mixed 15 mangoes with 15 leaves and arranged them in a circle. He then asked the unjust boy to take every ninth fruit or leaf as he may get, beginning to count from the fruit. The unjust boy since he got only 15 leaves and not even a single mango, found that he was very nicely deceived and went away sad, and repenting for his wicked conduct. The other boy thanked the man for his cleverness in finding out the truth and for the nice trick he planned. How did the mediator arrange the mangoes and leaves?

[This is a variant of the well-known Englishmen and Turkish men problem.—B. K.]

THE SCHOOLS AND COLLEGES OF THE PRESENT DAY.

ONE of the many problems that the educationists of the present day have to tackle with, is to find a remedy for the degeneration that the schools and colleges have fallen into. Whatever the young men that now come out of the schools and colleges may say to the contrary, there seems little reason to question the opinion of those educated in 1870 and 1880 that the capacity of the average student emerging from the schools and colleges of the present is appreciably inferior to that of the average student that these very schools and colleges were able to send forth in their early years, especially when we take into account the gradual degeneration that we have been witnessing around us. For instance, the average student of the Sixth Form of now-a-days is inferior to the average student of the same Form some fifteen years ago. What could have been the causes that have led to this gradual deterioration? To arrive at the answer to this

question we should closely examine the changes that have taken place in the schools and colleges since 1870.

Leaving out of consideration the special advantage which should, in a large measure, have contributed to the success of these educational institutions in their early days, viz., the enthusiasm of both the teachers and the students for their work consequent on the charm that attaches itself to every fresh and novel undertaking, there were some general conditions favourable to their success, which have unfortunately disappeared but which, nevertheless, are capable of revival; and these general conditions are:—

(1) The proportion of the teachers to the pupils;

(2) The healthy relation between the teacher and the taught; and

(3) Habits of thought and self-reliance on the part of the students especially; and until these conditions are restored, the education in our schools and colleges is destined to go to still lower depths.

The first of the above conditions stands much in need of attention. The pupils have increased out of all proportion to the teachers, and one of the results of this increase is that the individual attention which the students of the happy days in the past had been receiving from their teachers has become an event of the past; and the worst of it is, that the teachers do not in some cases even know the names of the students that have been committed to their care.

A bye-disadvantage of the large strength of the classes or even sections of classes is that the very largeness of the number of students increases the shyness of the obtuse and slow who, if the number in the class were limited, would have an incentive to overcome

their shyness and express their difficulty to the teacher, not to speak of the advantage of the latter in distinguishing the special characteristics, if any, of each student under him and taking him with the class.

The second condition of success of the school, viz., the healthy relationship between the teacher and the students, needs more comment. In the early days of English education in this presidency, the mutual relation of the teachers and the students was so remarkable that the students had an almost worshipful regard for their teachers who in their turn loved them as their own children, paid even school-fees to those in need of this help and toiled most unremittingly for their welfare. This healthy relationship between the teacher and his students—a truly divine element in man—which has unfortunately disappeared at present, is due to a cause which deserves condemnation, viz., the appearance of the “guides, notes and made-easies” which have come between the teacher and the taught, spoiled their inter-dependence and healthy relationship and have in the end weakened not merely the students but the teachers as well. It is these “guides, notes and made-easies” that have made the students forsake their allegiance to the living voice of their teacher; and out of this one fatal step has come all the misery that our schools and colleges groan under, the loss of respect for the teacher and with it also the natural decline of interest in the students, then the indifference to the instruction given by the teacher, externalised in the whispering talk, the silent slumber and the general look of inattention throughout the class, then the antagonism between the students and the teacher culminating in open quarrel and

confusion and in the end the entire disappearance of discipline.

The advent of the “made-easies” has not only broken the bonds that united the teachers and the students together, but has worked immense mischief in other directions. It is these “made-easy notes” that have destroyed the tendency to thought and self-reliance of the students and cramped the free growth of their young minds by circumscribing them to unorganised and thought-killing information the very aim of which is not to develop thought but to make the students get through the examination. The routine particulars insisted on at the examinations having been concretised in the “made-easies,” the tremendous pains which the students of 1870 took to assimilate and permanently store learning in the mind itself and thus make it the nucleus of thought, have disappeared in the student population of to-day who get through the examinations with their learning lasting only for days—the mechanical, learning of the scrappy “made-easies” forgotten soon after the examination is over. No wonder therefore that the minds of most of the students that our schools and colleges produce in these days are found generally lacking in the moral virtue of self-reliance and in the intellectual virtue of originality. We heartily wish for the day when the “made-easies” and the pressure of these so-called examinations will be at an end.

V. VEMBU SASTRY.

OUT-DOOR LESSONS.*

I have been asked to speak to you this afternoon on ‘Out-door Lessons,’ a subject of great educational importance and interest—one that has till now been kept in the very background of the elementary school course; and I am very pleased to have this opportunity of addressing a large number of persons with teaching experience on such an important subject.

It appears to me that though we are by slow degrees emerging from a period of educational inactivity into one of progress, yet sufficient stress has not been laid in the programme of elementary school-work on what I have called ‘Out-door Lessons.’ The tendency to limit the work of the school to the four walls of the classroom and the anxiety of the teacher to keep his youths sedulously at an arm’s length from the world around them and stifle their curiosity about things that do not concern the routine life of school are as marked now as ever. It is yet to be realised by many of our teachers that ‘most of the valuable parts of the training which young minds can receive at the commencement of school-life are not attainable within the school-room.’ The ordinary school lessons as taught now afford little scope for the development of the innate powers of children and for the free play of their intellect. For they do not stimulate to any large extent the observing faculty in children, their powers of perception and reflection. Too much importance is now given to the memorising of lessons and facts; and too little to the development of the observing faculty. Children are not encouraged to observe what lies around them and to question the teacher about the objects of everyday life. They are rigorously asked to confine their attention to their lesson books and to look upon Nature as forbidden ground. Such a system of teaching is productive of no educa-

tional good. It only tortures the memories of boys and makes the teacher a mere machine ‘acting within the bounds prescribed in his lesson book.’

What then should the teacher do? He must in the first place clearly understand that instruction is not education. Instruction is the imparting of mere information and is only secondary; whereas education is the development of the child’s innate powers and is of the utmost importance. So the aim of every true teacher of children should be, not to stuff the minds of his boys with multiplication tables and the like, but to train them to use their own eyes in observing what lies around them and to use their own judgment in drawing conclusion from observed facts. For a fact discovered by a child through his own observation is of far greater importance to him than the same learnt from his text-book. No educational system is worth the name if it does not attempt at the training of the observing faculty. Because at the root of all intellectual processes lies the development of the observing powers. So then every teacher in primary schools should make it his object to train his pupils in methodical observation by a series of graduated exercises.

Then there is another important fact which the teacher of youths must take note of. Every child is endowed with a fund of irrepressible energy. He cannot sit quiet, he must be doing something or other—very often it may be some aimless work. This strong desire on the part of a child to move about here and there, to be doing something if only to satisfy his idle curiosity, is a very important factor in early education. Those ignorant of child-nature often mistake this self-activity of children for love of mischief. The teacher at any rate must not fall into such a pit-fall. He must recognise that this self-activity, this super-abundance of energy is a very healthy sign of childhood and must therefore make it his aim to afford scope for the energy to spend itself.

* Read at the Teachers’ Conference recently held at Irinjalakuda (Cochin) by Mr. N. R. Subbaiya, B.A., L.T.

These two things, namely the development of the observing faculty and the finding of an outlet for the self-activity of children are so important in the early stages of childhood that educationists have devised means to meet the two. Object-lessons, Nature-study and Out-door teaching not only afford opportunities for the development of the observing powers of children, but provide an outlet for their self-activity and satisfy in an eminent manner their desire to move about and use their hands. In the case of Object lessons the children are made to handle the objects, to feel them, to make models like them—exercises which immensely please them. In Nature study they enjoy the open air talk in the garden; they love to dissect a flower and even wish to work in the garden. As regards Out-door lessons, namely lessons given by the teacher away from the school, actual observation plays an important part; while such lessons involve bodily exercise too. During these lessons the children walk about, play and converse freely and at the same time learn a good deal.

So then you will see that if the aim of education in the early stages of the school career has been correctly stated by me, no subject fulfils it better than Out-door teaching. When you take your boys out either to the open field or to the crowded street or to a neighbouring hill, you cannot but note what a gleam of pleasure is in their eyes, how much they enjoy the walk and what store of information they lay by. Only let them free from the restraints of the school-room and from the fear of the rod, and you will find even the duller of your pupils bright and lively. You will be surprised to find their quickness of perception and their swiftness of inference. If in the course of your walk your lessons are quite informal and do not partake of anything like task-work and if you judiciously use your questioning powers, you will discover how your boys are quick to take in every detail of the things to which you desire to direct their attention.

To take a large number of boys out on such an excursion; to relax the discipline of the school-room and at the same time to take care that it does not degenerate into 'the license of the play-ground'; to leave the children to themselves and at the same time to put a skilful question or two to direct their observation in the proper channel; to watch every group of children and at the same time appear as if your eyes are not on them—all these are certainly difficulties to be overcome. But these difficulties are worth grappling simply because of the manifold advantages that accrue from such excursions. Only those who have tried out-door teaching can realise fully its advantages not only to the children but to the very teachers who undertake it. I say it is an advantage to teachers, because such out-door lessons create a bond of union between the teacher and the taught. A teacher full of enthusiasm for nature and sympathy with children cannot fail to find his way to the hearts of his pupils. And again out-door teaching prevents the schoolmaster from getting fossilised, from running in the same groove. When once he gets out of the class-room and finds himself in the presence of Nature in all its variety, it is impossible for him to limit himself to the dull pages of his text-book. Nature is sure to inspire him and he will be ready with a hundred illustrations to bring home to his pupils' minds one single idea, and his teaching therefore cannot but be effective.

Having thus far explained to you what the aim of every true teacher of children should be and shown you how it is fulfilled in an eminent degree by out-door lessons, I must define the scope for out-door teaching in the regular work of the school. Before doing so, however, it will be useful to point out that out-door lessons cannot occupy a fixed place in the time-table of the school like Object-lessons or Nature-study. It is possible to assign a number of periods every week to the teaching of object lessons. For objects are always handy and available and

the time-table can be regularly followed. Such a course is impracticable with regard to out-door lessons. For these supplement the teaching of several school subjects and can therefore be undertaken only as necessity arises. This point will become clearer when you come to learn what subjects of the school curriculum lend themselves easily to out-door teaching.

There is another difference too between out-door lessons and other subjects of teaching. A whole afternoon may have to be spent on out-door teaching while, in the case of object lessons for instance, as much time as is allowed for a period can be taken advantage of without in any way detracting from the efficiency of teaching.

Now to the scope for out-door teaching in the regular school-work. Firstly out-door teaching is practicable, nay even very necessary in connection with the reading lesson. The reading lesson, as now conducted, does not at all interest the boys. And why? Because you make your pupils plod through the lesson line by line without at first trying to excite their interest as to the ideas that are contained in the lesson. You are satisfied if your boys read fast enough and you never take the trouble of seeing that the ideas in the book are brought home to the minds of your boys. I do not at all suggest that you do not explain sufficiently the meaning and the idea of every word and paragraph. No doubt you do. But what is it after all to the child? He cannot take in these ideas as easily as you can do. 'Things before ideas, ideas before words' is a truism; but like several other truisms in education it is left to take care of itself. You cannot expect your teaching to be effective unless you directly appeal to the senses and make your teaching realistic in all possible ways. How to do this by means of out-door teaching in the case of the reading lesson, I shall explain by taking one or two instances.

I believe all of you use in your schools Marsden's vernacular readers as the text-book in

language teaching. Let me just take Marsden's Malayalam Reader for Standard III. I run my eyes over the contents and pick out such of the lessons as require out-door teaching. Here is a lesson on 'Ploughing.' The different parts of a plough are described and their uses are correctly stated. How are the furrows and ridges formed? What is meant by hoeing? What are the advantages of ploughing?—these and similar things are dwelt upon in this lesson. Now, before proceeding with the lesson in your usual way, I would ask you to take your boys out to a field that is being ploughed, make them note the different parts of the plough and their uses, and let them notice how the earth is being turned; but make it a point to bring out from the boys' observation all the ideas that are found in their text-book. Next day begin the lesson. The boys are now familiar with the ideas and if you put a question or two on what they had observed the previous day, you have prepared your boys for whatever is contained in the reading book and then it is all fair sailing. The boys will see that their book is no God-send to them and that it only contains what they themselves had noted; and this gives them an amount of confidence.

Let me take another instance. There is a lesson on "Butterflies." You are told in this lesson that butterflies are very beautiful creatures whose wings are peculiarly coloured and arranged. They lay their eggs on the leaves of plants and these eggs when fully hatched become caterpillars that eat the tender leaves for their food. It is these very caterpillars that develop afterwards into the beautiful butterflies which you see flitting from flower to flower. The different stages of this wonderful transformation are very strange even to you. Many of us, I trust, are quite ignorant of the interesting history of this tiny insect. Imagine then what it will be to the young children! If in conducting this lesson you are merely satisfied with making the boys read line after line, I am sure that the

majority of your pupils will not have understood the ideas, much less realised their significance. They might think that the author of their text-book must be a God-inspired man to give them such a wonderful revelation of natural history.

But if you take the boys out on a walk to a garden or to a place where these butterflies abound, say a country hedge, if you point out to them an egg laid on a leaf, then show them a caterpillar crawling on the leaf and then trace the connection between the two, they will be eager to examine other leaves and see whether they cannot give any further evidence of this transformation. Some of them may even take home a leaf with an egg on it and carefully watch if it grows into a caterpillar. The peculiarity of the wings may be explained and the boys will be quite anxious to give the butterflies a chase and catch some of them for critical examination. In this way the whole history of this small creature of God's creation can be learnt by the boys with great pleasure from their own direct observation.

You would have seen that in the foregoing two instances my idea was not to give you complete notes of lessons but only to point out the direction in which the teacher might set to work. The advantages of such a method of teaching are patent. The ideas are all obtained from the boys' own observation and the text-book becomes of secondary importance. You make your teaching realistic; because the boys pass from things to ideas and from ideas to words—the surest way of acquiring knowledge.

But the subject in the school curriculum that involves in a great measure out-door teaching is Geography. You must remember that within the past few years there has been a great revolution in the teaching of this important subject. The old idea that Geography is merely the description of the earth and that it can be taught by explaining a few definitions and making your boys get by heart exports and

imports and the like, is now happily becoming obsolete. It is now a recognised fact that the beginnings of Geography consist not in teaching a few isolated facts about the home district but in giving your pupils in the form of stories an idea of the existence of other countries than your own, inhabited by people quite different from you in customs, dress and manners. After thus making the boys acquainted with the vastness of this world, the teacher must proceed to explain the configuration of the world's surface—its divisions into mountains and hills, oceans and seas, basins and valleys. This stage in geography teaching is always difficult and unless your boys realise the significance of the different land forms it is vain to hope for any success in the higher stages of geographical teaching.

Even in these days it is not uncommon to find boys of the IV Standard describing the Western Ghats as a big elephant or a giant snake lying from north to south. If boys have such hazy notions of one of the chief land forms, how can you expect them to understand that mountains prevent rain-bearing winds, that they are the birth-place of rivers and that they prevent communication from one part to another? Therefore no pains must be spared to make the teaching at this stage *realistic*.

Mere oral teaching in the class-room, however excellent, cannot impress on the minds of your boys the idea of a plain or a table-land, a hill or a valley. What you must do is to take your boys to a neighbouring hill or eminence, make them stand on it and observe the view. Point out to them the difference in level and from this lead them on to the much greater differences in the level of the world's surface. Ask them what will become of the water that falls as rain on the hill on which your boys are standing and gradually lead them to think about rivers running down the slope through the valleys. If by chance you have a depression anywhere in your

home area, it will serve excellently for explaining the nature of a lake.

Let me give you here one instance of the usefulness of out-door lessons at this stage of geography teaching. Suppose you have to give a lesson on the work of rivers. In such a lesson you will be required to teach how rivers eat away land and why the water is coloured. You may have occasion to tell your boys that sometimes rivers in flood carry away large trees and deposit them in the sea. The nature of the course of a river on level ground, its bends, convex and concave, the formation of a delta at the mouth and similar other things may have to be dwelt upon. In the case of a river emptying itself into a lake, the difference in colour between the river water and that in the lake should be accounted for.

In order to teach all these things you must take the boys to an ordinary runnel in the rainy season, make them see the water flowing in the runnel, then take them to the pond into which the runnel flows and let them observe that the water in the pond after sometime becomes clear. Down at the bottom of the pond the boys may see several twigs deposited and you may ask them the reason for finding such twigs there. In this manner you may effectively teach everything in connection with the action of the rivers and lakes.

I have no time to go into details about the necessity for out-door lessons in the other stages of geography teaching. It was my object here only to indicate to you the lines along which you must proceed to teach the first steps in Geography.

Sometimes even in teaching Elementary Arithmetic out-door lessons may become necessary. For you have to give your boys an idea of relative distances and this you cannot do better than march your pupils out into the play-ground, make them measure it at first roughly by pacing

and then by the tape. In this way the idea of a mile, a furlong, an acre, can be well taught to them.

The historical sites in the neighbourhood can be made use of in story-telling. Children love to listen to stories and to satisfy this instinct teachers very often draw on their own imagination or have recourse to *Æsop's Fables*. But some of these stories seem incongruous and stilted and do not appeal directly to the senses of your boys. On the other hand stories which have for their foundation any historical ruins will specially appeal to the imagination of youths and afford them genuine pleasure. Thiruvenchikulam, the capital of Cheruman Perumal, may be made the centre of a dozen interesting stories and a visit to this place, whenever possible, is sure to give the stories an air of reality, even though it might not be actually so. A teacher living near Chalakudi should take his boys on a visit to the Travancore Lines built as a defence against Tipu and give them a number of small stories in that connection. But these are small things and an enthusiastic teacher will discover a thousand opportunities to make his teaching effective by means of out-door lessons.

I shall now proceed to consider the question how far out-door teaching is practicable in schools. Many will be the objections that will be raised against the inclusion of out-door lessons in the programme of school-work, and I shall try to foresee such objections and meet them in my own way, leaving you to discuss them at length afterwards.

It may at the outset be contended that out-door teaching disorganises the regular work of the school and that therefore the Headmaster may not be willing to allow you to take your class out and be absent from the school premises for two or three hours together. Sometimes one has to reckon with Headmasters who may even think that a teacher wishes to give out-door lessons as an excuse to idle away his time. What I would

suggest in such cases is that the teacher should go with his class on any Saturday for out-door teaching. When the Headmaster sees that this particular teacher undertakes such extra work of his own accord, he is sure to be convinced of his sincerity and is therefore likely to give him more freedom in teaching. As regards out-door lessons disorganising school-work, I for one cannot see the force of the argument. For it is no loss at all to sacrifice even once a week two or three periods of class-room teaching to teaching out of doors. For out-door lessons excite a good deal of interest in boys and are always looked forward to with great pleasure by them. It is always better to do something to lessen the dull nature of class-room teaching and this can be done by taking your boys out on specific purposes once in a week or a fortnight, as necessity arises.

The second difficulty is the ignorance of parents in this matter and their unwillingness to allow their boys to be taken away from school. Even the so-called educated parent may ask you what on earth is the use of taking the boys to a hill or a field and may say that it only makes his child a little more playful and mischievous and that the time might have been more profitably spent in giving him another dose of Arithmetic. Sometimes this is a real difficulty. An official may think that his son must not be made to work in the school garden, for his boy is not going to turn out a gardener. But this difficulty can be overcome in two ways. The easier way is to exclude from out-door excursions those boys whose parents object to their being taken out and thus deny them all the advantages of out-door teaching. The other alternative is to convince the parents of the real usefulness of these excursions and enlist their sympathy in this good cause. This presupposes a good deal of tact and good sense on the part of the teacher and is therefore more difficult.

Lastly some of you may suggest that it is well nigh impossible for any elementary school

teacher to be acquainted with all the departments of Nature and to know all about plants, animals, insects, minerals and soils, and that therefore unless a teacher is a jack of all sciences it is not possible for him to carry on out-door teaching efficiently. You may naturally ask me how it is possible for any teacher to get acquainted with the natural history of the butterfly. I say it is quite possible. To be able to distinguish the rose from the jasmine, the teak from the sal is not to know Botany. In the same way you need not be a naturalist or an entomologist to know something of the wonderful history of the butterfly. In these days of cheap books, every school library may be stocked with handy reference volumes which the teacher may consult in case of need. It is my firm belief that with a little amount of trouble and self-culture it is open to every one of us to know a little of every department of Nature.

No, Sir, the real difficulty is not with the Headmaster, nor with the parent; but it is with us—teachers. Several of us have false pride. Some think that it is beneath their dignity to be seen outside, teaching a class of boys. If it is a sacrifice of your dignity to do your duty thoroughly then I grant it is so to be found teaching your boys in a field. I am almost tempted to assert that this idea of false pride is due to the want of love for the profession of teaching. A teacher imbued with intense love for his profession will not care what others say of his method of teaching out-of-doors, so long as he is convinced of its success. It is only a half-hearted teacher that raises all sorts of objection. Therefore divest yourselves of all false pride, keep before you the highest ideal of teaching and strive at all times to approach that ideal. No doubt the teacher is not well paid for all this extra trouble and our profession alas! is 'the sorriest of all trades.' But this is no reason why you should not get to love it having once embraced it.

THE KUMBAKONAM EDUCATIONAL CONFERENCE AND EXHIBITION, 1910.

(JULY 9 AND 10).

The age of cramming is dead and the age of realism in education has set in in right earnest. Teachers and students are no longer mere book-worms—mere passive recipients of other men's thoughts: they are realizing to themselves the ideas conveyed in the books used by them in a manner not easily forgotten. A spirit of emulation which is rare in adults has been exhibited in all the exhibits and is a healthy sign of greater progress in the near future. One educated under the old system feels that one's teachers had not done as much for one as the modern teachers are doing for their pupils. It is some consolation that even pupils of the old schoolmasters, who are now schoolmasters themselves, are capable of taking in new ideas of teaching and applying them with a fair amount of success.

THE MAN AT THE HELM.

Mr. K. S. Vaidyanatha Aiyar, B.A., L.T., the Sub-Assistant Inspector of Schools of the Kumbakonam Range, has infused new life even into old fogs. His enthusiasm is only equalled by his capacity to instruct even the unwilling and credulous. Ever since he came to the range, he has been holding monthly conferences at which model lessons on the various subjects of study in Elementary Schools have been given. The Exhibition is the fruit of these regular and well-attended meetings.

THE PRESIDENT.

The unexpected death of the late lamented Mr. A. S. Vaidyanatha Aiyar, B.A., Inspector of Schools of the VIth Circle, appears to have damped the zeal of the workers a little; but Mr. V. R. Venkatarama Aiyar, B.A., L.T., who succeeded Mr. Vaidyanatha Aiyar and whose experience of exhibitions and conferences is wider even than that of Mr. Vaidyanatha Aiyar, expressed his

readiness to help the proposed Conference and Exhibition by presiding over the proceedings for the two days it was to last, though by so doing he had to cancel a number of his own engagements and deny himself the rest on Sunday which an itinerant officer is only too anxious to enjoy. It was an accidental coincidence that the Exhibition of 1909 was presided over by Mr. Venkatarama Aiyar himself when he was Inspector of the Circle. His opinion of the second Exhibition and Conference must be acceptable to all inasmuch as he alone had an opportunity to compare the one with the other. Mr. Venkatarama Aiyar is an officer of the Department with more than twenty-five years' experience—experience gained after strenuous and intelligent work in schools and colleges of all grades and it was lucky indeed that the teachers were able to secure his co-operation.

VISITORS—BOTH PROFESSIONAL AND OTHERWISE.

Besides the Inspector of Schools of the Circle, there were present at the Conference many of the Lecturers of the Government College, the Assistant Inspector of Schools of the District, two Sub-Assistant Inspectors of other ranges, five Supervisors of Primary Schools, two hundred and fifty teachers of Elementary Schools in the Kumbakonam Range, Training school students from the Trichinopoly, Tanjore and South Arcot Districts, not to mention the teachers of High Schools in the town. M. R. Ry. Rao Babadur S. Appu Sastriar Avergal, B.A., Headmaster and Proprietor of the Native High School was present throughout. Mr. S. Narayanaswami Aiyar, Headmaster of the Mayavaram Municipal High School was one of the visitors. Mr. R. Swaminatha Aiyar, Headmaster of the Town High School where the Conference was held and his numerous assistants attended the whole session. Mr. Pichamuthu, B.A., L.T., of the St. Peter's College, Tanjore, attended the major portion of the Conference. Among others I should not omit to mention the following:—

Mr. Venkatasubba Rao, the Divisional Officer in charge of Kumbakonam; the two Sub-Magistrates of the town and the Police Inspector.

The Town High School Hall was literally crammed and the order that prevailed throughout the session was a practical lesson on discipline.

THE EXHIBITION.

The exhibits of 1909 were arranged *school-war* in the various class-rooms of the Town High School; consequently a complete view of the whole was not commanded. This year the exhibits were arranged methodically in front of the Town High School, in a building called the "Yanaiyadi Elementary School," one of the oldest Results System schools in the town. I may classify the exhibits under the following heads:—

- (1) Maps and apparatus for realistic geography teaching.
- (2) Pictures in brush and chalk-work for illustrating reading lessons.
- (3) Do. for Nature study.
- (4) Wax models for illustrating moral stories.
- (5) Agricultural implements and machinery.
- (6) A real rice-field exhibiting the various processes of raising paddy.
- (7) Weaving industry—models of the fly-shuttle loom and various counts of yarn.
- (8) House-building—card-board specimens of houses, schools, bungalows, flower-gardens and railway stations.
- (9) Engines—card-board models showing the various parts of a locomotive engine.

Among exhibits intended for geography teaching, the tellurion, the orrery and the volcano had most attractions for me. The delicate manual skill and the resourcefulness of the teachers who had made these three sets of apparatus are beyond all praise. The dignity of manual labour could not have been better

illustrated than by these specimens of work exhibited by the teachers. It is hoped that the pupils of these teachers will have laid to heart the lesson taught by their teachers. The cheapest materials had been used in the apparatus and great dexterity in manipulation has been displayed in turning them to account.

The clay-modelling by students approaches in perfection the models of Panruti-make and I have no doubt that a good trade can be established if more clay-models in colours are made for the *Navaratri* exhibitions.

The brush and chalk work is capable of considerable improvement. If only the right spirit is kept up, the next Exhibition is certain to show us better specimens.

The weaving demonstrations by the pupils of Elementary Schools was a welcome departure. The nimble fingers of the little boys, if rightly directed, may achieve better results and the cause of Swadeshism receive a new impetus.

The water-lifts, the wind-mill and the *Kabila* lift were all well made and in working order. Agriculture and weaving were well represented in the exhibits as they ought to be in all rural schools.

Most of the maps had been drawn by the teachers themselves and display an accuracy which is highly commendable. I would like to see more maps by students themselves at the next Exhibition whenever it comes to be held.

THE CONFERENCE.

The Conference programme was a crowded one consisting of nineteen items. All the items were gone through within the time assigned to each, showing a respect for punctuality very rarely observed by Indians.

The opening began with "God Save the King" and a few other songs by the pupils of Elementary Schools. The second item was a lecture by Mr. K. Venkatarama Aiyar of the Town High School on "Moral Instruction in Elementary Schools."

The lecturer took a review of the indigenous schools of olden times when no lesson was begun without prayers. There were certain books specially devoted to moral instruction such as "Nitisara" which every student was expected to know by heart. In Tamil likewise boys were taught only moral precepts in the poetry books they learnt—as a matter of fact only poetry was taught in the earliest stages. The responsibility of giving moral instruction to the youngsters should not be thrust entirely on the shoulders of teachers. Parents had a duty to perform in that respect. Instruction received during the five school hours might be rendered null and void if the homes of the students were not well ordered. It was therefore of prime importance that students' homes should be such as to facilitate the work of the school. The difficulty of imparting moral instruction divorced from religion was next dwelt upon. Notwithstanding that unfavourable circumstance in India, it was possible to teach moral lessons by means of stories constructed on the concentric system from the Infant standard upwards. The story of Harischandra might be enlarged from the lowest class upwards so as to include all the details. It was the duty of the teachers to be well-posted in illustrative stories that would appeal to young imaginations. Above all the teachers should remember the cardinal principle that example is better than precept.

The third item in the programme was a demonstration lesson on Civics given by the boys of one of the Elementary Schools in the town. The subject was "the trial of a criminal for theft of plantains." It was an object lesson to many who had never had the misfortune to enter the premises of a Criminal Court either in the capacity of parties or of witnesses. The little ones displayed a precocity that was admired. The accused little boy even set up an *alibi* and complained that the Police had tortured him to extort a confession from him. The boys who

played the part of legal advisers to the accused acquitted themselves very well.

Then were held four competitive examinations in drawing, writing, mental arithmetic and recitation. Prizes were awarded to the best among the competitors.

Mr. R. C. Krishnaswami Aiyar, M.B., C.M., a private practitioner at Kumbakonam, delivered a lecture on Bacteriology in Tamil which was highly appreciated. We cannot have too much of Hygiene in Elementary Schools in these days. Villages are becoming more filthy than towns and a knowledge of practical Hygiene alone is likely to mitigate the ravages of cholera and other epidemics. The thanks of the audience were given to Mr. R. C. Krishnaswami Aiyar for his very instructive lecture.

The first day's proceedings were brought to a close by Mr. R. Swaminatha Aiyar, B.A., L.T., Headmaster, Town High School, with an astronomical lecture aided by magic lantern slides. Mathematical geography which to many teachers must have been a sealed book was very fully explained by the lecturer.

The second day's proceedings were rendered very enjoyable by a lecture and demonstration on Electric Telegraph by Mr. K. C. Subrahmanyam Aiyar, M.A., L.T., Science Lecturer in the local Government College. The Honourable Rao Bahadur N. Krishnaswami Aiyangar presided over the morning's proceedings. The Avaniapuram Elementary School boys gave a demonstration on Civil Courts wherein the correlation of studies was very well illustrated. Mensuration, surveying, fencing and allied subjects were brought into relief by the little boys. The President, himself a lawyer, enjoyed the demonstration and complimented the teachers on the excellent training that was being given to the students in Civics.

In the evening, Mr. V. R. Venkatarama Aiyar, the Inspector of Schools, presided. The students of the Tirunagesvaram school gave a demonstra-

tion lesson on the working of the Post Office. The mystery of the Post Office was unveiled and the smartness exhibited by the boys was marvellous. The Avaniapuram boys played *Kolattam* in the ancient fashion and recalled the days when during the "Mahanavami" holidays, boys played *Kolattam* and earned for their teacher a small addition to his income.

The Honourable Rao Bahadur N. Krishnaswami Aiyangar promised two prizes, one for *Kolattam* and another for the best *Kindergarten* work done by pupils below 12.

It was nearly six in the evening when all the items had been gone through except the President's remarks. Mr. V. R. Venkatarama Aiyar is a native of the Tanjore district and graduated from the Kumbakonam College. Naturally enough, he has a very high opinion of his compatriots and of mother Cauveri whose waters not only supply all that the body of man wants, but also sharpens the intellect. He expressed himself thoroughly satisfied with the Conference and the Exhibition. The exhibits showed much improvement on those of the previous year. In regard to moral instruction in Elementary Schools, he was of opinion that greater responsibility rested on the shoulders of the teachers and that they should on no account shift it to those of the parents. They must set before the students the best models for imitation. He called on the teachers to pay special attention to Hygiene and paid a tribute of deserved praise to the Sub-Assistant Inspector of Schools, Mr. K. S. Vaidyanatha Aiyar, through whose personal exertions, the Conference had been brought to a successful termination.

The President and Rao Bahadur Appu Sastriar were garlanded and the Conference was declared closed.

I was present at the Conference held in 1909 as at that of the current year. I was not a little struck by the spirit of co-operation which prevailed among the whole body of teachers.

The green-eyed monster did not show himself at any stage of the proceedings. The Assistant Secretaries to the Teachers' Association displayed great energy and tact throughout. Manual training is receiving much greater attention than it did of yore. Drawing and drill to which we students of the seventies of the 19th century were entire strangers are being systematically taught. Drill is invariably accompanied with music and some schools have provided themselves with harmoniums. The demonstrations on Civics were simply admirable. Most students attempt to sing vernacular poetry in appropriate *ragams*. Indian music is being resuscitated by the new methods of instruction and it is devoutly to be hoped that the spirit of revival will spread itself to other branches of study.

I must not omit to mention the fact that Messrs. Ramachandra Aiyar and Rangaswami Aiyangar, Supervisors of Primary Schools of the Range, heartily co-operated with the Sub-Assistant Inspector of Schools in the matter of making the Exhibition and the Conference the success they have proved.

K. VENKATARAMA AIYAR.

MORAL INSTRUCTION.*

Educational controversies in all countries nowadays turn upon moral instruction, whether it should be at all given in schools, how it is to be given and on what sanction it should rest. On the first of these points this Conference has already heard some weighty opinions and it is needless to tread similar ground at length. Suffice it to say that the ideal course, *viz.*, home education, particularly of a moral nature is hardly practicable universally anywhere, least of all in our country where the vast majority of the guardians of children are illiterate and have scarcely any conception of the existence of the problem. If ideal homes were at hand I should confine the

* Paper read before the Secondary Teachers' Conference at Bombay by Principal Mr. R. P. Paranjpye.

schoolmaster to merely intellectual and possibly physical instruction. Even as it is it must be sadly recognized that even those parents who can *intellectually* see the need and the duty of the moral upbringing of their children do not actively do anything to discharge this responsibility and consequently we have to do what we can in this matter with the next best agency at our disposal—and a very bad second it is, *viz.*, the schoolmaster. Otherwise under the increasing stress of life, particularly in cities, we are likely to neglect this important part of our duties to the coming generations.

The need for moral instruction in schools being thus manifest, the question of methods next stares us. It is easy to talk in generalities in this matter. We may say that the prevailing atmosphere of a school should tend to impress the ideal of morality not only as an intellectual perception but as the very essence of their life. No doubt, an ideal headmaster, assisted by an equally ideal and numerous staff of assistants, will bring this atmosphere into being. But over and above the unattainable nature of these conditions we have to look to the outer vitiated atmosphere in which the vast majority of children pass a great portion of their time. The result of the best system in school alone—specially a day-school—is, therefore, bound to be imperfect.

The most important element of moral instruction in schools is the personality of the teacher. A good teacher can improve the tone of the boys under him wonderfully in a very short time. A bearing ever gentle, a deep sense of truth and a contempt for everything that is false or mean, a consistent regard for the rights of others will make the boys of such a teacher of far better character than those who have been fed on daily lessons in morality whether enforced or not with the assistance of theological beliefs. No opportunity should be lost in enforcing a simple code of morals on the boys. This need not be

done in a harsh way. In fact boys respond very quickly to moral impulses if these are consistently encouraged from the beginning. This is probably the best way of moral instruction. But as said above this depends a good deal on the personality of the teacher. If a teacher is harsh or his ways repelling the pupil will even get an aversion to the ordinary rules of conduct which he may try to enforce.

Another well-known way of encouraging social habits among boys is to make them fond of manly games particularly such as encourage joint action. Over and above their efficacy in improving the physique of the pupils these games if properly supervised and played in their true spirit will be a very good school of moral discipline. While impressing on the boys the necessity of doing one's best while the game lasts care should be taken to bring them to an attitude of mind which will take a defeat quite as coolly as victory and which will be neither too much elated by success nor too much depressed at a fancied humiliation provided one has done his best. Otherwise, as in a few cases it has unfortunately happened, we may be importing into healthy games the spirit of professionalism and games then become mere instruments of teaching trickery and meanness. These games if properly used will inure the boys to the lesson which cannot be learnt too early, *viz.*, that this world is not full of the sweets of life only but that the bitter as well as the sweet have to be expected as a matter of course. Unless such a lesson is early learnt one is apt to be a cynic early in his life and I am afraid we are having too many cynics among us even at present.

Over and above these indirect ways of moral instruction which require careful handling I now turn to the set lessons in morality. I am afraid that boys are apt to neglect abstruse lectures and in fact lecturers are very likely to forget that they sometimes talk above the depths of their young listeners. A few simple truths of morality can

be effectively impressed on young minds by appealing to their sense of fair play. The lesson of truth speaking can be enforced on them by a little elementary examination of what would happen if nobody's word could be depended upon. Young minds can be turned equally easily to brutish as to angelic ways and if their little brains could be made to see the desirability of certain kinds of conduct and the undesirability of certain other ways it is very likely that they will put them into practice. With older boys and men intellectual convictions are very hard to get realised into action; with little children they are done immediately. I believe that a few lessons should be given to boys in an impressive manner to make moral laws familiar to them and to show them that these laws have, on the whole, worked good to society.

Such lessons it need hardly be said should be well illustrated by a good deal of biographical matter. This kind of illustration should be, as far as possible, chosen from what they already know or what is likely to be familiar to them. Illustration from natural history and from the example of people of other countries will also come in very useful. We have been trying to give such lessons in our school once a week and it is found that they do some good. Generally the life of a well-known person is used as a peg to hang some well-known moral truth upon. In such lessons it will probably be found out that the persons who figure as heroes in history are not of much use. Ordinary history deals so much in the more brutal virtues that except in the hands of a very good teacher, the life of a historical hero will often bring home to the boys a lesson contrary to what is intended to be conveyed. Good stories will also come in handy and the quality of the lessons should be graduated to suit the mental capacity of the boys under instruction.

A teacher has to take care that in such lessons his words will not be open to obvious retorts from the boys. Nobody is so quickwitted in seeing

the fallacious reasoning in ordinary moral preaching as boys and they are very keen scenting any objections. Thus it must be made clear to them that sometimes apparent breaches of moral rules lead to success and hence wordly success should not be made the sole basis of a moral truth. A clever boy is often likely to arise who will point out illustrations where even in his experience this has occurred and hence it is best not to take too high a tone in such lessons. We have all read with intense enjoyment those skits of Mark Twain on the Good Little Boy that never prospered and the said Little Boy that always prospered. These sketches convey a real lesson to the teacher of morals. Let the teacher himself acknowledge that his lessons admit of exceptions. If he chooses this kind of humble attitude he will find that he commands the sympathy of boys better than if he adopts an infallible air. What teacher has not experienced the sympathetic relations established with his pupils when he acknowledges to them that there are some things which even he does not know or understand?

In enforcing moral lessons on the mind the boys' instincts and social opinion will be generally found sufficient guides. There will not often appear in the class a boy who wants a more logical sanction for morals; and if a boy is found for whom these guides are not sufficient, ten to one he will find theological sanction equally insufficient. After all in a few cases there might be need for a definite *ipse dixit*; and it is safer that in his case it should be the *ipse dixit* of the teacher rather than of somebody or something that he cannot very well conceive or realise. It may happen in later life that he will grow out of this necessity and then from the religious point of view itself it is better that he should not grow out of the need for religion.

But what I am more afraid of in making morality depend upon religious sanction is the danger to morality itself. Religion is altogether an individual's personal matter; but morality is not a thing personal only but it concerns the

whole society. In making morality depend upon religion we run the grave risk of loosening the moral ties if as is very likely to happen in after life, the religious sanction on which they were made to rest comes to be no longer regarded as binding. To take a well-known illustration, among Hindus drink has been regarded as a religious sin for centuries. Drink was fairly rare among all classes but soon after the introduction of Western education among our people, the claims of orthodox religion came to be minutely examined and when in several instances religious duties lost their binding, even the prohibition that our religion imposed on drink came to be removed; the first generation of educated Indians had thus no keen sentiment against the vice of drink and several of them, as if to signify to the world their emancipation from religious slavery, openly took to drink to their own ruin. If however in their case, the sentiment against drink had been implanted on purely social and hygienic reasons on an appeal to their intellect in their childhood, this reaction would not have taken place. In times like ours which are rapidly moving intellectually, where land-marks that were but yesterday regarded as perennial are being removed to-day and are likely to be forgotten to-morrow, it is best not to cling to too many rocks. The one solid rock on which by our very nature we can surely rest is our own reason. The dry light of reason may not be satisfying to some minds but it is the only one that is not likely to prove a veritable will of the wisp.

This is neither the place nor the occasion to touch upon the truth or the reverse of any particular religious sanction except in the way of practical instruction; and it behoves us to recognize fully the difficulties that a teacher of morality on a religious basis will assuredly meet. The only difficulty which I shall mention is the dilemma on the horns of which such a teacher will surely be placed by a boy, who need not be extra clever, when he asks why some things are regarded by our religion as right which are regarded by another religion as wrong; how can

then the alleged basis of morality be regarded as absolute? If eating pork is a heinous sin with one set of people, beef with another and any meat at all with a third, to what are we to trust? To such a difficulty there is no sufficient answer.

Again it will be admitted that every religion prescribes certain duties which it regards at least as rigorously binding as the moral duties which it prescribes only incidentally. Thus a Christian is exhorted to keep the seventh day holy as warmly as he is asked not to covet his neighbour's property. Now I want to keep these two sets of duties as distinct as possible. As said above it is likely that in these times religious duties may come to be neglected but I do not desire that moral duties should be neglected simultaneously. These latter can be founded on quite other considerations. Let religious duties keep their place on their own merits; morality is quite able to stand on his own legs, on the accumulated experience of ages and the inherited ideas which have become the very essence of human nature. We may otherwise find absolute theologies defended because they serve a useful moral purpose, because with their disappearance the whole social structure which is based on morality may come down with a sudden crash.

I have taken my stand so far on general principles which are applicable to all peoples but in the case of our own country the case is doubly strong. The basing of moral instruction on religious sanction may be possible in a country which professes one sect or one single religion; in such a case the disadvantages may to a certain extent be balanced by the good achieved. But when as in our country there are various religions, each religion divided into innumerable sects and each sect divided into many separate sections, when the feeling aroused by any religious question is of a pitch which can hardly be conceived in Western countries, when in fact the responsibility of a man is in inverse ratio to the number of people he is able to associate with without coming into conflict with the prevailing religious ideas, it will be easily seen that the

less we have to do with religion in moulding the character of young children the better for our national being. Let boys be taught to see that there are some principles which they can all believe irrespective of the fact that they belong to one particular religion or several. It is only in this way that our various races can be brought closer together. Western education and contact with European civilization are already bringing all our people together as Indians. Let us not by any act of ours strive to put back the hands of the clock. They cannot be really put back without deranging the whole machine.

Time will not permit me to dilate on the practical difficulties into which we are led if we take religion as our basis for moral instruction. Even the staunchest supporters of religious sanction admit that a fairly wide definition will satisfy nobody. We see in the educational controversies of the West that the drift is towards secular education not simply as a reasoned conclusion but also because the various denominations are not able to agree among themselves. Would it not be better to choose the alternative proposed because it is founded on judgment rather than on mere necessity?

Before concluding I shall only say that the views I have put forward are personal to me alone and do not commit my colleagues who are engaged with me in educational work. Most of them agree with me in thinking that education in India had best be secular but the manner and the substance of my paper are solely my own.—*The Fergusson College Magazine.*

TEACHERS AND TEACHING.

ADDRESS BY MRS. BESANT.

Mrs. Besant delivered an interesting address on "The Functions and Duties of a Teacher" to the members of the Teachers' College Association, Saidapet, recently. Sir S. Subramania Iyer occupied the chair, and the meeting was attended by the Principal and Professors of the College, and a large number of teachers who were undergoing training in the College.

THE LECTURE.

Mrs. Besant, who was received with loud cheers, said that at all times in the history of the world the office of a teacher had been held in reverence. In every class of population they found a certain anxiety to learn and to know something of the world in which they lived. The feeling that desire should be gratified was becoming more and more recognised and statesmen and rulers responsible for the welfare of the people were realising that on the education given to the young depended the essential welfare of the State, whatever might be the curricula of the subjects to be taught that were prescribed by the Department. In regard to the method of teaching, the voice of the teachers should have a very important and weighty part. It was necessary that teachers should contribute their help and devotion to the solving of the educational problem. The more they could think of education, not as a profession but as a most dignified function which they had to discharge in the State and in the nation, the more would they realise that into their hands the future of the nation was very largely committed; the more they realised that the boys and girls that they were training were the citizens of to-morrow, the more useful part would they play in the work of the State. It used to be so amongst the Indian peoples in ancient times. In those days no teacher would dream of taking payment for teaching, and teaching was an honorary office. Now-a-days teaching took its place as a profession.

THE DIGNITY OF TEACHING.

While adapting themselves to modern customs, people taking to the profession of teaching would do well to consider the dignity of the office. To give instruction to a human being was not really a thing that could be paid for with money. It was paid for with reverence, with honour and with love. The old relation between the teacher and the pupil was one of the sweetest and the most beautiful relationships that ancient India had known. While admitting that the old state of things could not obtain now, she thought that with that ancient ideal they might, to some extent, sweeten and dignify their modern ways. They who were going to become teachers ought to realise that the boys who came under their influence were living human beings, and that their influence over them depended on their winning their hearts as well as dominating their intelligence. Therefore, teachers should learn to know their boys in the class-room, in the play-ground, and in their homes if possible. In the play-ground a boy often learnt more than in the class-room and in the play-

ground the teachers became the friends of boys, ever holding up before them the chivalrous ideal of the man who knew how to play honourably, bravely, fairly, without a shadow of deceit or unfairness of any kind. They should all realise that a boy's heart was the easiest thing in the world to win. A little kindness, an occasional gentle and affectionate word, correcting a boy's blunder, not with a frown and an angry word but with a gentle smile and explanatory statement, would often draw a boy to the teacher. It was a mistaken idea that a teacher could only keep discipline by fear. Discipline was kept much better by love than by fear, by gentleness than by harshness. If a teacher could not enforce discipline without getting angry, then he was not fit to hold his office. It was the duty of a teacher to be a friend of every creature and most especially of those who came to him to be taught.

THE TRAINING OF CHARACTER.

Then, with regard to the training of character, character in the teacher was the first thing which was all important, for the character of the teacher was reflected in the pupils. Children were most eager to learn. It was the duty of teachers to take advantage of that quality in the children. If a boy was not interested in the lesson it was generally because the teacher did not know how to teach. The teacher was not to blame the boy for being stupid, but himself for being dull. A teacher, therefore, needed love, sympathy and the power to look at a thing from the boy's standpoint, the power to win his love, to influence him and, above all, a noble character. In dealing with their boys they ought never to deceive them, never to say a thing that was not thoroughly true, never to make a promise that they could not fulfil. They ought to trust their boys, and trust was the thing which was most wanting between the modern teacher and the boy. Only by straightforward, honourable conduct and trusting boys as honourable, would teachers strengthen truth in those who were weak in it and gradually make them feel that they would rather undergo severe punishment than soil their lips with a falsehood. She laid greater stress on the character side of the teacher than on the information side of him. They were responsible for not merely teaching boys, but also for moulding their character.

INDIAN PROBLEMS.

There were some matters of vital importance in modern India in which teachers had very important duties to discharge. First, there was the question of early marriage. It was the duty of teachers to bring their influence to bear on parents

of children to discourage that most objectionable practice. Unless teachers got rid of that curse, India would never be physically fit to take her place among the nations of the world. Scattered through the whole country at the present time were many newspapers and books which were trying to stir up bad feeling between different nationalities in the land, that were constantly appealing to boys and breeding in their hearts a spirit of hatred rather than of love, trying to stir up anger against nations that were united on this great Indian Peninsula, misrepresenting everything, attributing bad motives where bad motives did not exist, suggesting suspicions where trust was deserved, picking out a certain number of facts and taking them away from everything that surrounded them and putting them boldly forward as part of a general policy, thus poisoning the minds of thousands of young men in India. They all knew the kind of papers that she meant. They could not keep them out of boys' hands or prevent boys from reading them. That being so, it became the duty of all interested in the education of youths to try to put boys' minds on the right line, that they might not be easily turned aside into those bad paths of sedition and disloyalty, which was very largely done by misrepresentation. Let them take political economy, for instance; there was no subject of greater importance than political economy to students in colleges. Boys needed to learn it and how to apply the main principles of that science to the various conditions that they found scattered in the Indian land. They needed to understand how the resources of India could be best employed, how the various possibilities of India could be best developed and how Indians could be induced to put themselves into the work and improve their country.

They further needed to learn what they ought to do to open up its resources, make it wealthy where it was now very often poor. There was great difficulty in doing that, because India had not entered into the whirl of competition. Those methods of the modern world were not familiar to them and so it was very difficult to get Indian people to invest their money in some undertaking which would ultimately prove of great value, though for the time it meant expenditure. How were they to learn that those were ways in which Western nations had built up the prosperity which they were anxious to emulate? Certainly not by abusing the Western nations or the English people who had done these in their own country and knew that they resulted in national wealth, who were very anxious to invest their money here and willing to finance many schemes of public utility.

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Making railways, canals for irrigation, improvement of agriculture, all those things required expenditure of money.

THE DEVELOPMENT OF INDIA.

It was not true, speaking generally, to say that Englishmen invested their capital in India because they wanted to carry away India's money to England. It was not fair to represent that as a continual drain on the resources of India, because India would never have those resources developed unless money was spent. She was continually trying to stir up Indians to realise what would be gained by an enlightened commercial policy. While she urged on the people the duty of buying home-made articles, she was not going to take any part in abusing those who were investing foreign capital to develop the resources of India. All those questions needed some knowledge of economics for their proper understanding. These were very much misrepresented and twisted; and this might be largely prevented by teachers if they would explain to boys how these things were done, and try to make good feeling and mutual trust, instead of hatred and suspicion. When she found everything that was being done for India abused by a speaker or a writer, she felt that such a one was poisoning the very sources of good feeling between Englishmen and Indians, and that it was the duty of every good citizen not to separate but to unite, not drive apart but draw together, the ductile minds of boys and their hearts. It was their duty to try and get them to understand before they criticised, get them to study before they attacked.

SCHOOL-BOYS AND POLITICS.

If teachers talked with boys who had gone wild on political questions, they would find them crude and foolish. For such a state of things the boys were not to blame; their elders were to blame for misleading them. Teachers should counteract that evil influence, by giving right knowledge, prevent them from being misled into mischievous paths. More than ever in the teachers' hands lay the future of India, to train the boys to love of liberty, but understanding civic discipline and civic obligation, teaching them that only as men grew worthy to wield power was power permitted to come into their hands; teaching them that study should proceed the forming of opinion, that knowledge should be gained before words expressing thoughts were used. If teachers could rise to the level of their high calling, if they could feel the weight of their responsibility, if they could realise that the peace of India in the near future depended on her teacher,

more than perhaps on any other thing, if they realised that only by peace, order and discipline a nation could grow in India, then they would try to train their boys to be worthy citizens of this Great Empire so great was their power; so great also their responsibility. She begged them to use their power for good, to use that mighty influence they possessed to build up a strong, responsible and worthy citizenship in India. Let them all work together. They were all men; what mattered the colour of the skin? To them, who believed in reincarnation, what were these questions of race that they could make so much distrust and hatred? Let them learn to love, not hate, let them learn to co-operate, not to antagonise. Let them give credit for good motives until a bad motive was proved beyond dispute. If they spread that feeling in the school, then the India of the future would bless the teachers.

Mrs. Besant resumed her seat amidst loud cheers.

THE CHAIRMAN'S SPEECH.

The Chairman said:— I am sure I shall not be taken to task, if, on an occasion like this, I venture to call attention to certain views that have been expressed not long since, by a very distinguished friend of mine, with reference to the subject of education, in which none is more deeply interested than the body of experts at whose invitation I occupy the chair to-day.

The views in question will be found trenchantly expounded in the comparatively short chapter, entitled "The Problems of Education" in Babu Baghvan Doss's Book on the Science of Social Organization, published only the other day. The practical object aimed at by my friend, would, if I am not mistaken, seem to be the revival, so far as it may be possible in these days, of the system of education and training recommended by Manu, the great Law Giver; and of which one of the features was the moulding of the character of the pupil by means of his residence with the preceptor during the period of pupilage. That this system was actually in vogue in many parts of India is undeniable; and in ancient times it probably was very general in the country. The disappearance of the system from the face of the land was, of course, due to the class ordained to be the custodians of knowledge and teachers ceasing to be what they were intended to be, in consequence of changes, social or political, which are inevitable in the evolution of the different races of mankind. The point for consideration is whether educational work can, to any extent, be once more carried on,

in the light and spirit of the old system, so as to avoid some of the defects which modern methods disclose.

TEACHERS AND PUPILS.

In my humble judgment it would be rash to give an unqualified negative answer to the question. The matter would seem to be one for actual trial. The Government Member for Education I presume, cannot be expected, at least for some time to come, to be able to persuade his colleagues to sanction any such experiments by the Department of Public Instruction. It would not, however, be unreasonable to suggest that the authorities in the territories of Indian Rulers, Potentates and Chiefs, should start and carry on educational work on the old, simple and effective lines, adapting it to modern conditions. Be this as it may, it is to my mind the plain duty of the Hindu community to try and supply the want of indigenous institutions, maintained at an expense far less than that of those under State management, and providing for instruction and training better suited to the real needs of the generality of the inhabitants of this country. Of course, this can be done only if we can secure men to come forward to undertake the work of the teacher more on account of the nobility of the calling than for the sake of the pecuniary profit which its exercise would bring. It is fervently to be hoped that the day is not distant when such workers will not be scarce. In the Central Hindu College, with which my friend Baghvan Doss has been long connected, we have an instance, which will go to support this hope.....

INDIGENOUS INSTITUTIONS.

The only other thing required to carry on successfully the sort of work under consideration is the finding of the funds wanted for the construction of healthy but inexpensive school-buildings and quarters, both for the staff and the pupils, as also for making old age provision in respect of the former, in addition to their maintenance during the period of their actual service. I do not think I shall be casting any unmerited slur on my countrymen if I say that, at present, they will not make any contribution towards such cost from their private purse, though no other object would be worthier of such support on their part. Nevertheless, the money needed for a few institutions of the kind that would serve as models can easily be found from sources which are ready to hand, if only the community will rise to a sense of its duty to utilise those sources, as it is undoubtedly entitled to do, for the purpose. Of course, I refer to

the surplus income of public religious endowments, choultries, etc., so numerous in this part of India. I have not the slightest hesitation in asserting that the application for educational work of funds belonging to this class of endowments, after duly providing for what may be spoken of as the primary services in every such institution, is perfectly consistent with the highest Hindu authority and usage. Religion, public worship and the study of sciences, higher and lower, were inseparably connected parts of an organic whole under the social polity established by the ancient ordinance. The sharp line of demarcation now sought by some to be drawn in connection with the question of the application of the surplus income of public endowments, for purposes of education, is utterly alien to Hindu sentiment. There was a time when, as observed by Baghvan Doss, were attached to great temples, not only the counterparts of what we name to-day schools and colleges and hospitals, but also even museums, parks, gardens, and theatres and places of dance and song, and of other amusement and recreation; such institutions being placed in the shadow of the temple, on the general principle which pervades all the ancient culture, of subordinating and refining the physical to and by the super-physical, and not allowing the latter to be coarsened and degraded by, and into, the former. By way of an argument against any doubt that may occur as to the truth of the picture suggested in this last sentence, reference may be made to the fact that temple festivals with their attendant processions and tamashas so common down to this day, are but degenerate survivals of old institutions introduced with the intention among others of providing for the masses recreation and amusement, which, by their association with religion, would be protected from becoming mere harmful carnivals, while the pageants themselves would naturally tend to attract to the shrines a concourse of worshippers who may not otherwise attend.

The speaker quoted from an article in the *Times of India*, headed "Moslem Endowments," as affording an exceedingly striking corroboration of the view that in the East religious worship, charity, education and even the practice of the arts have, among all peoples and at all times been inseparably linked together.

After again quoting from a communication from the Rajah of Tanjore to the British Resident, dated 1801, giving an account of the practice and procedure then prevailing in the great endowments founded in that district by the rulers of the Marhatta dynasty, the Chairman said:—

"In short, the plea for educational work being made entitled to participate to some extent in the expenditure of the surplus income of public endowments, religious or charitable, originated generally by royal grants, must be understood as standing on the unshakeable foundation that according to the Sanathana Dharma not only knowledge of the Scripture, but also diligent cultivation of the sciences, logic, grammar, philosophy, metaphysics and the like is among the things indispensable to the attainment of spiritual illumination, the goal of human progress."

The proceedings terminated with the usual votes of thanks.—*The Madras Mail*, 25-7-10.

OUR ENGLISH LETTER.

LIVERPOOL, July, 1910.

The death of Goldwin Smith has removed one of the great figures of the educational world. He was a man who appealed to a wide public. His work was not, though with his qualifications it might well have been, of the scholastic or purely academic order. His career at Oxford, where he graduated and was afterwards Regius Professor of Modern History, was sufficient proof that he was possessed of the instincts and the acquirements of a scholar: his scholarship was indeed thorough and polished. But he did not in after days set himself to the laborious sifting of first hand sources and study of unknown periods which would have been necessary to enable him to enrich us permanently with a fuller knowledge of history. He endeavoured to make history rather than to write it. He was always possessed of ample means, and marriage did not impoverish him. And his tastes lay with the cares of the great outer world which is so often neglected of the student. He was an unyielding foe of oppression and unrighteousness. He dealt slavery in the United States one of its sorest blows. The journalistic gift he had almost in perfection. His pen was a fount of English, clear and strong. Justice and truth have had few more whole-hearted or more effective champions. Richard Cobden, who was one of his chief friends, said in 1864: "I am a great advocate of culture of every kind, and I say when I find a man like Professor Goldwin Smith or Professor Rogers, who in addition to profound classical learning have a vast knowledge of modern affairs, and who, as well as scholars, are profound thinkers, these are men whom I know to have a vast superiority over me, and I bow to them with reverence." There would be little difficulty in showing that his opinions

were not always worthy of assent and his prophecies often falsified by events, but nothing that could be said would praise too highly his moral fervour and the splendid courage with which he set forth his convictions. If he was not always on the right side, he strove unceasingly to be on the side of right. He was the friend of all good causes, and in his death humanity has lost one of her great sons. He met with an accident some months ago from which he partially recovered, and he feared he was to remain for years a helpless cripple. But mercifully death came. Most of his money he has left to Cornell University.

Dr. Robertson of Canada has just passed through this country. On the last day of the Royal Agricultural Show he delivered a lecture in the Nature Study department. His speech was like a breath from a new quarter of heaven, though the word 'breath' is hardly adequate: it was a half gale. He is the leader in a new educational departure in Canada which has Government support and valuable allies in influential quarters. Sir William Macdonald has put hundreds of thousands of pounds at the disposal of Dr. Robertson for the working out of his principles. The idea that Latin and Greek are the primary factors in a true educational system is, in Dr. Robertson's terse phrase, "all not." The first necessity is nature study and manual training. The touch of the fingers, the sight of the eyes, the native curiosity of the mind, come first. The school garden takes the place of the alphabet. In Canada the foundation of the whole educational system is the school garden. Work there begins after careful instruction in the school on the scheme to be developed. Mathematics and drawing emerge naturally from the work done, and to be done, with the hands in the garden and the carpenter's shop. The natural sciences, according to Dr. Robertson, are founded in botany. The germination of the seed is the fundamental fact of life. Research work is the basis, and not the apex, of education. The youngest pupils begin with it: it is not, as in England, foolishly attached as a sort of optional flourish at the end.

An hour or two after his lecture in Liverpool, Dr. Robertson was on board a liner *en route* for home. There he is to take the Chairmanship of a Commission appointed by the Canadian Government. The Commission is an attempt to discover how best the youth of Canada can be made fit mentally to cope with the gigantic material resources now being investigated by the Committee on Lands. The wealth is there, and what is sought is the best means of training those who will prove good miners. The Commission is to visit England,

France, and Germany. And it is interesting to hear that Dr. Robertson hopes to learn something in England, though England has so much to learn. He certainly cannot complain of ill-housing. Macdonald College could not be improved upon for its specific purpose. An ideal site has been admirably used. The buildings lie between the junction of rivers that flow down to Montreal and the Grand Trunk and Canadian Pacific Railways that now have stretched themselves to the far Pacific.

A remarkable headmaster has passed away in T. G. Osborn. He was at the Bar when he was suddenly asked to take over the headmastership of Kingswood School, Bath. He held that post for twenty years. The school was small, but under his headship it had a period of brilliant success. In particular between 1875 and 1885 it produced a number of scholars who have left their mark on Universities at home and abroad, and particularly on Oxford and Cambridge. Mr. Osborn was a great teacher, and had a remarkable personality: and personality after all is the requisite in a headmaster. We may not be able to define precisely what we mean by personality, but we can tell it when we see it, and we can tell when we do not see it, and it was markedly manifest in Osborn. He preached and practised the Gospel of work, and was successful in instilling his spirit into his pupils. He was a layman, but a remarkable preacher: and he could preach to boys, an art beyond the reach of most. From Bath he went to Colwyn Bay where he established a private school, which he sold a few years ago for £35,000. His son succeeded him there as headmaster a few months ago.

We mentioned last month that the preamble to the Statute appointing a delegacy to supervise women students had been passed by a big majority. On May 31st the amendments were taken and defeated, and the final vote was taken on June 14th. Mr. Godley, the new Public Orator, led the assault, but the Statute was carried by 106 votes to 53, exactly 2 to 1. Next term Convocation will decide the matter. It is not possible to say what way Convocation will vote, as this cannot possibly be construed into an attack upon the Church, and the country clergy may feel it consonant with their duty to stay at home caring for their flock, or even to vote different ways if they come up. But the philogynists are confident of the issue.

Opinion with regard to the proposed compromise regarding the elementary schools difficulty is still undecided: which is a good omen. That it has lived till now even though we are living in peaceful days (when the Radical lion will lie down even in the Veto Chamber with the Conservative lamb)

is much in its favour. One or two of the educational papers have given it a mild blessing. Are we in sight of port? Perhaps: but there will be storms before we get there.

Yesterday's budget has robbed the educationist of the "whisky money." A fixed sum from the Exchequer is substituted. This is well in these days when according to the Chancellor the Conservative is refusing to drink whisky because of his anger at the new tax and the Radical is refusing because of his anger at the publican, who imposes it before it is imposed on himself.

"The school of the future is the day school." So says Sir James Crichton-Browne, Doctor of Medicine.

Reviews and Notices.

HISTORICAL TALES FROM SHAKESPEARE. BY A. T.

QUILLER COUCH. EDWARD ARNOLD. 1s. 6d.

Readers of Lamb's *Tales from Shakespeare* have always felt a desire to have at least some of the tales not included in them, in narrative form. The want has been supplied by an admirable volume from the pen of the accomplished writer, Mr. Quiller Couch, entitled, *Historical Tales from Shakespeare*. The plot from as many as eight of the Historical plays is narrated here in a style which must commend itself highly to all lovers of simplicity and elegance. *Coriolanus*, *Julius Caesar*, *King John*, *Richard II.* *Henry IV.* *Henry V.* *Henry VI.* and *Richard III.* are dealt with in this volume. The style is admirably suited to the class of readers to whom it is primarily intended—young students at school—and the book can certainly be read with profit even by grown-up men.

A praise-worthy feature in the narration is the author's attempt to bring out prominently the motive-springs of action and to explain the chief traits in each character. Missing links and the historical matter necessary for an appreciation of each story, are supplied. The young reader will also profit himself by getting to know much of Shakespearean vocabulary by a study of this work.

It is with great pleasure that we recommend it for use in our schools—the name of Mr. Quiller Couch, who has recently been knighted, forming sufficient guarantee of its literary merit.

PARISIAN SCENES FROM A TALE OF TWO CITIES.
EDITED BY J. H. LOBBAN, M.A. THE CAM-
BRIDGE UNIVERSITY PRESS. 1s.

The large part played by French Scenes in *The Tale of Two Cities* has always served to make that masterpiece of Dickens more interesting as a picture of the French Revolution than as a novel depicting English life. It may even be ventured that the excitement roused by the scenes of the Revolution in the novel, stifles the plot, which is almost forgotten in our breathless pursuit of the fate of the Revolutionaries. Mr. J. H. Lobban has done well to edit these scenes together in a handy volume divested of the cumbersome appendages of a long novel. With Mr. Lobban's careful editing, the book may be usefully employed in the High School Forms and young minds may be given the opportunity of coming into contact with one of the greatest writers of Fiction. Within nearly a third of the length of Dickens' novel, Mr. Lobban has succeeded in confining its most stirring passages and picturesque scenes. The introductory account of Dickens, the synopsis of a *Tale of Two Cities* and the notes at the end serve to enhance its value as a school text-book.

THE CHILDREN'S SHAKESPEARE: AS YOU LIKE IT,
KING LEAR, AND THE MERCHANT OF VENICE.
MACMILLAN & CO., LTD. 3d. each.

These little manuals afford teachers the opportunity of introducing some of the masterpieces of Shakespeare to young readers. The introductory readings to the selections are furnished from Lamb's *Tales from Shakespeare* and some of the best scenes are selected for study. While preserving the most beautiful parts in each play, the study has been made easy by the omission of several unimportant and difficult scenes. The discrimination of the compilers may be judged by the fact that from *As You Like It* have been selected the parts representing Orlando's altercation with Oliver (I. 1.), the wrestling scene ending with Rosalind's veiled declaration of love, (I. 2.) the flight of Celia and Rosalind from the Court (I. 3.) the picture of the idyllic life of the exiles in the Forest of Arden (II. 1.) the old Adam's expression of devoted attachment to his young master, (II. 3.), Orlando's meeting with the senior Duke and his party, (II. 7.) and the scenes of Orlando's wooing (III. 2 and IV. 1.).

The arrangement of the selection as a continuous reader with intervening extracts from Lamb, the carefully chosen exercises in composi-

tion at the end of each lesson and the attractive illustrations must recommend them for wide use in schools.

A HANDBOOK OF HISTORY OF EDUCATION. BY
WILLIAM L. BANETTO, B.A. MYLES STAND-
ISH, LTD., ELECTRIC PRESS, RANGOON.

This is essentially a compilation from various sources of facts and opinions bearing on the history of education and is intended to assist students reading for the teachers' certificate examination. It will serve as a companion to larger works on the history of education. To students preparing for the L. T. examination of the Madras University the book may be helpful.

CHAMBERS'S EFFECTIVE READERS WITH COLOURED
ILLUSTRATIONS, BOOK III. W. & R. CHAM-
BERS, LIMITED, LONDON AND EDINBURGH.

We have not had the pleasure of examining the other books of this series, but from an examination of the book before us we are glad to say that the reader is very instructive. The lessons are skillfully graduated. The reader may be used in the upper forms of Lower Secondary Schools.

WIDER BRITAIN: PAST AND PRESENT, WITH
COLOURED ILLUSTRATIONS AND MAPS. W. & R.
CHAMBERS, LIMITED, LONDON AND EDIN-
BURGH.

This book forms a combined history and geography reader of the British dominions beyond the sea. Nearly seventy-two pages are given to India. Much historical information is given in a very readable form so as to interest young minds. The book will be found useful in our High Schools.

EDUCATIONAL OPPORTUNITIES IN LABORATORY WORK.
BY D. J. FLEMING, M.A., M.Sc. PUBLISHED
FOR THE PUNJAB TEXT-BOOK COMMITTEE BY
RAO SAHIB M. GULAB SINGH AND SONS,
LAHORE. 1910.

We have much pleasure in bringing this book to the notice of our readers. The aim of the book is to show that practical scientific training alone can impart the love of impartial and impersonal judgment, the habit of dispassionate and accurate observation, the wholesome search for facts rather than speculation and the appreciation of the nature of evidence. It is divided into five sections, the

first of which shows how laboratory work furnishes the best opportunity for mastering scientific subjects. The second deals with the development of scientific habits, and the remaining three sections treat in succession of the development of the spirit of unbiassed, unprejudiced verification, the development of the capacity for research, and the moral and social implications of laboratory work. Nothing inculcates individual responsibility so much as laboratory work. We agree with the author in all that he has said about the benefits accruing from laboratory. Teachers and students would do well to read this book.

LESSONS IN ENGLISH COMPOSITION—ORAL AND
WRITTEN. BY J. C. NESFIELD, M.A.

Books I, II and III contain each two stages, the whole being graduated according to standard and thus distinguishing it from others already in the field. According to the New Regulations, principles of General English are to be based on the text-books; but, teachers are helped by specimens of exercises grouping examples. The formation and re-casting of sentences, the substitution of one part of speech by another, conversion of sentences, and use of words and phrases are given in proper order and oral exercises with hints on composition to pupils and teachers for using them are of service. The series may be used by teachers in secondary forms and adapted to recent needs.

A TAMIL RENDERING OF THE CHIEF SCENES IN
SCOTT'S IVANHOE, AND A COLLECTION OF TAMIL
STORIES FOR THE YOUNG. BY V. RAJAGOPALA
AIYANGAR, SOMETIME TAMIL PANDIT OF THE
NATIVE HIGH SCHOOL, KUMBakonam.

We have read the two books with great pleasure. Tamil Prose has always been neglected by indigenous scholars. It is only of late that a movement has begun which augurs well for the future of the language, now thrown into the back-ground both by the University and by the School Leaving Certificate Examination. *Ivanhoe* is full of stirring scenes which have been now rendered into readable and accurate Tamil and fit to be used in all the Form classes of High Schools. *The Collection of Stories* is a good book for youngsters in the Standard classes. We only wish that Mr. Rajagopala Aiyangar will continue the good work and make himself useful to the reading public. The price of

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Ivanhoe is six annas and of *The Collection of Stories* three annas.

(1) WEIGHING AND MEASURING. BY W. J. DOBBS.
METHUEN & CO. 2/.

(2) EASY PRACTICAL MATHEMATICS. BY H. E.
HOWARD, LONGMANS GREEN & CO.

These two books are on Practical Mathematics and are not suited to be used as text-books in any of the Forms in Indian schools, nor are they written with a view to meet the requirements of any particular class of students out in India. But they are fit to be consulted by teachers of Mathematics. Now-a-days there is so much agitation about the correlation of Science and Mathematics in High Schools and the first book will help one to effect such correlation in practical work. The second book mentioned above treats of all the subjects of 'Elementary Mathematics,' viz., Arithmetic, Algebra and Geometry well correlated with one another. The questions are very practical and simple and are such that a student going through them will clearly understand the principles of 'Elementary Mathematics.' The book will be found to be useful by the teachers of 'Elementary Mathematics' prescribed for The Secondary School Leaving Certificate.

THE MERCARA HIGH SCHOOL MAGAZINE, June 1910.

It has now become the fashion for every school or college to have its own magazine recording its progress as well as of its students. We have just received the first number of this magazine. As the editor says in his introduction, this is intended to bring into friendly and familiar relation with one another all the former and the present students of the school, we wish the magazine every success.

THE VIVEKACHINTAMANI.—The June number of the *Vivekachintamani* opens with an excellent article on "The King's Sympathy and India's Ideal" followed by a pathetic prayer to the Goddess at Kumbakonam. In the article on "The Science and Conduct of Life" the burning question of the hour 'Religion and Morality' is dealt with. The writer's method of dealing with the subject is indicated by the following extract:—"Nature is the great Vedantist; and in all her works—for those who have eyes to see—She is but elaborating and manifesting that mighty process which the inspired sages of the past endeavoured,

as best they could, to interpret in the language of common speech." And the writer's ability to interpret Nature's laws in the language of common speech is evident from what Dewan Bahadur P. Rajaratna Mudaliar, C.I.E., and Gurus-Bhakta-Kesari, Dewan Bahadur A. Ramachandra Iyer, the retired Chief Justice of Mysore, who has devoted himself heart and soul to the erection of the Kalady-Memorial, have to say to the writer: the former compliments him for "devoting his time and talents to spiritual investigations" and expresses his wish "that our young friends of the rising generation will devote some portion of their time to such enquiries;" while the latter bears eloquent testimony to the Editor's "energy and enthusiasm in the noble cause of making people enlightened and healthy" when he met him in 1893, and further notes with pleasure "that since 1900, you have been working in a new direction and that you are able to suppress your mind."

One important feature of the magazine worthy of notice is that it deals systematically with the mystic science of Yōga or mental training, taking up and publishing the text in translation of the Great Avadhūta, Sri Sadasiva Yōgindra's recipe called "*Siva-yoga-Deepika*." There is an interesting preface to it and an intelligent exposition of the Allegory of Tara and Chandra from the point of view of Rāja-yōga. There is an inspiring exposition of the six-lettered Mantra, "*Shaddākhari*" and a folklore presentation of the New and Enlightened Girl's Ideal of Marriage, and her contempt for the man who seeks her hand only from mercenary motives. It is written in Ballad-style and is most attractive and we understand that already it has attracted much attention and created a sensation among the female circle of its readers. Reform like Charity begins at home, and Mr. C. V. Swaminatha Aiyar in this respect has been a consistent and persistent worker, will be admitted by all who know him closely and well, though his retired life of meditation and quiet contemplation, limits the circle of his friends to earnest spiritual students from whatever part of the world they hail.

The July number of the same educational magazine has an erudite and lucidly written article on "The Religious feeling—its use and abuse," in which the subtle but none the less important cause of all mischief by the abuse of religious feeling is pointed out, as also the noble use to which that exalted feeling can be and have been from time immemorial put to, by noble souls who have worked for the progress of

mankind. There is also a pen and ink sketch of the Marriage-conditions prevailing, with its ideal and the degeneracy it has attained to now in practice. The second chapter of *Siva-Yōga-Deepika* by Sri Sadasiva Yōgindra is full of important points which require the deep study of all earnest students in psychology as well as pedagogics. For the system of mental-training obtaining in the East is admitted by the greatest and most perfect and Sri Sadasiva Yōgindra is the greatest adept in the science and art of Yōga whose holy influence is still widely felt and appreciated throughout Southern India.

A PRIZE DISTRIBUTION.

The distribution of prizes to the students of the Gopalasamudram High School took place on Tuesday the 5th instant with R. G. Grieve, Esq., M.A., F.R.G.S., Inspector of Schools, Seventh Circle, in the chair, in the spacious hall of the High School building recently built on an attractive site in the centre of the green fields by the river *Thambra-Varuni*, at a cost of nearly Rs. 12,000 from the Manager's own personal funds. The Headmaster read his report in which he sketched the history of the institution from its birth till now, and in reviewing the several features of the school-work during the year under report, he discussed, by the way, some of the pressing questions connected with the secondary education, increase in the rate of fees and the new school-final scheme, etc. He concluded his report with a devout prayer to the Almighty that the sacred profession of teaching which has descended low from the high pedestal it once occupied, should once more be elevated to that position which its sacredness is entitled to in a civilised community. Then three pieces of recitation, Arthur Hugh Clough's "An Incident," J. Wagstaff's "Art of Grumbling" and Lewis Morris's "New Order" were successfully gone through. After the distribution of prizes about 50 in number, including a silver medal for a Tamil essay, the President delivered his stirring presidential address. In the course of which he congratulated the Manager and the Headmaster on the very good beginning they had made. It was easy to underestimate the educational value of a good building. In many places there were only architectural monstrosities for proper school houses. The new building was well-designed for satisfying the educational needs. From what he had seen there during the inspection he had every reason to expect a great development next year. The burden of maintain

ing a public institution should not be allowed to rest on a single individual; but should be shared by all the rich men in the neighbourhood. He congratulated the prize-winners, saying that winning prizes in school was one thing and worldly success was another. But all should justify their education in their after-careers. Those who would get responsible appointments should fill them with a due sense of responsibility and those who would inherit large wealth should use it well for the benefit of their fellowmen. With a vote of thanks to the chair and three cheers to their Imperial Majesties King-Emperor George V and Queen Mary, the interesting function was brought to a close. The school was given a special holiday in honour of the prize distribution and the Inspector's visit.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—The following postings have been ordered:—

Mr. T. K. Hanumantha Rau, sub pro tem Lecturer, Kumbakonam College, to be Lecturer in the same College.

Mr. M. Ramaswami Aiyangar, Third Assistant and Acting Second Assistant, Teachers' College, Saidapet, to be Assistant Inspector of Schools, Nellore district, with effect from 1st January 1910, but without prejudice to his present acting appointment.

Mr. A. Arulanandam, Assistant Lecturer, Rajahmundry College, and Acting Lecturer, Kumbakonam College, to be First Assistant, Training College, Rajahmundry, with effect from 21st March 1910, but without prejudice to his present acting appointment.

Mr. M. Seshagiri Prabhu, First Assistant, Mangalore College, to act as First Assistant, Training College, Rajahmundry, vice Mr. A. Arulanandam.

Mr. S. N. Krishna Aiyar, First Assistant, Practising section, Training College, Rajahmundry, to act as First Assistant in the Training section of the same institution with effect from 21st March 1910 and until relieved by Mr. M. Seshagiri Prabhu.

Mr. T. Sivakumara Sastri, Lecturer, Arts College, Rajahmundry, to act as Vice Principal, Training College, Rajahmundry, during the absence of Mr. M. Venkataratnam on leave or until further orders.

Mr. W. A. Hensman to act as Lecturer, Arts College, Rajahmundry, vice Mr. T. K. Hanumantha Rau.

The above appointments to have effect from 4th July 1910.

The following promotions have been made:—

Mr. W. A. Hensman to act in the ninth grade of the Provincial Educational Service during the absence of Mr. M. Venkataratnam on leave or until further orders.

1. Rao Bahadur M. Rangachariyar, from the second to the first grade.

2. Mr. S. Subrahmanya Aiyar, from the third to the second grade.

3. Mr. G. V. Subbarayudu Sastri, from the fourth to the third grade.

4. Mr. S. A. Steele from the 5th to the 4th grade.

5. Mr. U. Raghavendra Rau, from the sixth to the fifth grade.

6. Mr. V. R. Venkatarama Aiyar, from the seventh to the sixth grade.

7. Mr. C. A. Wilkinson, from the seventh to the sixth grade.

8. Mr. W. C. Old, from the eighth to the seventh grade.

9. Mr. M. Venkataratnam, from the eighth to the seventh grade.

10. Mr. H. W. Callaghan, from the ninth to the eighth grade.

11. Mr. V. Krishnaswami Jatavallabhar, from the ninth to the eighth grade.

12. Mr. Khaja Khan Sahib Bahadur, from the ninth to the eighth grade.

13. Mr. T. K. Hanumantha Rau to the ninth grade, permanent.

14. Mr. M. Ramaswami Aiyangar to the ninth grade, permanent.

15. Mr. A. Arulanandam to the ninth grade, permanent.

16. Mr. S. N. Krishna Aiyar to act in the ninth grade.

17. Mr. M. Seshagiri Prabhu to act in the ninth grade.

NOTE.—The promotion of officers Nos. 1 to 6, 8, 10 and 14 will have effect from 1st January 1910, of officers Nos. 7, 9, 12, 15 and 16 from 21st March 1910, of officer No. 11 from 1st February 1910, of officer No. 13 from 5th July 1909, and of officer No. 17 from 4th July 1910 or from the date of his joining the Training College, Rajahmundry, when the promotion of No. 16 will cease.

Mr. P. S. Tirumalai Aiyangar, Supervisor of Elementary Schools, Avanashi, is to act as Sub-Assistant Inspector of Schools, Coimbatore Range, in the probationary class, vice Mr. T. K. Venkata Rao on other duty or until further orders.

Mr. V. R. Venkatarama Aiyar, Assistant Inspector of Schools, Coimbatore District, is to act, with effect from 16th June 1910, as Inspector of Schools, VI circle, vice Mr. A. I. Mayhew, on Foreign service.

Mr. S. Soundararaja Aiyangar, Sub-Assistant Inspector of Schools, Hosur Range, acting in the Coimbatore Range, is to act, with effect from 16th June 1910, as Assistant Inspector of Schools, Coimbatore District, vice Mr. V. R. Venkatarama Aiyar on other duty or until further orders.

Mr. T. L. Subba Rao, Sub-Assistant Inspector of Schools, Ramnad Range, is granted privilege

leave for two months with effect from the date of relief, and Mr. S. Krishnaswami Aiyar is appointed sub-protem Supervisor of Elementary Schools, Mudukolattur to act for him in the Probationary class during his absence on leave, or until further orders.

Mr. A. Rangaraja Sastri, Sub-Assistant Inspector of Schools, Srivilliputtur Range, is granted privilege leave for two months from the 1st July 1910 or from the date of relief thereafter, and Mr. R. L. Krishna Aiyar, Supervisor of Elementary Schools, Tinnevely, is to act for him in the Probationary class during his absence on leave, or until further orders.

Mr. M. Bava, Sub-Assistant Inspector of Schools, Central Mappilla Range, has privilege leave for two months, with effect from the date of relief.

The following arrangements have been made:—Mr. A. Khadir Kutti, Sub-Assistant Inspector of Schools, North Mappilla Range, to be Sub-Assistant Inspector of Schools, Central Mappilla Range—to join on relief.

Mr. M. Bava, Sub-Assistant Inspector of Schools, Central Mappilla Range, to be Sub-Assistant Inspector of Schools, North Mappilla Range—to join on the expiry of his leave.

Mr. P. Muhammad, Supervisor of Mappilla Schools, Parapanangadi, to act as Sub-Assistant Inspector of Schools, North Mappilla Range, in the Probationary class, vice Mr. M. Bava.

Miss C. M. Lynch, Inspectress of Girls' Schools Southern Circle, has combined privilege leave and special leave for six months from or after the 6th June 1910.

Miss P. F. Parsons, Second Assistant Inspectress, Madras Girls' Range, and Acting First Assistant Inspectress, is to act as Inspectress of Girls' Schools, Central Circle, and in the Indian Educational Service, during the absence of Miss Arnold on leave or until further orders.

Mr. K. V. Rama Rau, Sub-Assistant Inspector of Schools, Penukonda Range, has privilege leave for two months with effect from the date of relief.

Mr. R. Krishnaswami Aiyangar, Sub protom Supervisor of Elementary Schools, Gooty, is to act for him in the probationary class during his absence on leave or until further orders.

Mr. N. Swaminatha Aiyar, Sub-Assistant Inspector of Schools, Georgetown Range, has privilege leave for a month from or after the 15th June 1910.

Mr. K. C. S. Anantanarayana Aiyar, Sub-Assistant Inspector of Schools, Triplicane Range, is to be in charge of the Georgetown Range in addition to his own duties during the absence of Mr. N. Swaminatha Aiyar, on leave or until further orders.

Mr. J. Vittal Pant, Assistant Inspector of Schools, Anantapur district, to act in the ninth grade of the Provincial Educational Service during the absence of Mr. G. V. Subbarayudu Sastri Garu on leave or until further orders.

Mrs. M. A. Shrinivasa, Third Assistant Inspectress, Kistna-Guntur Girls' Range to act as Inspectress of Girls' Schools, Southern Circle,

during the absence of Miss Lynch on leave or until further orders.

Mrs. M. Engler, Sub-Assistant Inspectress, Trichinopoly-Madura Girls' Range, to act as Second Assistant Inspectress, Madras Girls' Range, during the employment of Miss Parsons on other duty or until further orders.

Miss E. Hunter, Sub-Assistant Inspectress, Godavary Girls' Range, to act as Third Assistant Inspectress, Kistna-Guntur Girls' Range, vice Mrs. Shrinivasa on other duty or until further orders.

Mrs. M. A. Shrinivasa to act in the Indian Educational Service during the absence of Miss Lynch on leave or until further orders.

Government Technical Examinations.—The following appears in the *Fort St. George Gazette*:—It is hereby notified that the following rule is substituted for clause 1 of article 6 of the scheme relating to Government Technical Examinations:—“All persons who have studied up to the seventh standard of an elementary school and qualified for an elementary school leaving certificate or who have passed in the compulsory subjects of the late Lower Secondary Examination (in the case of the Elementary Technical Examinations), and all those who have qualified for a Secondary School Leaving Certificate or have passed the Matriculation Examination or in the compulsory subjects of the late Upper Secondary Examination (in the case of the Intermediate and Advanced Technical examinations). The Commissioner may accept any other examination which he considers equivalent or higher.”

University of Madras—Supplemental Convocation, 1910.—A supplemental Convocation for the purpose of conferring degrees was held in the Senate House on the 20th instant at 5-15 P.M. The Hon'ble Mr. Justice Wallis, the Vice-Chancellor, presided. About twenty Fellows were present. At 5 P.M. the Vice-Chancellor and the Fellows assembled in the old Senate Room. The reports of the examiners were read. The Graces of the Senate on behalf of the candidates for admission to the several degrees were supplicated in the following order:—Law, by the Hon'ble Mr. Justice V. Krishnasamy Aiyar, the Hon'ble Mr. Justice Sankaran Nair being absent; Medicine, by Lt.-Col. C. M. Thompson, I.M.S.; Engineering, by Mr. W. H. James; and Arts, by the Hon'ble Mr. J. H. Stone. The Graces were passed. The Vice-Chancellor and Fellows proceeded in procession to the Senate Hall. The candidates stood up and remained standing till the Vice-Chancellor and Fellows had taken their seats. The Vice-Chancellor explained the object of this Convocation. The candidates made the usual declarations. The candidates (186) were then presented to the Vice-Chancellor who admitted them to the respective degrees and signed the record of the degrees conferred and dissolved the Convocation.

Industrial Scholarships in Madras.—The Acting Director of Industries recently submitted for the general approval of Government his proposals regarding the award of scholarships in Industrial schools under his control. These scholarships are not tenable in schools classed as 'technical' or 'commercial,' or in other institutions, the principal object of which is literary education. There are 35 Industrial schools under the control of the Director of Industries, in which the teaching of as many as 40 different subjects is recognised. One hundred and ninety-nine scholarships, of the aggregate value of Rs. 566, are to be awarded amongst these schools, of which eight will be for the Advanced grade, of Rs. 9 each; 20 for the Intermediate grade at Rs. 6 each; 60 for the Elementary grade at Rs. 3 each and 55 and 56 scholarships (Elementary D and C Standards) of Rs. 2 and Re. 1½ each, respectively. The Director of Industries remarks as follows in respect of the scholarships generally:—

A large number of applications for scholarships from Industrial schools which were received late had to be rejected, and judging by the number already received in this office, the increase provided in the number of scholarships for award in Industrial schools is fully warranted and can only be provided for, without exceeding the budget provision of Rs. 6,800, by reducing the values of the scholarships in the two highest grades and enhancing them in the three lowest. The gradation in the revised scale is much more gentle than in the old, and is, in my opinion, better suited to Industrial schools which are for the most part supported by Mission funds and the pupils either orphans or the children of indigent parents. The rising of scholarship values in the lower classes will encourage pupils to continuing up to the elementary, and thereafter; particularly in carpentry classes, they begin to earn wages and will therefore feel less the reductions proposed.

The total annual cost of the scholarships now sanctioned amounts to Rs. 6,792. The Government in their order approving of the proposals in this respect emphasise the principle laid down at the Industrial Conference, Ootacamund, that scholarships or stipends given to students in Industrial schools should be confined to members of the artisan or to others whose families are already engaged in the trade and have directed that this principle should be embodied in the regulations governing the grant of these scholarships. The scholarships for the Elementary grade will be tenable for one year while those for the Advanced and Intermediate grades will be tenable for two years each. All applications for these should be made to the Director of Industries, Madras, through the authorities of the schools.

The Saidapet Training College.—In the annual Report of the Saidapet Training College for the past year, the Principal draws attention to the fact that

a large proportion of the candidates for Government scholarships had to be rejected in view of the limited number of scholarships available. In view of the excellent work done by the College in raising the standard of education in the Presidency, this certainly seems a great pity, and it is to be hoped that it will be possible soon to admit a larger number of pupil-teachers for training in the College. Another important point to which Mr. Hall draws attention in his report is the danger arising from the abolition of the practical part of the L. T. Degree Examination. There is, in the Principal's opinion, a danger that the students will, in future, pay less attention to the practical side of their work, since they will no longer be examined in it. His suggestion is that, to remedy this defect, a Committee be appointed to assist the Principal in the difficult task of awarding and refusing the certificates of practical work. It is to be regretted that neither of the important points above referred to are noticed either in the remarks of the Director of Public Instruction on the report or in the final comment of the Government. Apart from these questions, however, the College appears to be doing excellent work, and has attracted applications for admission from students in various Native States and from the Punjab. Attention is drawn, both in the Director's comment and in the Government comment to the urgent need for improving considerably the standard of English teaching, to the poor-ness of which the abnormal number of failures in last year's Matriculation Examination is attributed.

The Presidency College Students.—With reference to restrictions of admission of Mahomedan students to the Presidency College, the Director of Public Instruction says that Government has limited the admission of Mahomedan students on reduced fees to the first and second year classes to 35 in each year. No Mahomedan student should be admitted who has not passed, in the first and second division, his entrance examination. The Government has also imposed similar limitations to Hindu students from mofussil schools.

Training College, Rajahmundry.—The Government is pleased to accept the offer of the Principal, Government Training College, Rajahmundry, made on behalf of the Teachers' Association attached to the College, to endow two prizes in connection with the College, one in the name of His Excellency Sir Arthur Lawley and the other in that of the Hon'ble Mr. A. G. Bourne, C.I.E.

The Kumbakonam College.—In submitting his report on the working of the Kumbakonam College for 1909, Mr. T. O. Hodges, Principal, remarks:—

“For the First Examination in Arts 38 students were sent up by the college and 21 passed, 3 being placed in the first class. Two other students also, who had read in this college during part of the

course, obtained first classes. The results, though fair, were disappointing after the brilliant results of the last two years; and I am inclined to think that the students hardly did justice to their abilities, two candidates, at least, on whom I had relied for first classes, failing to pass. In the B.A. examination the results were extremely satisfactory. There were no failures at all in History, Philosophy and Tamil; and in the English Language Division 29 out of 34 passed, with 2 first classes and 10 second. These figures are far superior to anything during the last ten years at least. In Sanskrit the only first class in the Presidency was obtained by a student of this college."

In forwarding the report to the Government, the Director of Public Instruction remarked as follows:—

"The report, which is interesting and exhaustive, bears evidence of progress in all directions, and the Principal and the staff deserve to be congratulated on the efficient working of the institution during the year. It is hoped that the several building operations connected with the college will be carried on as rapidly as possible during the ensuing summer vacation."

The Government in recording the report observed as follows:—

"The Government have read the report with much interest. The results of the year were distinctly satisfactory. It is presumed that the Director of Public Instruction has checked the figures relating to fee receipts shown in the annual report with those given in the statements furnished by the Accountant-General."

Progress Report of Rajahmundry College.—A G.O. has been recently issued on the proceedings of the Director of Public Instruction as to the progress of the Rajahmundry College during the year 1909. Mr. Mark Hunter, M.A., the Principal, went on furlough from the 5th July, handing over charge to Mr. O. J. Couldrey, M.A., who is responsible for the present report. Certain minor changes, temporary and permanent both preceded and followed the Principal's furlough. The main feature is the improvement in the numbers upon the roll. In 1908 second term, there were 153 only, while in 1909 second term, they totalled 201. Of these 201, 191 were Hindus, 166 being Brahmans. 191 of the 201 were of the middle class, 182 being from the landholding, 56 from the official classes. The three districts of Godavari, Kistna and Vizagapatam contributed 189 of the total. The library consists of 6,241 volumes. Resort was made in 1908 to these by 6,584 professors and students, but in 1909 the number increased to 9,785. The results are not so satisfactory. For the F.A. Examination, 37 appeared, but 2 only passed in the first class, 13 in the second. For the B.A. English 29 appeared, and 19 passed in the third class and 3 in the second. For the M.A. Branch 6, English, 3 appeared, and 1 passed in the

third class. The total expenses of the Institution for the year were Rs. 32,718-14-7. Towards this Rs. 9,408-13-0 were contributed in fees. Some structural re-arrangements are recommended by the Director and agreed to by Government.

The V. R. High School, Nellore:—The Venkataraja's High School Day Association held its fourth celebration, on Sunday, 3rd July. Mr. Velandai Gopala Iyer, B.A. B.L., Vakil, Chittoor, an old pupil of the School, presided over the celebration. About 110 old students gathered together and the celebration was a unique success.

The College of Engineering:—The report of this College for the year 1909 is in some respects disappointing reading. There is a falling off in the number of students. In 1907 the average number was 313, which declined in 1908 to 253, and in 1909 to 204. The receipts from students in 1907 amounted to Rs. 24,000, in 1908 to Rs. 14,830, in 1909 to Rs. 17,849. The receipts in 1905 were nearly Rs. 31,000 with an average number of students of 294. It is to be noted also that the net cost per student in 1905 was only Rs. 229. It had risen to Rs. 300 in 1909. The Director of Public Instruction notes the further decline in the strength of the College, and it is pointed out that posts of the value of from 50 to Rs. 200 per mensem have been offered to the number of 112 to the graduate students during the past year. The Public Service must suffer in efficiency if the number of competitors for these posts continues to fall as it has apparently been doing, or if, in order to maintain the number, the qualification is to be reduced as proposed by the Principal. It is by no means certain, however, that the want of certain academic qualifications for admission will lower the general standard of excellence in the College, in so eminently practical a branch of study as Engineering. The lack of candidates for admission to the College may be due to a variety of causes, partly perhaps to the dislike of the clerical classes to anything like manual labour. The question is one of interest, and is likely in the future to affect the efficiency of the subordinate grades of the P. W. D.

School of Commerce, Calicut.—The Government have sanctioned the Director's recommendation of the proposal made by the Headmaster of the School of Commerce to make certain extensions at a cost of nearly Rs. 8,000 to the new building now under construction owing to the recent additions to the number of classes at work and the teaching staff.

CALCUTTA.

Agricultural College.—The Government of Bengal is seriously considering the question of establishing an Agricultural College at Bhagalpur.

The Central Hindu College.—Affiliation to the Allahabad University of the Central Hindu College,

Benares, up to the B.Sc. in Mathematics, Physics, and Chemistry has been sanctioned.

The Students' Advisory Committee.—The Bengal Advisory Board for Indian students has taken up the publication of a series of pamphlets containing useful information for Indian youths proceeding abroad for purposes of education. The Advisory Board has created a keen interest among Indian youths in pursuit of knowledge, who have in most cases sought expert advice from the Secretary to the Advisory Board. Some days ago the first batch of students from Bengal under the advice of the Advisory Board sailed for England, and a second batch of students will leave for England by the end of the current month.

BOMBAY.

A donation.—Raja Sahab Sir Bhagatjee, of Gondal, has given Rs. 20,000 towards building residential quarters for students of the Poona Fergusson College on condition that a certain number of students with a recommendation letter from Gondal State have prior chance of admission to the College and that ten students with a certificate from the State Dewan be admitted gratis. Rs. 2,500 of the amount donated will be utilised for higher studies.

The Tata Education Scheme.—An interesting account has been published, recently, of the working of the Tata Education Scheme during the past eighteen years. This scheme, originated by the late Mr. J. N. Tata, in 1872, was originally designed, by means of scholarships, to assist deserving Parsi students to prosecute their studies in the great schools of learning in the West. It was, subsequently, extended to all natives of India, and, since its inception in 1892, 30 students have availed themselves of its benefits. The selection of the Tata scholars must have been very well and carefully made, for their successes, in the various branches of study chosen by them, have been exceptional. Of the thirty students mentioned, no less than seven have passed the open competitive examination for the I.C.S., three, trained at Cooper's Hill College, have held high appointments in the P. W. D., one, the well-known Dr. Row of Bombay, has passed the M. D. and D.Sc., examinations of London, and attained considerable distinction by his Bacteriological Research work, two have become F. R. C. S's of England, and others have qualified for the English bar, or studied technical subjects. An important feature of the scheme is the absence of the purely eleemosynary element, the scholarships being really loans, repayable in easy instalments, when the students are in a position to discharge their obligations.

PUNJAB.

The Matriculation Examination.—At a meeting of the Board of Studies, Punjab University, it was

resolved to ask the Syndicate to abolish Physiology, Hygiene, Botany, and Zoology as subjects of examination in the Matriculation, in the Oriental Arts and Science Faculties, as suitable texts are not available.

Two donations to a Sikh Girls' School.—The Maharaja of Patiala has been pleased to donate Rs. 10,000 towards the funds of the Sikh Kanya Mahavidyalaya, Ferozepore, an institution that is doing excellent work in the direction of female education. The Maharaja is further pleased to make a monthly grant of Rs. 600 for the institution.

The Maharaja of Nabha has donated Rs. 5,000 and one week's pay of the State officials towards the funds of the Sikh Kanya Mahavidyalaya or the Sikh Girls' School, Ferozepore, and increased the monthly grant from two to three hundred rupees.

Amir's grant to Islamia College withdrawn.—On his visit to the Islamia College, Lahore, about four years ago, the Amir of Kabul was pleased to make an annual grant of Rs. 10,000 to the Anjuman-i-Himayat Islam in aid of the Islamia College. A local Mahomedan Vernacular contemporary reports that the Amir has now discontinued his annual grant to the College. It may be remembered that Dr. Abdul Ghani, who was arrested in Kabul in connection with the conspiracy against the Amir, was Principal of the Lahore Islamia College.

Exchange of answer papers.—A singular case of exchange of answer papers of the last Matriculation Examination has just been reported from Gorakhpur. It is said that a candidate who was expected to take a high place in the list of successful candidates was in reality unable to secure even a 'pass.' Inquiries are said to have resulted in the wonderful discovery that the answer papers of the particular candidate had been bodily transferred to the name of another, either by pre-arrangement or by accident it does not yet appear. Further inquiries are said to be in progress.

The Punjab Law Examination.—The statement that the Punjab Government has refused sanction to the Senate's recommendation for the abolition of the Aggregate-in-law examinations is a premature question and is still pending, having been referred back to the University for further information. The Punjab Government has asked whether in the event of the lower standard being adopted for the LL.B. examination by abolition of the rule of Aggregate, the Hon'ble Judges of the Chief Court are prepared to accept the success in this test as a sufficient qualification for candidates desiring to be enrolled as pleaders. About the first examination in law his Honour observes that the percentage of success has been high and it is not known why a change is considered necessary. So the question has been referred to the Chief Court.

The Islamia College: Strike of students.—For some time past certain students of the Islamia College had grievances against some of their Professors, as also against the management of the Boarding House. The Anjuman-i-Himayat Islam, Lahore, appointed a sub-committee to look into the grievances and to suggest a remedy. About 130 students threatened to strike. They bolted the doors of the boarding house from inside and refused to open in spite of persuasions. Police help was ultimately sought for and the doors were broken open. Four ringleaders have been expelled from the college and the strike is now over.

Sibpur Engineering College.—Private advices from England say that Mr. Rajendranath Sen, M.A., of Calcutta who distinguished himself in Applied Chemistry at the Leeds University, has been appointed to the Indian Education Service and will be posted at the Sibpur Engineering College as Professor of Applied Chemistry.

A Punjabi Government of India Scholar.—The *Tribune* of Lahore congratulates Lala Ram Chandra, M.A., on his selection as Panjab State Scholar to England for the current year. Lala Ram Chandra is a distinguished *alumnus* of the Government College, Lahore, and has had a brilliant career throughout. Passing his Matriculation examination in the first division from the Central Model School he joined the Government College in 1902. In 1904 he passed his Intermediate in the first division standing first in Mathematics. In the Bachelor of Arts he topped the list of successful candidates securing 359 marks, also standing first in his special subject of Mathematics. In 1907 he passed his M.A., in English and the next year in Mathematics standing first in M.A. and securing a first class in Mathematics for the first time in the history of the Punjab University. In October of the same year, he was appointed Assistant Professor of Mathematics in the Government College at the age of 19.

A Medical College at Lucknow.—The Secretary of State has sanctioned the construction of a Medical College and Hospital at Lucknow at an estimated cost of Rs. 32,69,950. The foundation stone of this work was laid by His Royal Highness the Prince of Wales on the occasion of his visit to Lucknow in December, 1905, and the time since then has been employed in elaborating and completing the full details of the project. The designs for the buildings are in the Indo-Saracenic style, the work of Colonel Sir Swinton Jacob, K.C.I.E. The College part of the scheme, the cost of which was met from private subscriptions was commenced last year and these buildings are now far advanced. The complete work will now be put in hand. The site for the hospital and other buildings, a commanding and central one, has been admirably chosen; that the buildings have been well designed and will be no eyesore, the name of Sir Swinton Jacob, says the

Pioneer, is sufficient guarantee; and the provision of an up-to-date hospital and college at a place like Lucknow will supply a long-felt want. It is understood that no effort will be spared to push the scheme to completion as rapidly as possible.

ALLAHABAD.

The objects and plans of the United Provinces Exhibition.—Mr. A. H. Mackenzie, Officiating Director of the Educational Court, United Provinces Exhibition, has issued a statement showing the objects and plans of the court. The court will be divided into seven sections. In section (1) leading Indian and European firms will exhibit books and apparatus selected to meet the needs of Indian schools and colleges. Section (2) will be devoted to secondary education, the work of pupils in Anglo-Vernacular and European schools of the United Provinces being completely represented. Corresponding exhibits of special interest from other Provinces of India, Great Britain, the Colonies and foreign countries are also to be shown. Section (3) will deal with primary education, and Section (4) with female education. Methods of training teachers for primary and female schools and training classes will be illustrated. The special feature of this section will be exhibits of Kindergarten work. Section (5) will comprise Collegiate and professional education. Efforts will be made to collect comprehensive exhibits which will include Allahabad University and its affiliated colleges. Commercial education will be represented by work done in provinces at the Read Christian College, Lucknow, and St. John's College, Agra, supplemented by exhibits from other parts of India and abroad. Other courts will show the work of professional training in medicine and forestry. Section (6), the Hall of Oriental Teaching, is to be one of special interest. It will contain manuscripts, photographs of observatories, instruments used in indigenous methods of teaching medicine, and exhibits illustrating ancient methods of Sanscrit and Arabic teaching formerly practised in the United Provinces as carried on to this day in Sanscrit Colleges, Sanscrit Pathshalas, Koran schools and monasteries of Burma and Ceylon. Section (7) will be devoted to exhibits from technical, industrial and art schools. Roorkee College will have its exhibits in a separate building, but will be represented also in this section. Technical exhibits from other provinces, England and Japan will be shown. The chief industrial schools in India will exhibit work done by pupils and boys from the Industrial Schools, Lucknow, and the School for Christian blind, Debra Dun, will be seen at work. The chief exhibits in the Art division will come from the Schools of Art, Bombay and Lahore. Their exhibits will consist of drawings, paintings, carving, modelling and metal work. Bombay exhibits will be located in a room whose decoration has been undertaken by the School. There is a large demonstration room in which from time to time lectures on subjects of educational and general interest will be given.

University results.—This year the University results have been deplorably bad. The Matriculation students have suffered especially. Owing to the new regulations most of the schools have thrown out a certain number of students who are quite at a loss as to what to do. A school at Agra has turned out some forty students from the Matriculation class, and we may presume that other schools must, of necessity, have done the same. Instead of facilitating education so as to be within the reach of any one who has a thirst for knowledge, they are making it more difficult year after year. The students themselves as well as the parents are losing heart and something must be done towards encouraging them.—*The Leader*.

INDIA (GENERAL.)

Indian Students to England.—The Secretary of State for India has established a Bureau for the supply of information on educational matters and has constituted a Standing Committee for general advisory purposes. Mr. T. W. Arnold has been appointed Secretary to this Committee. The Bureau is prepared to answer enquiries in regard to educational facilities in the United Kingdom, to supply information as to the means of entry, requirements and educational advantages of the various academic and technical institutions, and the course of study suitable for various professions, and generally to render all possible assistance either to students themselves or to their parents in India.

A list is kept of lodgings and boarding houses suitable for Indian students, and of private families willing to receive them as paying guests where such can be found. Students coming to England are at liberty to employ such agency as they may think fit, but those who have no agent acting for them may consult the representative of Messrs. Thos. Cook and Sons, who meets all steamers and trains bringing passengers from India.

Indian Languages for the I. C. S. Examinations. **Alterations in Rules.**—A resolution is published announcing certain changes in the regulations relating to the examination in Indian languages for candidates for the Civil Service. In future a candidate assigned to Eastern Bengal and Assam whose mother-tongue is Bengali must offer for examination Hindustani. A candidate assigned to Bombay whose mother tongue is Mahratti must offer for examination Hindustani. A candidate assigned to Bengal or Madras whose mother-tongue is either of the languages shown against his province must offer the other for examination.

State Technical Scholarships.—The Government of India have, on the recommendation of the Local Government, sanctioned the award of State Technical Scholarships of £150 each, tenable for two years, to Mr. J. Newson, a B.Sc. student of the Manchester University, England, who was born and educated in these Provinces, and to Mr. Ajai Pal Singh Yadav of the Agra district who is

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at present a student of the Victoria Jubilee Technical Institute, Byculla, Bombay, to enable them to complete in England a course of study in mechanical engineering.

Foreign Notes.

GREAT BRITAIN.

Preliminary Examinations of the Inns of Court, London.—The following are the days appointed for the Preliminary Examination in the Benchers' Room, Middle Temple Library at 10 A.M. precisely, of candidates for admission to the Inns of Court.

Thursday, October 27th, 1910.

Saturday, October 29th, 1910.

Saturday, November 5th, 1910.

Saturday, November 12th, 1910.

Saturday, November 19th, 1910.

Note:—Candidates for admission who shall have failed to pass at an examination immediately before or during any term are not allowed to present themselves again for examination until after that term.

The Examination is in the following subjects:—

(a) The English Language.

(b) The Latin Language.

(c) English History.

There are no fixed text-books. There is an examination on paper in all cases, and *visa voce* examination at the discretion of the examiners. The examination on paper in the Latin Language (b) consists of translations by the candidate from Cæsar's Commentaries, while the candidate's knowledge of the English Language (a) is tested partly from the manner in which the two subjects (b) and (c) are treated. But in all cases, a passage of English Prose will be read aloud and each candidate will be required to reproduce, in writing in his own words the substance of the passage read. The writing from dictation of a passage or passages in English may in any case be added at the discretion of the presiding examiners.

Indian students may obtain exemption from examination in the Latin Language, if they make application. Such students should take care to reach London before the date fixed for examination, in order to allow time for their application to be considered and granted by the Exempting Committee.

The new consolidated Regulations will come into force on the 1st October 1910. But until the end of the present year the Certificate of the Preliminary Examiners will be accepted in lieu of one of the examinations named in the Schedule. This is the only alteration in the new Regulations, and for the Michaelmas term 1910, persons who have passed an entrance examination at any University within the British dominions will, therefore, not be entitled to be admitted as students at any of the Inns of Court without passing the Preliminary Examination.

Candidates are requested to give two days' notice of the day they intend to present themselves for the examination, to the Secretary to the Examiners, Mr. Frederic Dapp, 15 Old Square, Lincoln's Inn, W. C., and prior to the examinations, to procure from the Inn of Court they intend to enter, an admission form, to be signed by two Barristers of either of the four Inns. The fee for the Admission Form is one guinea. The Admission Form should be taken to the Examination.

Professor H. B. Lees Smith and Indian students:—Professor H. B. Lees Smith, M. P., has informed the Education Department in India that the course which he arranged for Indian students at the London School of Economics and Political Science has met with sufficient response to justify a continuation of the experiment. The next session will begin in October. The scheme provides an introductory course in political and social science adapted to the needs of Indian students. Besides

studying in British institutions the students attend a series of lectures on Indian Sociology. The minimum expense for the nine months' course, including lodging, fees, and travelling expenses from India and back is £200. A special certificate is given to those who have attended the course and passed an examination. Mr. Lees Smith has suggested that the course might well be attended by other Indians than those who come here specially for it. The work for the Bar examinations, for example, is in his view, "so light by itself that young Indians in England are in danger of wasting their time and becoming demoralised," and consequently the two sets of studies could (he thinks) will be combined.

A CORRECTION.

'Arm' is misprinted for 'urn' in page 216, May issue, 1st column, 10th line from the bottom.

THE STORY OF KARMĀTURA OR THE STRUGGLE FOR DUTY AND THE EVOLUTION OF KNOWLEDGE—A Philosophical Novel, a mark of Reverence for Perfection, by V. VEMBU SASTRY. Price As. 6.

Works by Mr. A. Madhaviah, B.A.

ENGLISH.

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The Educational Review.

We have read with great interest the report of the Baroda Education Commission. The Commission was appointed in June, 1909, to enquire into the question of education in the Baroda State in its various aspects and to suggest the lines on which its future development should proceed. The following appear to be noteworthy among the many matters dealt with in the report. The system of free compulsory primary education, initiated by the Baroda Government, is considered a boon to His Highness's subjects, and the Commission recommends its preservation and extension. We are glad to find the Commission in agreement with us on the matter of religious teaching. "Religious teaching," says the Report, "cannot be given in the compulsory standards. Small children will not be benefited by a system of abstruse religious ideas, especially when imparted by teachers who are not likely to possess a vast amount of culture, nor capacity for the expression of philosophic ideas in a manner intelligible to very young children." One half of the Commission favours the introduction of religious teaching from Standard 5, but we are not sure any good will follow from this. More in the way of inculcating moral ideas can be done through the medium of ordinary everyday work than through text books on religion. Hinduism as a religion has been baneful to progress, and to teach it eliminating from it all the harmful elements would prove short of a miracle. The Commission is not satisfied that the teaching of manual training to the pupils of the Baroda schools will be productive of sufficient good to justify the considerable expenditure

involved. As regards the teaching of ethical ideas the Commission is of opinion that it is not necessary to appropriate one or two hours specially for this purpose in the time-table and that the readers now in use contain many lessons conveying ethical ideas, which may well be made the ground of appeal to his students by a thoughtful teacher. The Report lays great stress on female education. "The superficiality of the influence of education on Indian society is largely due to its comparative failure to enter the domestic life of the people. This can only be done if the women are educated." The Commission therefore regards the extension and improvement of female education as a matter of supreme importance, and recommends that the State should spare no effort to put girls' schools on a firm footing, and to widen their influence. The schemes for an Institute of Science and a University of Baroda, put forward by Dr. Jackson and endorsed by Dr. Travers, though good in themselves, are regarded by the Commission as beyond the range of practical politics. Similarly the proposals of the Principal of the Male Training College for the introduction of Hindi and the founding of a Vernacular University are characterised as the result of an incapacity to distinguish what is practical from the theoretical. The Report gives us information on many other educational matters, which are of equal interest to those in British India as in Baroda.

We are glad to learn that in the United Provinces Exhibition to be opened at Allahabad on the 1st of December next, there will be a special Educational Court containing exhibits pertaining to all branches of educa-

tion with a view to stimulate and instruct teachers and deepen the interest of the public in educational matters. The Educational Court will be divided into seven sections which will respectively be devoted to furniture, books and apparatus; secondary education; primary education; female education; collegiate and professional education including commerce, agriculture, forestry and medicine; oriental teaching containing manuscripts and exhibits illustrating the indigenous methods of Sanskrit and Arabic teaching; technical, industrial and art schools. In connection with the Educational Court there will also be a large Demonstration Room, in which, from time to time, lectures on subjects of educational and general interest will be given. We hope that educational exhibits will be sent from all parts of India so that teachers visiting the Exhibition might institute a comparison between the achievements of the several provinces in the matter of education. We wish all success to the Exhibition.

We have before us the Report on Public Instruction in Mysore for the year 1908-09. In this report Mr. Bhabha, who has retired from his position as head of the Educational Department, has given an interesting retrospect of education in the State, from April 1890, when he was appointed Education Secretary, to the date of his retirement. The year under review has been one of notable progress both in point of number and strength of educational institutions. The number of institutions, both public and private, increased from 4,146 to 4,310 and their strength from 123,106 to 139,008. The percentage of boys under instruction to the total male population of school-going age

increased from 25.2 to 28.4 and that of girls to the female population of school-going age from 4.72 to 5.3. These figures indicate the high rank occupied by Mysore among the provinces of India in point of numbers of institutions and pupils.

Primary education showed much improvement. The number of public primary schools for boys increased from 1,777 to 1,801 and their strength from 56,851 to 63,898. The number of private elementary schools also increased from 1,780 to 1,937 and their strength from 21,492 to 25,583. The total number of boys in the primary stage of instruction was 102,811 or 24.9 per cent. of the school-going population. We are glad to note that elementary education has been made free in all Government schools and that the minimum pay of school-masters has been raised to Rs. 10. It is no wonder that the raising of the minimum pay of school-masters has increased the efficiency of the elementary school.

The progress of female education also is encouraging. The number of schools for girls increased from 259 to 272 and the number of girls in all the institutions of the State increased from 19,099 to 21,438. The expenditure on female education increased from Rs. 197,995 to Rs. 220,850.

A noteworthy administrative measure adopted during the year is the introduction of a scheme for religious and moral instruction into schools. We are not sure much benefit will flow from this measure. As the Inspector-General of Education points out, "the subject of direct moral instruction is a very difficult one for untrained teachers to handle. The Department has been able to suggest the names of suitable text-books for the use of teachers. But much depends upon the intelligence and

tact of the teacher. The moral instruction in co-ordination with the literature or history read in school or with actual incidents of school life would be far more impressive than unconnected or abstract lessons, and teachers should try to correlate the teaching as far as possible."

The members of the Child Study Society of England are exhibiting great zeal and activity in all that stands related to

the moral, physical and intellectual* welfare of the child, and all educationists cannot but be in hearty sympathy with the aims and objects of the society. The society does not restrict the term "child" to infant school life, or up to the age of seven, but restricting our meaning of the term to this period of life, we should recognise in our study of the child that its mind is more receptive than self-active, and that all the pedagogical influence upon the pupil in this age can only be of a preparatory character. This society fully recognises that the mind at this stage must be preserved from debasing, weakening, or over-exciting influences, and must be kept open for anything that is conducive to the development of its faculties, and ought to be taught to distinguish between what is of real importance and what is less important. As the child is, at this stage, unable to direct its exertions and is entirely dependent on its teacher, any opposition of its own will to that of its teacher can only be followed by evil consequences. Hence at this stage the teacher should fully realise his own position and relation to the child. While the child must be taught obedience, this obedience should not be through fear, but one springing from confidence in the

superior wisdom and experience of the teacher and from the love resulting from the kindness of the teacher.

The Board of Education of England appointed in July 1908 a Manual Instruction committee of inspectors to consider how the extension

of manual instruction of boys in all classes of public elementary schools could best be secured and particularly how its co-ordination with the ordinary curriculum could be achieved, and what methods of instruction were suitable for children under the age of eleven. The aim was to secure a due continuation of the work previously attempted only or mainly in the infants' classes. The committee's report was not originally intended for publication, but mainly for the guidance of the Board, but the portions of the report now published will prove very helpful to teachers. The report deals with the place and value of handwork in the school, treating the subject on physiological and psychological grounds and in relation to all the various classes in the school. It also deals with the training of teachers for this special work and useful appendices are added dealing with various types of handwork seen in the lower classes.

In this connection we might state that Mysore is the only province in India where an attempt has been made to introduce manual instruction into its schools. The Government of Mysore deputed Mr. Bhabha, the last Inspector-General of Education, to study the various systems of manual instruction in vogue in Europe and America and he has published the results of his labours in a recently published report. The report treats briefly of the physiological basis of manual

training, the importance of manual training in the development of mind and character, the importance of manual work from the point of view of society, the regeneration of muscular development. The report shows also the important place occupied by the industries in elementary education in the countries of Europe and America and fittingly closes with certain observations as to what schools in India should be. "Reading, writing and arithmetic," says Mr. Bhabha, "should not be prescribed for children under six years of age. They should be wholly occupied with nature-work, kindergarten occupations, games, stories, and free play. For children above the age of six years, the reading and conversation lessons and composition should be correlated with nature-work. Drawing and clay-modelling are most important subjects and should be continued as far as possible to Vernacular Standard V. These subjects with brush-work and other practical work should, as far as possible, be correlated with nature-study, reading, geography and history. Let number lessons be based upon the number and size of the beds and paths in the garden, upon the height of the various plants, upon the number of beds and full-blown flowers upon a stem, the quantity of seed yielded by various plants, the amount of time required to dig up the potatoes in one bed, in two or more beds of equal size, etc., and arithmetic will appeal with ever new interest to child and teacher alike. Measuring, weighing, money values may all be taken in connection with nature-work."

Of late a great deal has been said of the Education in Ancient India. the benefits that accrued from the system of education in vogue in ancient India. The peculiar feature

of this education was the residence of the pupil with the preceptor during the period of pupilage. There can be no doubt that this residential system will have some effect on the character of the pupil. But the great drawback of the system is that the pupil grows in an atmosphere of continuous surveillance instead of an atmosphere of freedom. The ancient systems of education were all bound up with religion, as there was no difference between religious and secular subjects. But in modern times religion is going more and more out of the scope of proper studies except as illustrating certain features in the development of mankind. Religion as conceived in ancient times and by the majority in modern times is a mere matter of opinion or guess work or dogma. The application of the scientific method, which represents the only method of thinking that has proved fruitful in any subject, to the study of religion has reduced the latter to a feeling of vagueness and mystery and indicates the impossibility of teaching it so much so that religion has come to be regarded in modern times as a matter of mere personal opinion. We have therefore no need of the religious preceptor, nor is it necessary that the pupil should live with the secular teacher. The opinion is gaining more and more ground that young pupils should not be removed from their homes and the influence of their parents. That is why there is no boarding system in Germany. All German schools are day schools. As regards University students they are old enough to take care of themselves, and can be left without inconvenience to the discipline of consequences. No doubt the college or University may arrange hostels for the convenience of its students, but all idea of fear should be absent from these places and their

management should rest entirely with the students themselves. In the medieval times when the students from different parts of Europe came to hear lectures at the University of Paris, the students themselves did all that was necessary for their boarding and lodging. In German Universities at the present day a similar thing is in vogue. Certainly the ideal of Manu, on which stress is being laid by Mrs. Besant and her clientele, is not the modern ideal. The *Guru-Sishya* system of the past can not be of much use at the

present day when the aim is to foster a spirit of independent research. In the days when there was no printing the pupil had to depend upon his teacher who either knew books by heart or possessed manuscripts. At the present day when books are being multiplied without number the best college is a good library coupled with a good laboratory presided over by professors who will serve more as simple guides than as nurses who will spoon-feed pupils.

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MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

122. [M. M. VENKATACHARI]. Prove that $(1 + \sin \theta) (3 \sin \theta + 4 \cos \theta + 5)$ is a perfect square.

Solutions by R. Balasubramanyam, B.A., P. V. Krishna Iyer, B.A., L.T., S. V. Venkataraya Sastri, S. Sitarama Rao, S. Subramanyam, and N. S. Ramanatha Iyer.

$$\begin{aligned} & (1 + \sin \theta) (3 \sin \theta + 4 \cos \theta + 5) \\ &= \left(\sin^2 \frac{\theta}{2} + \cos^2 \frac{\theta}{2} + 2 \sin \frac{\theta}{2} \cos \frac{\theta}{2} \right) \\ & \quad \left(6 \sin \frac{\theta}{2} \cos \frac{\theta}{2} + 8 \cos^2 \frac{\theta}{2} - 4 + 5 \right) \\ &= \left(\sin \frac{\theta}{2} + \cos \frac{\theta}{2} \right)^2 \\ & \quad \left(8 \cos^2 \frac{\theta}{2} + 1 + 6 \sin \frac{\theta}{2} \cos \frac{\theta}{2} \right) \\ &= \left(\sin \frac{\theta}{2} + \cos \frac{\theta}{2} \right)^2 \\ & \quad \left\{ 9 \cos^2 \frac{\theta}{2} + \sin^2 \frac{\theta}{2} + 6 \sin \frac{\theta}{2} \cos \frac{\theta}{2} \right\} \\ &= \left(\sin \frac{\theta}{2} + \cos \frac{\theta}{2} \right)^2 \left(\sin \frac{\theta}{2} + 3 \cos \frac{\theta}{2} \right)^2 \end{aligned}$$

123. [M. M. VENKATACHARI]. From any point within a parallelogram perpendiculars are drawn to the sides. Show that the area formed by the joints of their feet is constant.

Solutions by N. S. Ramanatha Iyer, R. Balasubramanyam, B.A., P. V. Krishna Iyer, B.A., L.T., S. R. Venkateswara Iyer, S. Subramaniyam, and S. Sitarama Rao.

Let XY and ZP be the perpendiculars to the opposite sides. Then XY and ZP, the

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distances between the two pairs of parallels are constant.

The angle between XY and ZP = angle A or B of the parallelogram and is therefore constant.

The area of the quadrilateral XYZP = $\frac{1}{2}$ the product of the diagonals $\times$ sine of the angle between them = a constant.

124. [M. M. VENKATACHARI]. O is any point in the $\triangle ABC$. OX, OY, OZ are $\perp$ to BC, CA, AB. Then $(BX^2 - CX^2) + (CY^2 - AY^2) + (AZ^2 - BZ^2) = 0$.

Hence deduce that the 3 tangents at the points of contact of 3 circles which touch two and two are concurrent.

Solutions by R. Balasubramanyam, P. V. Krishna Iyer, B.A., L.T., and S. Sitarama Rao. I. by S. Subramanyam.

$$I. \quad BX^2 - CX^2 = OB^2 - OC^2$$

$$CY^2 - AY^2 = OC^2 - OA^2$$

$$AZ^2 - BZ^2 = OA^2 - OB^2$$

$$\therefore (BX^2 - CX^2) + (CY^2 - AY^2)$$

$$+ (AZ^2 - BZ^2) = 0.$$

II. If O_1, O_2, O_3 be the centres of the 3 circles and $\gamma_1, \gamma_2, \gamma_3$ their radii, then O_1O_2, O_2O_3, O_3O_1 will each pass through a point of contact. The tangent at the point of contact of circles O_1 and O_2 is perpendicular to O_1O_2 . Similarly the other tangents are perpendicular to O_2O_3 and O_3O_1 . Therefore since $\Sigma(\gamma_1^2 - \gamma_2^2) = 0$, these three tangents must meet at a point.

125. [M. M. VENKATACHARI]. If y be an integral function of x of the second degree and its values be 3, 5, 7 when $x = 1, 2, 3$ respectively, find its value when $x = 4$.

Solutions by S. Sitarama Rao, S. Subramanyam, N. S. Ramanatha Iyer, and S. R. Venkateswara Iyer.

Let $y = ax^2 + bx + c = f(x)$.

Then $f(1) = a + b + c = 3$

$f(2) = 4a + 2b + c = 5$

$f(3) = 9a + 3b + c = 7$.

$f(1) + f(3) = 10a + 4b + 2c = 10$

$f(2) = 8a + 4b + 2c = 10. \therefore a = 0.$

$\therefore f(2) = 2b + c = 5 \quad \therefore b = 2.$

$f(1) = b + c = 3 \quad \therefore c = 1.$

$\therefore f(x) = 0x^2 + x + 1.$

$\therefore f(4) = 8 + 1 = 9.$

126. [M. M. VENKATACHARI]. If of 4 numbers the first 3 are in A. P. and the last 3 in H. P. then they are proportionals.

Solutions by R. Balasubramanyam, P. V. Krishna Iyer, B.A., L.T., S. Subramanyam, and N. S. Ramanatha Iyer.

Let a, b, c, d be the 4 numbers.

Let a, b, c be in A.P. $\therefore a - b = b - c$

Let b, c, d be in H. P. $\therefore \frac{b-c}{c-d} = \frac{b}{d}$

i.e., $\frac{b}{d} = \frac{b-c}{c-d} = \frac{a-b}{c-d}$ for $a-b=b-c$.

$\therefore \frac{b}{d} = \frac{a-b}{c-d}$

Therefore each $= \frac{b+a-b}{d+c-d} = \frac{a}{c}$,

i.e., $\frac{b}{d} = \frac{a}{c}$ or $\frac{a}{b} = \frac{c}{d}$, i.e., $a : b = c : d$.

127. [P. V. KRISHNA IYER, B.A., L.T.] Shew that $\frac{2n}{n^2-a}$ where n is any number will give values of x satisfying the equation $ax^2 + 1 = y^2$.

Solutions by R. Balasubramanyam, and N. S. Ramanatha Iyer.

When $x = \frac{2n}{n^2-a}$, $ax^2 + 1 = \left(\frac{n^2+a}{n^2-a}\right)^2$,

which proves the problem.

128. [P. V. KRISHNA IYER, B.A., L.T.] Sum the series: $-1, 1, 2, 3, 5, 8, 13, 21$, &c., to n terms.

Solution by S. V. Venkataraya Sastri.

$t_3 - t_2 = t_1$

$t_4 - t_3 = t_2$

$t_5 - t_4 = t_3$

$t_6 - t_5 = t_4$

$t_7 - t_6 = t_5$

$t_8 - t_7 = t_6$

Adding $t_n - t_{n-1} = S_{n-2} \therefore S_n = t_{n+2} - t_2$,

i.e., $S_n = t_{n+2} - 1$.

Again $1 + x + 2x^2 + 3x^3 + 5x^4 + 8x^5 + 13x^6 + \dots$

$= \frac{1}{1-x-x^2}$ (by expansion) $= \frac{1}{\frac{1}{2} - (x + \frac{1}{2})^2}$

$= \frac{1}{\left(\frac{\sqrt{5}}{2} - x - \frac{1}{2}\right)\left(\frac{\sqrt{5}}{2} + x + \frac{1}{2}\right)}$

$= \frac{1}{\sqrt{5}} \left\{ \frac{1}{\frac{\sqrt{5}}{2} - x - \frac{1}{2}} + \frac{1}{\frac{\sqrt{5}}{2} + x + \frac{1}{2}} \right\}$

$= \frac{1}{\sqrt{5}} \left[\frac{2}{\sqrt{5}-1} \cdot \frac{1}{1-\frac{2x}{\sqrt{5}-1}} + \frac{2}{\sqrt{5}+1} \cdot \frac{1}{1+\frac{2x}{\sqrt{5}+1}} \right]$

$= \frac{1}{\sqrt{5}} \left[\frac{2}{\sqrt{5}-1} \left\{ 1 - \frac{2x}{\sqrt{5}-1} \right\}^{-1} + \frac{2}{\sqrt{5}+1} \left\{ 1 + \frac{2x}{\sqrt{5}+1} \right\}^{-1} \right] \dots A.$

The given series is the series of coefficients in the expansion of the above.

$\therefore S_n = -1 + t_{n+2} = -1 + \text{coef. of } x^{n+1} \text{ in A}$

$= -1 + \frac{1}{\sqrt{5}} \left[\frac{2}{\sqrt{5}-1} \left(\frac{2}{\sqrt{5}-1} \right)^{n+1} + (-1)^{n+1} \frac{2}{\sqrt{5}+1} \left(\frac{2}{\sqrt{5}+1} \right)^{n+1} \right]$

$\therefore S_n = -1 + \frac{1}{\sqrt{5}} \left\{ \frac{1}{\left(\frac{\sqrt{5}-1}{2}\right)^{n+1}} - (-1)^n \frac{1}{\left(\frac{\sqrt{5}+1}{2}\right)^{n+1}} \right\}$

129. [C. RUNGACHARI]. A conjuror asked a certain boy to think of any number, say 58.

He then asked him to multiply it by 3 and divide it by 2 and tell him if there is any remainder. 58×3 is 174. $174 \div 2$ is 87 — no remainder. When the boy said that he got no remainder, the conjuror asked the boy to repeat the process and say if he got any remainder. (87×3 is 261. $261 \div 2$ is 130 — 1 remainder). When the boy said that he got the remainder this once, the boy was asked to repeat the same process once more (130×3 is 390. $390 \div 2$ is 185 — no remainder). On the boy saying that he got no remainder this time, he was asked to say how many nines there were in the last quotient. (In 185 there are 20 nines). When the boy said that there were 20 nines, the conjuror at once guessed the right number 58. How was this accomplished?

Solution by S. Sitarama Rao.

Let $\begin{cases} x \text{ be the no.} \\ q_1 \text{ the quot., and, } r_1 \text{ the remainder, when } 3x \text{ is divided by 2} \\ q_2 \text{ " " } r_2 \text{ " } 3q_1 \text{ " " } \\ q_3 \text{ " " } r_3 \text{ " } 3q_2 \text{ " " } \\ l \text{ " " } m \text{ " } q_3 \text{ " " } \end{cases}$

Then $3x = 2q_1 + r_1$ Now $r_1 \geq 1$

$3q_1 = 2q_2 + r_2$ $r_2 \geq 1$

$3q_2 = 2q_3 + r_3$ $r_3 \geq 1$

$q_3 = 9l + m$ $m \geq 8$

$\therefore 3q_2 = 18l + 2m + r_3$

$\therefore q_2 = 6l + \frac{2}{3}m + \frac{r_3}{3}$

$3q_1 = 12l + \frac{4m}{3} + \frac{2r_3}{3} + r_1$

$\therefore q_1 = 4l + \frac{4m}{9} + \frac{2r_3}{9} + \frac{r_1}{3}$

$\therefore 3x = 8l + \frac{8m}{9} + \frac{4r_3}{9} + \frac{2r_1}{3} + r_1$

$\therefore x = \frac{8}{3}l + \frac{8r_1 + 6r_2 + 4r_3 + 8m}{27} = \frac{8}{3}l + y.$

Suppose $\frac{9r_1 + 6r_2 + 4r_3 + 8m}{27} =$

Max. value for $y = \frac{9 + 6 + 4 + 64}{27} = \frac{83}{27}$.

$\therefore x = \frac{8}{3}l + \frac{83}{27}$ when r_1, r_2, r_3 and m , are all max.

$= \frac{8}{3}(l + \frac{83}{27}) = \frac{8}{3}(l + 1 + \frac{1}{27}) = \frac{8}{3}(l + 1) + \frac{8}{27}$.

$\therefore$ when r_1, r_2, r_3 and m are all max., and when x is also max. $x = \text{integral part of } \frac{8(l+1)}{3}$

$+ \frac{8}{27} + \frac{1}{27}$ or integral part of $\frac{8(l+1)}{3} + \frac{9}{27}$

$\therefore$ As x is an integer its max. value $= \text{integral part of } \frac{8(l+1)}{3} + 1.$

Also it is clear that when x is even $r_1 = 0$, and when odd $r_1 = 1$.

$\therefore$ If x is even, and integer in $\frac{8(l+1)}{3}$ is even,

then max. value of $x = \frac{8(l+1)}{3}$ (integral part only).

If x is even, and integer in $\frac{8(l+1)}{3}$ is odd,

then max. value of $x = \text{integer in } \frac{8(l+1)}{3} + 1.$

If x is odd and integer in $\frac{8(l+1)}{3}$ is even,

then max. value of $x = \text{integer in } \frac{8(l+1)}{3}.$

If x is odd, and integer in $\frac{8(l+1)}{3}$ is odd,

then max. value of $x = \text{integer in } \frac{8(l+1)}{3} + 1.$

If $r_1 = r_2 = r_3 = 0$ then $m = 0$.

$\therefore y = 0$. Then $x = \text{integer in } \frac{8l}{3}$

If $r_1 = 0, \{r_2 = 0 \text{ or } 1, r_3 = 1 \text{ or } 0\}$

or $r_2 = 1, r_3 = 1\}$

and if $\frac{8(l+1)}{3}$ is odd $x = \text{integer in } \frac{8l}{3} + 1.$

If $\frac{8(l+1)}{3}$ is even $x = \text{integer in } \frac{8(l+1)}{3}.$

If $r_1 = 1, r_2 = 0$, or $1, r_3 = 0$ or 1 .

If $\frac{8l}{3}$ is even $x = \text{integer in } \frac{8l}{3} + 1.$

If $\frac{8(l+1)}{3}$ is odd, $x = \text{integer in } \frac{8(l+1)}{3}.$

QUESTIONS FOR SOLUTION.

131. [S. SITARAMA RAO]. Perpendiculars AA_1, BB_1, CC_1 to the plane of a triangle

ABC are erected at its angular points and their respective lengths are x, y, z ; show that if Δ and Δ_1 be the areas of ABC and $\Delta_1 B_1 C_1$ then

$$\Delta_1^2 - \Delta^2 = \frac{1}{4} \{ a^2(x-y)(x-z) + b^2(y-z)(y-x) + c^2(z-x)(z-y) \} \\ = \frac{1}{4} \{ a_1^2(x-y)(x-z) + b_1^2(y-z)(y-x) + c_1^2(z-x)(z-y) \} \text{ where } a_1, b_1, c_1 \text{ are the sides of } \Delta_1 B_1 C_1.$$

132. [S. SITARAMA RAO.] Show that the product of the diagonals of the quadrilateral ABCD (whose sides are a, b, c, d)

$$= \sqrt{a^2c^2 + b^2d^2 - 2abcd - 2abcd \cos(A+C)}.$$

[For the solution of this question, I would refer the proposer to any of the standard books on Trigonometry.—B.K.]

133. [N. S. RAMANATHA IYER.] Sum the following series to n terms:—

I. 1, 1, 4, 7, 19, 40, 97, 217,

II. 1, 1, 7, 13, 55, 133, 463,

134. [N. S. RAMANATHA IYER.] If a is the first term and r the common ratio of a G.P., show geometrically that $\frac{S_n}{T_1} = \frac{T_{n+2} - T_1}{T_1 - T_1}$ with the usual notation.

135. [N. S. RAMANATHA IYER.] Find geometrically the sum of $1, m, m^2, m^3, \&c.$, to infinity where m is a fraction positive or negative.

136. [P. V. KRISHNA IYER, B.A., L.T.] Explain the following geometrical constructions for finding the harmonic mean of two straight lines AB and CD:—

(i) Draw any trapezium with AB and CD for the parallel sides. Let the diagonals of the trapezium meet at O. Through O draw a parallel to AB or CD meeting AC, BD in P & Q respectively. Then PQ will represent the harmonic mean of AB, CD.

(ii) Take a straight line PQ equal in length to $AB + CD$. On it describe a semicircle. From PQ cut off PM equal to AB or CD.

Erect a perpendicular to PQ at M cutting the circumference at R. Join R to the centre of the circumference O. From M draw MS perpendicular to OR. Then RS will represent the H. M.

137. [M. BHIMASENA RAO.] D, E, F are the feet of the perpendiculars from a point P on the sides of a triangle ABC. If the sum of the angles PAB, PBC, PCA is one right-angle show that the circle DEF touches the nine-point circle of the triangle ABC.

138. [M. BHIMASENA RAO.] Show that the locus of perpendicular tangents to the inscribed circle in question 116 touches the circumcircle, the nine-point circle and one of the escribed circles of the triangle.

THE ENGLISH ASSOCIATION— A BRANCH FOR MADRAS.

The suggestion of Mr. Percy Simpson, M.A., in the *Educational Review* that a branch of the *English Association* might be started in Madras must be welcomed by all those interested in English literature in Southern India. He has set forth the aims of the Association and has given an interesting account of the very valuable work that is being done by the Association and its branches in fostering and regulating the study of English literature. The important part played by English in the Curriculum of this University, even from the Entrance class, the advanced standard in the subject required by the Degree Examinations, the wider acquaintance with literature in the student and the teacher, demanded by the New Regulations must convince persons engaged in the task of imparting instruction to young men in English literature of the usefulness of such an institution in the City of Madras. There must be besides, a large number of laymen, Indian and English, whose literary tastes might be expected to induce them to associate themselves with this movement to

afford additional facilities for the study of English literature in this country. It is not too much to hope again, that numerous students of literature entering upon an advanced Post-Graduate course will also benefit themselves by seeking membership in the Association. It may also be ventured that members of these classes in the mofussil might partake of some of the advantages. The idea must thus find a large number of supporters and with a little effort made by the advanced wing of the teaching profession in the City—by the professors in colleges—the branch may be an accomplished fact and the public may soon see an association devoted to the purpose.

It is no idle desire to launch forth fresh associations that exhibits itself in such a wish. It cannot be denied that there is not a single association in the whole city, which might by any stretch of the imagination be said to fulfil these functions. The societies attached to colleges appeal to the younger generation and are mainly intended to serve the under-graduates of the University. There are a few scientific and literary associations in the city, in which the interests of literature are relegated into the background, and English receives but scant recognition. The *Madras Literary Society* which might be expected to work in this direction confines its activity to the supply of literature to the reading public. The Association is thus seen to fulfil a real want in the City.

The aims of the Association are certainly of the very great interest to the classes already referred to. One of those is "to afford opportunities for intercourse and co-operation among those interested in the study and teaching of English literature and language." That members of these classes will benefit themselves by constant meetings, united work and common deliberation is no vain hope.

The Association in England also tries "to promote the due recognition of English as an

essential element in national education." It may appear at first sight that this object has no bearing on the conditions of life in this country, but it will be recognised that English literature has come to play a pretty important part in Indian life too. There is no doubt of the fact that the intellectual aristocracy of this country is being fed largely on the beauties of English literature. That the ideals embedded in the writings of Englishmen have come to exercise a profound influence on the imagination of Indians is a circumstance that has already received due recognition. Public men in this country have repeatedly expressed their grateful enthusiasm for the inspiration afforded to them by the study of English literature. In Social Reform, as well as in Politics—in every effort to ameliorate the condition of the country, it is difficult to exaggerate the value of the moving power supplied by the pursuit of English literature in this country. Politicians of all classes are agreed in thinking that English must continue to play an important part in the national life of the country, if it is to achieve its share of progress in the twentieth century. Visions of a common language for India take note of English with as much hope as of languages spoken by small areas, by a few districts or part of a Presidency. The best thought of the country, in all branches of national activity expresses itself through the medium of English. The language is heard on all the public platforms; the most influential organs of the Press live by its help; it is the medium of communication among the cultured and as a common bond it has been able to exercise not a little influence in moulding the national life of this country. If there is any possibility of prognostication in the realm of historical enquiry it may be asserted with confidence that its position is bound to develop in importance and usefulness in the future. Thus the spirit of even the second aim has a direct bearing on the conditions of Indian life.

The third object of the Association appeals to the members of the teaching profession in particular—it is the discussion of the methods of teaching English and the correlation of School and University work. The teachers of English in High Schools have to discuss numerous problems bearing on the teaching of a foreign language to young boys. It is one of the peculiarly puzzling problems associated with the educational work of this country and teachers of English in the lower classes must be deeply interested in problems of that kind.

The means of correlating School and University work in the study of literature must command the attention of professors in colleges as the complete achievement of such a result is bound to lighten their task and make the work of teaching English literature in the colleges much easier. It is to their interest to see that the school-boy who is soon to be placed in their hands is introduced to literary masterpieces pretty early in life, by means of extracts, popular stories and similar elementary methods of instruction. The correlation of School and University work will enable professors in colleges to have in their very elementary classes students familiar with stories from the *Fairie Queene*, the legends of Arthur and the Knights of the Round Table, the plot of almost all plays of Shakespeare, and possessing a knowledge of at least one aspect of some of the masterpieces of English fiction. It is also possible to think of a large number of questions bearing on the teaching of English literature in the College Department itself. The teaching of Philology, the treatment of the growth of particular institutions in literature, the use of the text-books prescribed by the University for 'non-detailed study' and the means of increasing the usefulness of the college library for the student—questions like these may engage the attention of advanced teachers of the subject.

The fourth object of the Association—"to en-

courage and facilitate advanced study in English Literature and Language," is again of importance to an increasing class of new men in India who have a real enthusiasm for literary pursuits in the English language. They have been devoting themselves to a pleasant life of drinking deep at the fountains of English literature and have occasionally even ventured into the fields of literary production. Whatever might be the value of the results achieved, the presence of this New Class must be recognised. An English Correspondent writing on this *New Class* to the *Madras Mail*, sometime ago, writes: "No one who reads the now numerous magazines printed in India can have failed to recognise the extraordinary talent of educated Indians." After an appreciation of the literary merit displayed by them he asks: "Are we to have no Seneca, no Mela and Columella, no Quintilian, above all no Rutilius to share in the literary and administrative glory of an empire, which we not unfairly compare with that of Rome?" It need hardly be said that a number of Anglo-Indians in this country have shown a talent for literary production as well as research. The English Association has thus another class to help, and let it be said, to receive valuable aid from.

The position of English literature in this country suggests a number of peculiar problems and affords subjects for study for the proposed branch. The future of English literature in this country, the contribution of Indian life, thought and civilization to recent English literature, the work of literary production in India itself during the last one century, since the days of Sir William Jones, Leyden and Dr. Wilson,—questions like these might very well be taken up by the branch as they do not fall quite within the province of the parent society. The outlook of the Association must certainly be always broad enough to take at a sweep the entire Commonwealth of English letters, with special attention to the developments in England, which

must remain the main theatre of activity, but its situation in India must determine the direction of at least a part of its activities.

An attention to the practical side of the suggestion will not be shunned in this paper. The low subscription—5s. per year, and for members of Branch Associations only 3s. 6d. will make it possible for a large number of people to take advantage of the opportunities afforded by such an institution. A similar modest sum from each member will cover the expenses of the Madras branch. The advantages offered by the parent Association are tempting enough.* Papers on literary subjects, by such eminent men as Professor A. C. Bradley, Canon Beeching, Professor Mackail, Dr. Sidney Lee and Professor Saintsbury are printed and issued to the members. Leaflets intended to facilitate and improve educational work in the subject, are issued free to the members. The title of some of the publications issued during the last year must serve to convince intending members of the benefits that can be derived from the institution. Papers on the following subjects have been sent to the members: *English Literature in Secondary Schools*; *The Teaching of Shakespeare in Schools*; *A Short List of Books on English Literature for the Use of Teachers*; *Types of Curricula in Secondary Schools*.

The work of the Madras branch may consist in addition, of occasional public addresses on literary subjects, the consideration of questions bearing on the teaching of English in Schools and Colleges and the publication of pamphlets for the furtherance of the objects of the Association.

The appeal of Mr. Simpson has already received some response in this country. Some applications for membership have been sent to England. The head of one of the Government colleges has approved of the scheme and has expressed his desire for a branch at Madras. It is hoped that efforts will soon be made in the

city itself to organise an institution to further the noble aims of the *English Association* in Southern India.

P. SESHADRI.

SOME MAIN DEFECTS IN THE ANSWERS OF HIGH SCHOOL STUDENTS TO MATHEMATICS PAPERS.*

IN trying to place before teachers some of the defects of High School students as regards Mathematics, I should not be regarded as an adverse critic eager to find fault with our students and their teachers, but as a friend trying to point out the chief defects he has noticed in the answers of Matriculation candidates, so that teachers may turn their attention to those defects and take the necessary steps to remove them. This again I have ventured to do only at the request of some of my friends among High School teachers who assured me that such an address from me as one of the examiners of Matriculation candidates would be quite welcome and specially useful to them. Herein I am not giving merely the defects but have also attempted to indicate some remedies to remove them.

Further, the defects I mean to point out are nothing new or strange but are quite common and must have been noticed by every teacher so much so that, I am afraid, my address may look tedious and superfluous, but I have the strong conviction that the defects are so very harmful that they cannot be too frequently pointed out, and that teachers cannot devote too much attention to seeking effective remedies to remove them.

The first, and that which should be considered first according to the logical order is, that questions are not patiently and care-

* An address delivered before the Mathematics-Science Section of The Madras Teachers' Guild.

fully read and understood by the students, and that they often begin to scribble something in their papers even before understanding the meaning of a question.

In Arithmetic, for instance, questions are wrongly taken down from the question paper, say by writing 2 for 3, $\frac{3}{4}$ for $\frac{2}{3}$, &c., and in Geometry one proposition is written in the place of another, *e.g.*, last year many students wrote Euclid II-4 when II-7 was asked and I-35 when I-37 was wanted. This shews sheer carelessness on the part of the students and the only way of remedying it is to draw their attention frequently to such carelessness and to deal with it rather severely in the class examinations by giving absolutely no marks for such answers. Here the students may plead that through an oversight the question was wrongly copied but the method is all right and consequently they should be given some marks and some teachers too may be disposed to be a little lenient; but I strongly affirm that such leniency would be altogether misplaced and productive of harmful results.

Then as to the practice of beginning to do a question even before its meaning is understood, I need not say, it is a very common occurrence amongst our students and is noticeable almost every day in our class-rooms. For example in the last Matriculation Arithmetic paper there was a question on an open rectangular box, and I was told by a Superintendent that candidates wasted a good lot of time in that question because of the words 'sides and ends of a box.' I can understand their inability to understand the meaning of those words and consequently to understand the question itself; but I can not understand how they could have wasted their time in trying *on paper* to do the question as was stated by the Superintendent. Evidently such students must have tried their chance at the question even though its meaning was

not understood by them. That question specially was, if understood, the simplest to work. In Arithmetic generally if a question be understood clearly there is nothing more required to solve it, but the application of the four rules; and to understand a question a patient and attentive reading of it a number of times is all that is necessary.

Now to remove this defect, the teacher, after dictating a question to a class, ought not to allow the students to begin working before he is satisfied that the question is correctly understood by them and to enable them to understand the meaning he must question them orally upon the several parts of the question so as to bring out the correct meaning of the question. Here judicious oral questioning will be found to be of great use and must be largely employed. Next he must also question them as to how they should proceed to solve the question, I mean the plan of operation must be questioned upon; and it is only after evolving the plan also that they must be allowed to work the question.

Some teachers may say that if they proceed like this with reference to each and every question set in the class, they may not find time to finish the portion prescribed. In this connection, I beg to say that we ought not to try to do too much at the expense of thoroughness and even though only a little could be done, let that little be done well. Our aim must be chiefly to secure for our students the intellectual and moral training given by Mathematics and the power to attack problems and with the training and the power thus secured they will be able to do any problem that may be proposed. Further such elaborate questioning will be found to be necessary only whenever a new model is introduced and consequently such a procedure will not involve as much waste of time as may be supposed.

In any case whenever a teacher has the

least suspicion that a question is being tried before its meaning is understood or without having a definite plan of operation, he must at once ask the student concerned to stop work and question him as to the meaning and the plan. Often it may be desirable to allow him to proceed in his own plan even though the teacher knows it to be wrong; for, the student will, in many cases, find out his own mistake and correct his plan accordingly. Such a procedure will be more effective than the teacher putting him in the right path, because that will teach the student self-help and self-confidence and also convince him of the folly of over-confidence.

The second of the defects I would like to dwell upon is that no rough estimate of the answer to be got, is formed by our students before or after working a question so as to check their answer.

Rough estimate is a thing altogether unknown to our students and for want of it, the candidates often give very absurd results as their answers, though a moment's reflection could detect the absurdity, *e.g.*, in the Matriculation Arithmetic paper of 1909, to the question about a gold ornament we had answers like 9 Rs. and 12 Rs. given by the candidates. In the question the ornament is said to weigh 4 tolas, 1 sovereign and odd and the price for a sovereign weight is given as 14 Rs. and from the data a tola could be found to be nearly $1\frac{1}{2}$ times a sovereign weight and thus a moment's reflection would show that the answer must be somewhere near 100 Rs. and yet answers below 14 Rs. (the price of a sovereign weight) were given by the candidates.

I need not say to this assembly how very useful a rough estimate will be for checking the answers, but I only regret to find that no such estimate is ever formed by our students

and the sooner we try to remove this defect the better.

The most effective method of removing it is to insist upon the students forming such an estimate to each and every question and checking their result before passing on to the next question. In this connection I must also say that our boys often do not know as to how to form such an estimate and, therefore, the teachers will do well to guide the students to get such rough estimates formed (in open class) for every question done in the class. The method must be such as not to take up much time and at the same time the checking must be effective. Constant practice and the example of the teacher alone can teach the students the shortest and the most effective method of checking the results.

For this purpose rough approximations must be introduced at a very early stage at least in connection with integers. For example in multiplying 345 by 23 the student must be made to see that the product is greater than 300 by 20 or 6000 and less than 400×25 or 10000. Again, say, the question 'what is the cost of 12 measures of rice, if rice sells at $4\frac{1}{2}$ measures per rupee' is proposed. The student must be able to say readily that the cost is slightly less than Rs. 3. Oral questioning to elicit such approximations may appear to be unnecessary and waste of time. But I won't be surprised if a student, provided there has not been any such questioning in class, gives 48 Rs. as the answer to this question. For, our students are never in the habit of checking the answers and if in the course of working he commits a mistake, say of writing $\frac{33}{8}$ for $\frac{8}{33}$ he gets the answer suggested and would coolly leave it there with 2 dark lines underneath to indicate that it is

the answer and pass on to the next question.

In short my own conviction is that teachers cannot spend too much time in forming such a habit in their students of checking their results and early and systematic attempts must be made by the teachers for the formation of such a habit.

The third defect I should like to point out is that answers are as a rule not verified nor is any revision of the work attempted.

For instance when roots of equations are found, they can be easily substituted in the equations and the equality verified. No such thing is ever attempted by the students. This defect is also removed like the previous one by the teacher insisting upon such verifications. This insistence upon verifications must be carried on until the students form a regular habit of verifying their results. Marks may be allotted for verification in the class examinations and the students must begin to feel that verification is as much their duty as the arrival at a correct solution. Many students many not know how to verify their answers or revise their work; the teachers will have to teach that also. For instance:—

In addition—adding from the top or horizontally.

Subtraction—addition.

Multiplication and Division—casting out the nines.

Identities—substitution of particular values.

Equations—actual substitution of root, &c.

The fourth defect is the incapacity to do things mentally or to conceive a figure before the mind's eye.

It is a notorious fact that, to subtract one number from another, our boys want them to be written one below the other and to multi-

ply one small number by another they want paper and pencil.

In higher Mathematics and in life, capacity to do easy operations mentally will be found to be very useful and serviceable, so that in the higher forms of our high schools, we must gradually try to cultivate such a capacity.

Here judicious oral questioning and mental Arithmetic will be of great value. Mental Arithmetic is a subject which is greatly neglected. It must be introduced in the secondary classes if not earlier. In forming rough estimates of answers and in verifying the roots of equations, simple operations will have to be done mentally and insistence on such estimates and verification will thus indirectly train them in performing at least simple operations mentally.

Again in teaching Geometry occasionally in the higher forms, students may be asked to go through the demonstration of a proposition with the figure drawn before the mind's eye rather than on the board and they may be asked to go through the several steps without their being written on the board. Such a course may be safely adopted in the higher forms during revision lessons or recitation lessons as they are called.

The fifth defect I have noticed is that many mechanical or arithmetical mistakes are committed by the students. Arithmetic is the subject which teaches accuracy in manipulations and results are not useful unless they are accurate and therefore it is highly desirable that the answers are accurate and consequently no mechanical mistakes are committed. The two chief reasons why they are being committed are (1) want of sufficient practice in doing things correctly, and (2) the im-

pression that they are entitled to some marks if their method or 'steps' be right. For both these we teachers are responsible. Firstly we are not giving them enough practice in manipulation of figures and secondly, and here we are to blame to a very great extent, we are often satisfied if the method of working be correctly indicated; we do not always insist on their working the questions through to the very end. Further, we in our class examinations do allow them some marks if the method be right and the answer wrong. We must make the students understand clearly that in Arithmetic students either get full marks for a question or zero and mark accordingly in the class examination. And in our classes we should make them work every question to the very answer required.

In Geometry the chief defect is the want of a correct understanding of the logic of the several steps in a proposition and ignorance of the central or vital point in a proposition.

To make the students understand the logic of the several steps and the central or vital step, judicious oral questioning on the several parts of a proposition is the method to be adopted. How to question on a proposition cannot be indicated herein and it is beside our point for the present. But small pointed questions on the subject matter of every proposition and the consequences of the absence of some of the conditions given, can and must be got ready by every teacher. In this connection I should only like to point out that teachers generally do not now-a-days resort to such oral questioning in connection with every proposition. They do make the students repeat the propositions and prove them at the most with figures having letters different from those used in the text,

and they then pass on to the riders which they do in large numbers and ask the students to take down the solutions. Such a practice is mere cramming and can never improve geometrical knowledge. In this connection I may also suggest that occasionally (say in teaching the important propositions) the teachers will do well to trace the proposition to the very fundamentals or first principles of the subject, i.e., definitions, axioms and postulates. In teaching a proposition students must be asked what theorems are assumed in it and then to prove those theorems what theorems are wanted and to prove these latter what are wanted and so on down to the definitions, axioms and postulates. And then by way of summing up they must be asked to proceed synthetically to the proposition starting from the first principles. Such a procedure makes the students thoroughly grasp the logical reasoning by which the proposition is arrived at and also give them the relation of one proposition to the other propositions and indicate to them the applications of the several propositions and incidentally teach them which propositions are very important and which are comparatively unimportant.

The second defect is that riders are considered difficult and are not attempted at all. Here, we must admit that doing riders in Geometry is somewhat difficult for, it requires a certain amount of thinking which is a difficult operation. To add to this our students are under the impression that if they do write merely the book-work they can get a pass. It is a notorious fact that our students care only for a pass in the examination and consequently such an impression makes them loathe to attempt a rider. In order to make them attempt riders, the teachers will by judi-

cious questioning do well to make the students solve some easy riders in class in connection with the propositions without ever mentioning to them that they are doing riders, and then ask them to open their books and show them the riders they have just then solved. Such a course would make them think that the riders are easily solved and encourage them in their attempt to solve them.

Then as for removing the impression that mere book-work will enable them to pass, fortunately we find that the question papers contain now-a-days very little of so-called book-work and in the new books on Geometry there is very little difference made between important riders and book-work. What is a book-work in one is a rider in another and *versæ*.

The third defect in Geometry is that symbols and algebraic notation are not being used to the extent to be desired. The meagre use of symbols, I believe, was chiefly due to the text-books not using them freely. The present day text-books do use them more freely than the previous ones but not to the extent that one would wish.

Further, there was a feeling prevalent hitherto that such symbols and notation are not allowed in Examination papers. That feeling also is, I dare say, gradually vanishing, because the question papers themselves use such symbols and notation. Teachers must greatly encourage a free use of symbols and algebraic notation because the steps will by such use become more concisely and forcibly expressed and one can follow the reasoning more readily.

Taking 1—37 for example—

Let $\triangle^s ABC$, DBC stand on the same base BC and between the same $\parallel^s AD$ and BC ; then they shall be equal.

Construction.—Complete the $\square^m ACBE$ and $DBCF$.

Then $\square^m ACBE = \square^m DBCF$

$\therefore$ they are on the same base and between the same $\parallel^s$.

and $\triangle ABC = \frac{1}{2} \square^m ACBE$

and $\triangle DBC = \frac{1}{2} \square^m DBCF$

$\therefore \triangle ABC = \triangle DBC$ $\therefore$ halves of equal things are equal.

Lastly, there is one thing more which is common to all the subjects of elementary mathematics, but which is not exactly a defect on which I should like to say a few words and that is, that questions and riders are not generally done in the simplest way possible. Here there may be a difference of opinion, some may say that the methods must be simple and elegant, while others may say that it is enough if a question is done, no matter what the method is. Professor Minchin has somewhere said that people who really make researches in Mathematics are those who are satisfied if a question be solved and who do not wait to give a touch and a finish to their solution. Whereas late Professor H. J. S. Smith has said that there is much in the method. A neat and simple method is often catching and the mere attempt to get a neat solution is in itself very instructive. Whatever that may be I am for simple methods being encouraged at least in the higher classes. For this, teachers will do well to get from the students different solutions to a problem. In so doing we will be getting the simplest method and at the same time enabling them to understand the different applications of a principle or a proposition.

P. V. SESHU IYAR.

MORAL EDUCATION IN SCHOOLS.

THE subject of "Moral Education in Schools" has, of late, engaged the attention of the public and varied opinions have filled the columns of the newspaper; but in none have I been able to find a scientific and philosophical exposition of it which alone can lead to a satisfactory conclusion, the first step towards practical application.

It is very difficult to formulate a theory of moral education which will not only be of universal acceptance but of easy application in practice. As it is, the forces at work against the introduction of a scheme of moral education in schools, are (1) the idea that moral education is something individual and private and that the school is no right place for it, (2) the fear that any attempt at moral teaching in schools may ultimately lead to religious discussion and wound the religious susceptibilities of the different religionists and sects, (3) the form in which this education is to be given and (4) lastly the anxiety of not only the parents but the teachers also for as much utilitarian instruction as possible; but I am of opinion that, if a right theory of moral education be reached, all the prejudices against it will disappear.

But before we begin to enter into the heart of the subject, we should pause a little and bring home to our minds the end of education. First, let us ask ourselves "why all this fuss about moral education, or any education at all?" But, when earnestly we put to ourselves the above question, side by side with it arises also the question "why all this fuss of the world?" And when this great enquiry comes all minds will unite and admit that the strivings of all of us are towards the attainment of happiness and that our very

nature is to seek happiness, though the means adopted to realise this end may vary with different individuals, and that the complete fulfilment of this nature of ours is the work of education; and the end of education is accordingly the happiness of all or universal good. This is the view accepted by most of the liberal thinkers on education, excepting the few materialistic theorizers who have unfortunately erred against their own nature.

The happiness and good of all being thus the end of education, what is the training that one should have to attain this end, or by what means can one feel, think and do good for all?

To get to the solution of this, let us modify the form of the query and put it thus:—"What is it that does not permit a man to work for universal good?" Now the answer is simple. I think that all will admit that it is the idea of "self."

We shall not stop here but shall scan the question still further. The idea of self being the enemy of the idea of universal good—the goal of education—how can we gradually rise above this idea of "self" and train ourselves to the idea of universal good? This can only be by the expansion of the contracted self, or by self-development, or by moral education, or by education in its most liberal significance; and, indeed every thought, word and deed that conduces to self-development and the gradual unfolding of the universal ideal is *moral education*, and everything that is antagonistic to the development of self or the unfolding of the universal ideal is anything but moral education.

So far our ground is clear; and naturally the next question is how to develop the contracted self and unfold it to universality, or

how to educate it to the highest extent possible?

First, let us see if this can be done by means of the senses. The sphere of work of the senses is very limited, limited by time and space inasmuch as our senses cannot help us to a knowledge of the past or of the future, or to a knowledge of unlimited space. Hence the functioning of our senses alone cannot educate us or develop the universal ideal, but can only make us the subjects of a limited environment. Hence to shape an unlimited and sublime environment, something other than sense experience should come to our relief; and this something is nothing but imagination by power of which alone we can shape our environment, develop ourselves to the fullest extent and ultimately realise the end of education.

The so-called realists in education, the veritable representatives of modern materialism in the field of education make much of the objective side of nature and give it undue elevation to the detriment of its more enduring subjective side. It is this prejudice of theirs in favour of the objective world that has led to much needless condemnation of "Imagination" and the undue importance to sense knowledge. But I hold that without the intervention of imagination man cannot shape his own environment and without the creation of an environment more comprehensive and more powerful than the environment that the senses permit of, mental and moral development is impossible. Nay, even the least knowledge is impossible without the help of imagination.

Such being the influence of imagination in the shaping of the environment and hence in the development of character, it is the

duty of the educator to press it into his service and make a free use of it in the school-room; and, if, without being corrupted by unnatural fables and stories about hobgoblins, this power is directed on healthy lines, the pupils will certainly be in a position to imbibe worthy ideals, acquire gradually the power of shaping their own environment and develop their inner power to all the extent that it will allow. For instance, what a healthy nourishment will it not be to the growing imagination to impress it with the story of the little hero of Haarlem, or the generous act of Sir Philip Sidney just before his death or the composure with which Socrates drank the cup of hemlock? Hence the simplest and the most scientific and natural method of moral education in schools is the careful training of the imagination.

The second factor of moral education in schools is the personality of the teacher. Example is a thousand times more powerful than precept, because example powerfully appeals to the imagination, while the precept does not. In fact, every word that the teacher utters and every act that he does secretly influences the pupils and goes to make or mar their character. Hence this also is an equally potent factor in moral education.

Now, to summarise the methods of moral education in schools, they are (1) the careful training of the imagination and (2) putting the pupils in charge of a teacher of flawless character. These two are the only methods that appeal to me; and I have no faith in the teaching of moral rules directly through any verbal medium, for when these cannot appeal to grown-up people of even some claim to culture, hardly can they influence children, pupils and even students.

On the origin and development of modern education, I shall dwell in a subsequent article.

V. VEMBU SASTRY.

FOUR-FOLD ASPECTS OF THE SCHOOL-FINAL SCHEME.

IN the April number of the *Educational Review* were dealt with some details of how the scheme is being worked out in Madras. Reference was therein made to the laudable object with which the Government have come forward to help the young and to prevent, if possible, the continuance of those jarring elements that contributed to mar their happiness by their annual slaughter—now proverbial as '*The Slaughter of the Innocents*'—at the Matriculation Examination of the University.

2. But a mere knowledge of details is not enough to enable a right appreciation of the position of the scheme in Secondary education. Unhappily for this Presidency, its existence has been ushered in, before the recent Regulations of the Matriculation Examination and the revised Syllabuses of the various subjects included in the Matriculation Curriculum have had full scope for being worked out, so that the public may be given an opportunity of seeing how far cramming detrimental to the physical energy and the brain power of any pupil is avoided and how far rational methods of teaching and learning improve the educational efficiency of schools by eliciting the faculties of pupils.

3. While a consideration of such a state of affairs is more directly germane to the discussion of questions bearing on University progress, it cannot be passed over without at

least a bare mention of the regret that must be, and is felt in all enlightened circles regarding the probable fate of the Matriculation Examination. Coming, as the New Scheme does after the revision of its Syllabuses, it has to be seen to what extent it assimilates to itself the elements of good that are to be found in it and eschews those elements that have been found disadvantageous to the vast majority of Secondary pupils. When a course of thought of this description is entered upon, it is quite easy to realise the existence of a large number of people who claiming to be practical say that it is of no use to go into theoretical or academical considerations. They are amongst those who ignore the value of mental working which alone makes practice possible, intelligent and rational. They are amongst those who fail to see that the most practical or concrete workings of scientists are the results of theories grasped by their inner vision and bodied forth in the devices of electricity, steam and other inventions too well-known to need mention. Applied to this scheme, the same principle holds good. Without an adequate realisation of the scope of the scheme, details degenerate into mechanical routine and bring back, in an aggravated form, the very evils which were intended to be averted.

4. If our vision, from a theoretical standpoint, is to be clear, we have to examine the bearing of the new scheme on the position of the different classes of people whose happiness it is bound to influence according to varying conditions of life—

(a) In the first place, we have the pupils, five-sixths of whom do not ever enter on the University course.

(b) In the second place, is to be reckoned

the position of families whose responsible heads invest large sums of money out of their own incomes and either mortgage or even sell ancestral lands as well as family properties of other kinds including jewels to part with which is the last act of a desperate family—properties with which parents, brothers and sisters consent to part in the hope of future material progress.

(c) Thirdly, there is a large number of institutions which have gathered a vast mass of accumulated experience in connection with the University culture of the entrance examination and which have been, till recently left to grope in the dark as to the syllabuses of the subjects taken up under the New Scheme.

(d) Fourthly, the relation of the Department to the University on the one side and to the State on the other is no insignificant factor. A full understanding of the scope and aim of the scheme takes a view of all these interests. If a separate division is shown, it is only to facilitate discussion by restricting the attention to one phase of the question that deserves a larger share of it for the time being. The points may be, therefore, taken in the order mentioned.

5. *Improvement in the material and moral condition of pupils.*—Hitherto, only about one-sixth of the number of Matriculation candidates became eligible for admission into the University classes of colleges; what was the fate of the remaining five-sixths? They could not easily go back to the callings of their fathers. The precious period of training required for them was already gone. Their hopes were frustrated; but, false notions of dignity had taken hold of their minds. Physical labour in gardens and fields

being left out of account, even the comparatively less onerous task of just going out to see the cultivated fields now and then and to supervise the work of the gardeners could not be performed with willingness. Of course, they had not developed the capacity for any useful supervision. There was no knowledge gained of anything practical in Science, but, the reading of two Science primers with notes taken in class or published by book-selling firms was enough to ridicule the village people as superstitious. No constitutional point in the History of England was fully grasped; even if it was a little known, any accurate exposition of it was rather the exception than the rule; but, to the plucked pupils, the rustics were people who had no possibilities of politics, statesmanship or the knowledge of foreign lands. With these ideas, they were not liked in their village homes; but, they were not taken as clerks even in Taluk Cutcheries. They rather resorted to small posts on sums varying from ten to fifteen in Railway offices or shops in towns. To them and even to their more foolish people, it was a more honourable thing. Unhappy folk, how little they understand that the lack of supervision over village lands, properties and domestic concerns involves the families in losses greater than the gains from salaries! These discontented pupils were a source of disturbance to discipline in the family in the ancestral way. They were thus a grave social danger to be seriously considered.

When the pupils are taken by themselves without reference to the family relationship, the lamentation over their lot at the appearance of the failure list is too dreadful a spectacle to be borne by elders having any

sense of humanity in them. Their spirits were depressed and their bodies cut down. Their health and strength were visibly damaged. There was no possibility of making any distinction between pupils who had spent their years in Forms IV, V and VI with a certain amount of assiduity and attention to duty and pupils who had consumed their midnight oil for at least two or three months prior to the University Examination or consented to place themselves under the guidance of private tutors after the selection examinations of the school had proved their disqualifications for being allowed a chance of sitting at the University Examination Hall. Nothing could be known whether the failure was due to the deficiency of a few marks or of more. But now, every hope may be held out of merely written examinations not dominating education, of the daily, weekly and monthly progress receiving some consideration. Those who cannot evince any fitness for University culture may have recourse to the business-side of instruction in schools. The large army of youths that are now found in the Railway offices of Trichinopoly, for example, may go there better equipped and their market value is bound to be higher in virtue of the technical qualifications attained under the best available local guidance. This raises their sense of honour and lessens their feeling of discontent. What is most important is the possibility to avoid the over-powering sense of depression that is the necessary consequence of inability and unwillingness to go back to ancestral callings and village duties in gardens and fields while declared ineligible for even the lowest grades of public service. Whatever may be the disadvantage of the scheme likely to be pointed out in other respects, it cannot be said that this loss of

lamentation over failure, is not highly beneficial and that the gain of cheerful spirits is not of infinite value to the possessor thereof. For this immense profit, no amount of sacrifice in other directions is too much to make.

6. *Bearing on the condition of families.*—The families that had lost property, been impoverished and left without any hope of any return for the expended capital could reasonably expect to find satisfaction in their children having some prospects of entering into the public service or any of the private respectable offices whose number is now-a-days on the increase and whose needs are neither less numerous nor less important than those demanded by the exigencies of public service. Some persons are particularly fond of saying that parents, guardians or heads of families have no business to feel any disappointment, if their children do not get incomes, that the purely commercial aspect of the question should not have loomed so large in their eyes and that the educative value of school-life in its modern ways ought to be or at any rate considered to be the sufficient compensation for all the trouble taken and the money expended. But, such theorists as these may well be requested to turn to the pages of Herbert Spencer's famous Essay on Education that has been translated not only into twenty-two foreign languages but also into Sanskrit for the use of our Pundits by an able citizen of the Mysore Province. Even with his advanced ideas, he does not ignore the value of the secondary ends of education. He admits that, while securing the means of livelihood is not all that should be aimed at by any intelligent class of people or any intelligent individual, they should not be neglected at all in taking into account the advan-

tages of instruction in schools. This applies, with special force, to this country where the learned class has been hereditarily poor and had been encouraged more by State patronage and public support than by individual effort and the sole discharge of responsibility by the custodians of family interests. To such of the families as look upon school-life as a means of some adequate return for the money invested, the new scheme cannot but be a welcome feature of secondary education. Those children whom last year they kept back at home after the terrible Matriculation Slaughter, they are sending this year in a fair number to undergo the School-Final Course. Instances of these are seen to some extent in the City of Madras and to an appreciable degree at Trichinopoly and Srirangam. Parents and pupils seem to be almost sure of success in a year and six months; they may meet or have to meet with disappointments; but, in the case of deficiency in a subject or more, the new scheme provides for the return of pupils to a course in those particular subjects alone. Thus, even a pupil of no special capacity or aptitude for advancement may make up for it by a further attendance at school with the certainty that his labours and moneys are not thrown away. The University Entrance Examination never allowed of any such chances notwithstanding repeated failures though these repeated failures may be, after all, not altogether due to causes within the control of parents and pupils or of the authorities of the schools to whom the youths were entrusted for instruction and guidance.

7. *How it affects institutions.*—The High School departments of Colleges are now more favoured by the public than purely Secondary Schools. This topic has been so much in the air that it is not the intention to dwell on it

at any length in this paper. But, if there is one point more than another that is noticeable, even to the most superficial observer, it is this—that the staff of Secondary Forms attached to Colleges have begun to plume themselves on their superior position which, they fancy, tantamounts to their own higher attainment. The uniform public test, however objected to or objectionable in some respects, proved them not only to be no better but also to be inferiors in general culture or even in habits of industry. Time alone must show how their assumption, rather presumption is to meet with a sufficient check at the hands of the Department and of the University. Till then, it is a sorry spectacle to see the deplorable state of affairs in such a short time as this. The humble contributor is not theorising on fancies but basing his statement on facts. Only names are omitted, as of no consequence in the matter and as of no desirability for mention in connection with an unpleasant predicament. Now, to be back to our point; whatever may be said of other centres, the writer knows from experience the difficulties to which High Schools like the National High School, Trichinopoly, and the High School, Srirangam, are likely to be put, unless the Department and the University combine to pass rules regulating the conduct of Principals of Colleges in the matter of admission of students into the Intermediate classes. Further discussion into the details of this controversy are avoided here for the reason that, in *The Hindu* of the 10th June, 1910, there is an elaborate comment by Mr. A. Panchapagesa Aiyar, M.A., L.T., with which there is a general agreement while differing in some points of principle and detail. His proposal in the case of candidates

seeking admission to College classes after the School-Final Course are what every manager, headmaster and assistant teacher of a High School feels and says. Unfortunately, in this Presidency, there is not sufficient public agitation until matters have attained to a stage in which it is said that indifference shows complete approval of what is not protested against or even objected to. If the Department and the University co-operate to prescribe the subjects and the minima in the subjects that qualify candidates successfully passing the public examinations conducted by the Director and the School-Final Board, there will be no difficulty in the way of students being matriculated or entered on the rolls of College classes.

8. *The relation between the University and the Department of Education.*—Nowhere else than in this country, especially this Presidency, does the Department control matters relating to the University. The essential motto of the latter is culture. It has reference to the purely educative aspects of learning. The basis of the latter is mechanical routine combined with business tact of office work. Sir M. E. Grant Duff, the learned Governor and Chancellor of this University said in the Convocation Address delivered by him that, except in the case of a few heads of departments and members of the Government Secretariat, the ends of public service would be met by an intelligent lower secondary course. Though a statement of the truth in the extreme, it still shows the underlying needs of public service, in the lower grades at any rate. The scheme is intended to prepare candidates for the public service to whom individual attention is paid far more largely to the improvement of English and vernacular composition and translation. If it should attempt this with technical education, in addition, it would be the most laudable scheme

that the Local Government formulated to the mutual advantage of the lower grades of public service and of the unfortunate *not-ables* that cannot pass the entrance test of the University. But, the Government have taken it upon themselves to enforce a scheme through the officialised Senate that tries to combine two generally incongruous elements—the culture of an academy and the business-training of an official or mercantile nature. No other Government seems to attempt such a matter too formidable for achievement. The most miserable feature of the Senate's discussion was an utter neglect of the many-sided considerations that should have been pressed home at the proper time. *The Hindu* then wrote able leaders. The public cannot be too highly thankful for its services in the public cause. So, there is no need to go over the trodden ground. One of the points urged on schoolmasters in the talented and enlightening leaders was the regret that they at least should have placed before the public "the nooks and corners" of the subject as well as its "broader principles." The lasting impression that this deserved comment made on this humble writer at that time compels him to submit for information and discussion certain features of the scheme looked at from the standpoint of the results that must follow from the postponement, if any, of the framing of rules, for the guidance of College Principals and of the public interested in Secondary education, to regulate admission to the University classes of Colleges.

9. *The Optimistic versus The Pessimistic side of the Scheme.*—In the performance of his daily duties, the humble contributor has thrown himself heart and soul in working out, within his limits, the details of the new scheme; but the warning given by *The Hindu*, if past redress in matters that have

already transpired, has to be borne in mind to forewarn us against future contingencies and to stimulate public discussion by a straightforward expression of the evils that must be the inevitable tendency of a neglect to keep matters before the public. The only *Review* we now have for ventilating such points in educational matters is to be thanked for ungrudgingly placing its pages at the disposal of all those who have something to say from experience, sympathy and realisation of its place in Secondary education in the form in which we now find it. To state the matter in a plain manner, *what are the necessary evils to which the students, the families and the unattached High Schools are likely to be subjected? Nay, what are the disadvantages to which even the lower grades of public service are liable?* The pessimistic view of the question may be held up in order to enable us to keep ourselves on the alert and to prevent us from falling into the pitfalls to which we are sure to be led by one-sided optimistic presentment. The dark side of the picture will be shown in the same order as the bright, so that the contrast may be easily placed in juxtaposition by those who need it. Of course, this has to be done on the supposition that, as is feared, no steps are at present meant to be taken by the University or the Department of Education. This is repeated in order to shut out all probability of being misunderstood. The University accepted it as a substitute for the Matriculation Examination, but reserved to itself the power of making or passing such rules or regulations as seem necessary to place University education on a basis of efficiency. The Government also must have the worthy aim of not bringing down the standard of University culture. We believe they have it in a commendable scale; but over and over again, the timely warning of *The*

Hindu has to be acted on at the present stage of Secondary education. The disadvantages to pupils, the loss to families, the risk to unattached High Schools and the deterioration in the efficiency of the subordinate grades of public service are therefore the issues that arise for solution.

10. *The disadvantages to pupils.*—The evils of the Matriculation Examination arose from its having been one qualifying for public service and admission to the portals of the University. The new scheme that was meant to be free from them appears with a public examination and opens to candidates the doors of service and the University. Any ordinary person can understand the imitation of the German system wherein there are real schools training for the business-side and *Gymnassia* preparing for the University. But the new scheme does not help the young to concentrate attention either to the one or to the other. In this country, people are not satisfied if they cannot also attempt to go through a college course. So, the one great advantage that this scheme could have conferred on the public was to have made it clear that they should have either the one course or the other. In our sister-presidency on the west coast, side by side with the Matriculation Examination has existed from about thirty years back the School-Final Examination that prepares candidates for the lower grades of public service in which more of vernacular and less of English are required, even the latter is conducted by the University. As this presidency has not had the fortune to have a Mehta at the Senate, the Matriculation may soon cease to be with the rival scheme attempting a two-fold course under which pupils will struggle as before to have both chances of appointment and of

entrance into colleges. With their certificates, pupils will try to join one college or another. It may be that the college in the most convenient locality for parental control and supervision refuses admission and that they have to go to more distant places in which they cannot enjoy such benefits. This will, by no means, give the healthy training that is required.

Moreover, the latest University Regulations have made it obligatory on Colleges to spend far larger sums than before on buildings, apparatus, library and equipments. The struggle for existence naturally leads College authorities to make the numerical strength as good as possible. Only Government colleges can afford to be free from it. If students then flock into colleges, the result will be a slaughter at the Intermediate Examination as they have gone into them without being as well-grounded as at the Matriculation.

If we had a Matriculation Failure Committee, we may have at some future date, an Intermediate Failure Committee to report on the changed conditions. As Tennyson says:

"The old order changes giving place to the new
And God proclaims Himself in various ways
Lest one good custom should corrupt the world."

How far this has been availed of remains to be seen.

11. *The loss to families.*—From the foregoing considerations, it has been seen that, instead of slaughter at the Matriculation Examination, there will have to be weeding out at the Intermediate. Larger amounts will be spent until the three chances allowed by the University are over and then no corresponding financial recoupment is possible. The regret will be felt in many quarters that they have shunned Scylla, only to fall into Charybdis.

12. *The risk to un-attached High Schools.*—

Already parents have begun to prefer the Secondary departments of colleges with the willingness to pay the standard rate and even more, if necessary. In the High School departments of the Madras Christian College and Pachaappa's, pupils of Form VI have been paying Rs. 23 and 21 per term, respectively; only the less intelligent and the more needy will resort to unattached High Schools. Notwithstanding the new Fee Notification, that safeguards freedom to private schools while reckoning collections according to standard rates for purposes of grants-in-aid by the Department, private arrangements will have to be made for granting concessions in the latter. It is not a sphere in which the Inspectorate can exercise any efficient check. The history of the past has proved it beyond any possibility of doubt. A rich management will show neat Account Books to be shown to the Inspector. It will at the same time maintain a Charities Disbursement Register in the private room of the manager. For example, a pupil may be shown as having paid Rs. 42 at school; but, the manager's private account may show Rs. 21 given him by way of help. This will be done in order to make it appear that there is no unfair competition. This will be the case in centres where there is more than one school, especially if Missionary and indigenous institutions exist side by side. The unattached High Schools will then suffer a great deal. The only way in which the Inspector can successfully make them maintain a high standard is to insist on satisfactory arrangements for keeping pace with the times. They will always do their best to keep themselves on the margin in which recognition will not be withdrawn. Already the Secondary depart-

But carpentry is a *trade*, while Sloyd is a *system of education*. It is true, no doubt, that the objects which the child makes are equally useful with those manufactured by the carpenter. Many persons, therefore, object to this kind of instruction. 'It takes,' say they, 'ten hours to make a spoon; why not buy one for two or three pence?' But the value of the child's work is not centred in the *objects* made by the child, but in the *child* that made them. The destruction of the objects does not impair the faculties of the child which were developed in making them, any more than the destruction of a copy-book impairs the skilfulness of the child who filled it.

The aims of Sloyd are mainly *formative* and *incidentally utilitarian*.

The formative aims of Sloyd are:—

- (1) To instil a taste for, and a love of, labour in general.
- (2) To inspire respect for rough, honest, bodily labour.
- (3) To develop independence and self-reliance.
- (4) To train in habits of order, exactness, cleanliness, and neatness.
- (5) To train the eye and sense of form. To give a general dexterity of hand and to develop the sense of touch.
- (6) To accustom to attention, industry, perseverance, and patience.
- (7) To promote the development of the physical powers.

The utilitarian aims are:—

- (1) To directly give dexterity in the use of tools.
- (2) To execute exact work.

Sloyd method is governed by the following principles:—

- (1) Instruction must proceed from the easy to the difficult, from the simple to the complex, from the known to the unknown.
- (2) It must serve to lay a good foundation.
- (3) It must be characterised by educational tact.
- (4) It should be interesting in character.

- (5) It should be imparted by a teacher and not by a mere craftsman.
- (6) It should be intuitive and individual.

Modern educational systems, based as they are on scientific principles, have for their end the development of all the faculties of the human mind and the human body. Manual training must therefore find an important place in every well-considered scheme of general education. The human hand is a very complex organ, an instrument of remarkable structure, and possesses an extensive range of powers. It can do very coarse and heavy work or execute the lightest and most delicate operations. Early manual training will best fit one for later work in connection with the arts and the sciences. But there is another important reason why we should provide manual work for children. Children are not lumps of clay. They are active, intelligent beings who must be doing and learning. If we gratify their curiosity and find proper employment for their hands, we shall be only fulfilling our duties by them. But if we stifle their spirit of inquiry and forbid them to do this and to do that, instead of assigning them some work to do, we shall be going against their natural tendencies and making life miserable to them and to ourselves. We often do this in ignorance of child-nature and of the elementary principles of Educational Science.

We find in Sloyd a rational scheme that will serve the needs of children from the Kindergarten stage until the time comes for them to enter the portals of the University.

The tools and exercises are so arranged and graduated that children find in it a progressive course that is neither too easy to sustain the interest, nor too difficult to keep the enthusiasm alive.

It is an important principle in Sloyd that the models must not only be useful in themselves, but be useful from the child's standpoint. If the child sees the true value or utility to itself of any object, it would take an interest in acquiring a knowledge of it.

Children are far more interested in making objects when they know that they will be of use to them, i.e., they love the labour connected with their manufacture. It is well, too, if the models be of objects that can be used in the home. The children will be delighted to assist their parents by making these objects for them, and thus there will be fostered in children a spirit of unselfishness and consideration for others. Sloyd work does not involve any fatiguing preparatory exercises. The children begin to work from the model—the absolutely concrete. At the next stage, they work from the model with the drawing of it—a combination of the concrete and the abstract. Then they work from the drawing only—the abstract. This drawing is prepared for them or by them, according to the discretion of the teacher. Lastly, the children are allowed to devise an object they would like to make, construct a drawing of it, and then the object from the drawing.

Sloyd also affords scope for considerable variety. There are the variety of exercise, variety in arrangement of exercises, variety of objects made, variety of wood used, variety of physical effort and variety of intellectual problems.

The objects made should become the property of the child. The child loves to possess the results of its own work. From an economical point of view it might be well to sell the objects. It has been argued that since the wood is not the child's, the child should not have it; but it may be answered that since the labour and skill expended on the production of the article are the child's, the school should not have it. We are informed that even the adults at Nääs are always very proud to take possession of their models at the end of their courses, to pack them with care and bear them away as treasures to their own homes in other lands.

The models, diagrams, and drawings which the children use are generally good from an æsthetic
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point of view, though beauty in Sloyd is subordinated to serviceableness.

In order to cultivate a sense of form, the course includes the making of objects that have a goodly number and a large variety of free curves. Curvilinear models can be tested principally by eye and touch, while rectilinear ones are tested with compass and square. Exercise of observation through the senses of sight and touch aids the cultivation of a general dexterity of hand. The accuracy which is demanded in Sloyd trains children to form correct estimates of actual size. In the perception of solid objects the hand plays in early life the most important part. There is really no such thing as visual perception of a solid; the visual perception is derived entirely from the association of the retinal image with active touch of the object the image represents. Hence Sloyd is a valuable means of perfecting visual perception of solid objects, as well as tactual perception of them, by always presenting objects to both hand and eye. And the greater the amount of accuracy demanded in the completing or perfecting of an object, the more beneficial and valuable does this training of hand and eye become.

Sloyd is valuable for developing attention. In Sloyd children must pay attention to what the teacher says, as otherwise they cannot do their work properly, and often not at all. It is a remarkable and noteworthy fact, derived from experience, that children usually inattentive have not only become attentive in Sloyd work, but they have been able to transfer this power of attention to other subjects as well. Children must be attentive about themselves, for if they are not, they will cut or injure some part of the body. They must also attend to their work or they will spoil the objects they are making.

Wherever practical manual work has been introduced, it has been found that many, who

of Education, busy as he was on the eve of his retirement in the preparation of his bulky, but luminous reports, was unable to give that time and attention to Sloyd education that it needed in the first stage of its introduction. And I have just heard with apprehension that one of our able Sloyd supervisors has sought and secured employment in a sister State for lack of sufficient encouragement here.

Sloyd is on its trial in Mysore. But it has not been afforded the necessary facilities for proving that it deserves an important place in the scheme of general education. Class-rooms, specially built and equipped for Sloyd, have yet to come into existence. Models have not yet been adapted and graduated. It has yet to be determined whether the pupils should be classed for Sloyd instruction according to age, size or progress in general studies. Competent graduates with a knowledge of Physiology, of Psychology, and of the universal principles of education, have yet to be trained in Sloyd to undertake Sloyd instruction as a part of general education.

But I do not despair of the ultimate success of Sloyd in Mysore. The forests of the State are capable of supplying the necessary wood for Sloyd work. And when those at the helm realise that Sloyd instruction in the Middle and Upper Secondary Departments of High Schools will be a valuable preparation for the higher scientific education of the colleges and for the post-graduate course in the Research Institute, they will no doubt with their wonted liberality provide the competent staff and the adequate equipment needed for Sloyd.

OUR ENGLISH LETTER.

LIVERPOOL, August 1910.

Messrs. Geo. Bell and Sons have just published the 'Report of an Enquiry into the Conditions of Service of Teachers in English and Foreign Secondary Schools.' The results of the comparison are far from favourable to England. Thus we learn that in Germany most of the teaching, even in girls' schools, is done by men, and very few start with a salary of less than £150: many teachers receive more. In France all *agrégés* receive an initial salary of £148. Men teachers in Holland start at £150, and in Denmark at £133. In Norway the scale is £122 to £195 for the lower grade, and £178 to £245 for the higher. In England, on the other hand, in 10 % of the schools the initial salary is less than £100, and, if we exclude the great public schools, £120 may be considered the average salary.

There is a corresponding difference in the matter of increases. In Germany, France, and Scandinavia, as well as in most of the towns in the United States, the increase is automatic: in England it is spasmodic. Increases are given sparingly and irregularly. The result is seen when we contrast maximum salaries. Here the inequalities are much more marked. The average maximum for all the German States is £300, not counting the rent allowance, which in some cases is as much as £60 a year. In several States the salary is practically £400—this maximum being reached in about 21 years. In Austria £300 to £330 is reached in 25 years. In France the best qualified men may eventually reach £360. The majority of the masters in American schools earn between £300 and £400, but the maximum is £500 to £700, even when we leave Principals out of our reckoning. In New York Assistants rise from £260 to £480, and First Assistants from £500 to £600. But in England 60 % of the schools have a maximum salary of less than

£200. The London County Council scale provides a maximum of £300, but many local authorities have a maximum of £200. In Wales there are 75 intermediate schools for boys, with 324 masters, of whom 240 are University graduates. Of these only one man receives a salary above £225, and in only five schools is the maximum above £200, while the average is £142. In one school a salary scale has been agreed to, arranging for a maximum of £140.

This reveals a state of things which is far from satisfactory. The cost incurred by a man in qualifying himself for the post of master in a secondary school is considerable, and Professor Sadler's demand of a minimum salary commencing at £150 with annual increments of £10 up to £300 is not beyond the mark. For the general conditions in England are no better than the monetary ones. Abroad the schoolmaster is a civil servant, has security of tenure, receives a pension, while only 24 schools in England have a pension scheme. His hours of work are 15 to 20 per week as against 25 to 30 with us. He has no out-of-school duties, and is allowed to give private lessons. We wish this report could be forcibly brought to the attention of education authorities in England and Wales. There is manifest far too marked a tendency for the authorities to devote their chief attention to buildings, apparatus, and scholarships, and to neglect the personnel of the staff, though it is on the teacher that the ultimate success of the school mainly depends. Without teachers who are at once capable and contented (a teacher who is always on the look-out for "something better" is no use to any school) there can be no substantial progress in education. If the Welsh authorities want the explanation of the recent damning report of the Board of Education on the recent examination in Welsh schools, which contained criticisms they have keenly resented, perhaps they should look to the salary lists of their teachers.

Mr. Runciman carried his education estimates a fortnight ago, but not without being subjected to stringent criticism from both sides of the House. There were several encouraging features in his statement, as well as some striking *obiter dicta*. He said, for instance, 'the golden rule of some teachers is never to let the child do for himself what the teacher could do for him: where that rule obtained, the school did not do good work.' Much has been done, we are glad to hear, in the direction of reducing the size of classes in the elementary schools. Newcastle last year had several hundred classes with more than 60 pupils: now it has none. The proportion of trained teachers to untrained has gone up. 33,000 copies of the temperance syllabus have been sold, and upwards of 200 education authorities have arranged for the definite teaching of temperance on the lines of the syllabus. 92,000 copies of the syllabus on physical exercises have been sold, and 4,700 students in training colleges have passed an examination in physical exercises since last Christmas. Mr. Runciman safely pointed out that we could look to such training rather than compulsory military service to stem the tide of physical degeneration, because military training would only benefit selected men, and those who most needed physical exercises—women, girls, and the weak of both sexes—would be excluded. He also enumerated certain educational experiments which had been successfully tried in various schools: he encouraged such experiments because in giving freedom to the teacher they gave freedom to the pupil. Mr. Runciman fell foul of Sir J. Yoxall in the matter of the circular warning parents against allowing their children to enter the over-stocked teaching profession: Sir J. Yoxall replied, but it was not easy to see where the truth lay. No doubt either side had some facts to go upon, and Sir J. Yoxall seems to have over-emphasized the difficulty which undoubtedly the elementary school teacher has in finding employment.

Mr. Tudor Walters, a Liberal M.P., who has done much for the cause of education, laid stress on the crucial point—the increases in the expenditure of local authorities which are constantly being necessitated by orders of the Board of Education without a proportionate increase in Government grants: the proportion of grants in fact, has actually diminished. From 1892 to 1902 the Exchequer grants amounted to 61 % of the total expenditure on education, whereas in 1908-9 they amounted only to 49 %. Mr. Walters did not quarrel with any of the orders: “it is certainly desirable to reduce the size of classes, to promote the efficiency of schools, to provide more air space, better accommodation, better buildings. But the President of the Board of Education, when he is issuing these orders, should have some regard to the cost involved. You go to him on the point, “Oh I have nothing to do with the cost. All I am concerned about is a sound educational policy. You must settle this with the Chancellor of the Exchequer.” Being a simple trustful person you go to the Chancellor. He asks why you have come. You say because of the policy of the Board of Education. “Go and see him” is the reply: “This has nothing to do with me. He prescribes this policy. He must find the money. So with the interesting process of Spenlow and Gorkins you get no satisfaction. You go back home, and if you are Chairman of an Education Committee the people are so enraged that you have to apply for Police protection. It is clear that unless the President of the Board of Education can get further grants from the Treasury to relieve the overburdened ratepayer educational work will come to a standstill.” There can be no shadow of doubt that in this matter Mr. Walters is the spokesman of the municipalities of the country. We can only hope for a lull in the activities of the German ship-building yards. The price of two Dreadnoughts would settle this matter.

News is beginning to cross the Channel with reference to the recently-founded National University of Ireland. Fortunately it is good news. The prophecies of failure so frequently indulged in are belied. The three constituent University Colleges of Dublin, Galway, and Cork, are flourishing. The classes at Galway and Cork far exceed in numbers those which obtained under the late Royal University. The newly-established Dublin University College has a good attendance at all the principal faculties, and in those lately founded, such as Celtic studies, Commerce, Education, and Economics, there is a very encouraging prospect. The new entrances this year will not fall far short of 1000. The Senate has taken a serious step in making Irish a compulsory subject for under-graduates in 1911-1912, and for Matriculation in 1913. The Gaelic Leaguers have carried this point by the assistance of a majority of the County Councils, who were lavish in promises of money to found scholarships with the penny rate which the Act allows them to enforce, but always made the stipulation of ‘compulsory Irish.’ It remains to be seen whether the effect will be to confine the area from which students will be drawn to one creed or party, or to induce the Protestant schools to begin teaching Irish for the purpose of enabling their pupils to avail themselves of the undoubted advantages and to compete for the prizes of the new University. There is little doubt that the leaders of the movement would welcome the latter event and the coming of Protestant students. It is Catholic policy, and not a Catholic move. The result ought to be the fostering of the Nationalist spirit, and the Celtic cult may cease to be the badge of a political or religious section. What the result will be, we cannot pretend to say: anything may happen in Ireland—as in most other places.

The Rev. William Temple is to succeed Mr. Ford as Head of Repton. This is the first that some will have heard of Mr. Temple, it will not

be the last. He will go far. He has brains and character and common sense: his personality is irresistibly attractive and his powers as a speaker are of the first order. We can remember him as an under-graduate following Mr. Lloyd-George at the Oxford Union. Very few men, whatever their experience and power as a speaker, could have sustained the position as ably as the stripling from Balliol. It was a case of David and—David.

There is a well-informed article in the *Quarterly* on the ‘Character of Edward VII’ which has attracted universal attention. It is generally attributed to Lord Coher. The account given of the education of the young prince is deeply interesting. “It is no exaggeration to say that every hour of the Prince of Wales’s time, from his earliest boyhood to the death of his father, was mapped out by his governors and preceptors, and submitted for approval. It is no mere phrase, but a sober fact, to say that every day of the boy’s life a report of his progress was sent up to his parents. And this was no perfunctory service on the part of his teachers, for hardly a week passed without some criticism of their methods, some word of commendation, or some expression of regret at their failure to come up to the lofty standard which was always before the mind of the Prince Consort.....The elaborately-prepared tabular statements of his work show no marked originality on the part of his professors, but a somewhat soaring ambition. The Prince, although he never rebelled, passively resisted the high pressure of his father’s system.” We note one shrewd judgment. “A great reader the King never was, but he was a great observer.” It was that power of observation, so keen that he missed nothing, that made him the King he was.

Reviews and Notices.

STUDIES IN THE TEACHING OF HISTORY: KEATINGE:

A. and C. BLACK.

Mr. M. W. Keatinge, M.A., in his thoughtful book on history-teaching has many useful hints to offer concerning the aims and methods that must prevail in well-managed secondary schools. The elevation of history to its proper place in the curriculum of studies, resulting from increased interest now manifested in educational problems, must have by this time made all aware of its importance as an introduction to the world of human nature. That it also offers vast possibilities for the training of the intellect and the will and imparts true culture in a way in which no other subject can, many may not yet have realised. To them Mr. Keatinge specially addresses himself. Showing as he does an organised and thoroughly sound enthusiasm in the subject and having much to say on the practical difficulties of the history teachers he devotes many pages to the emphasising of the importance of scientific method in History while by far the largest part of the book is taken up with the detailing of the steps by which the boys are to receive proper historical training. Much of what he says is not new as those who are acquainted with the masterly work of Messrs. Langlois and Seignobos on the study of History may easily see. Yet the author very clearly sketches in a few chapters the way in which students should learn to work at history on the basis of contemporary documents and to distinguish between the wheat and the chaff by means of a regular process of arguing out the probabilities of each case as it turns up for examination. The importance of using concrete illustrations has been fully described with the help of opposite instances and a number of well-chosen extracts are made to show what a wealth of illumination boys will receive by use of those parts of poetry which treat of historical events. There are some things however that the book leaves to be desired. Though elementary in its treatment one would have expected it to give a fuller list of men of early times and modern days whose views on the aims and methods of history-teaching would command general respect. As for the conclusions at which the author arrives on various questions there is perhaps in a few cases (e.g., pp. 34, 35) an one-sidedness which readers however may forgive to the disinterested sincerity which is shown through all the pages of the work.

TILLERS OF THE GROUND. BY MARION I. NEWBIGN.
MACMILLAN AND CO., LIMITED, ST. MARTIN'S
STREET, LONDON. 1910.

This volume belongs to a new series of books issued by the well-known firm of Messrs. Macmillan & Co., under the title of "Readable Books in Natural Knowledge." The aim of the series is to furnish good descriptive scientific literature containing broad views of scientific thought and progress. Their keynote is not so much information as inspiration, an exaltation of the spirit and method of science which leads men in a spirit of self-sacrifice to devote their lives to the advancement of our knowledge of nature. They are designed also to furnish reading matter urgently required in connection with the science work in schools and to be serviceable to a wider circle of readers in directing attention to the nobility of scientific ideals and the ultimate value of results obtained by careful and faithful work.

Though the compass of the book before us is small, its scope is wide. It contains 18 chapters dealing in a readable and inspiring way with the various aspects of agriculture. The historical treatment of the subject is very interesting and the author is to be congratulated on the manner in which he has tried to achieve in his book the general objects of the series to which it belongs. The get-up of the book is very nice for its price and there are 48 illustrations.

THREADS IN THE WEB OF LIFE. BY MARGARET R. THOMSON AND J. ARTHUR THOMSON, M.A.
MACMILLAN AND CO., LIMITED, ST. MARTIN'S STREET, LONDON. 1910.

This is another volume of the series of readable books in natural knowledge. It deals with the development and results of Biology. The name of Professor J. A. Thomson is a guarantee that the book contains up-to-date information. The book contains 14 chapters dealing with the following topics in succession: man as hunter; domesticated animals; earth-worms and their work; man's struggle with animals; animals which destroy man's crops; the balance of nature; Pasteur and his work; mosquitoes and malaria; inter-relations among animals; aids in the struggle for existence; social life among animals; social insects; inter-relations among plants. The book contains 72 illustrations which are all true to nature.

WONDERS OF PHYSICAL SCIENCE. BY E. E. FOURNIER, B. Sc. MACMILLAN AND CO., LIMITED,
ST. MARTIN'S STREET, LONDON. 1910.

This is a third volume of the same series as the two books last reviewed. It deals in a pleasant way with the various developments in Physics. The treatment follows the historical development of the science. The book contains 17 chapters which deal with the following subjects in succession: Archimedes; the wise men of Alexandria; Arabian days; Dr. Gilbert of Colchester; Galileo; the barometer; the air-pump; the inventor of the steam-engine; electric sparks; the electric current; the electric telegraph; the telephone; electric light; Michael Faraday; telegraphing without wires; the new ray; air-ships and flying-machines. The up-to-date character of the book is evident from the last chapter. There are 77 illustrations, some of which are portraits of the great physicists and inventors.

PRACTICAL ELECTRICITY AND MAGNETISM—A FIRST YEAR'S COURSE. BY R. ELLIOT STEEL, M.A.
G. BELL & SONS, LTD., LONDON. 1910.

The present volume is written on the same lines as Mr. Sinclair's Hand-books on Practical Physics and is intended as a companion to them. More space has been devoted to the study of electric current than to the less important subject of static electricity. The aim throughout has been to set forth the instructions in such a simple and clear way that students may be able to perform the experiments and understand the results obtained with as little help as possible. The book will be found useful by the science students of the Intermediate course of Indian Universities.

THE GIRLS' SCHOOL YEAR BOOK (ENGLAND), APRIL 1910 TO APRIL 1911. THE YEAR BOOK PRESS
c/o SWAN SONNENSCHN & CO., LTD., LONDON.

The book is replete with information about all that concerns the education of girls in England.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—Mr. W. A. Hensman, Acting Lecturer, Government College, Rajahmundry, has leave without allowances for three months with effect from the 20th July 1910.

Mr. A. A. Hall, Principal, Teachers' College, Saidapet, has privilege leave for six weeks with effect from the 22nd August 1910.

The Hon'ble Mr. A. G. Bourne, C. I. E., D. Sc., F. R. S., Director of Public Instruction, Madras, has combined privilege leave and special leave for six months with effect from the 12th October 1910.

Miss M. A. Jupe, Sub-Assistant Inspectress, Tinnevely Girls' Range, and Acting Assistant Inspectress, West Coast Girls' Range, to act as First Assistant Inspectress, without change of station, vice Miss Patterson on other duty or until further orders. To have effect from the date on which Miss Parsons ceased to act as First Assistant Inspectress.

The privilege leave granted to Mr. V. S. Vasudeva Sastri, Sub-Assistant Inspector of Schools, acting in the Perambalur Range, is extended by four weeks.

Mr. L. A. Ganapati Iyer, Assistant Lecturer, Rajahmundry College, is to act as Lecturer in the same College during the employment of Mr. T. V. Sivakumara Sastri on other duty or until further orders; to have effect from 20th July 1910, the date from which Mr. W. A. Hensman ceased to do duty.

Mr. L. A. Ganapati Iyer, to act in the 9th grade of the Provincial Educational Service during the absence of Mr. M. Venkatarathnam on leave or until further orders.

Mr. C. M. Srinivasachari, Sub-Assistant Inspector of Schools, Markapur Range, and Acting Assistant Inspector of Schools, Nellore district, has privilege leave for three weeks with effect from the date of his availing himself of it.

Mr. S. R. Venkatarama Iyer, Sub-Assistant Inspector of Schools, Negapatam Range (Head-quarters, Tiruvalur), is granted privilege leave for one month with effect from the 24th August 1910 or from the date of relief thereafter. Mr. S. Seshagiri Sastri, Sub-Assistant Inspector of Schools, Tirumangalam Range, and Acting Third Assistant, Madras-i-Azam, will act for him during his absence on leave or until further orders—to join on the arrival of Mr. S. N. Krishna Iyer.

This cancels the posting of Mr. S. Seshagiri Sastri to the Kumbakonam Range already made.

Mr. K. S. Vaidhyanatha Iyer, Headmaster, Government Training School, Tinnevely, and Acting Sub-Assistant Inspector of Schools, Kumbakonam Range, is to act as Sub-Assistant Inspector of Schools, Nanguneri Range, in the probationary class during the employment of Mr. M. H. Venkates.

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wara Iyer on other duty or until further orders—to join on relief before the expiry of his joining time.

Capt. M. J. Quirke, I. M. S., to act as Professor of Hygiene and Bacteriology, Medical College, and Resident Medical Officer, General Hospital, Madras, during the employment of Capt. T. S. Ross, I. M. S., on other duty or until further orders.

Major W. J. Niblock, I. M. S., in addition to his own duties, to act as Professor of Biology, Medical College, Third Surgeon, General Hospital, and Superintendent, Government Voluntary Venereal Hospital, Madras, as a temporary measure.

Rajkumar College: Approval of Government.—The Government have passed the following order:—

The proposal to establish such a college has been urged upon the Government by the Maharaja of Bobbili for some time past, and in March 1909 the Government appointed a Committee to investigate and report on the proposal. The Committee which consists of Mr. R. B. Clegg, President, Mr. Ranga Rao, Raja of Bobbili, V. C. Desikachari, J. H. Stone, Mr. P. Theagaraya Chetti, and Mr. A. R. Loftus-Tottenham, now submit a report and a draft scheme.

The Committee observe that the most important question connected with the establishment and maintenance of the college is that of funds. The construction of a suitable building would cost at least 2½ lakhs. A further sum would be required for the necessary initial equipment in the way of apparatus, books, etc., while the annual recurring charges on account of educational and menial establishment would amount roughly to Rs. 35,400, exclusive of the cost of maintenance and repairs to buildings. The Committee accordingly consider that a sum of not less than 5½ lakhs would be necessary for the establishment of the college in the first instance—2½ lakhs for the buildings and about 3 lakhs for the nucleus of an endowment fund.

The Committee anticipate that the college would be attended by twenty to twenty four boys and recommend that the fees to be charged might range from Rs. 1,800 to Rs. 2,400 per annum. At the same time they point out that in their opinion it is essential to the success of the scheme that fees should be kept as low as possible and to this end recommend that Government should give a grant towards the maintenance of the college. Assuming that the cost of maintenance including contingent and other charges will amount to about Rs. 40,000, the Government would be willing to contribute Rs. 15,000 for the first five years. But by the end of that time they consider that the college should be self-supporting. The endowment fund eventually required will therefore be not less than 6 lakhs, the annual interest from which (Rs. 21,000) would suffice to take the place of the Government contribution of Rs. 15,000 and meet any increased charges of the institution while enabling the fees to be kept below

the rates proposed by the Committee. The total cost of the scheme may then be computed at 8½ lakhs, of which 2½ lakhs would form the building fund. Towards the amount so required, the Maharaja of Bobbili has promised to contribute 1 lakh of rupees and the Government are prepared to make a contribution of a similar amount, if the remaining sum of 6½ lakhs is contributed by the landowners and zamindars of the Presidency.

The Committee apprehend that unless the Court of Wards lends its support to the scheme and sends its wards to the college, the number of pupils required to make the college a success cannot be secured. The Committee therefore propose to place all the members of the Court of Wards on the Board of Management of the college. The Government agree with the Committee and desire it to be understood that the contribution and the annual grant promised by the Government will be subject to the condition that the Court of Wards retains a clear working majority on the Board of Management. Subject to these remarks, the Government accept the scheme generally.

The Muhammadan Educational Society, Vaniyambadi.—In the Executive Committee Meeting of the Vaniyambadi Muhammadan Education Society, held on the 15th instant in the office of Messrs. Goolam Ahmed & Co., 10, Esplanade, Madras, Mr. M. A. Hyath Badsha Sahib subscribed Rs. 15,000 to the School Building Fund of the Society. This donation is in addition to Rs. 5,000 already paid by him towards the Capital Fund of the Secondary School maintained by the Society at Vaniyambadi. The lower storey of the school building is nearly completed at a cost of about Rs. 24,000 of which more than 13,000 Rupees was contributed by Mr. Hajee Budruddin Sahib and Rupees 5,000 by Mr. T. Ameenuddin Sahib who had also paid Rs. 2,500 and Rs. 5,000 respectively to the Capital Fund. Mr. Hayath Badsha Sahib's munificent donation at a time when owing to the general depression in trade there was little prospect of such a large sum being collected was received with great enthusiasm by all the people interested in the Educational regeneration of Muhammadans.

The Calicut School of Commerce.—As the strength of the beginners' classes in each section of Book-keeping, Commercial Practice, and Shorthand has reached nearly 100, though each of these classes has been divided into two sections (in Shorthand 3 sections) and as there is no room for more sections or for more students, we are informed, that the Headmaster has found it necessary to stop further admissions.

A meeting of the Commercial Teachers' Union was held on Saturday, the 13th instant, in the Govt. School of Commerce, Calicut, under the presidency of Rao Sahib S. Vaidyanatha Aiyer when Mr.

S. G. Grubb, B. A., of the training section gave an interesting lecture on "Marine Insurance." The meeting was well conducted and after a few remarks from the chair, the meeting terminated with the usual vote of thanks to the lecturer and the chair.

The Victoria College, Palghat.—The Madras Government have sanctioned a sum of Rs. 63,000 for the construction of a hostel for the Victoria College, costing Rs. 31,600 and an additional block costing Rs. 29,000. The balance amount will be utilised in making improvements in the College building. Dr. A. Govinda Menon of the Palghat Municipal Council intends moving the Council to name the block and the hostel "The Edward Block" and "The Edward Hostel," respectively.

TRAVANCORE.

The Kottayam College Prize Distribution.—The annual distribution of prizes to the successful students of the C. M. S. College at Kottayam took place on Monday, the 15th instant, at 4.30 p.m. in the College Hall presided over by Mr. R. C. C. Carr, I. C. S., the British Resident of Travancore and Cochin. The hall was densely crowded with the local Sirkar officials, European ladies and gentlemen, leading Vakils, merchants and a host of others who are interested in college education. On the platform the Chairman was supported by Bishop Gill and by the Venerable Archdeacon J. J. B. Palmer, M. A., Acting Principal. The proceedings opened with the singing of the hymn "O God our help in ages past" after which the Report for 1909 was read by Rev. W. S. Hunt, the Manager of the institution. The reading of the report over, the Chairman, as shown in the programme, undertook the task of distributing the prizes to the students, numbering about 10, of the College department, P. M. Chakko B.A., Headmaster, reading the prize list. Then followed recitation by P. M. Ninan on "Work" by Carlyle, which was highly appreciated by the audience. The prizes of the school department were then given away by Mr. Carr. The number of boys that received prizes in this department was 74. It was interesting to note that the Chairman found the duty that devolved upon him on the occasion a very pleasing one. The audience were entertained by another recitation: "The Miller of the Dee," by K. Achutha Menon, another student of the school. This was followed by a very interesting and instructive speech from the chair. The concluding speech was delivered by the Lord Bishop who expressed his great pleasure at the Resident having presided on the occasion, and said how much his presence on such occasions was valued. The Venerable Archdeacon Palmer, on behalf of the audience and students thanked the worthy Chairman and the Bishop for coming on the occasion, and devoting their

valuable time to perform their respective functions in spite of other duties. The interesting proceedings then came to a close with the singing of the National Anthem. Mr. Hunt, the Manager, then proposed three cheers to the King-Emperor, to the Maharajah and to the Resident, which were heartily responded to.

An educational grant.—The Maharaja of Travancore has given to the Cochin Thangal a valuable site in Alwaye for constructing a building to locate the proposed Arabic College with Urdu and Arabic classes, for the education of the Muslim students of Malabar. The Muslims of Madras have conveyed their thanks in meeting assembled to the Maharaja.

BOMBAY.

Re-admission of Samarth Vidyalaya students.—The following Press Note has been issued by the Government of Bombay:—

Government have decided that boys of 14 years of age and under, who attended the Samarth Vidyalaya at Talegaon in the Poona district, may, as a special case, be admitted to Government aided or recognised educational institutions on the following conditions in addition to all other conditions in force respecting the admission of boys to such institutions:—

(i) Application for admission must be submitted to the Educational Inspector within six weeks from the date of this order.

(ii) Such application must be accompanied by a written guarantee from two respectable and loyal persons (not near relatives) residing in the town where the school, to which admission is sought, is situated that they will be responsible for the good conduct of the boy if he is permitted to attend the school.

(iii) The Educational Inspector will make such inquiry as he may think necessary and may refuse the application in any case in which he thinks it undesirable to admit the boy.

(iv) Headmasters must keep boys so admitted under special observation and should not hesitate to expel any who show signs of having been tainted with disloyal views.

Matriculation vs. School Final.—The following resolution of the Bombay Government was issued on the 2nd instant:—In 1887 Government decided to recognise the School Final as opposed to the Matriculation Examination as qualifying for admission to clerical appointments in the public service; but they regret to find that this order has not been observed strictly in the past.

They have now decided that the rule must be enforced strictly in future; and, in order to secure this, are pleased to issue the following instructions for guidance in making first appointments to clerical posts in all departments to which the rules published in Government Notification No. 1944, dated 12th November 1907, apply:

(a) No Matriculate shall ever be appointed so long as any candidate who has passed one or other of the following examinations is available:—The School Final Examination, the European High School Examination, the full Senior Commercial Examination of the London Chamber of Commerce, the Cambridge Senior Local Examination; or for a vernacular post, the vernacular final examination;

(b) In the absence of any candidate who has passed any of the above examinations, a Matriculate may be appointed, provided that—

(i) he passed the Matriculation Examination not later than 31st December 1909, and

(ii) the appointment be made before 31st July, 1913.

(c) After 31st July 1913, no Matriculate shall be appointed to any post unless he be qualified under some other rule.

The Governor in Council is pleased to direct that these instructions shall be given effect to in all departments to which the rules published in Government Notification No. 1944, dated 12th November 1907 apply, and that in no case shall any officer making an appointment depart from them without first obtaining the special sanction of Government.

A copy of the instructions should be supplied to every English school in the Presidency.

CALCUTTA.

Bengal National College: Foundation-day.—The foundation-day of the above institution was recently celebrated at No. 92, Upper Circular Road. The time limited was from 4 to 7 p.m. But the items on the programme went on far into the night. The occasion was heartily enjoyed by the students and the members of the teaching staff of both the literary and the technical departments as well as others who attended. There were some modest decorations of the premises. Of the notabilities, who graced the function with their presence there were: Sir Gurudas Bauerji, Kt., Mr. J. Chaudhuri, Moulvi Yusuf Khan Bahadur, Babu Krishna Kumar Mitter, Babu Profulla Nath Tagore, Babu Gopal Das Roy Choudhuri, Dr. Indumadhab Mullick, Principal Ramendra Sunder Trivedi, Professor Hem Chandra Das, Babu Promotho Nath Banerji and Babu Gogon Chandra Biswas.

The celebration was heralded by feting the students of both the National College and the Technical Institute. They sat promiscuously and helped

themselves to plates of eatables, which went round presenting an interesting sight to the lookers-on.

A choir of singers to the accompaniment of the harmonium, sang a song adopted to *Ragini Purobi Tal ara theka*, composed by Sir Gurudas Banerji, Kt.

The Griffith's Prize.—The Calcutta University has this year awarded to Dr. Girindra Nath Mukerji, B. A., M. D., the Griffith's prize to the value of Rupees nine hundred for his essay on the Surgical Instruments of the Hindus with a comparative study of the Greek, Roman, Arab and modern European Surgery. The University has also undertaken to publish the essay in book form.

Final B. L. Examination: Number of passes.—

First Division.		
University College	...	1
Ripon College	...	1
Second Division.		
Ripon College	...	79
University College	...	27
Metropolitan Institution	...	13
City College	...	8
B. N. College	...	5
Dacca College	...	5
Midnapur College	...	4
Krishnagar College	...	2
T. N. Jubilee	...	1
Hughli College	...	1
Patna College	...	1
Rangoon College	...	1
Total	...	149

Post-Graduate Scholarships.—The undermentioned students are granted Post-Graduate Scholarships by the E. B. Education Department on the result of the B. A. and B. Sc. Examinations held in the year 1910, to enable the scholars to prosecute their studies for the M. A. degree. The scholarships are tenable for two years, with effect from May 1st, 1910:—Jatindra Mohan Chattopadhyaya will attend University lectures on Sanskrit, Calcutta, Rs. 40. Kshitish Chandra Mukhapadhaya will attend University lectures on Chemistry, Dacca College, Rs. 30; and Alim-ud-din Ahmad will attend University lectures on Economics, Dacca College, Rs. 30. The value of the junior scholarship awarded to Shib Chandra Sarma, is raised from Rs. 10 to Rs. 15 a month, as a special case. The scholarship is tenable for two years, at the Cotton College, Gauhati. A special junior Scholarship of Rs. 20 per mensem is awarded to Miss Priyatama Chatterjee, who passed the last Matriculation Examination from the Eden High School for Girls, Dacca. The scholarship is tenable for two years at the Diocesan Mission College, Calcutta.

INDIA (GENERAL.)

The Question of Free Primary Education: Reports of Local Governments.—A blue book of some 300 pages of closely printed foolscap is published containing the papers regarding the question of the abolition of fees in primary schools in India. These papers include the reports of all the Local Governments given between the dates of April 1907 and July 1908, also proceedings connected with the matter in the Imperial Legislative Council last cold season. The following is a general summary of those portions not previously made public:—

Madras.

The Government of Madras, in the course of a letter, dated the 24th February 1908, review the whole question. Mr. Taylor, I. C. S., Acting Secretary, writes:—"I am to point out that the whole expenditure of this Presidency is growing as fast as the revenue, if not faster, that the charges for education have expanded rapidly, and will continue to expand, and that the allotment for education can only be increased *pari passu* with the allotments for the other items of administration. At present the Government have under consideration, amongst others, a scheme for the establishment of model secondary schools which is expected to cost nearly three lakhs. But so far as the financial exigencies of the Presidency permit, the Governor-in-Council will be prepared to contribute to the object of free primary education. . . . In conclusion I am to state that the Governor-in-Council is not in favour of the proposal for the free supply to school children of books and other school requisites. If carried out, this proposal will involve an initial expenditure of about 7 lakhs, calculated at one rupee per pupil, and a recurring charge of about 3 lakhs per annum. The Governor-in-Council would, however, be prepared to afford special facilities for the purchase of these articles in the villages at the lowest possible rates. This Government are in entire agreement with the reasons set out for preferring the introduction of the scheme of free primary education *per saltum* instead of gradually, if it is to be introduced at all, but consider that the possibility of giving effect to it depends very largely upon the financial aid which the Government of India will be able to offer."

Bombay.

The Bombay Government report against the scheme, which they consider would be premature and harmful to the extension of primary education in Bombay. They add:—"He (the Governor of Bombay in Council) can only express the strongest hope that the Government of India will not press upon this Presidency the adoption of a scheme which, in view of the present paucity of schools and the wretched circumstances of the majority of the teaching staff, might produce results little short of disastrous."

Sind.

The Commissioner in Sind reports that, in his view, "there is ample scope for the expenditure of any additional funds that Government are likely to be in a position to allot to primary education on such objects as the further multiplication of schools, and the provision of better paid teachers, better accommodation, and better appliances of all kinds. All these are undoubted and crying needs, and until they have been suitably fulfilled they would seem to have a first claim on whatever additional funds can be spared."

Bengal.

The Bengal Government say:—"While the weight of opinion is in favour of the proposed abolition of fees, yet a very considerable number of persons, including many of those best qualified to offer a well-thought-out opinion on educational matters, express doubts as to whether the fees now levied really press hardly on the parents of children reading in primary schools, and take the view that any funds which may be available could more profitably be devoted to the establishment of new schools in backward areas, to the improvement of existing primary schools, and especially to bettering the position and increasing the pay of teachers. This last view is also taken by the majority of the officers whom the Lieutenant-Governor has himself consulted, and it is one in which His Honour, after a most careful consideration of the question, personally shares." In conclusion the Bengal report says:—"His Honour would only desire to express the opinion that if the general abolition of fees is to take place at all, the only practicable course is that it should take place *per saltum* in all primary schools, whether lower primary, upper primary, or middle vernacular, but that it should not apply to the primary classes of secondary schools."

The United Provinces.

The United Provinces report states that the Lieutenant-Governor "fears that disappointment will inevitably result should it now be determined that fees should not be abolished. But he considers it his duty to urge very strongly that this is the decision that should be come to on the question."

Punjab.

The Punjab Government report states that the Lieutenant-Governor "is convinced that in the Punjab, where the population is mainly agricultural, the chief desideratum is to afford additional educational facilities to the children of agriculturists instead of relieving the classes who now pay school fees."

Burma.

The Burma Government say:—"After giving the matter the most careful and attentive consideration the Lieutenant-Governor advises strongly against the adoption of the proposal so far as Burma is concerned."

Eastern Bengal and Assam.

The report of the Government of Eastern Bengal says:—"There is an almost general consensus of opinion on the part of the local officers of Government and the associations in favour of the abolition of fees, tempered, however, by the strongly expressed views of many experienced officers and persons consulted as to the ultimate results of this scheme when viewed from its financial aspect."

Central Provinces.

The Central Provinces report says:—"The Chief Commissioner most strongly deprecates any change being made merely in order to secure compliance with theories and principles which are novel even in Europe, and which, even if they prove an ultimate success in the West, are totally unsuited to these Provinces at this stage of their development."

N.-W. Frontier Province.

The report of the North-West Frontier Province Government is in the name of Sir Harold Deane, who dwells upon the backwardness of education in the area he is responsible for, and adds:—"The proposed exemption will at the outset benefit the small shop-keepers and others who do not contribute to the revenue of the State. There is, however, evidence to show that popular feeling on the subject of education is in a transition state, and in the present short-sightedness of the agricultural classes I can find no justification for the delaying of the advancement of universal primary education. It is a short-sightedness for which time will supply a remedy, and it may well be that the establishment of free elementary schools will in itself hasten the day of its wider appreciation."

Foreign Notes.

GREAT BRITAIN.

School Journeys: Report of L. C. C. Conference on the subject.—The Education Committee of the London County Council made the question of such visits a subject for one of their educational conferences. Under the chairmanship of Dr. Frederick Rose, a conference composed of many practical teachers and other educational experts, gave prolonged and careful attention to the subject; their report has just been issued. It contains a mass of interesting information concerning London, which will be useful not only to London teachers, but also to teachers in the outlying districts around the Metropolis. The report, for example, gives a list of museums, art galleries, public buildings, and other places of historical and educational interest. Tubes and tram routes to these places are given, also the days and times of admission, and, where necessary, how to secure permission. In addition, in many cases, there is a carefully-prepared list

of what might and should be seen, together with most useful information for the teacher's guidance. A very exhaustive list has also been drawn up of what might be seen during walks through London. This consists of objects of architectural, historical, archaeological, literary, and general interest. This section is most conveniently arranged. Buildings are classified under periods, places connected with famous men are listed, also London churches, relics of old London, monuments of libraries, food supply, and other objects of interest. A chronological list of portraits and effigies of English sovereigns in London, and where they are to be found, is a very complete collection. So also is the list of portraits and statues of statesmen and notable personages. It would be difficult, in any other volume published, to find so complete a list of objects of interest required by teachers in connection with school walks. The list of parks, open spaces, and other places suitable for the teacher in search of material for nature study will be found invaluable. Some examples from actual experience of educational walks are given, which show in a practical form how the information collated in the report might be used. A chapter on public engineering services is included, with details of the sources of information. The report concludes with a bibliography which is principally archaeological and architectural.

Indian students in England: Removal of their centre to new premises.—The English centre for Indian students has been transferred to the new premises in Cromwell Road. A much greater influx is expected this year. The National Indian Association will move in, in few days, and the Northbrook Society is beginning in September to contribute to the maintenance of the centre, but a considerable and perhaps the main share will fall on Indian revenues. It is understood that Lord Morley's Departmental Committee has recommended vesting the control in a Managing Committee, consisting of an Educational Adviser, a member nominated by the Secretary of State, and a representative appointed by the General Committee, composed of all the members of the governing body of the participating institutions.

Examinations: how they ought to be.—Miss Escott, of Sheffield High School, in seconding a resolution urging the co-option by Education Boards of acting teachers at the recent Head Mistresses' Conference, said a great deal was heard about examinations making the school work difficult, but if the examinations were of the right type and taken at the right age they helped rather than hindered. To ensure the right type they must have acting teachers on the Examination Boards. This was done in the northern universities, where two men and women were co-opted for a period of years. By this means the examinations were kept in line with the work of the schools. It was impossible for acting teachers to

take part in setting the papers, but they could criticise them afterwards, and unsatisfactory papers would not be set again. She had heard of a scholarship paper for children under twelve and a half years of age in which four questions in arithmetic had been impossible—two mathematical mistresses and the head of the school had failed to work them out! The examiner had acknowledged that one question could not be done, but he wanted the children to tell him so! In another resolution the head-mistresses expressed their regret that at a time when the correlation of subjects and the general principles which should underlie the making of a school time-table and curriculum are under general discussion, the Association of Teachers of Domestic Science should desire independently to approach university and other examining bodies and to press upon them a definite syllabus to be imposed upon all secondary schools taking this subject in their examinations.

Increased grants to Scottish Universities.—The amounts of the increased Treasury Grants to the Scottish Universities have been announced: Edinburgh and Glasgow will each have £12,500 a year more, Aberdeen £9,000, and St. Andrews £6,000. The principal conditions attached to these grants are that the money shall be spent in a manner approved by the Treasury, and that an inclusive or composite fee of uniform amount shall be fixed throughout the four Universities for all the classes included in a particular course of study.

The centenary of the birth of David Livingstone.—The centenary of the birth of David Livingstone will be celebrated in 1913, and in view of the fact that the famous missionary was a student at Charing Cross Hospital before he took his medical degree, the committee of that institution have decided to inaugurate a Livingstone Centenary Million Shilling Fund to enable them to re-open the wards which are closed owing to want of money. In this connection the fact is being recalled that Livingstone once wrote:—"It was with unfeigned delight I became a member of a profession which is pre-eminently devoted to practical benevolence and which with unwearied energy pursues from age to age its endeavours to lessen human woe."—*The Statesman*.

GERMANY.

Compulsory Continuation Schools in Germany.—An interesting contribution to the literature dealing with the continuation school question has just been made in a pamphlet on 'Compulsory Continuation School in Germany,' published by the Board of Education. The author, an official of the Southampton County Education Committee, gives facts and statistics collected, and records impressions

formed, during a two months' journey last year, undertaken to investigate the actual working of the compulsory continuation schools in some of the larger German towns, and their position with regard to the social and industrial life of the country. The general principle followed in these schools is to group the instruction round the calling of the pupils. Sometimes the teaching is both theoretical and practical, sometimes mainly theoretical.

The State laws and local bye laws enforcing compulsory attendance apply, as a rule, to boys only. In a small and diminishing number of states attendance is still altogether voluntary.

The success of a compulsory system of further education must depend largely on the attitude towards it of the people most directly concerned. Generally speaking, both workers and employers are favourably disposed, and often they are enthusiastic. In fact, the support given by employers and by trade associations induces the belief that their intelligent sympathy and collaboration are the ultimate conditions of success. The opposition of individual employers in the early days of compulsion has passed away with the recognition of the keener intelligence and greater usefulness of boys so trained. In the report are set out the expressed opinions of many representative trade societies and employers. The majority

of these testify not only to the zeal, interest and diligence of the pupils in their studies, and to increased technical skill, but also to the beneficial influence on their general character and conduct. While, however, compulsory attendance does not appear to interfere seriously with the routine of the factory and the workshop, it is contended that the absence during the day of the clerks greatly disturbs the routine of the office.

In the matter of the times and arrangements of the classes, the convenience of employers is studied as much as possible. The classes often begin at 7 a.m. and parallel or alternate class for boys in the same year are generally held at the same time, so that employers are not often inconvenienced by the absence of two or more boys at once.

With regard to the supply of teachers, the tendency to universal day-time instruction is making a special staff of teachers solely appointed for continuation work more and more necessary. The main body consists of elementary schoolmasters who have qualified, by attendance at special courses in the theory and practice of particular trades, as teachers of trade arithmetic, book-keeping and correspondence. The manual and practical instruction is given by expert artisans, who, in some places, as Hamburg and Düsseldorf, are instructed in educational principles and teaching methods.

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ment should pursue, encouraging in the people themselves a feeling of self-help." We are in perfect accord with the main contentions of Mr. Hammick. We think that the missionary bodies, whose ostensible aim is not education, have in this country thwarted the growth of indigenous educational institutions. The people have not yet become sufficiently patriotic to resort solely to indigenous institutions, overlooking the various allurements put by the missionaries to draw Indian youths to their institutions. We must also confess with sorrow that Government officials have not always been sympathetic to indigenous institutions. Much of the charity in India is misdirected, and we believe that with the proper organization of charity and co-operation among the people existing educational institutions can be placed on a better footing, not to speak of starting new ones, with the help of the Government. Attempts made by the educated sons of the soil to place religious endowments on a better footing and direct them in proper channels have not received proper support from the Government.

On its inception we welcomed with joy the School Final Examination, trusting that, if the scheme were properly worked out, it would be productive of many benefits. We little dreamt that within a short time serious complaints would be made against the scheme. As now planned and worked the change from the Matriculation to the School Final does not seem to be for the better. The marks system that has been introduced in connection with the School Leaving Certificate has turned every lesson into an examination. The boys of our upper secondary classes are now-a-days always thinking of marks and not of know-

ledge. Their teacher is now regarded as an examiner, and the teacher aims at finding out what the pupil knows of the lesson. We do not know who is responsible for this harmful system. We know of no country in which this system is followed. The country which produces the best scholars in the world entirely disapproves of the marks system. The superior scholarship of German schools is ascribed to the absence of marks and examinations. It would not be true to say that German teachers never examine their classes, but these examinations are merely what we should call class tests, examinations set when a given subject is finished, with the purpose of finding out whether the main points of what has been taught are sufficiently impressed on the mind of the pupil to make it safe to go on with another part of the subject. There is only one examination worthy of the name that every German boy has to pass at the end of his school years, the *maturitäts-examen*, which admits him to the university. The Indian pupil is undergoing an examination almost every day. This continual strain is likely to tell very seriously on the health of our boys. We cannot too strongly condemn the marks system that has come into vogue in our schools.

No one will deny the value of pictures as an adjunct to teaching almost all subjects. It is therefore natural to think that the cinematograph will prove a valuable instrument of education in the primary school. We think it could be well adopted in such lessons as history, geography, botany and natural history, and even in needle-work and arithmetic. The mechanical industries, such as the manufacture of boots and shoes, clocks

and watches, coal-mining and iron-smelting, agriculture in its many different phases, could also be taught much more successfully and with a considerably enhanced interest to the children by means of "living pictures." There can be no doubt that children will read their story-books with greater zest and accuracy when they see the stories actually represented on the screen, and that they will learn in this way to realise the meaning of mountains, rivers, lakes, and islands more readily in a few minutes than if they had read a geography book for a whole week. The use of the cinematograph is said to be already in force in some of the American public schools; experiments in the use of the cinematograph in schools are being made in some schools of England and France. The Education Department of Madras might attempt similar experiments with great advantage. It may be pointed out that some of the serious objections that might have been brought against the use of the cinematograph in schools, such as the inflammable nature of the celluloid films and the possible damage to the eyesight of children from the vibrations of pictures, no longer exist. A non-inflammable safety film has been invented and is largely in use, and the vibration has enormously decreased since the first inception of living pictures, and the multiplication of films, it is believed, will soon abolish the vibration altogether.

We have read with much interest the report of the Committee appointed by the Madras Government to consider the feasibility of establishing a Rajkumar College at Madras and the resolution of the Government thereon. As to the feasibility of the

scheme there can be no doubt, for the zamindars and rich landed proprietors can find the money to lavish on this luxury and the Government in its present-day mood will find also some money to patronise its zamindar protégés. But the main question connected with the proposed institution is not its feasibility but its utility. The sons of zamindars are like the sons of other men and have therefore to go through a course of training similar to other young men. As a matter of fact when young Rajas, like those of Mysore and Baroda, were under the tuition of special private tutors, they had to be associated with other young men and made to go through the same training. In European countries there are not special institutions for the training of the sons of Kings and Emperors. The heir-apparents go through a school and college course just like any other bourgeoisie and it is to their advantage to do so. Even in Madras only such of the wards in 'Newington' as have had the fortune of going through a college course in association with the sons of middle-class men have had any culture worthy of the name. Others may be adepts in sports, but it is doubtful if they have any culture in them. If the zamindars are to administer their estates in the interests of their subjects, it is good that their sons should mix with their subjects and put themselves in their position during their period of tutelage. The zamindars may not be willing to consider this aspect of the question. Let zamindars, if they like, throw away the hard-earned money of their subjects on luxuries, but we cannot approve of the Government spending any of its revenues for the benefit of a few who can well afford to take care of themselves. It is pure sentimentality

for the zamindars to think that their children should be trained separately from the other children of the soil. If the moral fibre of their children is not to be weakened, their children must not be afraid of pain and hardship.

In this connection we may be permitted to suggest the amount proposed to be spent on the Rajkumar College might well be diverted for the free Primary education of the poor.

At a recent meeting the Senate of the Calcutta University passed a resolution dispensing with the necessity of attendance at a college as a condition precedent to being allowed to appear at any examination for the B. A. degree in the case of those who had once failed in the B. A. degree. This is what obtains in Madras and we believe that this is the proper course. Students who have once gone through a college training might be considered to be capable of helping themselves for an examination with the aid of the necessary books. We are therefore somewhat astonished at the severe comments made

by the *Bengalees* on the resolution of the Calcutta University. It asks, is this conducive to the interest of discipline, about which we hear so much in these days? Our contemporary must have indeed very queer notions of discipline to connect discipline with permission to appear for an examination in private in the case of failed students. The *Bengalees* thinks that this resolution is likely to affect vitally the interests of the non-Government colleges, for it would lead to a diminution, a perceptible diminution, of the number of students attending the B.A. classes in those colleges, and, therefore, an appreciable loss of income. This is a wrong view of the matter. If the failed students see that colleges render them real help which would enable them to pass their examinations with greater facility, they are sure to resort to the colleges. The aim of every university should be to put as few restraints as possible on its under-graduates. What is done by the students for themselves is of greater benefit to them than what the colleges may do for them.

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SCHOOL RECORDS IN RELATION TO THE SCHOOL FINAL SCHEME.

THE School Final Scheme has been hailed by all educationists of this Presidency as inaugurating a reform which we have been hitherto badly wanting but which, it was in the will of Providence to be discovered after what we may almost feel as a settled fact, our departed friend, Matriculation, has committed incalculable havoc upon the juvenile victims of High Schools. All the jubilation felt in the discovery, will be of no avail, unless proper measures are taken to make the scheme a success. There are as many opportunities to make it a factor of beneficent influence by conscientious, intelligent and wisely directed efforts as there are possibilities to make it a fruitful source of harm by negligent, perfunctory or make-show work. It is therefore the duty of all concerned, of the Director, of the Inspector, of the Head Master, of the School Final Board and of the School Master to see that the scheme is so worked as to serve the best interests of education. Of the many-sided requirements for the successful working of the scheme, the most prominent one is the marking system required to be adopted in schools, which is mainly to guide the School Final Board in declaring individual certifi-

cates, either completed or otherwise. The following few paragraphs will be devoted to the discussion of how best to keep the school records of marks. We shall also discuss what defects there are in the suggestions hitherto received and how best to guard against such defects. Before we take up for discussion this subject, for which this article is devoted, it will not be unprofitable to examine why by unwillingness on the part of the Matriculation Board to attach value to the school record of marks the Matriculation system proved a failure. This preliminary examination, which must be necessarily brief as not having very much to do with the object on hand, will be of no small help in the discussion to follow.

It needs no saying here that for a candidate to be recognised to have passed the Matriculation Examination, what was required is that he should have got not below a fixed minimum of marks in each of the subjects of the examination. In spite of the admitted freaks of the examination and constant variations in the difficulty of the question papers and in their valuation, Matriculation was looked up to as a passport either for higher University course or for Government service. Whatever might be the acknowledged merit of a particular candidate, however much his real capacity belied the results of the public examination, it was the results of the exami-

examination will become really useful. If, on the other hand, the examination is held only on portions held at short intervals, there will not be scope for questions to test original thought which is the natural outcome of assimilated knowledge, cram will be encouraged, estimate of capacity will become unavoidable and thus the main object of the examination will be frustrated. Moreover, often held, these examinations take away much of the time that could be well utilised for useful teaching. Along with disadvantages of this nature, there are also advantages, one of the most important of which, is that it stimulates preparation by continued application. The tendency on the part of young pupils to allow revision work to accumulate is guarded against by this system.

Another system that we have to deal with for the purpose of school records is the system of periodical examinations, generally terminal or annual examinations. Until the beginning of the current year, these were the examinations that were regularly held in most schools. Unavoidable as these are even now, it cannot be said that they are without their drawbacks. It is said that there is no practical difference between a public examination conducted on a large scale and the school terminal examinations and so it is held that the less these examinations are depended on in the estimate of individual capacities, the better. A teacher with some experience may find it difficult to endorse the correctness of this view in its entirety. There is a good deal of difference between a public examination and a school terminal examination, caused by the enormous difference in the numbers presenting themselves for the examinations and by the possibility of their being fewer freaks in school

examinations than in public examinations. It is not to be supposed that it is attempted to set up a defence in favour of school terminal examinations. What is desired to be urged is that they do not deserve to be decried in the manner they are. No one doubts that they have drawbacks of their own and they would lose half their value if they should wholly be depended upon for deciding promotions. But, along with the knowledge of the previous progress during the year to serve as corrective, school terminal examinations must prove good and reliable tests, as good as any that can be thought of. Inexperience and ambition, sometimes, spoil the value of these examinations by unsuitable question papers, both in regard to length and difficulty. To guard against this defect, it is expected of experienced Head Masters that they will not permit such papers to be given. Carefully conducted, they have been found to prove of considerable value.

There is one other point which requires some discussion before the subject of school records is dealt with. Has the general impression of Head Masters and teachers regarding individual pupils anything to do in deciding the question of their fitness for the public examination in connection with the Secondary School Leaving Certificate Scheme? To say that there is absolutely no room for such an impression is to admit the infallibility of school marks; on the other hand, to admit that there is room for utilising the general impression, is to look with an eye of doubt on the value of school records. The only way to reach the truth of this problem will be to think for a while in order to see whether human capacities are such as can be mathematically estimated by the drill system of marking. Man being of God,

man's intelligence is of divine proportions transcending all mechanical systems ever devised or can be devised to gauge it. This point must always be borne in mind by all those who are in charge of the education of youngsters. It is true that error in one case is corrected by accurate estimate in ten other cases. The average of marks alone having to be the teacher's guidance, there cannot generally be errors of either over-estimate or under-estimate. After all, what is looked up to for guidance, is only an average estimate which, by its very nature obviously admits of errors. Consequently, school records of marks may have to be modified, though in exceptional cases, by the general impression regarding individual capacities. It is cautiously put down here that the general impression test must prevail in *exceptional cases only*; otherwise disastrous consequences are sure to follow. Only let Head Masters bear in mind that no school staff can be a model one, that over-zeal and inexperience sometimes spoil as much as incapacity and indifference. It is hence that, in exceptional cases, general impression must be allowed to have some modifying influence. This impression should be one formed after long and intimate contact and must be based on conscientious and clear knowledge of individual capacities, without prejudice or favour of any kind; otherwise this impression is not worth even a moment's entertaining.

The foregoing paragraphs will have made it clear that no one particular system can be looked up to as a sole reliable test in the estimate of fitness. Each system has its drawbacks and merits, so that to minimise the evils and to profit by the merits of each, a wholesome combination of all of them will

have to be made. It is difficult to say what proportion of importance is to be attached to each system with reference to the other. In our present state of inexperience with regard to the new scheme no hard-and-fast rules can be framed for general guidance. It will take sometime before any one connected with the scheme or working in the field of education can be in a position to give any practical advice of assured usefulness in regard to school marking or in regard to any practical method by which individual merit can be known. Meanwhile, publication of views both in associations and through the Press cannot but be of general usefulness. It is only with this object in view that some suggestions are given below on the problem of school records, which, in the present initial stages of the operation of the School Final Scheme, is a problem of all-absorbing interest.

For the purpose of entries of marks each teacher must be provided with a register with the necessary columns opened against the name of each pupil. This must bear the serial number, the admission number, and the name of the pupil. Columns must be provided in it for date, for the description of the examination, whether regular daily examination, surprise examination, written, oral or periodical, with a vertical column for the average of marks obtained every month in each subject. There should be, in addition, a register for the entry of averages in which each individual teacher should enter the maxima reduced to hundred and the total of marks of each pupil so as to bear the same percentage to hundred that the total got bears to the total of the maxima. A third register which may be styled the individual-pupil register is advisable to be kept, of

which one page may be set apart for each pupil with the names of subjects printed in a vertical column and columns provided for the entry of the percentage obtained for each month in each of the subjects. Every page of this register may have also space provided for general impression to be noted down on Physical Exercise, English-Handwriting and Vernacular Handwriting with space also for such general remarks as the Head Master may deem fit. In addition to these registers, the Head Master may have a book of a respectable size called the memorandum-book of which one or two pages may be set apart on behalf of each pupil for notes of memoranda to be put down by the Head Master as he is gathering information which must be very reliable and not got haphazard, regarding each pupil. This book cannot but be of real service to the Head Master for general remarks to be noted down at the end of each month in the individual-pupil-register, as well as in the School Leaving Certificate Book, at the time when the certificate books are sent up to the School Final Board. The individual-pupil-register supplemented by the memorandum-book supplies all the information necessary for entries to be made in the School Leaving Certificate Book. The average of the monthly percentages is taken and entered in the School Leaving Certificate Book as the percentage against each subject and the essence of the general remarks is put down as the general impression against such of the subjects for which numerical entries are not required and as the impression of the Head Master regarding the noteworthy capacities and characteristics of each pupil.

The records described above are work enough for the staff and the Head Master of

any school. It may not probably be deemed out of place here to devote some space to the question, how to value papers, how to distribute marks and how examinations are to be held. To begin with, oral examinations, questions requiring intelligent thought, about five in number, may be previously prepared by the teacher on each of the subjects taught by him and put to such pupils as he chooses and marks entered in his register according to the quality of the answers. In this way the examination of a whole class may be finished at least once a month. One precaution that has to be taken is to guard against the inference on the part of pupils, that, because they have been once examined, there will be no further examination during the month so far as they are concerned. This can effectively be done by putting some questions also to those who have been once examined accompanied by a show of mark-entry. An examination of this description may be called the regular daily examination which encourages systematic preparation of the portions daily done.

Two other examinations that have been described in the course of this article are surprise examinations and short-written examinations. Both these examinations may be profitably combined in one. A short paper of an hour's duration may be set and given on any day. Pupils should be asked to have examination note-books on each subject which should be retained by the teacher concerned and distributed as soon as the question-paper is given. These note-books may have a narrow and a wide margin on each side of the space for answers, the narrow margin being intended for hints of mistakes by the teacher, the wide one for correction to be written down by the pupil concerned, acting

on the hints found on the narrow margin. This paper may be so set as to test the assimilation of the portion taught for such long duration, as the teacher deems fit to examine on.

Another examination suggested by some is daily written examination for about 10 or 15 minutes at the end of each lesson. One or two questions on the portions just then taught, or previously taught, are dictated. Answers are written down within the end of the hour. The note-books are collected and valued. To save pressure of work to the teacher, he is advised to value about half-a-dozen note-books daily with the precaution suggested in connection with the daily oral examination.

One other examination that deserves to be adverted to is what is known as periodical, which is either monthly, three-quarterly or terminal. This is held to test the assimilation of the portions done for a longer period than weekly or short-time-examinations and is conducted generally after the manner of public examinations. The value of an examination of this kind lies in the fact that it enables the teacher to estimate more correctly the real capacities of pupils for the public ordeal than short-time-written examinations or oral examinations. This view may not be acceptable to many who think that the daily or short-time-interval tests are more valuable to be relied on for guidance than periodical written tests, which occur at longer intervals and which have whims and caprices of their own. Reasons have been put forth to explain why this view is not correct and as such, a reiteration of the same is altogether needless in this place.

Before closing, it will be well to consider what relative values are to be attached to

these examinations, and according to their values what proportions of marks are to be assigned to them. The value of an examination must be tested by how far it enables a teacher to estimate correctly the real capacity of his pupil. The value rises or falls by the greater or smaller extent it is helpful in this way. The proportion of the percentage of maximum marks being according to the value estimated in this way, one that has followed the discussion in the preceding paragraphs cannot have any difficulty in fixing the percentage for each kind of examination. For instance, the daily oral test cannot carry so much value as short-interval written tests. These, again, being tests on smaller portions, and cram and memory work being possible without evidencing real capacity sufficient as the standard requires, cannot carry as much percentage as terminal or monthly examinations. In a matter, like this, the views of teachers may possibly differ. But the view that the writer has come to hold, after long experience has been put forth here to be taken for what it is worth. It will certainly be absurd to lay down any hard-and-fast rules for guidance with regard to the determining of the percentage for each examination. Only as a matter of illustration it may be stated that, if on each subject there are held three examinations each month (1) an oral test, (2) a surprise written test, and (3) a monthly test, the maximum may be distributed in the proportion of 2:3:5. The added-up marks obtained monthly reduced to the maximum of hundred may, at the end of each term, be made to bear the same value as the marks obtained in the terminal examinations. The results got in this way may have, in exceptional cases, to

$$\therefore \frac{A'C}{CB} = \frac{AC}{CK}$$

$$\therefore \frac{A'C}{AC} = \frac{CB}{CK}$$

and $\angle A'CA = \angle C + 45^\circ = \angle BCK$.

$\therefore \triangle A'CA$ and BCK are similar and equiangular.

$\therefore \frac{AA'}{BK} = \frac{AC}{CB}$ i.e., as one of the sides containing a right-angle in a right-angled isosceles triangle is to its hypotenuse

And $\angle A'AC = \angle BKC$

Taking (1) and (2) together

$$\frac{B'C'}{BK} = \frac{AA'}{BK} \therefore B'C' = AA'$$

Also $\angle ABC' = \angle AKB$

$\angle A'AC = \angle BKO$

$\angle B'AC = 45^\circ$

$\angle ABC' + \angle A'AB' = 90^\circ$

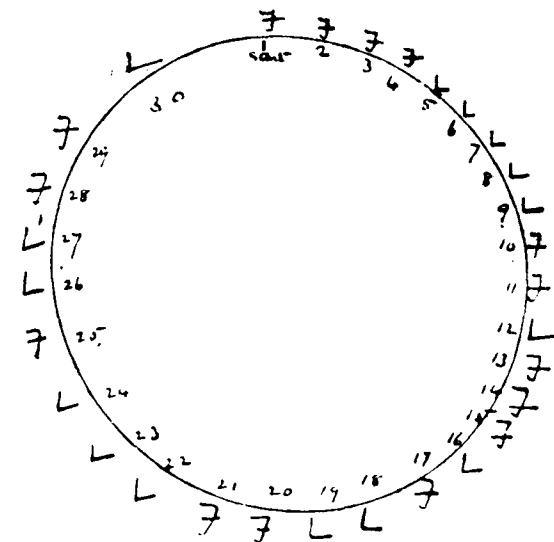
$\therefore AA'$ is perpendicular to BC .

130. [C. RUNGACHARI.] In a quarrel between two boys for 15 mangoes, a mediator finding that one of the boys was right and the other in the wrong, settled the quarrel as follows:—He mixed 15 mangoes with 15 leaves and arranged them in a circle. He then asked the unjust boy to take every ninth fruit or leaf as he may get, beginning to count from the fruit. The unjust boy since he got only 15 leaves and not even a single mango, found that he was very nicely deceived and went away sad, and repenting for his wicked conduct. The other boy thanked the man for his cleverness in finding out the truth and for the nice trick he planned. How did the mediator arrange the mangoes and leaves?

[This is a variant of the well-known Englishmen and Turkish-men problem.—B.K.]

Solutions by D. P. Varadaraja Iyengar, and many others.

The following is the arrangement. F stands for fruits and L for leaves.



133. [N. S. RAMANATHA IYER.] Sum the following series to n terms:—

I. 1, 1, 4, 7, 19, 40, 97, 217,.....

II. 1, 1, 7, 13, 55, 133, 463,.....

Solution by S. V. Venkataraya Sastry.

I. Sum to n terms 1, 1, 4, 7, 19, 40,.....

Here $t_n - t_{n-1} = 3t_{n-2}$

$t_{n-1} - t_{n-2} = 3t_{n-3}$ and so on

$t_3 - t_2 = 3t_1$

Adding $t_n - t_3 = 3S_{n-2}$

or $t_{n+2} - t_2 = 3S_n$

$$1 + x + 4x^2 + 7x^3 + \dots = \frac{1}{1 - x - 3x^2}$$

$$= \frac{3}{3 - 3x - 9x^2} = \frac{3}{3(1 - x - 3x^2)}$$

$$= \frac{3}{\sqrt{13}} \left\{ \frac{1}{\frac{\sqrt{13}-1}{2} - 3x} + \frac{1}{\frac{\sqrt{13}+1}{2} + 3x} \right\}$$

$$= \frac{6}{\sqrt{13}(\sqrt{13}-1)} \left(1 - \frac{6x}{\sqrt{13}-1} \right)^{-1}$$

$$+ \frac{6}{\sqrt{13}(\sqrt{13}+1)} \left(1 + \frac{6x}{\sqrt{13}+1} \right)^{-1}$$

$\therefore t_{n+2}$ = the co-efficient of x^{n+2} in the expansion of the above

$$= \frac{6}{\sqrt{13}(\sqrt{13}-1)} \left(\frac{6}{\sqrt{13}-1} \right)^{n+2} + \frac{6}{\sqrt{13}(\sqrt{13}+1)} \left(\frac{-6}{\sqrt{13}+1} \right)^{n+2}$$

$$= \frac{6^{n+3}}{\sqrt{13}} \left\{ \frac{1}{(\sqrt{13}-1)^{n+3}} + (-1)^n \frac{1}{(\sqrt{13}+1)^{n+3}} \right\}$$

$$= \frac{6^{n+3}}{\sqrt{13}} \frac{(\sqrt{13}+1)^{n+3} + (-1)^n (\sqrt{13}-1)^{n+3}}{12^{n+3}}$$

$$\therefore S_n = \frac{1}{3} S_{n+2} - \frac{1}{3}$$

$$= \frac{1}{3\sqrt{13} \cdot 2^{n+3}} \{ (\sqrt{13}+1)^{n+3} + (-1)^n (\sqrt{13}-1)^{n+3} \} - \frac{1}{3}$$

II. Sum to n terms 1, 1, 7, 13, 55, 133,.....

As before $t_{n+2} - t_2 = 6S_n$

$1 + x + 7x^2 + 13x^3 + \dots$

$$= \frac{1}{1 - x - 6x^2} = \frac{\frac{2}{3}}{1 - 3x} + \frac{\frac{1}{3}}{1 + 2x}$$

$$\therefore t_{n+2} = \frac{2}{3} \cdot 3^{n+2} + \frac{1}{3} (-2)^{n+2}$$

$$\therefore S_n = \frac{1}{3} t_{n+2} - \frac{1}{3} = \frac{1}{3} \{ 3^{n+3} + (-1)^n 2^{n+3} \} - \frac{1}{3}$$

136. [P. V. KRISHNA IYER, B.A., L.T.] Explain the following geometrical constructions for finding the harmonic mean of two straight lines AB and CD:—

(i) Draw any trapezium with AB and CD for the parallel sides. Let the diagonals of the trapezium meet at O. Through O draw a parallel to AB or CD meeting AC, BD in P and Q respectively. Then PQ will represent the harmonic mean between AB, CD.

(ii) Take a straight line PQ equal in length to AB + CD. On it describe a semicircle. From PQ cut off PM equal to AB or CD. Erect a perpendicular to PQ at M cutting the circumference at R. Join R to the centre of the circumference O. From M draw MS perpendicular to OR. Then RS will represent the H. M.

Solution by S. V. Venkataraya Sastry.

(i) Let the order of the letters be ABCD.

Through A draw a line parallel to BC meeting PQ, CD in E and F respectively.

Through P draw PG parallel to BC meeting CD in G.

P is on AD and Q on BC

AOB and COD are similar triangles.

$\therefore AB:CO = BO:OD = AP:PO = PE:DG = PQ - AB:CD - PQ$ which shows that PQ is a harmonic mean between AB and CD.

(ii) RS.RO = RM²

and RM² = PM.MQ = AB.CD

RO = $\frac{1}{2}$. PQ = $\frac{1}{2}$ (AB + CD).

$\therefore RS = \frac{RM^2}{RO} = \frac{2AB \cdot CD}{AB + CD}$ which shows

that RS is a harmonic mean between AB, CD.

QUESTIONS FOR SOLUTION.

139. [G. R. KAYE.] Find integral solutions of the following particular cases of the equation given in problem 127.

- (1) $69x^2 + 1 = y^2$; (2) $109x^2 + 1 = y^2$;
(3) $61x^2 + 1 = y^2$; (4) $4729494x^2 + 1 = y^2$.

140. [G. R. KAYE.] In dealing with the equation $ax^2 - 1 = y^2$ Bhaskara says: "If the multiplier (a) be not the sum of (two) squares, when unity is subtractive, the instance proposed is imperfect." If this is generally true, prove it.

141. [G. V. TELANG.] Sum the following series to n terms:

(a) 1, 1, 3, 5, 11, 21, 43, &c.

(b) 1, 2, 5, 12, 29, 70, 169, &c.

[Suggested by Question 128].

142. [G. V. TELANG.] AB and AC are tangents to a circle.

(a) Draw a tangent to the circle so that the portions of it between the point of contact and the points of intersection on AB and AC may be in a given ratio.

(b) Draw a tangent to the circle so that the portion of it intercepted by AB and AC may be of given length.

(c) Through a given point P draw a line PQR (points Q and R being on AB and AC respectively) so that PQ : PR = QB : RC.

143. [G. V. TELANG.] Two posts of given lengths are fixed vertically in the ground. Strings are tied to the top of one and the bottom of the other. Show that the two strings cross each other at a fixed height from the ground irrespective of the distance between the two posts.

144. [G. V. TELANG.] A merchant had three pots which could contain 20, 13 and 7 seers of oil. The 20 seers pot was full and the others empty. Show how he measured out 10 seers of oil to each of two customers by means of the 3 pots.

145. [S. L. UGRANKAR.] The diameter AB of a circle is divided into n equal parts. On AB an equilateral triangle ABC is described. C is joined to P, the second point of division from A. CP is produced to meet the circle in Q. Prove that the arc AQ is $\frac{1}{n}$ th of the whole circumference.

146. [S. L. UGRANKAR.] Prove that the side of regular heptagon inscribed in a circle is equal to the altitude of an equilateral triangle whose side is equal to the radius of that circle.

147. [S. L. UGRANKAR.] AB is the diameter of a circle whose centre is O. At A, B tangents AX, BY drawn. From AX a part AP is cut off equal to $1\frac{1}{2}$ times AB. In BY a point Q is taken so that the angle BOQ = 30° . Prove that PQ is equal to half the circumference.

THE SONNETS OF SHAKESPEARE.

IN the wide and universal appreciation of Shakespeare's consummate craftsmanship in the drama, and in the constant adoration paid to his dramatic genius, there is the danger of his lyrical achievements not receiving adequate recognition. It is the creations of his dramatic spirit that are seen receiving popular applause wherever we turn. Here a delightful comedy of his is being staged with a Falstaff or Dogberry or one of

his inimitable clowns setting the audience in roars of laughter. There, the tragic passions are delineated with a thrilling fervour which evokes pity and terror. Now it is an audience enraptured over one of his exquisite heroines, or shedding tears for the sorrows of Imogen or the sad end of Desdemona. Now again, it is the revelation of volcanic formations which work the tragic fact of a play. It is thus everywhere the appreciation of the dramatist.

Shakespeare is moreover always necessarily seen speaking to the world through his characters though the veil cannot effectively obscure him at least to critical and discerning eyes. There must be a longing in those familiar with the dramatist's work to hear him speak in his own person so that they may strive to come to an intimacy which would allow them to feel the swell and throb of his own heart, peer into its depths and listen even to the slightest whisperings of his soul. It is not suggested that his dramatic works do not aid us in this direction. He reveals his personality though not in absolute clearness of outline and in fulness of detail even when he is engaged in the work of dramatic presentation, but it cannot be denied that his own personal utterances are more appealing.

Which student of Dante is not thankful for his *Vita Nuova* with its spiritual offerings to Beatrice which enable him to know the author of *The Divine Comedy* with more intimate sympathy?

"The Sonnet glittered a gay myrtle leaf
Amid the cypress with which Dante crowned
His visionary brow,"

and its intense personal note is the cherished object of the affections of a wide circle of his readers. Who has not been touched by the

plaintive strains with which Camoens tried to assuage the anguish of his heart,—loving the epic poet with greater sympathy as the result? Is there not a sense of regret felt that the high-souled Puritan-bard of England should not have more directly embodied the experiences of his rigorous life than what has been vouchsafed to us in a very few sonnets and in the reminiscences revealing themselves in the career of the imprisoned Samson working eyeless at Gaza? The desire to hear Shakespeare's purely personal voice is even greater, as the poets of *The Divine Comedy*, *The Lusiad*, and *Paradise Lost* enjoy the privilege of talking in their own person whenever they have the inclination for it, while the dramatist has always to discharge, at least professedly, the task of conveying the sentiments, feelings, and emotions, of others. Whatever may be the autobiographical value of the sonnets of Shakespeare, the reader enjoys the delightful satisfaction of listening in them to the voice of his "beloved Shakespeare" directly and not through the misleading indistinct medium of a character which though only the creation of the dramatist assumes a vivid individual personality with its own attributes, and can serve to some extent as an effective veil of separation.

II.

The Sonnets present one of the most baffling problems of Shakespearean study. A shroud of mystery has been clinging around them since they were ushered into the world in 1609 by the piratical publisher, Thomas Thorpe with the unintelligible dedication:

"To the onlie begetter of these ensuing sonnets Mr. W. H. all happiness, and that eternity wisheth the well-wishing adventurer in setting forth."

The hundred and fifty-four sonnets have elicited an amount of controversy which no writings within a similar compass seem to have done in all the range of the world's literature. The first one hundred and twenty-six sonnets are professedly addressed to "a man right fair" and the last few to "a woman colored ill." The person on whom his affections are lavished with the passionate enthusiasm of a lover in the first part of these sonnets is described as a young man of extraordinary beauty, a lovely boy with "birth, wealth, and wit," a literary patron who is addressed thus:

Lord of my love to whom in vassalage,
Thy merit hath my duty strongly knit.

The amorous adoration is so intense that Coleridge suggested—and the suggestion deserves some regard—that some of them at least must have been addressed to a woman. The last sonnets reveal a tragic history of unfaithfulness in a mistress and the fierce outburst of Titanic passions in the lover. But the personages have persisted in refusing to have their veil of obscurity rent by all the acute and erudite critics who have zealously applied themselves to the work of unravelling this tangled problem. Critical research has not been successful in tracing the identity of the mysterious W. H. who is referred to by Thorpe as 'the only begetter' of these sonnets. Whether he was William Herbert, Earl of Pembroke, or Henry Wriothesly, Earl of Southampton or an unworthy literary jackal, William Hall who acted as the underling of Thomas Thorpe—these are questions which only seem to grow more and more mysterious with the attempts at their discussion. The "dark-eyed" mistress is more severe towards the advances

of critics. The scholarship that has been spent on these vexed problems and the critical ingenuity which has been exercised in the most fantastic directions with the aim of solving this question merit the remarks of Professor Raleigh—"There are many foot-prints around this cave of mystery, none of them pointing in the outward direction. No one has ever attempted solution of the problem without leaving a book behind him; and the shrine of Shakespeare is thickly hung with these votive offerings, all withered and dusty. Not one has ever sought to gain access to this heaven of poetry by a privileged and secret stair-way, without being blown ten thousand miles away over the backside of the world into the Paradise of Fools."

The enquiry seems to bristle with difficulties and some of the conclusions that have been arrived at are amusing in their grotesque perversity. A critic sees in the *Sonnets* a religious and political allegory—the representation of conflict between reason and the affections. Another has ventured upon the strange proposition that they are intended as a satire on the sonnetteering fashion of the day. From the country which seems to enjoy the unenviable monopoly of all eccentricities in Shakespearean criticism, Germany, comes the strangest of all theories, that the object of Shakespeare's idolatry was 'William Shakespeare' himself. It must be a consolation to Herr Barnstoff, who is the illustrious discoverer of this priceless truth, that the poetic Narcissus who indulged in paying such an amorous adulation to his own person did not pine away and die like his prototype in Greek mythology, but lived on to write a series of dramatic masterpieces. The list is by no means at an end, for has it not also

been said that Shakespeare addressed them to his illegitimate son or to the great Queen Elizabeth herself? Have not the Baconians stepped in with their deliberate conviction that they were written by Bacon to be read by William Herbert to the Queen and thereby win back her regard for the offending truant Essex? It is verily to a PARADISE OF FOOLS that such attempts have been leading and it is a sign of wisdom to turn away from them altogether. "Upon the Sonnets," says Swinburne in his characteristic manner, "such a preposterous pyramid of presumptuous commentary has long since been reared by the Cimmerian speculation and Beotian brain-sweat of Sciolists and Scholiasts, that no modest man will hope and no wise man will desire to add to the structure or subtract from it one single brick of proof or disproof, theorem or theory." And after all such efforts are only worse than what Mr. George Wyndham has stigmatised as "trying to find in the Sonnets the writer of the plays instead of caring for the sonnets themselves."

III.

A critical appreciation of the poetic value of the Sonnets must form the most important aspect of their study. They are among the proudest achievements of passionate love-poetry in the English language and have a value independent of the beings who were the recipients of the feelings imbedded in them. Here is lyric sweetness of an intoxicating rapture exercising a subtle influence over the heart; marvels of verbal melody with a swelling cadence of music; a worship of Beauty with passionate love if not with any mystic sanctity; a vigour of imagination and a loveliness of fancy attuned in rare harmony; blinding flashes of meteoric and

rainbow light; a tragic grimness and sublimity striking awe into the very soul; a thrilling note of agony, fear and hatred; a fervour of the heart glowing with emotion at a white heat; cravings of the body and soul finding utterance in accents of far-reaching strength—the Sonnets exhibit a combination of the most varied poetic excellence. The poetic spirit assumes strange and unlooked-for manifestations and new virtues reveal themselves every moment before the unwary reader. For in the Sonnets may also be found lurking deeper a play of the fancy approaching the ethereal dreams of Shelley; sometimes a feeling of extreme tenderness and child-like innocence and a pathos touching in its sincerity. The ebullitions of the poet's soul—which are occasionally too violent and rushing in their course to submit themselves to steadiness—are kept under a sober restraint, with a scrupulous eye to all the taxing requirements of artistic beauty. Despite some weaknesses of exuberance, poetic craftsmanship attains to a fulness and perfection never seen in realms other than those consecrated to the highest expression of art. Brushing aside the numerous controversies over the Sonnets, Saintsbury says, "What is important is that Shakespeare has here caught up the sum of love and uttered it as no poet has before or since and that in so doing he carried poetry.....the expression in verse of the sensual and intellectual facts of life, to a pitch which it had never previously reached in English and which it has never outstepped since. The coast-line of humanity must be wholly altered, the sea must change its nature, the moon must draw it in different ways before that tide-mark is passed." Let it be noted that this unique position to the Sonnets of Shakespeare has

been assigned in a literature which can boast of such productions as Rossetti's *House of Life*, and *The Sonnets from the Portuguese* which were sung by the

"Lyric love, half-angel and half-bird
And all a wonder and a wild desire"

to 'her poet' and 'princely heart.'

IV.

It is regrettable that attempts should be made in quarters where more wisdom might be expected to belittle the importance of the Sonnets of Shakespeare by calling them mere poetic conventions, and exercises of the fancy which leave the great master's heart untouched. The circumstance that such a distinguished Shakespearean scholar as Sydney Lee lends his support to this perverse view, makes the situation more distressing. Literary history is familiar with such grave injustices to poetic truth and sincerity. A critical world which could doubt the sincerity of Dante when he sought to give expression to his Platonic spiritual worship of Beatrice in sonnets of matchless beauty may be expected to indulge in such blunders. It almost seems that the most illustrious masters of poetry must needs be dragged down from their summits on Parnassus to answer critics who would brand even their poetry as "soul-less." It is strange that any one with an ear and soul for poetry should think of questioning the "high poetic seriousness," of the Sonnets of Shakespeare. All true lovers of poetry have an instinctive perception of the true poetic ring, which is inseparably associated with the throbbings of the heart. As is observed by Professor Raleigh, "All who love poetry, love it because in poetry the profoundest interests of life are spoken of directly, nakedly, and sincerely. Without the passion there is no poetry;

to recognise great poetry is to hear the authentic voice. Poetry is the touchstone of insincerity; if any one does not feel that which he desires to express, he may make a passable oration; he will never make a great poem."

An appreciation of the excellence achieved in the Sonnets and an examination of the ideas which form the subject of their deathless yearnings must lead to the inevitable conclusion that most of them are the utterances of a passionate soul whose inmost chords have been touched. When Edmund Gosse says of them that, puzzling as they are and formed to mystify the commentator, they are at least of a most thrilling sincerity, and are inspired by an original exercise of high imagination, he is delivering a praise which no unbiassed reader of the master's poetry would grudge. In the first part is the realisation of an aspect of Platonic ideal friendship, while the soul-stirring sonnets at the end are a deep study in a weird world of gloom, happiness and hatred. Intense in their tragical impulses, rapturous in their avowals of love and quivering in their emotional sensibilities, the Sonnets cleave open the poet's heart.

"Like some pomegrenate which if cut deep down
the middle,
Shows a heart within blood-tinctured, of a veined
humanity."

the poet is discovered, "human at the red-ripe of heat."

Nothing is easier than the work of detecting the conventional in poetry. A conventional love-sonnet betrays its hollowness of sentiment with a helplessness which is pathetic. An angel and a queen, with a necessary number of Cupid's darts, lover's

sighs and unquenchable fires, the heavens, the sun, the moon, and the stars, sleepless nights and wearisome days, eyes killing with arrows—these and similar things constitute the uniform ground-work of conventional love-poetry. Was not Mercutio referring to poetry of this class when he conjured Romeo.

"Romeo! humours! madman! passion! lover!
Appear thou in the likeness of a sigh:
Speak but one rhyme, and I am satisfied;
Cry but 'ay me'! pronounce but 'love' and
 'dove:'

Speak to my gossip Venus one fair word,
One nick-name for her purblind son and heir."

He is attacking the same class when he ridicules Romeo with the words, "Now is he for the numbers that Petrarch flowed in. Lara to his lady was but a kitchen-wench; marry she had a better lover to be-rhyme her." Each member of this class may promise with Benedick a sonnet, "in so high a style that no man living shall come over it." In Shakespeare's Sonnets themselves we find a characterization of these worthy poetasters,

"So is it not with me as with that Muse
Stirr'd by a painted beauty to his verse,
Who heaven itself for ornament doth use
And every fair with his fair doth rehearse,
Making a compliment of proud compare,
With sun and moon, with earth and sea's rich
gems,

With April's first-born flowers, and all things
That heaven's air in this huge rondure hems."

To think that Shakespeare's Sonnets in any way belong to this class is to mistake gold for dross.

With an unmistakable note of downright sincerity, Shakespeare declares his own laudable purpose,

"O, let me, true in love, but truly write,
And then believe me, my love is as fair.

As any mother's child, though not so bright
As those gold candles fix'd in heaven's air :
Let them say more that like of hearsay well ;
I will not praise that purpose not to sell."

Every circumstance about the Sonnets serves to demonstrate the realisation of the high purpose which the poet set before himself. Rossetti has said of the sonnet,

"The sonnet is a coin; its face reveals
The soul."

and let not Shakespeare of all poets be understood as proving an exception to a principle based on one of the profoundest truths of poetry. There is no modish sentiment in the sonnets masquerading in the garb of poetry ; no conventional themes harped upon with dull monotony ; no insatiate indulgence in meaningless adulation—but intense personal, emotional and tragic seriousness. Situations of grim realism are chosen for poetic treatment and the poetic spirit flows from the very life-blood of the heart.

What literary patron would have understood this language of pure emotional love if he had known Shakespeare only as a flattering client? Which class of conventional poetry would concern itself with the idea in the couplet,

"For I have sworn thee fair, and thought
thee bright,

Who art as black as hell, as dark as night."

It is not the spirit of a cold mechanical composition which is seen in the Sonnets beginning with,

"The expense of spirit in a waste of shame
Is lust in action."

"Poor soul the centre of my sinful earth,
These rebel powers that thee array,
Why dost thou pine within and suffer dearth,
Painting thy outward walls so costly gay?"

or again,

"When to the sessions of sweet silent thought
I summon up remembrance of things past,

XVI

I sigh the lack of many a thing I sought,
And with old woes new, wail my dear time's
waste."

It is cruel to question the sincerity of a poet who addresses his unfaithful mistress with the childish innocence and pathos of these lines,

“Lo, as a careful housewife runs to catch
One of her feather’d creatures broke away,
Sets down her babe, and makes all swift dispatch
In pursuit of the thing she would have stay ;
Whilst her neglected child holds her in chase,
Cries to catch her whose busy care is bent
To follow that which flies before her face,
Not prizing her poor infant’s discontent :
So runn’st thou after that which flies from thee:
Whilst I thy babe chase thee afar behind ;
But if thou catch thy hope, turn back to me,
And play the mother’s part, kiss me, be kind.”

Conventional poetry discards such homely
similes and takes to unreal regions of life.

It would be futile to try to construct the autobiographical elements in the strange drama of these sonnets. Suffice it to recognise that the story which unrolls itself is too painful to be mistaken for 'the past time of a courtly fancy.'

With the instinct of a poet Wordsworth has declared that Shakespeare has 'unlocked his heart' with the 'key' of the sonnet and if the poet has proved the 'less Shakespeare' by that, as Browning unfairly thought, there is no means of escaping the truth. Tennyson again, found the highest ideal of personal friendship in the first part of these sonnets. When he declares in *In Memoriam*,

"Nor can the soul of Shakespeare love thee more," he is understood as referring to the love portrayed in the first part of the sonnets. It is rather strange that there should be any necessity for such a plea on behalf of the

sincerity of Shakespeare's feeling but the fact has nevertheless to be recognised. It is hoped that Professor Raleigh has said the last word on this aspect of the question,

"The situations shadowed are as unlike the conventional situations described by the tribe of sonneteers, as the hard-fought issues of a law-court are unlike the formal debates of the Courts of Love. Some of them are strange, wild, and sordid in their nature; themes not chosen by poetry, but choosing it, and making their mark on it by the force of their reality. All poetry, all art, observes certain conventions of form. These poems are sonnets. There is nothing else conventional about them, except their critics."

Y.

The work of answering Shakespeare's detractors in respect of the sonnets has unfortunately to be continued. Allied to the charge which has just been refuted is another which is serious as trying to affect the reputation of the Poet's art—that most of the ideas in the sonnets are borrowed from other writers. Sydney Lee has gone to the length of devoting a whole chapter in his valuable life of Shakespeare to what he calls the "Borrowed Conceits of the Sonnets." Misapplied scholarship is largely responsible for the attempts which are made at various times to find out parallel passages with the aim of convicting poets of plagiarism. The world is familiar with the mischief which was sought to be done to Tennyson's fame as a poet by picking out the "borrowings" in his work. In a vigorous and dignified letter the late Laureate gave such critics an effective reply—

"But there is, I fear, a prosaic set growing up among us, editors of booklets, bookworms, index-hunters, all men of great memories and no imagina-

tion, who impute themselves to the poet, and so believe that he too, has no imagination, but is forever poking his nose between the pages of some old volume in order to see what he can appropriate. They will not allow one to say "Ring the Bells," without finding that we have taken it from Sir Philip Sydney, or even to use such a simple expression as the ocean "roars" without finding out the precise verse in Homer or Horace from which we have plagiarised it."

A similar slur is sought to be cast on the Sonnets of Shakespeare. He is not allowed to think of "the Eternity of his song" without the critic's tracing it to Horace and Ovid through Drayton, Daniel, Spenser, Sydney and a host of others. If the conditions of nature are described as affecting the course of amorous emotion, he must be indebted to Ronsard. If he should but declare that his love's image is in his heart, he must have brought the inspiration from across the channel. Does Shakespeare happen to say that his words are inadequate for the expression of his love? It is pointed out that the idea is borrowed from Petrarch's forty-first sonnet. Let it be confessed that there is no remedy for a scholarship which finds a delight in such activities. Let the truth be also asserted that these alleged plagiarisms in Shakespeare's Sonnets are only those coincidences in thought and impressions inevitable as long as human eyes all over the world look at the same objects in creation.

VI.

Where lyric beauties abound in such a large number the task of selecting specimens of excellence is by no means easy. It is true there are some sonnets which are lost in hopeless inanity sinking beneath the weight of ornamentation, quibbling, and artificial sentiment but the majority of them reach a standard of "lyric melody and meditative

energy" which is not found elsewhere in English poetry. Here is an expression of steadfast love in strains of majestic music,

" Full many a glorious morning have I seen
Flatter the mountain tops with sovereign eye,
Kissing with golden face the meadows green,
Gilding pale streams with heavenly alchemy ;
Anon permit the basest clouds to ride
With ugly rack on his celestial face,
And from the forlorn world his visage bide,
Stealing unseen to west with this disgrace ;
Even so my sun one early morn did shine
With all-triumphant splendour on my brow,
But, out, alack ! he was but one hour mine,
The region-cloud hath mask'd him from'me now.
Yet him for this my love no whit disdaineth
Suns of the world may stain, when heaven's sun
 staineth."

Here is a glorification of the *influence* of love for which it would be difficult to find a parallel:—

“ When, in disgrace with fortune and men’s eyes,
I all alone beweepe my outcast state,
And trouble deaf heaven with my bootless cries,
And look upon myself, and curse my fate,
Wishing me like to one more rich in hope,
Featured like him, like him with friends possess’d,
Desiring this man’s art and that man’s scope,
With what I most enjoy contented least;
Yet in these thoughts myself almost despising,
Haply I think on thee, and then my state,
Like to the lark at break of day arising
From sullen earth, sings hymns at heaven’s gate ;”

Here is praise characteristic of a poet's love,

"Be thou the tenth Muse ten times more in worth
Than those old Nine which rhymers invoke;
And he that calls on thee, let him bring forth
Eternal numbers to outlive long date."

It is the privilege of all readers of the sonnets to feel in them the raptures of love with sympathy and a keen artistic appreciation. Here is a true lover,

"But from thine eyes my knowledge I derive
And constant stars, in them I read such art,
As truth and beauty shall together thrive."

Here is a fond belief in the Eternity of his poetry :

“ Not marble, nor the gilded monuments
Of princes, shall outlive this powerful rhyme !
But you shall shine more bright in these contents
Than unswept stone, besmeared with sluttish time.
When wasteful war shall statues overturn,
And broils root out the work of masonry,
Nor Mars his word, no war's quick fire shall burn
The living record of your memory.
' Gainst death, and all-oblivious enmity
Shall you pace forth ; your praise shall still find
room

Even in the eyes of all posterity
That wear this world out to the ending doom."

Love's sincerity and self-effacement have never found utterance in lines of finer sentiment than—

“ No longer mourn for me when I am dead
Than you shall hear the surly sullen bell
Give warning to the world that I am fled
From this vile world, with vilest worms to dwell:
Nay, if you read this line, remember not
The hand that writ it ; for I love you so,
That I in your sweet thoughts would be forgot,
If thinking on me then should make you woe.”

When his friend has been lured by his unfaithful mistress his only grievance is that *she has him*, stepping between their affections.

It is not every heart that realises the
sacred truth that love,

" Is an ever-fixed mark,
That looks on tempests and is never shaken ;
It is the star to every wandering bark ;
Love's not time's fool though rosy lips and
 cheeks

Within his bending sickle's compass come ;
Love alters not with his brief hours and weeks,
But bears it out even to the edge of doom."

The delicacy of this sonnet comes as a surprise midst a group of intensely passionate passages—

“ How oft, when thou, my music, music play’st,
Upon that blessed wood whose motion sounds
With thy sweet fingers, when thou gently sway’st

The wiry concord that mine ear confounds,
Do I envy those jacks that nimble leap
To kiss the tender inward of thy hand,
Whilst my poor lips, which should that harvest
reap,
At the wood's boldness by thee blushing stand!"

VII.

An admirable feature which specially appeals to all lovers of perfection and refinement in the *technique* of art is the happy felicities of expression, the beauty of phrase and line which manifest themselves throughout the sonnets. The following lines serve as an effective illustration of what Shakespeare has achieved in this direction. Within the short compass of ten lines are seen nearly half a dozen purple patches of poetry,

"When I do count the clock that tells the time,
And see the brave day sunk in hideous night;
When I behold the violet past prime,
And sable curls all silver'd o'er with white;
When lofty trees I see barren of leaves,
Which erst from heat did canopy the herd,
And summer's green all girded up in sheaves,
Borne on the bier with white and bristly beard,
Then of thy beauty do I question make,
That thou among the wastes of time must go."

A similar characteristic is perceived in this passage which displays a remarkable combination of poetic strength and beauty,

"O how shall summer's honey breath hold out
Against the wreckful siege of battering days,
When works impregnable are not so stout,
Nor gates of steel so strong but Time decays."

They are seen scattered all over the sonnets with a haunting sweetness of their own, reminding us of some of the verbal perfections in Tennyson's *Art*. A glance at random, reveals many such delights of poetry,

"So are you to my thoughts, as food to light,
Or as sweet seasoned showers are to the ground."

or

"You did exceed
The barren tender of a poet's debt."

or again

"Slander's mark was ever yet on the fair"

or yet again

"Boughs which shake against the cold,
Bare ruined choirs where late the birds sang."

Similar achievements in a still shorter compass abound, as in the phrases.....the ambush of young days; a jewel hung in ghastly night; barren rage of death's eternal cold; the chronicle of wasted time; Siren tears distilled from limbeck's foul as hell within; Time's thievish progress to eternity.

The selection of such specimens can be carried to any length but it is hoped that enough has been done to show that among the sonnets are numbered as Saintsbury says, "No small proportion of the highest, the intensest, the most exquisite jewels of English poetry."

VIII.

A characteristic common enough in all masters of real genius, the opening up of a universal sweep of observation and experience, is naturally found in the sonnets. The vision is not limited to the immediate interests of the lovers, but the extension of the horizon does not lessen the intensity of amorous expression. The sorrows and disappointments are not purely personal and the living world enters into them with a significance which it richly deserves. The circumstances that torment the lover are not always in the nature of personal grievances but are sometimes responses to the fortunes of the world. The lover is represented in one of the sonnets as tired for "restful death"—not by the coldness of his love or by any condition

impeding the course of his heart's feelings, but by various causes like 'seeing desert a beggar born;' 'needy nothing trimmed in jollity;' 'maiden virtue rudely strumpeted;' 'purest faith unhappily forsworn'—and what is worthy of special note, 'art made tongue-tied by authority.' There is also a clear perception of eternal truths and an appreciation of the moral foundations of the universe.

IX.

Even the most superficial reader of the sonnets must be struck by the revelation in them of a highly developed dramatic spirit which does not however appear as anything strange in the work of such a great dramatist. The situations are portrayed with a vividness and reality characteristic of the drama. There is sometimes a directness and a sensation of personal appeal which make the reader turn round to find the other actor on the stage. Even the tragic outbursts are often only like the impassioned speeches which are heard from a Lear or a Hamlet. Though a large number of the sonnets have the serenity and calm of deep meditative pieces, there are unmistakable traces of the dramatic spirit exhibited at constant intervals. Who can overhear these lines without the strong suspicion that he is listening to an actor in a tragedy,

"Be wise as thou art cruel; do not press
My tongue-tied patience with too much
disdain"

or

"O call not me to justify the wrong
That thy unkindness lays upon my heart."

The suddenness and force of speech, sometimes suggests the experience felt when a person is represented on the stage as unex-

pectedly coming upon another and breaking out in vehement eloquence.

A large number of the sterner feelings are expressed with dramatic vigour. A wiser Antony might have mercilessly unmasked the Siren in Cleopatra precisely in the manner displayed here. Posthumus might have bewailed the alleged unfaithfulness of Imogen in similar plaintive strains. An infuriated Othello might have vented his wrath on Desdemona in expressions equally fierce. A rough Hamlet might have accused his mother in language largely borrowed from the sonnets. There is throughout an effective display of dramatic power.

X.

It may also be noted that Shakespeare exhibits a real tragic seriousness for the first time in his literary career, in the sonnets. Most of them were produced according to Sydney Lee between the years 1594 and 1603 and he says that to very few of the extant examples can a later date than 1594 be allotted with confidence. They were thus in all probability written before his tragic masterpieces took shape, if we ignore his immature attempt *Romeo and Juliet*. Tragic emotion had not yet acquired the strength necessary for finding expression through all the paraphernalia of the drama. And in his personal voice he is seen giving vent to them in the sonnets.

XI.

A word on the sonnet-form adopted by Shakespeare. The Petrarchan sonnet with its balanced octave and sestet was altered, it will be remembered, into the four-line stanzas ending with a couplet. All the other great sonneteers in English, Milton, Elizabeth Barrett Browning, Rossetti and to some extent

Wordsworth, have shown their reluctance to change the Petrarchan form. The Shakespearean sonnet has been considered an improvement by a large number of critics. Professor Saintsbury has said that the form is extraordinarily suitable to the subjects in the sonnets and may be said to be for the sonnet meditative actually preferable to the octave and sestet though the latter may have advantages for the sonnet descriptive. If any toleration can be extended to what may appear as a literary heresy, the opinion will be ventured that Shakespeare's change does not indicate any specially fine perception of the principles underlying metrical expression. The steady building up of the thought through the dodecasyllable with a climax or a quick antistrophe at the end does not seem to be more suited to the spirit of the sonnet than the almost even balance of the octave and sestet. There is danger of the couplet at the end sometimes deteriorating into poetry of a very artificial kind. The reader is not prepared for these two instances in Shakespeare, and they are open to special criticism as occurring at the end—

"All the days are nights to see till I see thee,
And nights bright days when dreams show thee
me."

or, "And other strains of woe which now seem woe,
Compare with loss of thee will not seem so."

XII.

Literary criticism cannot afford to ignore the defects in the sonnets. They were the productions of the Elizabethan age—the age of poetic exuberance and effervescence. And in the sonnets are therefore found some of the rhetorical weaknesses characteristic of this period. A parallel may be sought for in his early plays. Artificialities in style and conventions in poetic diction threaten to

cloud the sentiment. Lyly's *Euphuism* still tempts the writer; verbal quibbling is indulged in, as an art; technical and professional expressions enter the ideal regions of poetry—defects which one recognises as a surrendering of the poetic spirit to the prevailing fashions of the age.

In one of the sonnets there is a serious account of the conflict between the heart and the eyes, for the affections of his love; the last two sonnets in the series relate two conventional anecdotes of Cupid's love-brand; quibbles on "William" and "Will" engage two more; he calls himself a painter sketching his love's image on his heart and the metaphor is elaborated into all the technical details of the painter's craft with the 'frame,' 'table' and 'perspective.' Within a single sonnet occur the words 'Charter,' 'releasing,' 'bonds,' 'patent,' and 'judgment,' and in another the words 'mortgaged,' 'forfeit,' 'surety,' 'bond,' 'usurer' and 'debtor.' There is no necessity to plead at any length the excuse that these are only some of the weaknesses of the Elizabethan mind as it will be readily accepted.

XIII.

The study of the sonnets is over, though there are other interesting aspects deserving attention. Shakespeare has realised his own prophecy,

"Not marble nor the gilded monuments
Of princes, shall outlive this powerful rhyme,"

though he could not then have had a clear perception of what all that statement implied. They have taken a permanent place in literature and have not been excelled in their own line by any succeeding poet. It is true the sonnets of Milton have been properly called 'soul-animating strains'

and Wordsworth displays remarkable ability in grappling successfully with a long sequence of ideas in the sonnet-form. But there cannot be any useful comparison of Shakespeare's sonnets with these as they belong to an entirely different class. The only other works which they challenge are Rossetti's *House of Life* and Mrs. Browning's *Sonnets from the Portuguese*. Shakespeare can by no means approach the mystic worship of beauty and the spiritual raptures of the magnificent series of poems in *The House of Life*. Nor can his sonnets lay claim to the angelic purity and touching tenderness of Mrs. Browning's lyrical outpourings. But his sonnets have a far more passionate and instant force with a sharper note of emotion and a keener truth, though stained with dark impurities. In marvels of sound and flashes of light they excel the two collections and sometimes appear to be beyond all poetical reach.

A comparison of Shakespeare's Sonnets, the first part of them in particular, with Tennyson's *In Memoriam* is naturally suggested. Tennyson's high appreciation of the sonnets is evident from a study of the striking resemblances between them and *In Memoriam*, in turns of expression and in general spirit. There is in both the celebration of personal love and friendship and the same introspective analysis of the heart. But they are distinct in the circumstance that in one the love is touched by earthly sin and shame, in the other it is of a hallowed purity. In the Sonnets the bounds of the sensual world limit the poet's yearnings while in *In Memoriam* they are idealised even beyond the regions of death.

Literary history must acknowledge the

service done by Shakespeare for the sonnet in English. If Milton showed its possibilities for conveying sentiments even other than those of love and if Wordsworth by his numerous attempts gave it a very wide popularity, Shakespeare was the first to give it the dignity and importance of a distinct species in poetry. Wyatt and Surrey but made a beginning. It was only as "a glow-worm lamp" that the sonnet cheered "mild Spenser." It is true that in the Elizabethan age the sonnets came "as swarms of locusts" but despite their general sweetness, they were not distinguished by any merit and they had even some baneful effects. It was only occasionally that there were such beautiful attempts as Drayton's

"Since there is no hope come let us kiss and part,"
or Sidney's sonnets to the moon and to sleep. It was Shakespeare that raised the sonnet for the first time to the prominent position which it now occupies. The average Elizabethan sonnet has been characterised by Edmund Gosse as a poem with a passion 'so covered up with the ashes of an alembicated precosity that it is often doubtful whether it burns at all.' We know what Shakespeare did for it.

That the sonnets are of exquisite beauty and embody universal sentiments, though of a particular class, will be recognised by all lovers of poetry. As they have caught up the sum of love and uttered it as no poet has, before or since, they are destined to rank for ever with the highest achievements of the world in lyric poetry.

In the words of Professor Raleigh:

"The sonnets speak to all who have known the chances and changes of human life. Their occasion is a thing of the past; their theme

is eternal. The tragedy of which they speak is the topic and inspiration of all poetry; it is the triumph of Time, marching relentlessly over the ruin of human ambitions and human desires. It may be read in all nature and in all art; there are hints of it in the movement of the dial hand, in the withering of flowers, in the wrinkles on a beautiful face; it comes home with the harvest of autumn and darkens hope in the eclipses of the sun and moon; the yellowing papers of the poet and the crumbling pyramids of the builder tell of it; it speaks in the waves that break upon the shore, and in the histories that commemorate bygone civilisations."

P. SESHADRI.

SLOYD OR EDUCATIONAL MANUAL TRAINING—A NECESSARY PART OF THE SCHOOL CURRICULUM *

Before setting forth the nature and positive value of Educational Manual Training in a scheme of general Education, permit me to speak of Education in general and its aims, to find out the means employed, to discover how far it is successful in its attempt, and to see whether or not it admits of any improvement, and if it does, in what direction.

Objects of General Education.

It will be conceded on all hands, I feel sure, that the aim of education is purely the development of the child's powers, mental, moral, and physical.

The mission of education, as I understand it, is to stimulate thought and close observation, cultivate taste, encourage habits of system, attention and precision, foster the judicious habit of looking at things on all sides, to teach one to economise time and labour, to create, to invent, to shorten methods and thus feed the natural appetite for mastery over material things and forces; that is, its end is wholeness and integrity, and nothing less than this. It has to do with the whole of life, with man, and not with any one or any group of his petty activities.

* Paper read at Mysore in connection with the Mysore Manual Training Teachers' Association by Mr. S. Srinivasa Rao, B.A., Sloyd Teacher, Bangalore.

Further, its aim is to communicate everything to the child through the senses, that nothing that has not been thoroughly understood, should be prescribed as a memory task, that nothing should be left until it has been well impressed by means of the ear, the eye, the hand and the tongue, that nothing should be learnt by authority but by demonstration, both sensible and rational, and above all, that nothing should be taught without things.

This is not all. Its aim is not to fasten the boy to his books, but to allow his hands to be employed greatly to the advantage of his brain. Education has to develop a maximum of intellectual vigour and practical power, expand and increase the resources of boys, give them confidence in themselves, arouse and strengthen the manly instincts and powers of man, to open the doors into the world of to-day, to give the best preparation for taking up the world's work successfully, teach practical life in a larger number of points, and thus better fit all for that sphere in life in which they are destined to find their highest happiness and well-being.

Again education should train the child, as a whole, instead of, in parts, since it has a body as well as a mind. It should train the child physically towards use, by a wise shaping of the eager animal activity and thus introduce him into that hard world of work by a training, which shall be of the hands as well as of the brain. It should give him study and work together. In other words.—

The end and aim of education, is to train harmoniously all the faculties of the child, so that he may be ready to grapple with any situation in life successfully.

In short, the chief business of education is the making of "Man," the building of "Character" and the preparation for good "Citizenship."

The ways and means employed at present.

The means employed are the establishment of schools and colleges, where provision is made for the teaching of a number of subjects, calculated to train the intellect, memory, body, and the moral side of a child.

Defective nature of the School Curriculum.

If one scans the programme of work in schools, one finds that boys are there fastened to books, that their hands are not employed to the advantage of their intellect, although the necessity of utilizing man's physical power in developing him into a complete being has been recognized for many centuries and by widely separated peoples, and although all the great educational reformers

including Pestalozzi, Froebel, Spencer, Comenius, Herr Otto Solomon emphasise, in their teaching, the necessity for bodily training and activity. One is thus highly impressed with its literary character. The consequence is that boys that come out of our schools will be accomplished more in languages, composition, etc., than in those things and subjects, very necessary to them for success in after life.

Again, the instruction now given, does not communicate everything through the senses. It trains the head to the exclusion of the hand. The reasoning powers are trained by abstract mental processes alone without the aid of the eye and the hand, and the brain is crammed with facts.

Further, there is very little scope for boys, at present, to apply what they learn to the circumstances of every-day life. Boys, in schools, have no chance of seeing any use made, of the principles they learn. They are to them only theories, and in consequence, the retention of facts learnt, is all a mere matter of memory, without any interest whatever. The instruction is more theoretical than practical. The result is that whatever is learnt is either misapplied or entirely forgotten.

The training given, trains boys in description without giving them an opportunity to observe the very things, they should describe. It is besides such that it tends to produce boys, who are really very great at second-hand knowledge, but confused, helpless and diffident, when thrown on their own resources, who are skilful with the pen, but awkward and ignorant in using any other tool.

The work done now is such that it appeals to memory rather than the whole intellect. Names, dates, events, grammar, literature, etc., occupy a greater part of a school-boy's time.

Again, when we take a broad view of the curriculum of studies in schools, as a whole, we find that the training imparted to boys tends to the cultivation of only one set of activities to the exclusion or neglect of the rest. The schools, we find, prepare almost as directly and immediately, students better fitted only for certain definite callings,—such as, Clerkships, Book-keepers, Office-holders, etc., where brightness and facility to write a fair hand or add a column of figures are the only qualifications required. These students will not be fit to become craftsmen; nor will they be willing to be put to any kind of craft. It is within the experience of many, present here, that the actual influence of our present method of education is to make our youths revolt, in reality, from manual labour, to look down upon it, and shrink from entering upon

lines, wherein physical labour is to be their means of living, however honourable they may be. The student, who completes his High School course, seldom willingly enters a work-shop as an apprentice, with the intention of becoming a skilled mechanic, and earning a livelihood by manual labour. His twelve or thirteen years' mental school-work, whether successful or not, has, through habit, if in no other way, unfitted him for all manual work, even if he has not been taught to despise labour. I need not say that there is very little scope, at present, for the cultivation of habits of system, attention to details and precision, for the formation of the judicious habit of looking at things on all sides, to invent, to create, and to shorten methods of labour.

Not much attention has been paid in this country to the development of the constructive aptitude of children which is so very apparent and on which so many vital social questions, affecting the welfare of the whole community, depend; and as one of the results, I am sorry to say, the most powerful and the necessary inclination of children to construct has been left to develop, as well as may be, without help or interference from the School Master.

Thus, the ordinary school course neglects the constructive ability of children, and in its attempt to develop the purely mental faculties, produces results, somewhat harmful to the social life of the people.

The lighter occupations, calling for purely mental powers are naturally overcrowded by a large number of youths and the industrial occupations are filled, on all sides, with incompetent workmen who might have early discovered their unfitness for occupations involving manual skill, if opportunity had been presented to them. The breaking down of apprenticeship system, the advent of universal education, and the high pressure in every occupation resulting from competition, have brought the school course of mental education into somewhat unmerited disfavour among the artisan classes, who frequently complain that many things are taught at school which appear useless in after life, while other useful subjects are omitted. The want of continuity between the school and after life detracts, to a very considerable extent in many men's estimation, from the value of the ordinary school instruction.

Nor is this all. The child in our schools is at present brought too little into contact with actual facts and things; and those faculties of a child which are of the utmost importance to industrial life are not at all cultivated to the great disadvantage of the child. From the first year in the

primary school onward, the child is not brought forward, fast enough to maintain his interest and induce him to put forth his whole strength. Frequent complaint is made of over-pressure in our public schools, but it is not work which causes over-fatigue, so much as lack of interest and lack of conscious progress. The sense that, work as he may, he is not accomplishing any thing, will weigh upon the stoutest adult much more than upon the child. One hour of work in which he can take no intelligent interest will wear him out more than two hours of work in which he cannot help being interested. To many, much of the work in our public schools, is, I notice, uninteresting. It is thus clear that the programme of work in our schools is wanting in something, is highly literary and one-sided in character, and is therefore not at all suited to the pursuits in which a large proportion of population are now engaged. It is also clear that this system of training is the survival of a method adopted at one time by those who alone received education, viz., the gentry and the nobility, who were able to live at all times exempt from all problems of labour, manufacture, construction, invention, and domestic economy. It is also evident that the present system is more of abstract and less of concrete, more of memory work and less of constructive work.

It has, in short, the effect of being too bookish and of being too little practical. Alas! how many of our weak spots are due to a defective education!

This is a scientific and keenly competitive age. In this age an exclusive education in the languages dead, or living is a perplexing anomaly. The flowers of literature, it is true, should be cultivated and gathered, though it is not wise to send men into the fields of industry to gather the harvest when they have been taught only to cull the poppies and to push aside the wheat.

Hence it is clear that some link is missing. Now, when I claim and when others claim that such a programme is faulty, it is not to be misunderstood that we fail to duly appreciate its value. The above programme was mine as a pupil, and for some years, mine, as a teacher. I know something of the enthusiasm with which both pupil and teacher may prosecute such studies. My criticisms do not therefore spring from a lack of knowledge of what is being done in schools, nor from a lack of sympathy with the greater part of the work itself. I know how pure, how delightful and how generous all this is. What can be finer than to take the children of the people and lead them along these paths? What can more ennoble, more inspire, good thoughts and chaste ambitions? Yet, when I lift up my eyes from my books and

study life, the life, that is, the activities that make up the civilization of to-day, the responsibilities that must soon fall upon the shoulders of my pupils, the demands that to-morrow will put upon them, I am brought face to face with the solemn fact that we have ignored the actual demands of our own age, and trained them all for some other. Thus the present system falls short of the expectations and needs improvement.

Remedies proposed.

Let us next find out what should be done in order that the system of education, when improved, may work satisfactorily and produce the desired results.

The present age, as we all know, is one of rapid progress in every field. The story of the industrial, commercial, and scientific progress in the West, under the leadership of Watt, Fulton, Franklin, the Stevensons, Morse, Bessemer, Edison and others is almost threadbare. Even in the East, under the influence of the West, there is scarcely an occupation among us which has not been transformed or actually created, since the dawn of the nineteenth century. Think of the way we light our houses, the way the towns are supplied with water, the way we travel, transport goods on lands and sea, how we make our cloth, tools, and books, and how we tell our news, etc.

The art of education is, or should ever be progressive. With every new phase in civilization, has come a new phase in education. The history of education is full of records of conflicts between the old and the new. The old has been justified by all the past with its traditions and authorities, while the new has fought for recognition as the demands of the age, as essential to progress, which education has to make, if it is to keep ahead of the other institutions of civilization. Educational progress has been first the effect of progress, and then the cause of more progress. Aristotle settled the question of the constitution of matter for over a thousand years; and no rational progress either in medicine or chemistry was possible till the falsity of his doctrine was shown. Countless questions, in religion, science, and Government, which some people fondly supposed had been settled over and over again, have been unsettled as often as progress was to be made. Is it therefore strange that we, who are devoted to the cause of educational progress, should insist upon unsettling the question of the course of study sufficiently, not to destroy it, or mutilate it, but to improve it?

In spite of improvements in many directions, our methods of education have changed least of all. In the main, it is well to be Conservative in

education. All that glitters is not gold; and all that offers is not fruitful or wholesome. The nature of mind is unchanged; and the laws by which intellectual, physical, and moral powers are developed, and faculties are acquired, are essentially the same in all ages. On the one hand, the ends of education are the same now as they have always been, on the other, they are new, and the new aims demand new appliances. The new aims point to new duties, new functions, and new responsibilities, which demand a measure of definite preparation on the part of the youth. The system of education which is to develop a maximum of intellectual vigour is also to produce practical power, and to open the doors into the world of to-day, and to give the best preparation for taking up the world's work successfully. In order, therefore, that children may become more useful to societies and to themselves, in order that they may be able to think and work together, so that they may get on successfully even when left to themselves, it is desirable, I think, that our present system of education should be improved. It should be so modified that our schools adopting the same, may be able to send out, instead, a large class of young men, best fitted for business and trades, and able and willing to work; young men with the elements of high character, with a vigorous and healthy body and mind, able to put both hand and brain to work, and to enter readily into sympathetic co-operation with the institutions of their country and times.

In these days of repeating rifles, it is unwise to send out into the strife, boys equipped only with swords, shields and javalins. "In this age, full of modern artillery," says Prof. Huxley, "we cannot continue to turn out boys to do battle in it, equipped only with the sword and shield of the ancient gladiator." What I protest against is not literary study but the exclusion of those modern subjects which bear directly upon the duties and responsibilities of life.

Again, the present system of education should be so modified that it connects school-room with work-shop, the training of boys, with their future employment; work, work-shop, tools, materials and work-shop problems should also be dealt with in schools along with the present grinding system of book learning and cram, in order that it may successfully fulfil its sacred mission. Into our schools, then, must be introduced something that will enable students to engage themselves with great advantage and willingly in the actual struggle of life, and to carry off the prizes even after school-life and thus be ready for the whole work of life.

The programme of studies, gentlemen, needs, on the one hand, careful revision, and on the other, pruning of worthless appendages, and judicious additions. It needs invigorating. It must be such that it attracts, interests, and inspires those whom it now repels, tires, and disheartens. In applying a remedy, we must be certain, not only of the facts as they exist, but of the causes, which have lead to them.

Some may say that the meagerness of results is due to poor teachers who go to their work with no special preparation, no professional zeal, and no purpose beyond their salary. With such teaching material, they argue, it is no wonder that the results are disappointing. The remedy they propose, is more and better teachers' training schools, and higher standard of qualifications in the examination and selection of teachers. We may admit, that poor and ill-paid teaching largely accounts for no small part of the failures of the school to serve its purpose. I cordially endorse the proposition that there is no longer any justification for the employment of untaught and untrained teachers. But do not misunderstand me. While I believe that much of the efficiency of the school depends on the teacher, and while I believe that facilities for properly trained teachers should be enlarged and multiplied, I am far from admitting that that is all that need be done, under the present circumstances. In my humble opinion, the radical defect of one-sidedness in our school curriculum, already pointed out, cannot be cured by carrying out with more skill and completeness the present one-sided programme. If the medicine prescribed is wrong, it does not help the patient to have it faithfully administered. If the plan of a military campaign is fatally in error, it does not entirely mend matters, to put its execution into the hands of a well-trained leader. Similarly if a scheme of education leaves out certain lines of development and culture, an able and enthusiastic teacher may carry his pupils along other lines so thoroughly as actually to magnify the very evils complained of. I therefore conclude that the remedy for the defects and failures of the present system of education is not to be found in the better training of teachers alone, on old lines. It appears to me, therefore, that no course is open to us but that of unsettling the entire questions of the "Course of Study."

Our needs and requirements.

We need more of the concrete, less of the abstract, more of primary knowledge, less of secondary; more personal experience, less of memory; we need more life, more action, more interest, more of the executive, and less of the passive, and more of application and less of absorption.

I should be unjust to the spirit of the times and to myself, if I did not admit, with great pleasure, the advance now making in the directions mentioned above, in some of the subjects taught in schools, such as science, drawing, etc.

Definite remedy proposed.

The definite remedy that I propose for the evils pointed out, is the introduction, into our schools, of a system of training, which, without altering radically the system of training now in vogue, materially improves it, providing for all the demands of life, of which I have spoken already; a training that is found to cure the complaints, now existing, that develops the head, the hand and the heart, of every child simultaneously, and that will thus help the child in literary and other pursuits of life.

The Educational Manual training or Sloyd.

This training is what is called "THE EDUCATIONAL MANUAL TRAINING." It is not the outgrowth of a single mind, nor of the experiments made at any one time or place. But it is the result of the work of wise investigators and practical teachers in many countries.

Let us next consider what this "EDUCATIONAL MANUAL TRAINING" exactly is, how it supplies our present want, and whether we are justified in introducing it into our public schools.

Manual instruction, especially when wood is the material used, may be nothing more than the development of mechanical skill in the use of tools; and, as such, it is understood by many. But this is not what "Educators" conceive "Manual Training" to be. The Manual Training of the school must be a training which places *intellectual and moral results before mechanical skill*. If I may venture on a definition, I should say that "Educational Manual Training" is a special training of the sight, touch, and muscular perception by means of various occupations; it is a training of these faculties not so much for their own sake, though that is important, as it is for the training of the mind. While the eye in this is being trained to accuracy, and the hand to dexterity and manipulative skill, the mind is being trained to observation, attention, comparison, reflection, and judgment. In other words, Educational Manual Training is the development of the manual and visual activities of the child, having for its purpose the quickening and development of the mental powers of observation, attention and accuracy, to cultivate the moral faculties of order, neatness, perseverance, self-reliance and a host of others, equally good; to awaken and train the

artistic faculties, and direct the child's instincts towards the beautiful and the true, to satisfy and cultivate the child's instinct for activity, and excite pleasure in the acquisition of skill, to provide opportunities for the development and practice of the inventive and constructive faculties, and to afford scope for the imagination.

It is thus no Manual Training or Manual Labour, pure and simple, as is often supposed. It is not knife-work or chisel-work. It is not making a set of models. It is not finishing a prescribed course of exercises in any material. It is not the use of certain carpenter's tools. But it is, on the other hand, a system of educational hand-work, so arranged and carried out as to stimulate, promote, employ and direct the vigorous and intelligent self activity of a pupil for a purpose which he recognizes as good. The spontaneous exercise of a creative faculty for a useful and good purpose is a moral tonic. It is, in other words, not only manual training, but also mental training.

It is, further, a system of training, not based on the use of tools, or their construction, or the making of useful models; but it is one, based on the *needs and demands of the growing child*. It is a kind of hand work, which will best stimulate the right kind of head work. It consists of a series of actions, which are controlled by the mind and which always react on it. It is thus an educational agent that advances towards a definite educational aim.

It is, again, a system which cannot be taught, with profit, by a mere mechanic or an artisan, any more than educational gymnastics can be taught by an athlete. It should be taught by one who *understands and appreciates the nature and needs of children, their ways of feeling and thinking*—one who is always trying to direct muscular and mental activity of the child in such a way as to promote the best health and the best thought.

In order to know the real meaning of the system of Educational Manual Training, one must first appreciate the aim of the work and the principles governing the same. I need not detain you here with a discussion of general principles; but will proceed at once to consider the most important principles governing this. I shall endeavour to show you how work is arranged in this to meet the needs of the growing child. The physical and mental capacity of the child is first considered, and suitable provision is made for his putting forth the necessary effort to reach an end, which he sees and desires. This careful provision is found in the progressive exercises, carefully arranged in order of difficulty. An exercise in this

means a specific use of a tool, involving a certain mental and physical effort. In all the work that is done, the chief aim is the advancement of the worker, mentally, physically and morally, the mental advancement being secured by the help of the physical. In short, a definite effort is made in this to provide each worker with such manual work as will arouse a mental enthusiasm, the value of which will be highly felt in all the purely intellectual work of the school.

Influence of Educational Manual Training.

This system of training, when properly given, cultivates the intellect in close and intimate contact with action. It trains to the full the faculties of the individual, including his mechanical powers, and thus fits him to act his part ably as a citizen, a home builder, and a bread winner. In this system, both attention and interest are excited in the worker's mind, since he has to make something of real use. The variety of manipulation in making an object in it stimulates thought and curiosity; and the carefully graded exercises teach the pupil in an easy way "the important lesson of subordinating minor ends to major ends." The child thus acquires a strong will ultimately. Further, this training helps children to acquire not only a strong will, but also a good will. In this kind of work squareness of things is always insisted upon, and therefore the pupil becomes accustomed to maintain squareness in every thing he does. The squareness in things, that he thus maintains, is not without relation to squareness in action and thinking. Every worker in a manual training class learns to be exact and truthful in his work. This habit will make him feel inclined to be scrupulous and truthful in his speech, in his thoughts, and even in his acts. The training in this makes a worker love good work, like to be useful and prefer occupation to idleness; and it thus plants the seeds of good citizenship in children at the time, most favourable to growth and development.

For the first time, probably, a boy in this class is confronted with the importance of accuracy of measurement and has to put into practical use of the tables of measurement he has learnt at school. He finds that his drawing is to be no objectless copy but a correct representation of an actual model. He finds plenty of scope here for freehand work or modelling of solid forms. The eye and the sense of touch are greatly developed, which will thus help the child to judge things correctly. The pupil here is led to see and feel the simple beauty of proportion, of harmony of parts, as well as grace of outline.

Educational Manual Training is particularly strong in furnishing knowledge, experience, memory and generalisations, things so necessary to the operations of logic, with the help of tool-work and tool instruction, which are full of meaning and which are always logical. Moreover, several senses join in this work in the search for truth. Sight, sound, touch and muscular force testify together; the memory is called upon for former experiences; the new and the old concepts are compared and classified, inferences are drawn and generalisations made. The newly-discovered truths are recognised as such, properly labelled, and packed away in the store-house of memory for future use.

Educational Manual Training, it is not too much to say, multiplies opportunities for personal experience, and contact with external realities without which no adequate conception of cause and effect is possible. It labours to give the pupil the result of human experience along certain lines. The various laboratories of mechanics-drawing, etc., give him a modicum of personal experience by means of which he may subsequently interpret and appropriate the experience of others.

Perhaps, the most striking and peculiar function of Educational Manual Training, is the help it gives in the mastery of the subjects such as Mathematics, Sciences, History, etc., by putting life, meaning and force into the same, and in its availability for cultivating a capacity for executive work and a certain power of creatorship.

Every manual "exercise" involves the execution of a clearly defined plan. Familiar steps and processes are to be combined with new ones in a rational order and for a definite purpose. As a rule, these exercises are carefully chosen and deliberately planned by the Instructor. However, at proper times and in reasonable degree—not too early, nor too often—pupils are set to forming and executing their own plans. Here is developed not a single faculty but a combination of many. Memory, comparison, imagination, and a train of reasoning—all these are necessary in creating something new out of the old. In the Manual Training School these powers find continuous and systematic training in the various forms of manual work.

It is scarcely necessary to add, gentlemen, that, while constructive tool-work furnishes the training referred to above, the analytic work of natural sciences does scarcely do so, to the same extent. This remark is not to be interpreted as, in any way, derogatory to the study of science in all schools. The study of science has its high

functions; but it is not my object to present them all here. Suffice it to say that manual training and natural science (Physics, Chemistry, Zoology and Botany) work are supplementary essentials. Another peculiar feature of the manual training is the teaching of drawing, the shortest of short hands, in connection with wood work. The boys are taught first to draw and then to execute. This will be found most valuable as a mental discipline, involving constant thought and close attention.

Fruits of Manual Training in Education

If we omit the mechanical laboratory, we omit a valuable feature. It is one of the most fruitful things for pupils in their teens. Manual training is Physics, Mathematics, Gymnastics and Morality, all combined. It keeps the young pupil alert. It stimulates close observation. Boys in manual training schools will have keen relish both for book-work and laboratory work. Boys reported dull in other schools, as well as those reported bright and industrious are all awakened to new life and enthusiasm in manual training schools. Here life is extended into all lines of work.

More mental discipline and valuable culture can be secured by wisely combining manual training with the study of other subjects such as, Mathematics, Science and Literature, than by omitting it and giving attention entirely to the other subjects. There is not a single influence flowing from manual training which is hostile to good books. The free hand and model-drawing, geometry and other subjects, usually included in the ordinary school-work are much more intelligently learnt by boys who are being taught manual training; and it is found that the time deducted from the ordinary school hours of boys who are undergoing courses of manual training in no way causes a decreased efficiency in the ordinary subjects. Boys are also found to be more careful, observant, more self-reliant, and certainly are more likely to grow up with a real respect for the dignity of labour.

Manual training seeks to lead the child through his own interest and activity to self-control and unselfish thinking. It does not aim to build superstructures, but to lay broad and firm foundations. It seeks to produce not simply a better wage-earner, though that is a natural result, not only a well developed being mentally and physically, but also to generate and train individual power, to reveal to each soul its own possibilities, to inspire it with strong and steadfast purposes to attain them and to permeate all with kind and good thoughts.

Further, its work is so arranged as to provide for a wholesome proportion between problems of thought and tool-work. It offers sufficient opportunity for the cultivation of habits of accuracy, neatness, thoroughness, honesty, independence, patience, perseverance and industry. It pays special attention to uniform physical development, and excludes all harmful attitudes and movements.

The instruction in a manual training class, you will all observe, begins with concrete things. It always proceeds from the easy to the more difficult without break. It is individual. It gives general development of the pupil's powers, arouses interest in manual work, promotes order and exactness. It develops self-activity and diminishes crime and idleness. Further, it develops right action through well-directed movements. Here the material result obtained by the child is a true representation of his own muscular and mental effort. This has both a physical and moral significance.

The value of manual training, when properly combined with literary, scientific and mathematical studies, is, as already stated, shown in various ways. It bears fruit in proportion to its adoption. It keeps boys longer at school. It awakens a lively interest in school and invests dull subjects with new life. It keeps boys out of mischief both in and out of school. The pupils will be so earnest, so impressed, with the value of what they are receiving that mischief and foolishness seem rather out of place. Even out of school hours, its influence is equally marked. The boy's mind as well as his hand is occupied, and Satan finds it hard to gain a listening ear or an idle hand.

It gives boys, with strong mechanical aptitudes, but who are slow of speech, an equal chance with boys with glib tongues and good memories. Success in this has often the effect of arousing ambition and awakening dormant powers. It stimulates a love for truth, simplicity and intellectual honesty. Every effort in this is direct and straightforward, with the least noise and minimum waste of energy. A high appreciation of this quality in manual work cannot but tend towards a similar quality in character, conversation, and life. The pupil is stimulated to love and respect honesty, not by resisting, but by seeing that dishonesty is a sign of weakness and incompetency. Correct notions of things, relations and forces, derived from actual personal experience here go far towards a comprehension of the languages employed by others.

Science and mathematics, as already stated, profit not a little from a better understanding of forms, materials and processes, and from the readiness with which their principles may be illustrated. Manual training aids one who has to choose his occupation. Hitherto men who cultivated their minds neglected their hands, and those that cultivated their hands found no opportunity to cultivate their minds. The crying demand to-day, is for intellectual combined with manual training. It is this want that the Educational Manual Training aims to supply. Its motto is "the cultured mind and the cultured hand." Man became man when he made his first tool; he becomes more manly when he continues to invent and use more tools. He subdues nature and develops art through the instrumentality of tools. Every occupation becomes ennobled by the transforming influence of thought and skill. Manual Training thus raises the standards of attainment in mechanical occupations and invests them with new dignity.

Manual Training enables an employer of labour to better estimate the comparative value of skilled and unskilled labour, and to exercise higher consideration for the labouring man.

We are apt to fancy that the age of invention is nearly over. On the contrary, it has barely dawned. What has been done in the past has been in spite of the education of the schools. The so-called educated man rarely makes a practical invention; so deficient is he in the knowledge of essential conditions. Nor does the practical mechanic invent, as he cannot calculate and cannot draw. Therefore, add to their educations, the missing elements in either case, and you have a vantage ground that to no great extent has ever been occupied. This is exactly what Manual Training schools do. Manual training thus stimulates invention.

Nor is this all. It increases the bread-winning and home-making power of the average boy. It adds to the efficiency of school-work by making school-work attractive, more intelligible, more interesting, more delightful, by arousing the enthusiasm of the pupils and by making pupils more manageable. There will be increased love of school, increased interest in all studies, better appreciation of what is taught, why it is taught, greater cheerfulness and less disposition to consider the school as a place for tasks and the teacher as a task-master. It will relieve school-life of some of the weariness and languor, incidental to purely mental effort.

As stated already, manual training deals with things in the concrete rather than in the

abstract; and this gives boys clearer ideas of the nature of things and the practical lines of human progress than what seems to be obtainable by mere study of such things in the abstract. It will thus produce good and intelligent citizens.

Memory, imagination, generalizing power, correct judgment and reasoning power find plenty of scope for exercise in manual training. The healthy mental activity which invariably accompanies properly selected and skilfully conducted tool exercises is more clearly recognised than explained. The living reality of the students' work, their natural craving for physical activity and personal discovery, their recognition of economic bearings, and above all, the thought-provoking character of the work, all stimulate the mind. The intellectual culture of active art is far more vigorous than that of literature. In literary culture, we feebly grasp ideas by their association with printed words. The presence of the objects and the operations performed in manual training continually stimulate the workers. Our perceptions in manual training are clear, positive and exact. The concentrated attention, the close observation, the ingenuity, invention and judgment in use, here, are far superior, as mental discipline, to any, that literature can give.

Work in a manual training school appeals to the intelligence of the worker. It requires his full thought and attention, cultivates his tastes and, above all, it appeals to the human heart. What he makes is something connected with the most natural and best interests of his life so that, while his hands are at work, his thoughts are wholesome, generous and joyous. The mind and heart of the boy are not forgotten, while his hands are supplied with work.

Conclusion.

It will thus be seen that Educational Manual Training or Sloyd, referred to above, is something very useful; its main aim is to perfect our system of education and to raise the practical intelligence throughout the community, and thus educational. At the same time, some other advantages follow, which, even if secondary, are important. For instance, the special training of hand and eye cannot fail to develop and stimulate those faculties upon whose activity success in life depends. The cultivated taste, the trained eye and the skilled hand cannot fail to bring forth fruit in the home, in the work-shop, and in fact, in whatever position in life the child may be placed. The success that

UNIVERSITY EDUCATION.

VIEWS OF PRINCIPAL MIERS.

Principal H. A. Miers of the University of London in opening the address he delivered during the present session of the British Association at Sheffield started by emphasizing the importance in all systems of teaching of the individuality of the teacher and his personal influence upon the pupil. After pointing out that it was inevitable that educational systems should lay down the same methods for most different types of teachers he showed that the really successful teacher usually succeeded in going beyond the scope of his trainings. He referred to the prevalent idea that among the first qualities now demanded of a master in a public school for boys were manliness, athletic skill, and a hearty and healthy mind, but he contended that the only permanent personal influence was really wielded by teachers who exercised it on intellectual lines.

Principal Miers then passed on to consider how the interests of the pupil could best be roused and sustained at the different stages of his career. In the child he said the main interest was that of novelty. In the older student it was essential that if interest was to be aroused the idea conveyed must direct the mind to some set purpose. The teacher of young children should, therefore, aim at setting before his pupils the subject of their lessons in an attractive manner so that the idea of novelty was never lost, whereas the teacher of more mature minds should emphasize particularly the purposeful character of the subject under discussion. Passing to consider the ideal entrance examination of the University, the Principal criticised the present day tests as being too much designed to find out what the pupil knew rather than to determine whether he was fitted to enter upon a University career. The fact again that it was usually taken at the age of sixteen showed too often that the schools undertook work which was properly of a University character while it was seen that a great deal of work done at the Universities was conducted upon school lines. Summing up his attitude towards entrance examinations he said:—'It will be sufficient for me to say that I have been led to the conclusion that the Matriculation Examination should be designed to suit the capacity of average pupils of not less than seventeen years of age if they are to test the intelligence of those who are ready to enter upon a University course.'

UNIVERSITIES AND BUSINESS.

With that the Principal passed to the main-subject of his address and contrasted vividly the

different atmosphere into which the University student and the boy who left school for business were plunged, and he contended that just as the schoolboy who entered the business house was brought into immediate contact with the actualities of life, so too should a University student be at once brought into contact with the actualities of learning. Thus if he were taking up the subject of history he should at once learn to use the original sources and the University training should be adapted to give him this knowledge. The University course, in fact, should become a more complete specialisation but of a broad character, the study in fact of the special subject in its wider aspect and with the help of the other knowledge which might be necessary for the purpose. After following this idea through science and classics he continued:

'The first question which a University teacher should ask himself is, 'Am I rousing a spirit of inquiry in my pupils?' If this cannot be answered in the affirmative it is a confession that the University ideal is not being realised.

'It will be clear that the principle which I am advocating is a very simple one, namely, that the business of direct mental training should be finished at school, and that at the University, the trained mind should be given material upon which to do responsible work, in the spirit of inquiry. Preparatory exercises belong to school life and should be abandoned at the University.

'It may be asked 'In what manner is this change to be introduced, and how is it possible under present conditions, where so many students are all pursuing ordinary degree courses and have no time or opportunity for special work, to provide teachers who can educate them in this spirit, if it is also their duty to get students pass through their examinations?' The answer, I think, is that 'in a University the professors and higher teachers should be, without exception, men who whatever may be their teaching duties are also actively engaged in investigation. Their assistants should be teachers who, even if the whole or only part of their time is occupied in routine teaching, have yet had some experience in, and possess some sympathy with modern advanced work under such professors.' This is only to be secured by insisting that teachers in a University should all have had some experience of original work, and, just as one of the necessary qualifications for an elementary teacher is some education in method, so a necessary qualification for a University teacher should be some education in research. Anyone desirous of qualifying for University teaching should be compelled to devote a certain portion of

his student career to advanced work, and the funds of a University cannot be better applied than to the retention of the better students at the University for the distinct purpose of enabling them to pursue investigation under the professor for a period of one year after they have completed their degree course, if they have not been able to do so during their undergraduate period. It is not, however, too much to hope that the majority of those who are endeavouring to qualify for the higher educational posts will be assisted to obtain this special experience during their degree course. Under the present system at most Universities, unless the student has been fortunate enough to come in contact with a teacher imbued with the spirit of research who is carrying on his own investigations, it rarely happens that he has the time or the means which would enable him to obtain any insight into the meaning of investigation before he leaves to take up teaching work. The need of post-graduate scholarships for this purpose is very widely felt and is now frequently expressed. To insist upon such qualifications for all University students is, of course, under present conditions, impossible; but there should be no insuperable difficulty in insisting upon them for those who are to be allowed to enter a University as teachers.

RESEARCHERS BORN, NOT MADE.

'Researchers are born, not made, and it is not by any means desirable that all University students should be cast adrift to make new researches and seek discoveries even under the direction of experienced teachers and investigators. This must depend to some extent upon the character of the pupil as well as of the teacher.

'The mere publication of papers may mean nothing, and much that is dignified with the name of research is of no account. To turn a lad on to research unless it be in the right spirit, may be only to set him a new exercise instead of an old one; to leave him to prosecute an investigation for himself may be to condemn him to disappointment and failure. On the other hand, to carry on any piece of work, whether it be new or old, in the zealous spirit of inquiry, with faith in a purpose, is to insure the intellectual interest of the students: and I cannot see why this spirit should not animate all University education, whether it be accompanied by original research or not. The essential condition is that chief University teachers should themselves possess this spirit of investigation.

RESULTS OF THE SYSTEM.

'One result of the conventional attitude is that those who have distinguished themselves at school

in some subject are often assumed to have a special aptitude in it, and to be destined by Nature to pursue the same subject at the University, whereas their school success may only prove that they are abler than their fellows, and that this ability will show itself in whatever subject they may take up. Such students would sometimes on coming to the University be all the better for a complete change of subject, without which the continuance of the school studies too often means a perpetuation of the school methods.

'Another result is that when teachers are always playing a somewhat mechanical part in a systematised course, receiving duly prepared pupils and preparing them again for the next stage, such an atmosphere of preparation is produced that many persons continue to spend the greater part of their lives in preparation without any reasonable prospect of performance.

The Principal then turned to consider school-teaching. In view of the fact that teaching at school must inevitably be on very narrow lines he strongly deprecated the specialisation that too often occupies the latter parts of a school career. At the same time he drew attention to the very remarkable arrest of development that often occurs in boys at about the age of sixteen and quoted an eminent school authority who believed that these boys would continue developing upon useful lines if an entire break was made at that stage in the method of their teaching. He preferred, however, to leave this question open for the consideration of those who had practical experience in teaching at the schools. He then asked the question what sort of education affords the best preparatory training for the University and said:—

'I have often heard it asserted that, if a boy is capable of taking up at the University a course which is entirely different from his school course he will generally be found to have come from the classical side and not from the modern side. An ordinary modern-side boy is rarely able to pursue profitably a literary career at the University, whereas it often happens that ordinary classical-side boys make excellent scientific students after they have left school. I am bound to say that this is on the whole, my own experience. It suggests that a literary education at school is at present a better intellectual training for University work than a scientific education. If this be so 'what is the reason'?

CONTRIBUTORY CAUSES.

'There are no doubt many causes which may contribute in some schools: the brighter boys are

still retained on the classical side while those who are more slow, are left to find their way to other subjects; and some whose real tastes have been suppressed by the uniformity of the school curriculum turn with relief to new studies at the University and pursue them with zeal. But the facts do also, I think, point to some defect in the present teaching of school science whereby a certain narrowness and rigidity of mind are rendered possible. This may be partly due to the lack of human interests in the teaching of elementary science; the story of discovery has a personal side which is too much neglected though it is most attractive to the beginner and might with advantage be used to give some insight into the working of the human mind and character. Moreover, it would form an introduction to the philosophy of science which is at present so strangely ignored by most teachers.

'But another noteworthy defect is the absence of that mental exercise which is provided by the thoughtful use and analysis of language.

'I believe that the practice of expressing thoughts in carefully chosen words which forms so large a part of a good literary education constitutes a mental training which can scarcely be surpassed, and it is unfortunately true, that in the non-literary subjects too little attention is paid to this practice. In school work and examination, a pupil who appears to understand a problem is often allowed full credit, although his spoken or written answer may be far from clear. This is a great mistake. A statement which is not intelligibly expressed indicates some confusion of thought: and, if scientific teaching is to maintain its proper position as a mental training, far more attention must be paid to the cultivation of a lucid style in writing and speaking.'

NEED FOR TEACHING ENGLISH.

'The various Universities seem fairly agreed upon the subjects which they regard as essential to an entrance examination—subjects which may be taken to imply the groundwork of a liberal education. Among these is English: and yet of all the subjects which children are taught at school there is none in which such poor results are achieved. It may be taught by earnest and zealous teachers: the examination papers are searching, and seem to require a considerable knowledge of English literature and considerable skill in the manipulation of the language, and yet the fact remains that the power of simple intelligible expression is not one that is possessed by the average schoolboy and schoolgirl.

'Although it is true that the intelligent reading and study of the great masters should assist in the acquisition of a good style, it is equally true that if they come to be regarded as a school task, they are not viewed with affection, especially in these days of crowded curricula, when there is little leisure for the enjoyment of a book that requires deliberate reading. If the modern strenuous curriculum of work and games has abolished the loafers, it has also abolished leisure, and has therefore removed one of the opportunities that used to exist for the cultivation of literary and artistic tastes and pursuits by those to whom they are congenial. The art of expressing one's ideas in simple, straightforward language is to be acquired not so much by study as by practice. There is no essential reason why children should write worse than they speak; they do so because they have constant practice in the one and little practice in the other. Our grandparents felt less difficulty in expressing themselves clearly than we do ourselves; of this their letters are evidence. It may have been partly due to the fact that they had more time and encouragement for leisurely reading, though they had not so much to read; but I believe that the letters which they wrote as children were their real education in the art of writing English. Much would be gained if boys and girls were constantly required to express their own meaning in writing. The set essay and the *precis* play a useful part, but do not do all that is needed. Translation does not give quite the necessary exercise. What is required is constant, with certain periods of conscious, practice, and that is only to be obtained by making every piece of school work in which the English language is used an exercise in lucid expression. Very few paragraphs in anything written by the ordinary schoolboy—or, for the matter of that, by the ordinary educated Englishman—are wholly intelligible, and teachers cannot devote too much pains to criticising all written work from this point of view. If we first learnt by practice to express our meaning clearly we should be more likely to acquire the graces of an elegant style later. I must add that I believe the training in the manipulation of words would be improved if all children were required to practice the writing of English verse—not in efforts to write poetry, but narrative verse used to express simple ideas in plain language—and I believe that this would enable them the better to appreciate poetry, the love of which is possibly now to some extent stifled by the pedantic study of beautiful poems treated as school tasks.

'In such a subject as English composition, in which reform is so badly needed, something, per-

haps, would be gained by an entire break with existing tradition—a break of the sort which would be required if it became suddenly necessary to provide for an entirely new type of student.

NEW UNIVERSITY DEVELOPMENT.

'Now there is one new and interesting development which has recently been taken up by several Universities, and by which, for the first time, an opportunity offers itself of dealing with a body of students who, although possessed of more than average intelligence and enthusiasm, have not received the conventional training which leads to a University course. The tutorial classes for working people which have now been undertaken by several Universities, and which already number about 1,200 students, are attended by persons carefully selected for the purpose and anxious to pursue a continuous course of study of an advanced standard. In these classes the Universities will be compelled to begin new subjects for students of matured minds who have not received the usual preparation, and will therefore necessarily deal with them in a new way. Here, if anywhere, the difference between school methods of teaching and University methods ought to be apparent; and I feel sure that, if University teachers attempt conventional methods with these students, they will be condemned to failure. It is certain that these classes will increase enormously and rapidly, and I have great hope that they will for this reason influence the methods of University teaching in a very healthy manner. With the tutorial class students in particular the teachers will be confronted with the new problem of students who have thought much, and of whom many are experienced speakers, well able to express their thoughts by the spoken word, but who, nevertheless, have received little training, and have had still less experience, in expressing their ideas in writing. Many of the students whom I have met have told me that this difficulty of writing is their real obstacle, and the matter in which they feel the want of experience most acutely. It will be a very valuable exercise for those who conduct these classes to instruct their students in the art of writing simple and intelligible English and I hope that the necessity of giving this instruction will have a good effect upon the conventional methods of teaching English in schools as well as in Universities.

The address concluded with an eloquent appeal to University teachers to get a full realisation of the idea that the spirit of independent enquiry was that which should dominate all University teaching and learning.—*The Leader*.

OUR ENGLISH LETTER.

LIVERPOOL, September, 1910.

The *Liverpool Daily Post* is one of England's leading newspapers. It ranks with the *Manchester Guardian* and one or two others at the head of the provincial press which is in many ways on a level with the press of the capital in these degenerate days of half-penny and catch-penny journalism. And we are at present in the height or the depths of the silly season. Anything and everything is snatched at which can afford copy. The journey of a suspected murderer across the Atlantic has been chronicled with pleasing minuteness. And yet the *Daily Post* of Monday contained a small paragraph tucked away in an obscure corner, which read something like this: "Developments are being eagerly looked for in psychical-research circles in the case of a communication from Professor William James, the brother of Mr. Henry James, the well-known novelist. Professor James, who died yesterday, had promised to send a message from the spirit world to a friend. But no message has yet been received." And that was all. No account of Professor James' lifework followed in later issues. The dead lion was worth more than the living thinker: the life-message did not count. And yet people tell us that when the history of the present era comes to be written, the material will be found ready to hand in the newspaper files.

The death of William James leaves a great gap. He was in the very front rank of the world's thinkers. His was a curious history. He was born in an American manse, and not only graduated in medicine, but received an appointment on the medical side of Harvard before he was drawn to psychology and entered into the field of philosophy by a new gate, or rather by making a breach in the hedge. Your correspondent can well remember the contempt and anger with which his pragmatist philosophy was received at Oxford. Did not our tutor describe him as 'an American doctor of medicine with a turn for piety?' But his 'Principles of Psychology' had given him chief place among the world's psychologists, and no one could deny the dialectical skill and the literary genius which marked not only 'The Will to Believe' but 'Pragmatism' and the 'Meaning of Truth.' He was engaged at the time of his death in an endeavour to establish a metaphysical basis for pragmatism and perhaps his work is sufficiently far advanced to allow of publication. We cannot believe that he has made good his main thesis,

but how many philosophers have? And there certainly have not been more than half a dozen men in the history of thought who have given more impetus to study of philosophy. Philosophy seemed to be a new and living creature as he handled it, and the ground of quarrel with him in many cases was simply this—that he dragged philosophy from the clouds in which the schoolmen wanted her for ever to veil her face, and he had related philosophy to the common facts of human experience in a manner that shocked the professors.

Perhaps two short quotations may be allowed. This on the Hegelian philosophy—"His system resembles a mouse-trap in which, if you once pass the door, you may be lost for ever. Safety lies in not entering. Hegelians have anointed the entrance with various considerations which, stated in abstract form, are so plausible as to slide us unresistingly and almost unwillingly through the fatal arch." This on the little which has been so far accomplished in the search for truth: "A story of raw facts; a little gossip and wrangle about opinions; a little classification and generalisation on the mere descriptive level; a prejudice that we have states of mind and that our brain conditions them; but not a single law in the sense in which physics shows us laws; not a single proposition from which any consequence can causally be deduced; no science—only the hope of science." And to-day there is sorrow in the lodgings of many a student who never saw those deep-set eyes, the high forehead, the grizzled beard that could not hide the firmness of the mouth. They mourn the passing of William James because they loved him for his very humanity: he had humanized philosophy.

All depends on point of view. *The Journal of Education* has been falling foul of the appointment of Mr. Temple to the Headmastership of Repton. "It is no less preposterous to appoint to a headmastership an inexperienced College Fellow than it would be to give the colonelcy of a regiment to a cadet who has passed first out of Woolwich." One day this week a friend was lunching with us, who happens to know Temple intimately. "I wonder he thought it worth his while to take it," was his comment. But Professor Sadler has taken up the cudgels manfully in vindication of the appointment. He points out that Temple will be like a breeze from a new quarter in the Headmasters' Conference: no man of his years could speak with more knowledge and sympathy of the ideas and ideals of Englishmen of all classes. So much has his

work at Oxford and for the Workers' Educational Association and, we may add, for the Church of England Men's Society, done for him. And, as we ventured to speak so highly of Mr. Temple last month, we are glad to quote this striking tribute from Professor Sadler: "The thing which has been greatest in English higher education is the scope which it has given for the strong personality of gifted teachers. This was the case with Butler of Shrewsbury, with Arnold of Rugby, with Thring of Uppingham. Temple is in the succession. Just as Wilson Steer carries on the great tradition of English landscape and is in direct succession to Turner and Constable, so in his promise stands Temple to those others." If you want to win fame as a prophet, predict a future for this worthy son of a worthy father.

The Clarendon Press has just issued 'Principles and Methods of University Reform': and this has been taken as a sign that Oxford is prepared to do all she can to set her house in order. Greek apparently, like cotton some years ago, is "going." Promising men are no longer to be kept out by the insuperable obstacle presented by the Greek required for Smalls. This was bound to come, we suppose. But there are some of us who are not hide-bound conservatives or the slaves of tradition, who fear lest the change will have more widespread results than would appear at first glance. An attempt is also to be made to reduce the cost of living and make the place more accessible to the poor man's son. The hostel system as illustrated at Emmanuel, Cambridge, has been considered. But initial expense in building is a consideration, when money is to be saved rather than expended. Personally one thinks that the aim should be to bring the non-collegiates within the borders of the colleges rather than to try and make their lot more bearable outside. After all, the glory of Oxford is her colleges, and the man who is outside them is an outsider. The colleges must cut down the cost of living. And it seems to us that it is the trimmings that are made so expensive—athletic club subscriptions, compulsory hall dinners, upkeep of choirs, college gaudies and the like. So many of the 'extras' are not really optional: we are not speaking of "wines" and other social clubs, but of what is expected and demanded of every man whose name is on the college books. Some colleges have a 'minimum cost' that is £20 or £30 a year more than is sufficient at others, and these others are £20 or £30 more than is really necessary.

The Osborne Cadet case has called forth strong expressions of the view that expulsion is always

an unjustifiable punishment. But from this view we must dissent. Expulsion is the most effective weapon a headmaster has at his disposal. To refrain from using it is to weaken his hold. We do not under-rate the services of medicine, but there are occasions when we call in a surgeon: and the surgeon will sometimes amputate. We know too well a school whose discipline has been undermined through weakness in this matter.

On the difficult matter on which the Head of Eton has so often made our darkness more visible, we have never read anything more convincing than this. Professor Förster in the *Refren-blätter* says:—"I should characterize it as a dangerous error to suppose that the sexual wildness and hyper-irritation of modern youth are results of imperfect instruction on the sexual question. The real cause lies in the terrible decline in character-formation. If the young are not trained to a higher conception of life, instruction will at most make them curious about what it conceals. Mere enlightenment makes no defence if the force of the lower impulses is not counteracted by a strong gymnastic of the will. It is a thousand times more important that the will should be prepared for the coming of the sexual desire than that the understanding should be prepared for it: the protection of youth against sexual dangers is a question of strength rather than a question of knowledge. A boy picks out from enlightenment, however good it may be, what stimulates and excites. The best sexual pedagogic is that which tells directly of sexual things only the barest, most necessary minimum: but which understands how to produce all these forces and habits of character which enable the young man to assume of himself the true intellectual attitude towards awakening sexual desires. The best sexual education is an education of all the faculties."

Reviews and Notices.

EDUCATION AND CITIZENSHIP IN INDIA, BY DR. LEONARD ALSTON: LONGMANS, GREEN & CO. 4s. 6d. net.

It is a pity that Messrs. Longmans, Green & Co. should have lent the weight of their name to a publication like Dr. Alston's *Education and Citizenship in India*. The alluring title and the reputation of the firm of publishers raise expectations which are not at all satisfied. And the book certainly comes as a profound disappoint-

ment. It is curious and amusing to go through two hundred pages, made up largely of extracts from articles, selected without any discrimination, sense of unity, or directness of purpose. The most obscure of magazine-writers are given the exalted rank of authorities and their opinions are gravely quoted to support convictions which are vague and desultory, if they are not altogether missing. The foot-notes which take up nearly a third of the book, are additions to this kind of extracting work. One is disposed to exclaim with irritation, 'What has Alston to say?' It is a book without any strong point, solid conviction or independent enquiry. It is astonishing to see him condemn persons like Mrs. Besant and Sister Nivedita as people who have not understood the Hindus and who misrepresent their character. The last few pages in which the writer may be expected to sum the questions discussed and offer his own conclusions are devoted to extracting work with increased vigour and frequency. Almost all the prominent Indian politicians are profusely quoted to show—one has to wander helplessly to find out for what. We are indeed sorry to confess that we are not in a position to give a favourable account of the book—it may be useful for the number of opinions and recent statistics quoted.

SELECTED ENGLISH ESSAYS—CHOSEN AND ARRANGED BY W. PEACOCK, WITH NOTES, BY C. B. WHEELER: OXFORD UNIVERSITY PRESS. 3s. 6d.

We have nothing but praise for this recent collection of English Essays. In spite of the large number of books bearing on the subject, an exhaustive collection of representative essays has been a long-felt want and this is supplied by Mr. Peacock's book. It is an admirable volume giving within the compass of about five-hundred pages, choice specimens of essay-writing from the work of every great English essayist, from Bacon down to Stevenson. It is a pleasure to find all the most important masterpieces included—to see all the passages which we hope to find. The critical judgment and artistic choice exercised in the work are faultless and above criticism. The book may be expected to be useful to students of literature in many ways. As providing material for a study of the development of English prose, its value is great; as affording facilities for an examination of style and expression, it is equally valuable; as a literary masterpiece, nothing is lost by its being a collection.

The notes are learned and to the point, but we are not prepared for the following mistake in an

Oxford University edition. In the well-known passage quoted from Milton in Steele's essay on *Mr. Bickerstaff Visits a Friend*, (*Tatler* 114), 'the solemn bird' is explained to be an 'owl,' though every student of Milton knows that the word *solemn* is used in the classical sense and the reference is to the nightingale. This is evident from the context, as well as from similar usages in Milton:

Till even, nor then the solemn nightingale
Ceased warbling, but all night tuned her soft lays.
—*Paradise Lost*, Bk. VII, 435-436.

But we have no hesitation in saying that the work of annotation has been done with commendable ability. We have very great pleasure in recommending it to the attention of the colleges in Southern India and the Board of Studies in English in the Madras University.

TALES OF THE PUNJAB, TOLD BY THE PEOPLE, BY FLORA ANNIE STEEL, WITH ILLUSTRATIONS, BY J. LOCKWOOD KIPLING, C. I. E. MACMILLAN AND CO., LTD. 1 Re.

This is one of Messrs. Macmillan's English Texts for Indian schools and the volume is as useful as a school-book as an addition to Indian folk-lore. Flora Annie Steel has already distinguished herself as a writer, whose Indian sympathies have been responsible for a series of works valuable to this country. Her *Tales of the Punjab* is worthy of her reputation as a writer on Indian subjects. The stories are full of delicious mirth and merriment and must afford delightful reading to young minds for hours and hours. The imagination is never at rest and jumps from wonder to wonder when it has scarcely had any time to reconcile itself to the situation. The only complaint that is possible is that the merriment is satiating in its excess. It must be admitted that the incidents are very often too grotesque and fanciful, but it must be remembered that the writer is not weaving any tales from her own imagination, but is merely recounting twice-told tales. The book must be of interest to all parts of India—not to Punjab alone, as the title would seem to indicate—as the social conditions represented in it are true of the entire country. If we are allowed to seek out a flaw in such a faultless work, we would mention the writer's using the reckoning of English money in the very first story. The young lad of Punjab asks his mother for four *shillings*! But the local colour is fairly faithful throughout Mr. Lockwood Kipling has enhanced the value of the work by

his fine illustrations. The book can be profitably used in our Secondary Schools, in the lower forms.

MILTON: COMUS, L'ALLEGRO, IL PENSEROSO AND LYCIDAS, EDITED BY OLIVER ELTON. OXFORD CLARENDON PRESS.

The publications of the Clarendon Press are always welcome. And the authorities of the Press have done well in bringing together their separate editions of Milton's minor poems, *Comus*, *L'Allegro*, *Il Penseroso*, and *Lycidas* are likely to remain always the most popular part of Milton's poetic work. *Paradise Lost* is more talked about than read, and except among professed students of literature, there are probably very few who have gone through its ponderous length of twelve books; *Paradise Regained* is rarely thought of and the book is familiar to the general reader only through a few extracts; *Samson Agonistes* has always appealed only to a very select class of readers. The four minor poems, which by themselves would have been enough to secure for Milton the reputation of a poet, therefore constitute the most well-known region of the poet's vast contribution to literature. Students of literature must therefore feel highly thankful to the Clarendon Press for this valuable edition of Milton's minor poems. Each poem is preceded by a critical introduction displaying a fine taste in artistic perception. The notes are very valuable and are consistent with the deserved reputation of the publishers. To the volume are also added the *Sonnets* whose poetic value cannot be over-estimated—any study of Milton's poetry would be incomplete without the *Sonnets*. We have very great pleasure in recommending the use of this volume to University students as well as lay readers of Milton's poetry. The notes which are not too voluminous form an effective help to the study of the poems.

ENGLISH LITERATURE, BY F. J. RAHTZ, M.A., B.Sc. METHUEN & CO., LTD. 2s. 6d.

This History of English Literature is an excellent text-book for classes which have to study the subject. The author has given a biographical and critical account of some of the greater writers, with whose work every elementary student of literature ought to be familiar. The treatment is simple and lucid—quite suited to the young minds to which it is intended. There is no attempt to load the memory with a number of biographical facts and names of books—too

much detail has been carefully avoided. One very valuable feature of the book is its honest and successful effort to point out the greatness of each writer and to analyse the elements of his artistic genius. Such a task has not been accomplished even in some of the larger manuals and it is wonderful to see Mr. Rahtz successful within the short compass allowed to him. The compilation of an History of Literature is always open to the weakness of not being able to satisfy varied literary tastes in the selection of writers for treatment. But that is hardly an excuse under which Mr. Rahtz can escape for his failure to include Cardinal Newman's name. He is not even mentioned in the volume. But it must be acknowledged that the work has been done admirably on the whole and must prove very useful to students of literature. The book has also the additional virtue of giving a number of questions at the end of each chapter.

SELECTIONS FROM ENGLISH LITERATURE, VOL. I BY
F. J. RAHTZ, M. A., B. SC. METHUEN & Co.,
LTD. 2s. 6d.

This is intended as a companion volume to the above. No study of the History of Literature is desirable even in the elementary classes without enabling the student to make his acquaintance with representative extracts from each writer. The want has very often to be supplied by the teacher of the subject and it means an amount of labour in selection which only those who have done it can possibly realise. Mr. Rahtz's volume prevents such a necessity and must prove very useful to teachers of the subject. The first volume includes selections from all writers from Chaucer to Dryden and the passages are chosen with remarkable ability and a fine literary taste. It is not merely as a companion volume to the author's History of English Literature that it is useful. Independently of the *History of Literature*, it can be availed of for any study of representative passages from every period of English Literary History. The book is astonishingly cheap for the price.

MILTON: SAMSON AGONISTES AND PARADISE LOST, BOOK IV, EDITED BY MR. E. E. KELLETT, M.A.
SRINIVASA VARADACHARI & Co. Price Re. 1 and As. 12 respectively.

These are two editions intended for the use of the students of University Examinations who have to study the *Rape of the Lock* and *Paradise Lost*, Book IV as text-books. They have

all the virtues necessary for a College text-book. With an elaborate introduction to the author and an exhaustive study of the poems, the literary and critical part of the poems have been very well attended to. The chapter on Milton's verse is of special value. While the notes are exhaustive and thorough enough they are not unwholesomely full and do not encourage idleness in the student. We have much pleasure in recommending these two books to the students of this University.

ESSAYS FROM THE 'TATLER' AND THE 'SPECTATOR':
EDITED BY MR. E. H. ELLIOT, B.A. SRINIVASA VARADACHARI & Co. Price only one Rupee.

Mr. Elliot has done well in making a selection of Addison's essays from the *Tatler* and the *Spectator*. The choice has been very discriminate, and the reader is thus enabled to get himself acquainted with some of the finest and the most representative specimens of Addison's prose. The editing has been done with commendable thoroughness. A welcome feature of the book is the valuable Introduction which covers nearly fifty pages giving a critical study of Addison's life, literary work, and the social conditions of the Eighteenth century. The annotation is exhaustive enough to suit the requirements of students preparing for the F. A. Examination who have to study some of them as their text. We have no hesitation in recommending it to the attention of the large number of University students who have to go through the essays from Addison for their examination.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—Mr. T. Krishna Rau, Assistant Inspector of Schools, Tanjore district, is to act in the 9th grade of the Provincial Educational Service, vice Mr. A. C. Pranatartihara Aiyar who is acting in the Indian Educational Service, or until further orders. To have effect from 16th June 1910, the date on which Mr. V. R. Venkatarama Aiyar assumed charge of the office of Inspector of Schools, Sixth Circle.

Mr. H. Swami Rau, Assistant Inspector of Schools, Kurnool district, is to act in the 9th grade of the Provincial Educational Service during the absence of Mr. T. J. Venkatachala Aiyar on leave or until further orders.

Mr. T. K. Venkata Rau, Sub-Assistant Inspector of Schools, Coimbatore Range, is granted privilege leave for two months and twenty-eight days with effect from the 30th August, 1910.

The privilege leave granted to Mr. T. L. Subba Rau, Sub-Assistant Inspector of Schools, Ramnad Range, is extended by fifteen days.

Mr. M. Subramanyam, Sub-Assistant Inspector of Schools, Nellore Range, is granted privilege leave for one month and eleven days with effect from the date of relief and furlough for four months and nineteen days in continuation thereof.

Mr. S. Gopalan, Fourth Assistant, Training Section, and Temporary Assistant, Practising Section of the Training College, Rajahmundry, is to act for Mr. M. Subramanyam, in the probationary class.

The undermentioned officers will be considered with effect from the 23rd July, 1910, to be acting in the appointments which they were holding sub protem:—

Mr. S. Swaminatha Iyer, Sub-Assistant Inspector of Schools, Trichinopoly Range, and sub protem Assistant Inspector of Schools, Kistna District.

Mr. M. Parthasaradhi Iyengar, Sub-Assistant Inspector of Schools, Ambasamudram Range, and sub protem Sub-Assistant Inspector of Schools, Trichinopoly Range.

Mr. P. N. Ramaswami Sastri, Sub-Assistant Inspector of Schools, Kanigiri Range, and sub protem Sub-Assistant Inspector of Schools, Ambasamudram Range.

Mr. C. Minakshisundram Iyer, Supervisor of Elementary Schools, Tiruvalur, is to act as Sub-Assistant Inspector of Schools, Negapatam Range, in the probationary class in addition to his own duties during the absence of Mr. S. R. Venkatarama Iyer on leave.

Mr. S. Seshagiri Sastri, Sub-Assistant Inspector of Schools, Tirumangalam Range, and Acting Third Assistant, Madrasa-i-Azam, is to act as Sub-Assistant Inspector of Schools, Conjeevaram Range, sub pro tem, vice Mr. S. Venkatasubba Iyer transferred to foreign service.

The sub pro tem promotions of Messrs. N. Venkoba Rau, K. C. S. Anantanarayana Iyer, M. Bava and L. Venkatasubba Iyer will be considered to have ceased from the 23rd July, 1910, the date on which Mr. B. C. Ramaswami Iyer returned to duty as Assistant Inspector, and the following acting promotions are sanctioned with effect from the same date:—

Mr. N. Venkoba Rao, from Class II to Class I, acting, vice Mr. J. Vitral Pant, temporarily promoted to the Provincial Educational Service.

Mr. K. C. S. Anantanarayana Iyer, from Class III to Class II, acting, vice Mr. N. Venkoba Rao.

Mr. M. Bava from Class IV to Class III, acting, vice Mr. K. C. S. Anantanarayana Iyer.

Mr. L. Venkatasubba Iyer, from the Probationary Class to Class IV, acting, vice Mr. M. Bava.

Mr. S. K. Venkatarama Iyer, Headmaster, Government Training School, Chittoor, and sub protem Sub-Assistant Inspector of Schools, Kanigiri Range in the probationary class, will be considered as acting in the same class with effect from the 23rd July 1910.

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The privilege leave granted to Mr. K. Venkataramanayya, Sub-Assistant Inspector of Schools, Guncavaram Range, is cancelled.

Mr. B. Raghavendra Rau, Lecturer, Rajahmundry College, is granted privilege leave on half pay for one month with effect from the 18th October, 1910 or any later date from which he may avail himself of it.

The privilege leave granted to Mr. Ch. Suryaprakasa Rau, Sub-Assistant Inspector of Schools, Bandar range, is extended by fifteen days.

Mr. V. P. Subrahmanya Aiyar, Head Clerk, Office of the Inspector of Schools, Third Circle, and sub pro tem Sub-Assistant Inspector of Schools, Tirumangalam range, is granted privilege leave for one month and twenty-seven days from the date of relief and Mr. S. Krishnaswami Aiyar, sub pro tem Supervisor of Elementary Schools, Mudukolattur, and Acting Sub-Assistant Inspector of Schools, Ramnad range, is to act for him in the probationary class during his absence on leave or until further order—to join on relief.

Mr. Y. A. Venkatasubbayya, Sub-Assistant Inspector of Schools, Chidambaram range, is granted privilege leave for a month from the date of relief, and Mr. V. Narayanaswami Aiyar, Supervisor of Elementary Schools, Villupuram, and Acting Sub-Assistant Inspector of Schools, Villupuram range, is to act for him in the probationary class during his absence on leave or until further orders—to join expeditiously on relief.

The Kumbakonam College.—The annual sports were held on 17th instant in the College playgrounds which were very tastefully decorated. Many of the local gentry were present. The judges were Messrs. H. D. Robertson, Inspector-General of Police, R. F. Austin, Collector, F. Cardozo, Superintendent of Police, L. Withinsaw, Assistant Superintendent of Police, and the Hon'ble Rao Bahadur N. Krishnaswami Aiyangar. Other European gentlemen that were present and conducted the sports were Mr. Gore-Langton, the District Board Engineer, Mr. Shore, the Executive Engineer and a Roman Catholic Father from the local Episcopate.

The Principal, Mr. Hodges, had taken great pains to put everything in order and he and the Secretary Mr. T. K. Venkatarama Aiyar, deserve praise for the excellent arrangements they had made to receive the visitors and attend to their wants.

The chief items of the programme were (1) Half-mile flat race; (2) High jump; (3) Flag race; (4) Long jump; (5) 100 yards flat race; (6) Hurdle race; (7) 300 yards handicap; (8) Obstacle race; (9) Old boys' 100 yards race. The programme is an improvement upon its predecessors inasmuch as information is given regarding winners in previous years. An opportunity is given to the spectators to compare the results of previous years with those of the current year. One Srinivasa Rangachari who carried off the champion cup last year has won many prizes this year too. Messrs. Austin and

Cardozo, the Hon'ble Rao Bahadur N. Krishnaswami Aiyangar and Mr. B. Venkatachalla Chettiar gave prizes to the winners. The prize articles had been selected with the greatest amount of care and taste.

The weather was splendid though at the beginning there was slight drizzling. At the close of the sports Mr. Austin gave away the prizes and cheered Mr. Hodges which was responded to. With cheers to the Collector and to His Majesty the King-Emperor, the proceedings came to a close.

The University Commission consisting of Dr. A. G. Bourne, Rev. J. D. W. Sewell, Rev. E. M. Macphail, Messrs. W. E. Smith, R. Littlehales, and K. Ramunni Menon, is now on their inspection tour in the Southern districts.

Prize Distribution in the Maharajah's College, Vizianagaram.—The distribution of prizes to the students of the Maharajah's College, Vizianagaram, took place recently in the upper hall of the institution.

The proceedings began with the reading of the Report by the Principal on the working of the institution for the year ending with the 30th June, 1910. The year under review has witnessed important changes in the College and shows a record of progress which reflects high credit on the Principal and his staff. The number of students on the rolls on the 31st March last, was 805, of whom 99 belonged to the College Department. When compared with the number in 1902, the year of the last distribution of prizes the present number shows an advance of 217, an increase of about 36 per cent. It would however have been nearly 50 per cent. were it not for the abolition of the three lowest classes about the middle of last year, which formed part of the Secondary Department in 1902. Coming to the results of the University and other examinations, 20 candidates were sent up for the English branch of the B.A. Examination, of whom 16 came out successful, 4 being placed in the second class and 12 in the third. For the Second Language Division 19 had applied, and 16 came out successful, 8 being placed in the second class and 8 in the third. For Mental and Moral Science, 8 candidates appeared, and of these 7 were successful, 4 being placed in the second class and 3 in the third. Only 2 students appeared for Mathematics, and both were successful, having been placed in the third class. For Chemistry branch as many as 6 were sent up, but one came out successful. For the F.A. Examination, no less than 20 candidates were sent up, of whom 11 came out successful. For the Matriculation Examination 131 students were sent up, of whom 26 have obtained their certificates. Seven candidates were sent up for the Government Technical Examinations, of whom 4 were successful.

The Principal wound up his interesting report with quoting extracts from the proceedings of the Director of Public Instruction on the College

Department and from the Report of the Inspector of Schools on the Secondary Department:—

After recitations in English, Sanskrit, and Telugu were gone through, the Maharajah rose and spoke as follows:—

"It gives me great pleasure to be here this evening. To begin with, the Principal has paid me a compliment by having this function on my birthday. And then the Report just read by him is an interesting record of progress in all directions. I wish to congratulate the students on the prizes they have won and wish them all success in their studies and in everything that makes for liberal education. Fortunately the old idea that education means only a knowledge of books is going out of fashion in this country. In this narrow sense it was understood for a long time even after English education was introduced. It still lingers in quarters where that education is wanting, or has not made much progress. Now-a-days it means a great deal more—a training not merely of the mind, but of the body and the will. The ideal of an educated man to-day is one who has a sound mind in a sound body, a strong will and a large heart—a creature of reason, a lover of beauty in art and nature, a good citizen, and a loyal servant of King and God. That is the goal which every student must try his best to reach, and I wish you all possible success in your progress towards it."

The Principal then thanked the Maharajah in suitable words for his kindness in distributing the prizes and the proceeding terminated amidst loud cheers to the King and the Maharajah.

A Free Night School at Trichinopoly.—A Free Night School has been established at Kiledar Street, Trichinopoly. The school will be opened and regular classes will commence shortly. The following are a few particulars of the school:— 1. There is no age restriction; 2. Hours of attendance: 6 p.m. to 8.30 p.m.; 3. Fees: Education given free; 4. Scholarships: Liberal scholarships and prizes are given away by philanthropic gentlemen; 5. Admission: only 25 can be admitted for each class at present; 6. Subjects for instruction:—(a) Tamil, English, Arithmetic, Indian History, Geography, Drawing, Hygiene; (b) Workshop practice, Watch repairing, Weaving.

A Munificent donation.—We learn that Mr. Abdul Sattar Hajee Moosa, one of the leading and influential Native merchants of Muttancherry, has donated Rs. 5,000 towards the fund for the proposed Arabic College which is to be established at Alwaye. Mr. Abdul Sattar has further promised to build a mosque at his own cost for the use of the College students when the College buildings are completed. This is one of the results of the Mahomedan Educational Conference lately held at Madras.

A Mahomedan University: Public Meeting in Madras.—Under the auspices of the Mahomedan

Educational Association of Southern India, a public meeting was held at the Anjuman-i-Muflid-i-Ahlai-Islam with the Hon'ble Mr. Justice Abdur Rahim in the chair, when Mr. Mahomed Azeez Mirza, Secretary of the All-India Moslem League, delivered an eloquent address on "A Mahomedan University." There was a very large attendance.

The speaker after a short address briefly outlined the aims and objects of the Mahomedan Anglo-Oriental College. Sir Syed Ahmed in the address presented to Lord Lytton, who laid the foundation stone of the College, expressed the hope that some day the institution would expand into a University, whose alumni would go forth preaching the gospel of free enquiry, of large-hearted toleration and of a pure morality. If a Mahomedan University was established, it would tend to make those Mahomedans take to Western education who would otherwise remain illiterate, or at least with a very limited mental horizon.

The speaker next dwelt upon the Catholic spirit of the Aligarh College in throwing its door open to all sections of the community, irrespective of caste, creed or colour. The University, if it were ever established, should be on the same lines and on the lines of the old Mahomedan Universities of Cordova, Baghdad, Saville, Cairo, etc.

The Chairman, in his concluding remarks complimented the lecturer on his eloquent address. He did not, however, agree with Mr. Mirza that the present system of education tended to sap the foundations of religion and morals. He believed that it was a peculiar feature of the Mahomedan community that no Moslem boy was left ignorant of the first principles of his religion. The unprogressive character of Islam was due mainly to the unreasoning prejudice of Moulvies against Western culture and progress. One beneficial result of a Mahomedan University would lie in such a combination of religious and secular education as would give the students the equipment suited to the growing needs of the times. The Mahomedan University, unlike others, already in existence in India, would also turn out a better class of young men. He was, however, not averse to the idea of a common University, as projected by Mrs. Besant, but he doubted if it would be satisfactory to the peculiar needs of Mussalmans. It seemed to him to be better for each community to conserve and develop separately all that was best in its religion, history and culture.

Tinnevely Hindu College: interesting speech by Mr. Srinivasa Rao.—Presiding at a meeting of the Tinnevely Hindu College Debating Society, Mr. K. Srinivasa Rao, District Judge, delivered an interesting and eloquent address, in the course of which he observed that Debating Societies should not be intended merely for improving the powers of speech, but should serve to bring together in the leisure hours teachers and taught, for a full exchange of thoughts and feelings. He impressed on the students the cardinal virtues

of modesty, humility, reverence for age, and respect for law and authority. Obedience and duty, he said, were the two central principles on which the life of the nation had been built. No man who means well for the country should try to shake them, and woe be to him who does so. Indian students should never give up these good points of their national character, and respect for law and authority should be engrained in them all, and it was most painful to see young men losing respect for their elders. He advised them to spend their time more with the dead than with the living, and not let current events distract their attention from their books and studies. He made a powerful appeal to the sacredness of student life, and how it should be spent in the company of great men and good books, unruffled by anything outside their studies. He deplored the tendency of young men to get derailed from their studies into matters that did not concern them, and that were not conducive to their well-being. He exhorted them never to be ungrateful to the British Government and the English language, but for which we would not possess our present knowledge, enlightenment, and progress. He wound up with a reference to H. E. the Governor's recent speech at Founder's Day at the Lawrence Asylum, and read portions of the same, which was received with great enthusiasm.

The training of a Teacher.—At a public meeting of the Teachers' Association held at the Teachers' College, Saidapet, the Rev. E. M. Macphail delivered a lecture on the "Training of a Teacher." He conferred his lecture to the expression of a few thoughts (being the outcome of his experience in the Educational department for over twenty-five years, both with teachers and students) with reference to the subject of teaching and more specially with reference to the preparation required for teaching and to the life of teachers in general. In the solution of the question of teaching, two questions, he said were of considerable importance—What was the work of a teacher and what was the object for which he was trained as a teacher? The answer was not only to impart knowledge to boys but also to train and develop the character of the taught. To enable him to do this satisfactorily, a teacher should possess four kinds of knowledge, viz., a knowledge of the subjects to teach, a knowledge of the best method by which to impart instruction to boys and to train them, a knowledge of the children he was to handle, and lastly a knowledge of his ownself. He then described how these various forms of knowledge could be attained. Talking of the profession of teaching itself Mr. Macphail said that though he did not quite agree with the remark that was sometimes made that a teacher was not well-remunerated, there was one consolation to a teacher that he led a more intellectual life in many ways than the others and that it ought to be borne in mind was in itself a part of the wages of a teacher. There was a tendency on the part of some teachers to be unduly stern and

of value in all games and sports was to learn how to lose a game gracefully. The speaker referred to the pain with which he had learned of the defeated school hooting the successful school, and he trusted the Association would succeed on impressing on the young men how disgraceful and unworthy of all true sportsmanship such conduct was. After referring to the need for co-operative obedience to the head in all games, the Hon'ble Mr. Chaula wished every success to the good work accomplished by the Association.

CALCUTTA.

National Council of Education.—The National Council of Education, Bengal, are offering two scholarships of Rs. 10 each a month to deserving students who would take up History or Philosophy in the Proficiency Class of the Bengal National College. Similarly they are also offering two scholarships of Rs. 8 each a month to deserving students who would take admission in the 6th standard Class, Literary Course, in the Bengal National College.

Dacca College of Law.—It is understood that Government's sanction for the establishment of the Dacca College of Law has been obtained. The teaching staff will consist of two Professors and a Vice-Principal. The Principal of the Dacca College will act as the Principal of the Law Department, Mr. Khuda Bux of the Calcutta High Court Bar, has been appointed Vice-Principal. In all other matters the *status quo* is to be maintained. A sum of Rs. 3,000 has been granted for the Law College Library.

Ripon College: Foundation stone laid by Sir E. Baker.—His Honour Sir Edward Norman Baker recently laid the foundation stone of the new Ripon College, in the presence of a large gathering.

Dr. Rash Behari Ghosh, President of the Board of Trustees, read a statement, giving a history of the new building and a list of donors.

His honour then addressed the assembly in the course of which he said: I should like to take this opportunity to offer a word of advice, in which I feel sure all true friends of education will concur. Let it be the care of the Trustees to see to it that the new Ripon College is maintained as a temple of learning, pure and undefiled, in which the politician and the agitator shall have no place whatever. I am not going to offer you a demonstration of the reasons why students should be debarred from participation in politics. Those reasons have often been set forth by abler voices than my own, and are familiar to us all. The matter is no longer an open question: it has become an established principle, which all must accept who embark on educational work.

The funds for which the College authorities are now appealing to the public are required exclusively for educational purposes, and for no political object whatsoever. It is on that clear express explicit understanding that I have agreed to be present here to-day; and I think that those who respond to the appeal may rest assured that that condition will be honourably and unreservedly accepted.

A vote of thanks was next proposed by Babu Surendranath Bannerjee, the President of the College Council and the ceremony came to a close.

Dacca Government College.—The Secretary of State has sanctioned the addition of the following new appointments to the staff of the Government College at Dacca: in the Indian Educational Service one Professor of English and two Professors of Physics, in the Provincial Educational Service one Professor of History, one Professor of Political Economy and one Professor of Arabic and Persian.

PUNJAB.

Aligarh College: a handsome donation.—We understand that Colonel Sahibzada Obaidullah Khan, the second son of H. H. the Begum of Bhopal and A. D. C. to H. E. the Viceroy, has made a handsome donation of Rs. 50,000 to the funds of the Aligarh College. Colonel Obaidullah Khan recently accompanied his enlightened mother, the Begum of Bhopal, to Aligarh, where they inspected the College during the working hours and were immensely pleased with their visit.

Punjabi language in Punjab.—The Sikh Educational Conference recently addressed the Punjab Government urging the adoption of the Punjabi language in Punjab schools. The Punjab Government have now replied that such language is already optional, as an alternative to Hindi and they do not see their way to making a change in the existing arrangement.

ALLAHABAD.

Khalsa College: Amritsar.—Mr. Wright, Principal of the Coimbatore College, has been appointed Principal of the Khalsa College, Amritsar, vice Mr. Cole, appointed Registrar, Allahabad University. The new Principal will join the Khalsa College next month.

TRAVANCORE.

The Maharajah's College, Trivandrum.—Quite a lively function was witnessed on the 9th instant, at 5.30 P.M., at the local V. J. Town Hall when H.H. the Maharajah's College Malayalam Samajam celebrated

its 12th anniversary with Mr. C. V. Raman Pillai, B.A., the Superintendent of the Government Press, in the chair. The elite of the Malayalam speaking gentry of the town were present, the whole proceedings being in the Malayalam language. The audience was welcomed by Mr. C. N. A. Ramiah Sastri, M.A., in a short nice speech and the meeting was then declared open by the Chairman who had some very humorous observations to make regarding his being invited to preside on the occasion. The Secretary then read his report for the year. The first speech was on "Translation" by Mr. C. S. Potti, B.A. The paper was appreciated highly as a critical brochure on the present day disposition of Malayalam *literatis* in the work of translating pieces from Sanskrit and English. The second speech was by Mr. M. Govinda Pillai, B.A., B.L. His subject was "Advocacy—an art." Mr. Pillai premised by saying that he was specially connected with the Samajam as he was its first Secretary and one of its generators. He spoke from personal experience and close observation of human nature. The paper contained practical sound advice to young men who intended to join the Bar and pointed out the slight obstacles that stood in their way to achieve success. He depicted the several types of Judges, good, bad and indifferent, before whom the young practitioner is ushered in for the strenuous battle of life. The speaker said acuteness of perception was the most needed quality in an Advocate and a correct appreciation of human tendencies under a given set of circumstances would enable the practitioner to achieve success at the Bar. Mr. Pillai said that justice in a Court of Law was sometimes the result of chance and it behoved every practitioner to see that he never hurts the feelings of the presiding Judge. The speech was wound up by some practical hints on the art of cross-examination. Mr. C. V. Raman Pillai then delivered his concluding address in which he advocated the cause of Malayalam literature he being one of its staunch supporters. The presidential address was decidedly a success. Mr. Gopala Menon, B.A., History Tutor of the College, then thanked the audience and the meeting dispersed at 7.30 P.M. with three ringing cheers for H. H. the Maharajah.

INDIA (GENERAL)

The Indian Institute of Science.—It is proposed to lay the corner stone of the central building of the

Indian Institute of Science towards the end of the present year. A considerable number of applications for admission has been already received by the Director from students, and he says that many of them appear to be well qualified, so far as may be judged from the accounts they give of their training. The Institute will accommodate at a minimum 64 students and 8 demonstrators, and at most the buildings will be ready about this time next year.

The Director of Public Instruction: N. W. F. Province.—Mr. Ritchie, Professor, Dacca College, has been selected to succeed Dr. A. Stein, as Director of Public Instruction, N.W.F. Province.

Mr. H. W. Orange as Chief Inspector of Elementary Schools in London.—Mr. H. W. Orange, who is about to vacate his appointment of Director-General of Education, will take two months' leave on expiry of which his services will be replaced at the disposal of the Board of Education in England. He will join his new appointment in London as Chief Inspector of Elementary Schools on 1st December.

Foreign Notes.

GREAT BRITAIN.

The Encyclopædia Britannica.—The University of Cambridge has, we are asked to announce, acquired the copyright of the Encyclopædia Britannica and it is proposed to publish an entirely new edition (eleventh) at the University Press. The work which will be published about the end of this year, will be issued as a complete work in twenty-eight volumes. It is perhaps only fitting that one of the leading Educational institutions of the world should undertake the publication of this monumental work the value of which is enormous. It is also stated that in more than one department, the new Encyclopædia Britannica has been made the medium through which hitherto unpublished theories and discoveries are now first made accessible to the public. The work will be thoroughly up-to-date being brought up to the summer of this year. The edition will be printed on India paper for conveniences of space.



The Educational Review.

The remarks made on the teaching of mathematics by Prof. E. W. Hobson, D.Sc., F.R.S., in his presidential address to the Mathematical and Physical Science Section of the British Association Meeting at Sheffield deserve the attention of all teachers of Mathematics in India. Dr. Hobson accepts the general principle that a much less abstract mode of treatment than was formerly customary is desirable, but he at the same time thinks that there are some serious dangers connected with the movement towards making the teaching of mathematics more practical than formerly. He says: "Geometry and mechanics are both subjects with two sides: on the one side, the observational, they are physical sciences; on the other side, the abstract and deductive, they are branches of pure mathematics. The older traditional treatment of these subjects has been of a mixed character, in which deduction and induction occurred side by side throughout, but far too much stress was laid upon the deductive side, especially in the early stages of instruction. It is the proportion of the two elements in the mixture that has been altered by the changed methods of instruction of the newer school of teachers. In the earliest teaching of the subjects they should, I believe, be treated wholly as observational studies. At a later stage a mixed treatment must be employed, observation and deduction, going hand in hand, more stress being, however, laid on the observational side than was formerly customary. This mixed treatment leaves much opening for variety of method; its character must depend to a large extent on the age and

general mental development of the pupils; it should allow free scope for the individual methods of various teachers as suggested to those teachers by experience. Attempts to fix too rigidly any particular order of treatment of these subjects are much to be deprecated, and, unfortunately, such attempts are now being made. To have escaped from the thralldom of Euclid will avail little if the study of Geometry in all the schools is to fall under the domination of some other rigidly prescribed scheme."

Dr. Hobson rightly disapproves of the tendency in some quarters to demand a regular order in the sequence of propositions, in order that it may be easy to appraise the performance of the candidates and in standardising the results of examinations. "From the point of view of the examiner it is without doubt an enormous simplification if all the students have learned the subject in the same order, and have studied the same text-book. But, admitting this fact, ought decisive weight to be allowed to it? I am decidedly of opinion that it ought not. I think the convenience of the examiner, and even precision in the results of examinations, ought unhesitatingly to be sacrificed when they are in conflict—as I believe they are in this case—with the vastly more important interests of education. Of the many evils which our examination system has inflicted upon us, the central one has consisted in forcing our school and university teaching into moulds determined not by the true interests of education, but by the mechanical exigencies of the examination syllabus. The examiner has thus exercised a potent influence in discouraging initiative and individuality of method on the part of the teacher; he has robbed

the teacher of that freedom which is essential for any high degree of efficiency. An objection of a different character to the newer modes of teaching geometry has been frequently made of late. It is said that the students are induced to accept and reproduce, as proofs of theorems, arguments which are not really proofs, and thus that the logical training which should be imparted by a study of geometry is vitiated. If this objection really implies a demand for a purely deductive treatment of the subject, I think some of those who raise it hardly realise all that would be involved in the complete satisfaction of their requirement. I have already remarked that Euclid's treatment of the subject is not rigorous as regards logic. Owing to the recent exploration of the foundations of geometry we possess at the present time tolerably satisfactory methods of purely deductive treatment of the subject; in regard to mechanics, notwithstanding the valuable work of Mach, Herz and others, this is not yet the case. But, in the schemes of purely deductive geometry, the systems of axioms and postulates are far from being of a very simple character; their real nature, and the necessity for many of them, can only be appreciated at a much later stage in mathematical education than the one of which I am speaking. A purely logical treatment is the highest stage in the training of the mathematician, and is wholly unsuitable—and, indeed, quite impossible—in those stages beyond which the great majority of students never pass. It can then, in the case of all students, except a few advanced ones in the universities, only be a question of degree how far the purely logical factor in the proofs of propositions shall be modified by the introduction of elements derived from observation

or spatial intuition. If the freedom of teaching which I have advocated be allowed, it will be open to those teachers who find it advisable in the interests of their students to emphasise the logical side of their teaching to do so; and it is certainly of value in all cases to direct the attention of students to those points in a proof where the intuitional element enters. I draw, then, the conclusion that a mixed treatment of geometry, as of mechanics, must prevail in the future, as it has done in the past, but that the proportion of the observational or intuitional factor to the logical one must vary in accordance with the needs and intellectual attainments of the students, and that a large measure of freedom of judgment in this regard should be left to the teacher."

The Third International Congress on School Hygiene, held in Paris during the past month, has

rendered immense service. It was a very successful effort to focus opinions held in various parts of the world on a great international movement and to inspire it with vital energy. The two previous congresses on this subject, held respectively in Nuremberg in 1904 and in London in 1907, dealt mainly with the theoretical aspects of the question; the Paris Congress dealt with the solution of practical difficulties. These difficulties have been already partially grappled with. In England medical inspection has become a recognised practice, both for the prevention of infectious diseases and for the promotion of sanitary conditions in the home and school. In France the work is still in the initial stage and only carried on at present, without Government regulations, in a few of the large and more pro-

gressive towns. In India, especially in the Madras Presidency, there has been some talk about the medical inspection of school children in view of the establishment of a hospital for consumptives as a memorial to the late King-Emperor. It may be pointed out that nowhere has a medical service, adequate for all needs, been thoroughly organised. The magnitude of the evils to be grappled with and the best mode of attacking them are yet to be realised. We think that the field of conflict is in the streets and the homes, rather than in the schools. The sanitary conditions in our schools are far better than those in the homes. The Hindu, as is well-known, dines on a table-cloth of dung. In such circumstances to leave the homes untouched while ensuring sanitary conditions in the schools is to count disaster. It is a lack of perspective that makes people think of attacking infectious disease only in the schools. We do not deny that the standard of health must be raised and the methods of education must be improved, if the education given in schools is to be effective. We are in complete agreement with Dr. Mathien in saying that we want "air in the school, air in the lungs, air in the timetables."

In his presidential address to the Conference on the Hygiene of Childhood at the Royal Sanitary Institute Congress, Sir William Collins, M.P., pointed out how child-life was a most sensitive re-agent to hygienic and mal-hygienic influences, and how conversely such influences were most potent in the case of children. Though early reformers had taught us in matters of hygiene to keep our eyes on the death-rate, we had until lately regarded complacently the im-

provements in the general death-rate ignoring altogether the fact that the infantile death-rate had until lately shown little disposition to decline. Happily, attention has now been concentrated upon child-life, and the influences which are acting upon it for weal or woe upon it—voluntary agencies, administrative bodies and the legislature—have all become alive to the importance of such questions. The years of school-life, five to fourteen, are tending to become not merely educational, but a period for the State handling of childhood. The hygiene of childhood may be considered under the heads of school hygiene and the pre-school and post-school age. The question of hereditary influence must be considered. Sir William Collins accepts neither the conclusions of Weissmann and his school who deny the transmissibility of acquired characteristics nor those of the Eugenic Society who think that the children of the intemperate are not less likely to be healthy than those of sober parents. He thinks that physical education in schools should not be in the nature of military drill, for it gives a bias or a premature specialisation to the boy. We should foster self-knowledge, self-reverence, self-control, and not a military spirit or a morbid form of a spurious patriotism. The individual should always be encouraged and spurred on to exercise a spirit of self-reliance and independence and this, more than anything, is what should be attempted in the schools.

Principal Miers delivered the presidential address to the Educational Science Section of the meeting of the British Association at Sheffield. He devoted his address to the subject of university education, dealing with the general relations between

teachers and pupils, and explaining what in his opinion should be the change in the method of teaching, or at any rate in the attitude of a teacher to pupil, when the latter passes from school to university.

Granting that there should be a radical difference between the ways of school and university teaching, how is the distinction between the intellectual interest of a child and the intellectual interest of a man to guide us in adjusting our methods of teaching when students pass from school to the university? The chief purpose of liberal school education being not so much to impart knowledge as to train the mind, almost any subject may be made to give intellectual training, as this is concerned not with the subject but with the manner in which it is taught. In any case, if the scheme of intellectual training be adequately fulfilled, the period of mental discipline should come to an end with the close of school-life, and the mind should then be able to enter upon new studies and to assimilate fresh knowledge without a prolonged continuation of preparatory courses. Indeed, the professed object of entrance examinations to the university is to exclude those whose minds are not prepared to benefit by a course of university study, and to admit only those who are sufficiently equipped by previous training to do so.

The first question which a university teacher should ask himself is: "Am I rousing a spirit of inquiry in my pupils?" And if this cannot be answered in the affirmative it is a confession that the university ideal is not being realised. The business of direct mental training should be finished at school, and at the university the trained mind should be given material upon which to do responsible work in the spirit of inquiry. Preparatory

exercises belong to school-life and should be abandoned at the university. At school no subject should be taught as though it were intended to be their life-work; on the other hand, at the university each subject should be studied as though it really were the life-work both of teacher and student. The acquisition of knowledge and the training of the mind are two inseparable aims of education, and yet it often appears difficult to provide adequately for the one without neglecting the other. If childhood is the time when systematic training is most desirable, it is also the time when knowledge is most easily acquired; if early manhood is the time when special knowledge must be sought it is also the time when training for the special business of life is necessary. To withdraw from the child the opportunities of absorbing knowledge may be harmful as it is unnatural; to turn a young man or young woman loose into a profession without proper preparation is cruel and may be disastrous. If education is to achieve the great purpose of interesting the pupil while young in right objects, and also of training him for the proper business of his life before it is too late, is it not mainly a question of deciding when and how far to take from him, or to leave to him, the responsibility of what he is to learn and how he is to learn it? If the teacher bears the responsibility during the period of school training, should not the student have a large share of responsibility in the quest of knowledge at the university? The spirit of independent inquiry should dominate all university teaching and learning.

At a joint meeting of the Anthropological and Education Sections of the British Association meeting at Sheffield, much psycho-pedagogy.

was said in support of Professor Binet's view that teachers should have at command the means of recognising intellectual and moral types among children, means of measuring memory and of strengthening it; that they should know how to estimate fatigue and how to counteract it. For such ends psychologists and teachers should, it was urged, as M. Binet desires, set themselves jointly to the task of creating the science of "psycho-pedagogy." Speakers dwelt on the short-sighted niggardliness of the British Government, which, unlike the Governments of Germany, France, Belgium, the United States and Russia, has failed to give support to inquiries into the fundamental questions affecting education, and also on the opposition created in the minds of teachers by the pressure of preparation for examiner's visits. But some of the best things were said by Sir George Reid, High Commissioner of Australia, who complained that, though he could get a simple and admirable text-book on the mental history of a beetle, no such book could be obtained on the sovereign human mind. The dominant mental attitude of a child when it went into school was curiosity. Its mind was fallow soil ready to be cultivated, and the greatest curse to the young mind was endeavouring to make it try to master abstract propositions in the first glimmerings of its growing consciousness. The body could cry out if it was supplied with indigestible food, and you could hear the wail of the body if you starved it, but the mind sometimes got walnuts with the shells on and yet it could not cry, and the school became a sort of penitentiary. You might starve the mind of a child and give it mental food which it could not digest, but it was unable to suggest anything better. Sir George Reid would like to see

memory not given so high a place in the education of children, as the result of so doing was to turn them into so many little gramophones. In his view it would be a great thing when men of science really did know everything about which they talked, for then they would be able to tell us what it all meant in plain English.

We are glad to note that Professor Miers in his presidential address to the Educational Science Section of the British Association meeting at Sheffield laid special stress on the individuality of the teacher. He said:—

"Educational systems necessarily prescribe the same methods for different teachers, and, being made for the mass ignore the individual. But happily, in spite of the attempts to formulate methods of instruction to make precise systems, there are many, and those perhaps some of the most successful, in the army of earnest school teachers who are elaborating their own methods. Now, among all the changes and varieties of system and curriculum, there is one factor which remains permanent and which is universally confessed to be of paramount importance—the individuality of the teacher and his personal influence upon the pupil. It is therefore a healthy sign when school teachers who have been trained on one system begin to develop their own methods, for in this they are asserting their individuality and strengthening that personal influence which is the real mainspring of all successful education. Personal influence is, of course, not only a matter of intellectual attainments; it appears to me, however, that at the present time so much is made of the duty of schools to aim at the formation of character that there

is an unfortunate tendency to regard this duty as something distinct from the other functions of a master and as independent of intellectual qualifications. Among the first qualities now demanded of a master in a public school for boys are manliness, athletic skill, and a hearty and healthy personality, and these are often regarded as compensating for some lack of intellectual equipment. I suspect that there is a similar tendency in schools for girls. And yet I think it will be found that the only permanent personal influence is really wielded by teachers who exercise it through intellectual channels, and that those who acquire intellectual authority will generally succeed in training the characters as well as the minds of their pupils. On the other hand, the master who is not up to the proper intellectual standard will soon be found out by his cleverer pupils, and will lose influence, whatever may be the charm of his character."

These utterances of Professor Miers deserve the deep consideration of those who are clamouring for religious education in our schools and colleges.

The London County Council has issued the following instruction to Educational methods in Infants' Schools. head-mistresses and other teachers engaged in teaching infants; this instruction will be found useful also by the teachers of our primary schools.

Two distinct processes are required for the act of learning by the sense of sight—the power of sight and the power of appreciation of the thing seen. Difficulties arise in both processes in young children. To see, in the sense of perceiving clearly, it is necessary that the image on the retina of the eye should be large. This can be obtained either by

using large objects or by allowing the child to bring the object close to the eye. When an object is brought close to the eye a continuous muscular action (accommodation) is required. This, like any other continuous muscular exertion, leads to fatigue, discomfort, and even cramp, while the similar effort involved in converging the eyes tends to produce further defects. To see any object nearer than a yard from the eye involves much more strain than in an adult. When an object has to be held near to the eyes, whether on account of its small size or some defect in the mechanism of the eye, this injurious chain of events is liable to be set up, affecting not only the eyes, but also the position and carriage of the children, and leading to a risk of permanent deformity. In the teaching of writing there is the further difficulty that the infant has not acquired the power of controlling and co-ordinating the movements of the small muscles of the hand. Instruction in writing in infants' departments often leads to two bad habits: holding the head so that the eyes are near the work with back-bent and the chest contracted, and holding the pen with the hand in a strained position and the forefinger bent at a very acute angle. These habits are eradicated with difficulty, if at all, in higher standards. To avoid these risks, the form of letters should be learned from large objects, the letters being built up by stick-laying or placing together rows of beads, *i.e.*, in the desired forms. Then the letters may be written by each child on a blackboard with big, sweeping movements, and later with chalk on brown paper. Copy work should not commence below Standard I. The first copy-book used should be altogether with outlines. Squared paper must not be used for instruction in writing.

It is welcome news that the control and copyright of the *Encyclopædia Britannica* has been taken by the Cambridge University. The reputation of the university will be a guarantee of the completeness and modernity of the eleventh edition of a book of reference which is valuable to the teacher. The new edition will contain in twenty-eight quarto volumes, a fresh and original survey of all existing knowledge in every field of thought, and is timed for the end of the present year. Eight years have been devoted to the reconstruction of the entire work, which has gone on simultaneously under the various experts engaged in the revision. The contemporaneous revision by over fifteen hundred specialists will avoid the chief defect of encyclopædic literature issued piece-meal. As all articles on cognate subjects have been simultaneously correlated and balanced, it is hoped that there will be no over-lapping or discrepancy arising from different intervals of publication. The object of the university in undertaking this work is to bring all knowledge within the reach of every class of reader.

IN THE PRESS

B. A. Degree Examination, 1912.

NOTES ON LESLIE STEPHEN'S **GEORGE ELIOT**

With an Introductory Study of George Eliot as a Novelist

By P. SESHADRI, M.A.

Pachaiyappa's College, Madras.

Frederic Harrison writes of the Introduction:—

"I have read with care and great interest your essay on George Eliot as a Novelist and I do not hesitate to say that it is really a remarkable example of the thoroughness with which our Hindu students assimilate English culture and of the literary skill and critical judgment they can acquire in the native colleges.

"Your essay seems to me a truly just and thoughtful estimate of our famous novelist. And your mastery of pure and correct English prose is astonishing in one who I presume has not spent many years in our island here."

MATTHEW ARNOLD'S Literary Influence of Academies and Marcus Aurelius

WITH INTRODUCTION AND NOTES

BY THE SAME EDITOR.

SRINIVASA VARADACHARI & CO., TRIPPLICANE & ESPLANADE ROW, MADRAS.

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MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

57. [M. BHIMASENA RAO.] Show that the circumcentre of the diagonal triangle of any quadrilateral lies on the line of collinearity of the orthocentres of the four triangles which can be formed by the sides of the quadrilateral.

Solution by P. V. Krishna Iyer, B.A., L.T.

The solution proved below is based on the following theorems.

I. The circles on the 3 diagonals of a quadrilateral as diameters are co-axial, the radical axis being the line of orthocentres of the 4 triangles formed by the sides.

2. These 3 circles are cut orthogonally by the circumcircle of the diagonal triangle.

Hence the centre of the latter lies on their common axis which is the line of orthocentres.

I. Let ABCD be the quadrilateral; m_1, m_2, m_3 the middle points of its diagonals; D_1, D_2, D_3 the diagonal triangle.

Let O be the orthocentre of AED.

Then the tangents from O to all the 3 circles whose centres are m_1, m_2, m_3 are equal. For sq. of tangent from O to the circle $m_3 = Om_3^2 - m_3E^2 = 2EO \cdot PQ$ where PQ is the intercept on EO made by the $\perp^r$ and median from m_3 .

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This intercept = $\frac{1}{2}OK$, since OKF, QPM, are similar triangles.

$\therefore$ sq. of tangent from O to circle $m_3 = 2EO \cdot \frac{1}{2}OK = EO \cdot OK$.

Similarly $Om_1^2 - m_1D^2$ can be proved to be equal to $DO \cdot OL$ which is equal to $EO \cdot OK$.

Similarly $Om_2^2 - m_2A^2 = AO \cdot OM = EO \cdot OK$. $\therefore$ tangents from O to all the circles are equal.

Similarly tangents from the other orthocentres to the circles can be proved to be equal.

$\therefore$ The line of collinearity of the orthocentres is the radical axis of the 3 circles.

II. The pencil B.EDFD₃ is harmonic.

$\therefore$ the transversal ED₃ is divided harmonically.

$\therefore$ The polar of E with respect to circle D_1, D_2, D_3 passes through F; but E and F are extremities of a diameter of circle m_3 .

$\therefore$ The two circles D_1, D_2, D_3 and m_3 cut orthogonally.

Similarly it can be proved that D_1, D_2, D_3 is orthogonal to the circles m_1 and m_2 .

$\therefore$ The centre of D_1, D_2, D_3 is on the radical axis of m_1, m_2 and m_3 .

94. [G. V. TELANG]. Through O the centre of a circle, a perpendicular OA is drawn to a given straight line intersecting the circle in two points B and C. On it a

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point P is taken such that AP^2 is the arithmetic mean between AB^2 and AC^2 and through P a chord DE is drawn. From D and E perpendiculars DM and EN are drawn to the given straight line. Show that the sum of the squares on DM and EN is less than $2AP^2$ by the square on the difference between AM and AN. For what position of DE will this difference be greatest?

Solution by the Proposer.

Let $OA = h$, the radius of the circle $= r$, $\angle DOP = \theta$, and $\angle EOP = \phi$.

$$\text{Then } OP = \frac{r \sin(\theta + \phi)}{\sin \theta + \sin \phi} = \frac{r \cos \frac{(\theta + \phi)}{2}}{\cos \frac{\theta - \phi}{2}}$$

$$AM = r \sin \theta, \quad AN = r \sin \phi.$$

$$DM = h + r \cos \theta,$$

$$\text{and } EN = h + r \cos \phi.$$

$$\text{Now } DM^2 + EN^2$$

$$= (h + r \cos \theta)^2 + (h + r \cos \phi)^2 \\ = 2h^2 + 2hr(\cos \theta + \cos \phi) + r^2(\cos^2 \theta + \cos^2 \phi).$$

$$\text{Now } PA = h + r \frac{\cos \frac{1}{2}(\theta + \phi)}{\cos \frac{1}{2}(\theta - \phi)}.$$

$$\therefore 2PA^2 = 2h^2 + 4hr \frac{\cos \frac{1}{2}(\theta + \phi)}{\cos \frac{1}{2}(\theta - \phi)} \\ + 2r^2 \frac{\cos^2 \frac{1}{2}(\theta + \phi)}{\cos^2 \frac{1}{2}(\theta - \phi)}.$$

$$\text{Again } 2PA^2 = AB^2 + AC^2 = 2AO^2 + 2OB^2 \\ = 2h^2 + 2r^2.$$

$$\therefore 4hr \frac{\cos \frac{1}{2}(\theta + \phi)}{\cos \frac{1}{2}(\theta - \phi)} + 2hr^2 \frac{\cos^2 \frac{1}{2}(\theta + \phi)}{\cos^2 \frac{1}{2}(\theta - \phi)} = 2r^2.$$

$$\therefore h = r \left(1 - \frac{\cos^2 \frac{1}{2}(\theta + \phi)}{\cos^2 \frac{1}{2}(\theta - \phi)} \right) / \frac{\cos \frac{1}{2}(\theta + \phi)}{\cos \frac{1}{2}(\theta - \phi)} \\ = \frac{r \sin \theta \sin \phi}{\cos \theta + \cos \phi}$$

$$\therefore 2PA^2 - (DM^2 + EN^2) \\ = 2h^2 + 2r^2 - 2h^2 - 2hr(\cos \theta + \cos \phi) \\ - r^2(\cos^2 \theta + \cos^2 \phi) \\ = 2r^2 - r^2(\cos^2 \theta + \cos^2 \phi) - 2hr(\cos \theta + \cos \phi) \\ = r^2(\sin^2 \theta + \sin^2 \phi) - 2r^2 \sin \theta \sin \phi \\ = (r \sin \theta - r \sin \phi)^2 \\ = (AM - AN)^2.$$

Next let the $\angle OPD = \alpha$ and draw OG perpendicular to DE.

$$\text{The } DP - PE = 2GP = 2OP \cos \alpha.$$

$$\text{Again } (DP - PE) \sin \alpha = AM - AN.$$

$$\therefore AM - AN = 2OP \sin \alpha \cos \alpha = OP \sin 2\alpha.$$

and since OP is given in magnitude AM - AN is greatest when $\alpha = 45^\circ$.

Hence the difference will be greatest when DE is inclined at an angle of 45° to AO.

95. [G. V. TELANG.] TA and TB are tangents to a circle, angle ATB being obtuse. TCD is a chord such that $\angle BTC$ is the supplement of $\angle ATB$. Show that the intercept on TB made by AC and AD is half of CD.

Solutions I by the Proposer, and II by P. V. Krishna Iyer, B.A., L.T.

I. Let AC and AD intersect TB in E and F. In the $\triangle ATC$, TE is the external bisector of the $\angle ATC$.

$$\therefore TE^2 + EC \cdot EA = TA \cdot TC.$$

$$\therefore TE^2 + EB^2 = TB \cdot TC.$$

$$\text{i.e., } TE^2 = EB^2 - TB \cdot TC.$$

$$\text{Again } TE^2 = (TB - EB)^2 = TB^2 - 2TB \cdot EB + EB^2$$

$$\therefore TB^2 - 2TB \cdot EB = -TB \cdot TC.$$

$$\text{i.e., } TB = 2EB - TC \quad \dots \quad (1)$$

Similarly by taking the $\triangle TAD$ it can be proved that $TB = 2FB - TD \quad \dots \quad (2)$

$$\therefore \text{from (1) and (2) we have}$$

$$2FB - TD = 2EB - TC.$$

$$\text{i.e., } 2FB - EB = TD - TC.$$

$$\text{i.e., } 2EF = CD.$$

$$\therefore EF = \frac{1}{2}CD.$$

116. [G. V. TELANG.] If the inscribed circle of a $\triangle$ passes through the circum and ortho centres, show that the perimeter of the $\triangle$ is $\sqrt{6}$ times the diameter of the circum-circle. Determine the angles of the $\triangle$.

Solution by the Proposer.

Let ABC be the $\triangle$, S the circumcentre, O the orthocentre and I the incentre; and let R be the circum radius and r the in-radius.

$$\text{Since } IS^2 = R^2 - 2Rr.$$

$$r^2 = R^2 - 2Rr.$$

$$\therefore R = (\sqrt{2} + 1)r \text{ or } \frac{r}{R} = \sqrt{2} - 1. \quad (1)$$

$$\text{Again } r^2 = IO^2 = 2r^2 - 4R^2 \cos A \cos B \cos C.$$

$$\therefore r^2 = 4R^2 \cos A \cos B \cos C. \quad (2)$$

Now it can be proved that, if s be the semi-perimeter

$$\frac{s^2}{R^2} = \left(2 + \frac{r}{R} \right)^2 + 4 \cos A \cos B \cos C.$$

$$\therefore \frac{s^2}{R^2} = \left(2 + \frac{r}{R} \right)^2 + \frac{r^2}{R^2} \quad \left\{ \begin{array}{l} \text{from (2)} \\ \text{and} \end{array} \right.$$

$$= (1 + \sqrt{2})^2 + (\sqrt{2} - 1)^2 \quad \left\{ \begin{array}{l} \text{from (1)} \end{array} \right.$$

$$= 6$$

$\therefore s = \sqrt{6} R$, i.e., the perimeter is $\sqrt{6}$ times the diameter of the circum-circle.

To determine the angles of the $\triangle ABC$.

It can be easily proved that $\angle SAI = \angle SAO$ and $\angle BAS = \angle CAO$.

In the $\triangle SAI$ and OAI , $SI = OI$, IA is common and the $\angle SAI = \angle OAI$. $\therefore$ the $\triangle$ s are similar. $\therefore AS = AO$.

Draw SD perpendicular to BC,

$$\text{then } SD = \frac{1}{2} AO = \frac{1}{2} SA = \frac{R}{2}.$$

$$\therefore \text{the } \angle BAC = 60^\circ.$$

$$\text{Let the } \angle SAI \text{ or } \angle OAI = \theta.$$

$$\text{then } \cos \theta = \frac{SA^2 + AI^2 - SI^2}{2SA \cdot AI}$$

$$\frac{R^2 + r \operatorname{cosec} \frac{A}{2} - r^2}{2R \cdot r \operatorname{cosec} \frac{A}{2}}$$

$$= \frac{(\sqrt{2} + 1)^2 + 2^2 - 1^2}{2(\sqrt{2} + 1) \times 2} \quad \therefore R = (\sqrt{2} + 1)r \text{ and}$$

$$= \frac{2\sqrt{2} - 1}{2} \text{ on reduction.}$$

$$A = 60^\circ.$$

It is easy to see that $\angle ABC = 60^\circ - \theta$ and $\angle ACB = 60^\circ + \theta$.

Hence the angles are determined.

131. [S. SITARAMA RAO.] Perpendiculars AA_1 , BB_1 , CC_1 to the plane of a triangle

ABC are erected at its angular points and their respective lengths are x, y, z ; show that if Δ and Δ_1 be the areas of ABC and $A_1 B_1 C_1$ then

$$\Delta_1^2 - \Delta^2 = \frac{1}{4} \{ a^2(x-y)(x-z) \\ + b^2(y-z)(y-x) + c^2(z-y)(z-x) \} \\ = \frac{1}{4} \{ a_1^2(x-y)(x-z) + b_1^2(y-z)(y-x) \\ + c_1^2(z-y)(z-x) \} \text{ where } a_1, b_1, c_1 \text{ are the sides of } \triangle A_1 B_1 C_1.$$

Solutions by S. V. Venkataraya Sastri, N. S. Ramanatha Iyer, K. Krishnamachari, B.A., and M. M. Venkatachari.

Through B_1 draw $B_1 D \perp$ to AA_2 meeting AA_1 in D. Then $B_1 D = c_1$, $A_1 D = x \sim y$, $c_1^2 = A_1 B_1^2 = B_1 D^2 + A_1 D^2 = c^2 + (x-y)^2$.

$$\text{Similarly } a_1^2 = a^2 + (y-z)^2, \quad b_1^2 = b^2 + (z-x)^2. \\ \Delta^2 = s(s-a)(s-b)(s-c)$$

$$= \frac{1}{16}(a+b+c)(-a+b+c)(a-b+c)(a+b+c)$$

$$= \frac{1}{16}(2\Sigma a^2 b^2 - \Sigma a^4) = \frac{1}{16} \{ 4\Sigma a^2 b^2 - (\Sigma a^4) \}$$

$$\therefore \Delta_1^2 - \Delta^2 = \frac{1}{16} [4\Sigma a_1^2 b_1^2 - (\Sigma a_1^4) \\ - 4\Sigma a^2 b^2 + (\Sigma a^4)]$$

$$= \frac{1}{16} [4\Sigma \{ a^2 + (y-z)^2 \} \{ b^2 + (z-x)^2 \} \\ - 4\Sigma a^2 b^2 - \{ \Sigma a^2 + \Sigma (x-y)^2 \}^2 + (\Sigma a^4)]$$

$$= \frac{1}{16} [4\Sigma a^2 \{ (z-x)^2 + (x-y)^2 \} \\ + 4\Sigma (z-x)^2 (x-y)^2 - 2\Sigma a^2 \Sigma (x-y)^2 \\ - \{ \Sigma (x-y)^2 \}^2]$$

$$= \frac{1}{16} [2\Sigma a^2 \{ 2(z-x)^2 + 2(x-y)^2 - \Sigma (x-y)^2 \}] \\ + \frac{1}{16} [4\Sigma (z-x)^2 (x-y)^2 - \{ \Sigma (x-y)^2 \}^2]$$

$$= \frac{1}{8} \Sigma a^2 \{ (z-x)^2 + (x-y)^2 - (y-z)^2 \}$$

since the second term of the last expn. is 0

$$= \frac{1}{8} \Sigma a^2 (2x^2 - 2xz - 2yz + 2yz)$$

$$= \frac{1}{4} \Sigma a^2 (x-y)(x-z).$$

Again this last expression

$$= \frac{1}{4} \Sigma a_1^2 (x-y)(x-z)$$

$$= \frac{1}{4} \Sigma (y-z)^2 (x-y)(x-z)$$

since the 2nd term vanishes.

132. [S. SITARAMA RAO.] Show that the product of the diagonals of the quadrilateral ABCD whose sides are a, b, c, d

$$= \sqrt{a^2 c^2 + b^2 d^2 - 2abcd - 2abcd \cos(A+C)}$$

Solutions by M. S. Sundareswaran and N. S. Ramanatha Iyer.

Let ABCD be the quadrilateral. At B and C make angles CBP, PCB equal to ABD, ADB respectively. Now triangles ABD, BPC are similar.

$$\therefore \frac{AD}{PC} = \frac{AB}{BP} = \frac{BD}{BC}$$

$$\therefore AD \cdot BC = BD \cdot PC.$$

Again triangles ABP, BCD are similar for $\angle ABP = \angle CBD$ and $AB : BP = BD : BC$

$$\therefore \frac{AB}{BD} = \frac{AP}{CD}, \text{ or } AB \cdot CD = BD \cdot AP.$$

$$\text{Now } AC^2 = AP^2 + PC^2 - 2AP \cdot PC \cos(A+C)$$

$$\therefore AC^2 \cdot BD^2 = AP^2 \cdot BD^2 + PC^2 \cdot BD^2$$

$$- 2AP \cdot BD \cdot PC \cdot BD \cos(A+C)$$

$$= AB^2 \cdot CD^2 + AD^2 \cdot BC^2 - 2AB \cdot CD \cdot AD \cdot BC \cos(A+C)$$

$$= a^2 c^2 + b^2 d^2 - 2abcd \cos(A+C)$$

$$\therefore AC \cdot BD = \sqrt{a^2 c^2 + b^2 d^2 - 2abcd \cos(A+C)}$$

134. [N. S. RAMANATHA IYER.] If a is the first term and r the common ratio of a G. P., show geometrically that $\frac{S_n}{T_1} = \frac{T_{n+1} - T_1}{T_2 - T_1}$ with the usual notation.

Solutions by M. S. Sundareswaran and D. P. Varadaraja Iyengar, B.A., L.T.

AD, DE, EF.....are in G. P. with the construction in question 135 *infra*.

Let AN be S_n ; then NP is T_{n+1}

$$\frac{AN}{AD} = \frac{AV}{AT};$$

$$AN = S_n; AD = T_1; AV = T_1 - T_{n+1};$$

$$AT = T_1 - T_2$$

$$\therefore \frac{S_n}{T_1} = \frac{T_1 - T_{n+1}}{T_1 - T_2} = \frac{T_{n+1} - T_1}{T_2 - T_1}.$$

135. [N. S. RAMANATHA IYER.] Find geometrically the sum of $1, m, m^2, m^3, \&c.$, to infinity where m is a fraction positive or negative.

Solutions by M. S. Sundareswaran, and D. P. Varadaraja Iyengar B.A., L.T.

Let ABC be a right-angled Δ whose hypotenuse $AC = \frac{1}{1-m}$ and side $AB=1$; from AC cut

off $AD=AB$ and draw $DE \perp$ to BC; make $DE=DE$ and draw $FG \perp$ to BC; make $FH=FG$ and draw $HK \perp$ to BC and so on.

$$\text{Then } DE = \frac{1}{1-m} \times 1 = m$$

Similarly $FG = m^2$ etc.

$\therefore$ AD, DE, FH.....stand for the series and the sum of these is evidently $AC = \frac{1}{1-m}$

$\therefore$ the sum of $1, m, m^2, m^3, \dots$ to infinity $= \frac{1}{1-m}$

138. [M. BHIMASENA RAO.] Show that the locus of perpendicular tangents to the inscribed circle in question 116 touches the circumcircle, the nine-point circle, and one of the escribed circles of the triangle.

Solutions I by M. S. Sundareswaran, and II by G. V. Telang.

I. In question 116, since I is equidistant from S and P, one angle A, say, is 60° .

$$\text{Again } R^2 - 2Rr = r^2. \therefore R = r + r\sqrt{2}.$$

$$\text{Also } r = R\sqrt{2} - R.$$

$$\therefore (s-a) \tan \frac{A}{2} = \frac{s-a}{\sqrt{3}}$$

$$= \frac{s-a}{\sqrt{3}} = R\sqrt{2} - R.$$

$$\therefore s-a = \sqrt{6} \cdot R$$

$$r_1 = s \tan \frac{A}{2} = \sqrt{6}R \cdot \frac{1}{\sqrt{3}} = \sqrt{2} \cdot R.$$

The locus in question is a circle concentric with the in-circle and of radius $r\sqrt{2}$.

$$\text{Now } IS = R - r\sqrt{2}.$$

$\therefore$ the locus touches the circumcircle.

$$\text{Again } IN = \frac{1}{2}R - r = \frac{r}{2} + \frac{r\sqrt{2}}{2} - r$$

$$= r\sqrt{2} - \frac{1}{2}(r + r\sqrt{2}) = r\sqrt{2} - \frac{1}{2}R.$$

$\therefore$ the locus touches the nine-point circle. Also $II_1 = 2R = (R-r) + (R+r) = r\sqrt{2} + \frac{1}{2}R$.

$\therefore$ the locus touches the ex-circle opposite to angle A.

QUESTIONS FOR SOLUTION.

148. [M. M. VENKATACHARIAR.] A circle is described to touch the circumcircle of a triangle opposite to angle A, and the arms containing the angle A. Show that its radius $= r \sec^2 \frac{A}{2}$, with the usual notation.

149. [M. M. VENKATACHARIAR.] An equilateral triangle is inscribed in a circle, again a circle is inscribed within the triangle; again an equilateral triangle within that circle; and so on *ad inf.* Represent the sum of the circumferences and the areas of these inner circles in terms of the circumference and the area of the outer circle.

150. [M. M. VENKATACHARIAR.] By using the test of divisibility for 11, find a method by which the remainder when a number is divided by 11, can be easily found (as in the case of 2, or 3, or 4, or 9, or 25).

151. [M. M. VENKATACHARIAR.] The bottom of a mine is reached by two inclines, the first 234 ft. long, with a fall of 3 yds. for every 25 yds. along the incline; the second 516 ft. long, with a fall of 1 yd. in every 6 yds. along the incline. What would be the shortest distance between the top of the mine and the point where the lower incline meets the bottom?

152. [M. M. VENKATACHARIAR.] S, S' are the circumcentres of triangles ABC, AOC when O is the orthocentre of triangle ABC. Show that ASS'S' is a rhombus.

153. [K. KRISHNAMACHARI, B.A.] If two of the odd numbers between any two given numbers have the greatest common measure, show how to find the two odd numbers.

154. [K. KRISHNAMACHARI, B.A.] If α, β, γ , be the roots of the equation $x^3 - px^2 + qx - r = 0$, show that α, β and γ represent the dimensions of a rectangular parallelepiped, the sum of whose edges is $= 4\Sigma\alpha$, the surface $= 2\Sigma\beta\gamma$ and the volume $= \pi\alpha$.

155. [K. KRISHNAMACHARI, B.A.] Show that the arc of the circumcircle intercepted between the perpendiculars drawn from any two vertices of a triangle to the opposite sides, is bisected at the third vertex.

156. [N. S. RAMANATHA IYER.] Express $(a^2 + b^2)^n$ in the form $m^2 + n^2$ where m and n are two algebraic expressions prime to each other.

157. [N. S. RAMANATHA IYER.] Of all quadrilaterals of the same area the square has the least perimeter; and of all quadrilaterals of the same perimeter the square has the greatest area.

158. [N. S. RAMANATHA IYER.] Of all quadrilaterals whose sides are four given straight lines a, b, c, d , that quadrilateral which is also cyclic has the greatest area.

159. [S. SITARAMA RAO.] The line of collinearity of the middle points of the diagonals of a complete quadrilateral is perpendicular to the line of collinearity of the orthocentres of the four triangles.

UNIVERSITY REFORM IN BOMBAY.

"THE first question which a University teacher should ask himself is: 'Am I rousing a spirit of inquiry in my pupils?' If this cannot be answered in the affirmative it is a confession that the University ideal is not being realised."—PRINCIPAL MIERS.

A substantial summary of the very thoughtful and suggestive address delivered some time back by Principal Miers, of the University of London, on the ideal of University Education, was published in the September number of the *Educational Review*. The address is calculated to set one thinking about University education in India, when we are so far behind other civilized nations in almost all departments of public life. The ideal set forth by Principal Miers is a high one, and has yet to be attained even in England. Much has been said recently about Indian education and the urgent need of reform therein, and attempts are being made on all sides to bring our educational system up to a higher level. If we apply the test of Principal Miers given at the top of this article, to the Indian system of University education, it will be found that we are indeed very backward. Yet it is gratifying to see that we have become conscious of the serious defects which have robbed our higher education, in fact all education, of its real value to the intellectual and moral development of the country. It is not possible to expect a sudden and wholesale change. We cannot easily unlearn the past or shake off the influences amidst which we have grown up. But the conditions which surround us change from day to day. Our environments, needs and aspirations call for an adaptation of the present system of education to the new state of

things. Wider experience, the example of other countries and the unsatisfactory results of the existing system, point to the necessity of an overhauling of the whole of our educational policy. We intend, in this article, to examine in this light, the changes that are proposed to be made in the courses of Collegiate instruction by the Senate of the University of Bombay and to indicate in what way they are an improvement on the present system.

The defects felt to be lurking in the University system in Bombay were that there were too many examinations, which encouraged cram, the study of Science was neglected, the courses were loaded with too many subjects and there was little scope for research work or original thought. Everyone who had anything to do with the colleges in Bombay was struck with these defects and many inquired if nothing could be done to remove them. His Excellency Sir George Clarke, the Governor, himself a man of some educational experience, takes great interest in the cause of education. His insight into such problems is as keen as his sympathy is deep and broad. His Excellency's efforts to encourage the study of Science in Bombay have already been crowned with an amount of success, and the Science Institute, which will soon be started in Bombay, will be the tangible fruit of his advocacy of the cause of Science and the public spirit of the wealth of the Province. The Senate of the University was for some time considering the question of recasting the Science course, and asked the advice of the Chancellor, the Governor of Bombay. In December 1908, Government addressed a letter to the University containing a number of useful recommendations for the consideration of that body. The ball was thus set rolling, and then

commenced the protracted debates in the Senate which were early marked by serious differences of opinion mainly on questions of principle. There were long delays, and at one time it was thought the whole thing would end in smoke. A *non possumus* was reached, but in the end the difference of opinion was minimised and now a happy settlement is in sight.

There was a sturdy fight in the first instance on the question of the abolition of the Matriculation. Many people have a wholesome horror of all such public examinations, in which thousands of candidates are tested, passed and plucked every year and they would do away with them all, excepting perhaps the last degree test. There is much truth in what the abolitionists say. The time and energy of students is spent in their constant preparation for examinations rather than in the pursuit of knowledge. The Matriculation also tends to stereotype the High School course, where the Headmasters are at the mercy of the University examiners, by whom the course of instruction in the schools is regulated. Scope for improvement and freedom for adaptation would be provided if the colleges were allowed to hold their own examinations and admit students such as they liked. Various difficulties were however opposed to this proposal. There would be a difference, it was said, in the standards adopted by various colleges. What was again to become of candidates rejected by any one college? Were they to be eligible for admission to the others? A public examination at the conclusion of the Secondary course was regarded as essential and as such the Matriculation it was urged, had proved both useful and popular. These arguments, joined perhaps to financial considerations, led the

Senate to retain that examination. This was a triumph for those who advocated a *status quo*, indeed with the necessary changes in the High School course, and was obtained after a severe struggle. The next fight was over the Previous examination. Many zealous reformers wanted to abolish it as a University examination and to leave the College authorities to test and pass their students. It was a tough and weary combat and the champions on either side, skilful and bold. Victory veered now to this side and now to that, and the followers and spectators could not foresee what the event would be. The Senate as a whole did not know its own mind, the majority having rejected all the different proposals made. There came a long pause. The combatants enjoyed a well-earned respite and many were preparing for the resumption of hostilities, but with new and less sharp weapons. The inconclusive and by no means very creditable issue of the lengthy debates led to a renewal of the discussions. But now it was almost smooth sailing. Rocks and shoals were avoided. Compromise was in the very air of the Senate Hall, and one proposal after another was easily passed by substantial majorities.

The differences which originally hampered the proceedings were differences of principles and ideals. According to the reformers whose motto was thorough, the old system had failed entirely; they therefore proposed to usher in a new order of things. Their position was this. Specialization must be introduced early in the University course. It was useless to make all manner of students to study all kinds of subjects, whether they had any aptitude for the same or not. At the end of the first year the courses were to bifurcate into the Arts and the Science branches. Only

English was to be made a compulsory subject in both courses, the students being left to choose the voluntary subjects they liked out of the groups prescribed. This may be called the ideal of specialization. The other ideal of University education was the old one of "something of everything and everything of something." It was contended in defence of this ideal that too early specialization was calculated to frustrate the true ends of higher education. Young people who would go out into the world with the hall-mark of a University education must have had sufficient knowledge of a variety of subjects and a sound culture. Thus Ancient History, the History of India and England, Logic and Economics must find place in the curriculum. The existing system had been designed to suit Indian conditions and to produce thoroughly cultivated young men. Ancient History is the basis of all modern European civilization and it is impossible for students to appreciate the latter properly unless they have a grounding of the former. Specialization is all right so far as it goes, but it must come in at a later stage. Systems in vogue in Europe are not suited to our conditions which require that the outlook of all our students should be broadened by a study of such subjects as History and Economics. Examinations have their own uses, both to the teachers and the taught. It is unnecessary to discuss here the merits of the cases pleaded by the two sides. It is sufficient to note the difference and examine the proposals now accepted by the Senate, in the light thereof.

When the discussions were resumed, it was perceived that there was no hope for either of the two extreme positions and that compromise was the only way, if any forward step was to be taken at all. It was in this

give and take spirit that the new proposals were conceived and they succeeded as they deserved to. As regards the examination at the end of the first year at College, the Previous was given up as a University examination. The Colleges are to test their students themselves and pass them on to the next class. The certificate of the College authorities will be a passport to the College of Agriculture, though the heads of the other professional colleges have not yet accepted this arrangement. For the first year there will be four subjects as before; only Ancient History will be replaced by Practical Science. This is regarded as a sufficiently large basis, common to both the Arts and Science courses, before they branch off from the trunk. The Intermediate will be the next examination and it will be taken by the University in the work of the second year only. Indian History and Administration will form one subject which will be compulsory along with English and a Second Language, while there will be option between Logic and Mathematics. The Science course will have of course nothing to do with these subjects excepting English and Mathematics. For the B.A., English and English History will be the two compulsory subjects and students will have the option of taking up any one of the groups prescribed such as History, Logic, Languages, &c. For the Intermediate as proposed to be constituted, there will be four instead of five subjects as at present. Many students preparing for that examination find Mathematics a great stumbling block in their way. They will now have an option. Those who were in favour of having History as a compulsory subject will have the satisfaction of securing it for both the examinations. In the case of the B.A. examination,

English History—Political and Constitutional—will be compulsory. Political Economy is removed to the voluntary group and the Second Language is done away with. This is evidently a compromise between those who wished to win recognition for the importance of History and the others who would have had only English as the compulsory subject. Science, which the latter wished to reserve for the Science course, may be taken up as a voluntary subject for the B.A. examination but finds no place in the M.A. At the Final Arts examination, there is to be no Science; students wishing to specialize in that subject, must go in for the other course. This is perfectly fair and reasonable. Committees have now been appointed for the purpose of drawing up the syllabuses and prescribing text-books. We shall, therefore, not enter here, into the details of the two courses and the above brief statement is enough for our present purpose. A proposal has been accepted by the Senate to the effect that, as far as possible, a continuity should be kept up in the studies at College. That is to say, any one, for instance, who takes up Logic at the Intermediate examination may go in for Philosophy only at the B.A. The object of this restriction clearly is to discourage superficial and haphazard pursuit of any subject. Students are often guided in their choice of subjects by motives other than those of special liking or aptitude. They look to conveniences such as those of text-books and teachers rather than to their natural inclinations. There will be an Honours Course both for the B.A. and the M.A. for which some additional papers will be set in the special subject selected by the students.

We have tried to give above a brief summary of the changes it is proposed to make in the

system of University education in Bombay. It must have been clear that the arrangement finally arrived at is the result of the mixture of two different ideals. Yet in spite of the defects, it is certainly a great improvement upon the existing system. The number of examinations has been reduced by one. The burden of subjects has been made lighter and the study of Science encouraged and systematised. There are greater opportunities for the pursuit of a favourite subject and for a thorough grasp of the same. For many reasons the ideal of Principal Miers can not be practicable in this country for a long time to come. This need not however discourage any one from keeping it constantly before his eyes. Principal Miers would make the University a new world altogether to a student fresh from school. This means a thorough overhauling of the school course in the first instance. Our system of Secondary education is unsatisfactory. Endeavours are being made to improve it and the reform in University education must depend to a large extent on the improvement in the system of school education. In spite of this it may be said that a new era of higher education has been ushered in. The passing of examinations will no longer be the sole end of students to the extent it used to be. The exclusively literary character of higher education will be modified, and it will be more scientific and practical. Cram will be largely discouraged and a real and willing pursuit of knowledge for its own sake fostered. Students having a liking for and studying Science, will no longer be hampered by History and Sanskrit. Those who are scared away by Mathematics are now free to reject that subject. Professors will find it easier to foster a spirit of inquiry among their students, and students will have

opportunities to devote their energies to their favourite subjects. Even then the ideal of Principal Miers will be far distant but a beginning will have been made in a march towards that goal. That ideal requires a different type of teachers, students and the educational system. But in this slow moving country any step, however short and tardy, must be welcomed if it is taken in the right direction. It is for this that the Bombay University must be congratulated on the reforms on which it has embarked. In certain respects it is behind the sister institutions in India, and its attitude has so far been marked by conservatism and caution. Now that the spell of the old system has, however, been broken, the urgency of improvement and up-to-dateness realized and a forward step actually taken, we may hope to see the University making rapid strides in the path of progress.

V. G. KALE.

'MORAL EDUCATION IN SCHOOLS.'

Under the auspices of the Madras Teachers' Association, Saidapat, the Hon. Mr. P. S. Sivaswami Iyer, C.I.E., delivered the following interesting lecture on 'Moral Education in Schools.'

Gentlemen,—

I am very much obliged to Mr. Dodwell for the very kind words in which he has been pleased to introduce me to you. I am only afraid that those very kind words of introduction may be attended with this disadvantage that they may have aroused in your minds expectations of hearing something very valuable from me to-night. I am sorry, however, that I cannot promise to place before you anything very novel as regards the matter or anything very attractive in manner.

The subject is one which has been discussed *ad nauseum* of late. It has been discussed by eminent divines in our midst. It has been discussed in all quarters, high and low, and it is hardly possible for any one to say anything that is new upon the subject. Nor can I claim to set it forth with any embellishments. I do not possess the art of literary embellishment, and I certainly have not had the time to prepare a set discourse for you. All that I wish to do is to place before you some of those thoughts and suggestions which occur to laymen like myself, to persons who are not actively engaged themselves in the work of education. The question is one of the greatest possible interest to all of us, whether to persons engaged in the active work of education or to persons who are not so engaged and who are merely citizens interested in the progress of the country. This subject has been attracting attention not merely in our country but in almost all the civilised countries in the world now. You know that there has been a Moral Education League formed in England and that there was a Moral Education Congress held recently in London. It is, therefore, nothing strange that it should attract the attention of the authorities here, both educational and non-educational. There are some circumstances which have contributed to attract a great deal more attention to this subject here than it might under other conditions and circumstances have attracted.

THE UNREST.

The unrest that has been prevailing unfortunately in the country during the last few years has led a number of people to investigate the causes of that state of things, and many have been the attempts at a diagnosis. It is only natural that the Government of the country should endeavour to inquire into the causes of this peculiar state of things and ascertain what are the various factors which have led to this condition. It has been considered that this political

unrest must to some extent be connected with defects in the system of education. That is a diagnosis which has found favour with a number of people. I am sure, however, that this is not a correct diagnosis. While I agree with those who deplore the unrest I am not at one with those gentlemen who think that it is in any great measure due to the defects in the system of education or in the system of indirect moral training that is now in vogue in our schools. It seems to me that this unrest is very largely due to intellectual error. It is more due to false notions of political economy, false conceptions about history and about a number of other things. It is attributable rather to false intellectual conceptions than to perversity of moral ideas. I do not deny that in some instances there has been such perversity in parts of Bengal where apparently the principle that the end justifies the means seems to have been adopted by some of the misguided youths. But leaving alone exceptional cases of that sort which perhaps may account for what we hear of political dacoities in Bengal, I do not believe that the excesses or the crimes of the misguided youths of Bengal are due so much to moral perversity as to intellectual error. It is very largely due to the influence of inflammatory speeches and writings. I am not going to dwell on any political topics, and I have no desire to do so. I am merely trying to place before you my own views as to the connection that is supposed to exist between the system of education that is now pursued and the political condition of the country. In my opinion these lamentable features in the present condition of Bengal are really due not to any serious defect in the system of education. Some of you, if not all of you, might have read the articles of the Special Correspondent of the *London Times*. You will find that he thinks that many of these young fanatics are guided by high impulses though they have been misguided. It is not that they are wanting in high ideals. But

they have been misled by people who ought to know better. That only confirms my view that the system of education that is now pursued has not really been the potent cause of this unrest. There are other causes which have led to it, and the proper remedy for the removal of the unrest lies in the removal of these causes. Then, you may ask whether I am quite satisfied with the system of education that now obtains and whether I am prepared to go the length of holding that the present system of education leaves nothing to be desired, or has nothing to be improved upon in the matter of the training of character. I think there is considerable room for improvement and it is necessary for us to set about to find in what ways we can improve the training that is now afforded to students in our schools and colleges. I have made these prefatory remarks more with the object of pointing out to you that there is really no need for any alarm about the condition of our students. Sometimes we find that our relations and friends tell us that we look ill and we fancy that we are ill. There is in my opinion no need for taking such an alarming and gloomy view of the moral condition of our students. What defects there are in our present system and how we ought to remedy them must certainly engage our attention, but we need not start with the assumption that everything is wrong and that our students have greatly deteriorated in their character. It might perhaps be asked why if there is no such deterioration whatever there is any need for considering this question of the moral training of our students. While I admit that there has been no deterioration so far in the character of our students, I think there are forces at work which may tend in that direction and that it is necessary that we should take timely steps to counteract these forces. That there has been no moral deterioration in the character of our students must, I think, be admitted.

PUBLIC MORALITY.

Take the matter of the standard of public morality. It must be admitted that there has been a great improvement in the standard of public morality and official integrity. And taking the question of private character even, it cannot be said that there has been any fall off in the standard of private character. But it is not enough to be satisfied that there has been no deterioration. We must also be satisfied that there are no forces at work likely to undermine the character of the youth of the country; and if you find on enquiry that there are any such forces we must do our level best to combat those forces. The fact that many of our students have now to live away from their parents, in large towns, is a circumstance which does tell in the direction of weakening the influences which mould character. When a boy lived in the parental roof and was subject to the supervision and control of his parents and in days when the parents themselves more or less cultivated learning and had high ideals of conduct before them, the influence of the conditions under which young men lived would be of a wholesome character. But now the fact that students have to live away from their homes, the fact that even those who live with their parents here do not receive the attention which their parents ought to give them in the matter of their education, are circumstances which are not favourable to the development of character. Then, again, another circumstance which has to be borne in mind is that one result of the impact of Western civilisation and Western ideas upon our Eastern civilisation and upon our religion has been to shake the foundations of many a dogma and many an article of faith. How far our old religions will stand the shock of this collision of ideas is a matter which must engage our attention. I certainly think that the Hindu religion has got virtue in it to emerge victorious out of the struggle and that out of this collision of ideas

we shall get a purer and more clarified form of religion.

THE NON-ESSENTIALS IN RELIGION.

We shall then be able to drop all the non-essential elements and succeed in retaining the essential elements. That is one of the features of this reaction which has been referred to by the Correspondent of the *Times*. The result of this conflict of ideas is certainly to undermine the faith of many a young man in the articles of faith which used to be implicitly accepted by the older generation. You must all be aware that there are many things in our religious systems which are really not of a very essential character. Much that is connected with ceremonial is necessarily of an accidental and non-essential character. For instance, in our books it is laid down that if you touch a Sudra you must bathe. You cannot accept that as an essential part of religion. Notions of that kind are bound to disappear. The unfortunate part of it is a great deal that is trivial is bound up with much that is of imperishable value in our religion, and if the necessary result of this conflict of ideas is to shake the faith of our young men in these things I for one am not disposed to regret the tendency. It is a necessary part of the intellectual and moral evolution we are destined to go through, but one result of this tendency may be that, in undermining the foundation of much that is unessential, the foundations of the essential may be also weakened. It is against this tendency that we have to guard. We have to see that along with the faith in what is unessential no part of the faith of our students in what is essential and valuable is lost. Then, again, many of our old standards of conduct and ideals require to be revised in the light of altered conditions. For instance, according to the standard of many of our Sanskrit books the highest ideal was simply to live and let live. I do not say that that is the only doctrine to be found in our books, but you will

find that it is considered to be a very high ideal for a man to lead a pure life for himself. But it is not an ideal which in our new environments we are disposed to adopt as sufficient. In this work-a-day world with its keen competition and with the struggle that is going on between nations, it is impossible for any sane person to accept that as an adequate ideal. We have to adopt other ideals, the ideal of working for humanity and for our country. It used to be considered a high praise for a man if he was quite uninterfering. But that would be regarded as poor praise if we applied that to a person living under modern conditions. If a man did not take part in the public life of the country, if he did not do justice to the State as a citizen and recognise and fulfil his obligations towards his neighbours and fellow-countrymen, we should regard him as a man living with but a poor ideal of life.

CIVIC DUTIES.

These altered conditions impose civic obligations of which our ancestors had no conception. We have to train our young men to an adequate measure of recognition of their obligations as citizens and as subjects of a great Empire. The complexity of conditions in modern life is bringing men into new relations and imposing upon them new and further duties which they have to learn to recognise and discharge.

SPECIAL MORAL TRAINING NECESSARY.

The next question is if there are these forces at work which have to be taken into account in developing the character of our young men, have we to depend upon merely incidental training in character—such training as is afforded in the general course of instruction, or have we to set about to accomplish the end by a special course of instruction. The question is one which has been debated upon in many books and papers dealing with this subject—whether the system of separate instruction is preferable to incidental

instruction. There are advantages and disadvantages in both these methods. On the one hand if you trust merely to such incidental instruction as the teacher may be able to impart in the course of giving instruction in some other subject such as history or literature, the result will be found to be not quite satisfactory. The instruction is likely to be more or less of a desultory character. You cannot possibly cover the whole field of moral training nor can we be satisfied that the teacher has been able to impress upon the minds of his students all the truths and principles which he ought to be able to impress upon them. On the other hand if you go in for a system of regular instruction in moral training, you have certain dangers to guard against. There is one danger which I am disposed to apprehend most and that is the lessons may be given in a dry and mechanical manner. I feel nervous when I think of the results of teaching a fine passage of poetry to a class. The dissection of a fine poem by a teacher for the purpose of exhibiting the grammar or the structure of the poem or for the purpose of exhibiting even it may be the beauties of the poem is a process not altogether in favour of its appreciation as a work of art. I doubt very much whether for instance a teacher who had to teach Tennyson's *In Memoriam* in the ordinary way would end by impressing his students with a very high notion of the beauty of the poem. In the same way, if a teacher sets about discoursing on veracity or any other rule of human conduct, the cold dissection of the rule of conduct or the statement of the rule with its limitations and qualifications would certainly not be favourable to the formation of a vivid or a deep impression on the minds of the students. Much depends in this matter on the personality of the teacher, whether he is able to present it only in a dry-as-dust manner or whether he is able to clothe a principle of conduct with flesh and blood and present it as a warm living principle of conduct and inspire enthusiasm for it. It depends to a very

Sri Krishna put forth was the attainment of salvation through the performance of duty. The ideal of Jaimini was the attainment of bliss through Karma. The ideal of Kapila was the establishment of the eternality of matter, as opposed to that of Sankara, which was to prove that the material world is nought, that there is nought but God. Instances can be multiplied, but I hope those given here are enough to show that no one can be great unless he has an ideal before him for which his life-work must be directed, more especially a teacher than any other. In the absence of any ideal he becomes devoid of a unifying force for his work, all his endeavours become motiveless, he works like a day-labourer for his sustenance and leaves the profession not a whit better than it was when he entered it. A teacher is remembered not by the amount of knowledge he has imparted in this subject or that, but by the impress he has left on those that had the good fortune to sit at his feet for instruction and by the motive-power he has created in them for their work in life. In fact whatever may be the subject of instruction, it is not impossible for an intelligent teacher to create opportunities enough to connect the subject he teaches with the ideal he has in view, so as to have the satisfaction, that, while the student leaves him, he has been brought much nearer his ideal, the goal of his ambition, than when he came to him in quest of knowledge.

Those that take a merely pound-shilling-pence view of their profession may disagree with me in the view set forth here and may hold that the bread and butter question can be in itself a main motive force for the teachers' work. The teacher's duty, according to these men of practical wisdom is to teach the subject or subjects, for which he has been employed, conscientiously and satisfactorily, neither turning to the right, nor to the left, and to get the remuneration he is entitled to, to keep the pot boiling at home. The first argument against this view is that no educator—I mean he who is rightly styled as such—has hitherto taken such a low view of his profession. Another argument is that each one feels very frequently in his life that the noble side of his nature laments that it is hungered to death and there is an undefinable dissatisfaction that all the precious moments of his life are spent away for the mere acquisition of bread and butter without any fair proportion of them being laid under contribution either in the cause of knowledge or active charity. A teacher's work should be such that, when he lays down his office, he must be able to look back to the period of his

active service as the golden period of his life spent for the ennoblement of the hundreds that had the good fortune to come to him for instruction, so as to be nearer the ideal that he has either set forth before himself or has been set forth for his guidance by others. It is not intended to imply that the bread and butter question is one that should be treated with contempt or indifference. It is by a satisfactory solution of this problem that the teacher can keep his mind at ease and command the comfort and convenience that are so necessary in the interests of his profession and of himself personally as a life-student for the acquisition of knowledge and as a servant of society. He has to sweat for the enlightenment of the rising generation receiving small thanks for his unremitting and laborious service. The teaching profession should not fight shy of the tough but not the least important question of how to get recognition for it, at least as much as the other professions, if not more. This recognition will be possible only if the teacher is above want. To secure this end, by all means, let the teacher work hard for the maintenance of his dignity and for all reasonable conveniences as far as these depend upon money, but at the same time, let him not forget the fact, that in the interests of society which must be a matter of weighty consideration with him, he must not subordinate his life's ideal to the mere consideration of pounds, shillings and pence.

In addition to the individual ideal of a teacher, it should be borne in mind, that there is another ideal of much greater importance for which each teacher has gradually to prepare his pupil. This is the national ideal. The educational system of each country stands or falls according as it is or is not calculated to contribute to the advancement of the national ideal; at any rate the system organised must at least harmonise with the national ideal. It is the teacher's duty to set his pupil going fairly enough on the road towards the realisation of this ideal. It needs no saying here what the ideal is of each of the more important of the world's nations. The ideal of the Englishman is individual freedom consistent with national progress and imperial federation. The ideal of the Frenchman is fraternity and equality with the reserved privileges of citizenship to all. The ideal of the German is devotion to the Fatherland, to its glorification and defence, and of its traditions and usages, whether with regard to its people or its sovereign. The ideal of the early Christians was to render unto Caesar what was due to Caesar and to render unto God what was due to God. The ideal of

the ancient Hindu was to subordinate matter to spirit and to so spiritualise every action of his as to subserve this one end, the emancipation of the spirit. Even an indifferent study of the system of education of each country and of India in ancient days shows that the system of each does or did subserve the national ideal.

It was said before that the education of each individual of a nation should be such as to prepare the individual according to the national ideal. It was also said that each teacher should prepare his pupils according to his own individual ideal. Is it not likely that in some cases, though not in all or in a large majority of cases these ideals may clash? In almost all cases the apprehended inconsistency may not arise. The exceptions, either do not exist or even if they do, such cases should be treated as instances of apostasy and therefore should be disqualified for the teaching profession. It is, in fact, impossible for the individuals of a nation to have aims opposed to the national aim. It is likely that, in minor points, there may be differences. Such differences make for strength and solidarity and lead to the discovery of truth. For instance, Whig or Tory, Protestant or Roman Catholic, Idealist, Pantheist or Monist, each one works for the common ideal of the English nation. Similar was the case in India in ancient days. Whether a Kapila, a Kaada, Tantrika, Jaimineeya or Vedantin, each teacher brought up his disciple for the ideal of his choice, consistent with the ideal of the Srutis and the Smritis which was the national ideal. The Chārvākas rebelled against the national ideal and were not tolerated. The Buddhist partly rebelled and partly got reconciled, meeting half way and so, for a considerable time was tolerated, but, in the end, Buddhism became extinct in the land of its birth.

Is it possible for India with her heterogeneous population and with her diverse creeds to have a common national ideal? In spite of variety, a common national goal was possible in ancient days, as the variety was confined within the limits of a single religion, which made the India of those days the India of the Hindus. Now it is no more such. It is as much the India of the Hindu as it is of the Mussalmān, or of the Christian, or of the Parsi, or of the hundreds of creeds and races inhabiting the vast continent. Such as it is, it may appear that a common national ideal is not a thing to be thought of just at present. A satisfactory solution of this question can be possible only if it can be proved that the Indians are a nation.

It has been admitted on all hands that Indians do form a nation, in spite of the innumerable schisms, varieties, and clashing interests existing in them, for the reason, that all Indians must and do have the welfare of India at heart, that they are subject to one Government, that they are all orientals by origin, growth and surroundings and that, in spite of the differences in their religious beliefs, they, Atheists excepted, acknowledge the Fatherhood of God. With such forces at work to make of the Indians a nation, it is not impossible to define what should be the national ideal of the Indians. Later on in the course of the paper it will be explained what this ideal should be like. Meanwhile, the educational ideals of some of the nations of the world who were foremost in ancient days, both in knowledge and power may be passed in quick review for the purpose of comparison in regard to their merits and demerits and for lessons to be drawn therefrom to chalk out an ideal that will be best suited to the requirements of our country. The review will also be of help to discover the defects, if there be any, in the present system of education in our country and enable us to devise ways and means for its rectification and improvement. In this review it is proposed to bring in the ancient Hindu ideal towards the close of this portion of the paper, though from chronological standpoint it should come first. While speaking of the ideal of each nation that was great in ancient days it will be considered what defect there was in each system which made it impossible for each ideal to persist, in spite of the passing of ages.

As in these advanced days, so also in ancient days there appear to have been attempts to reach perfection by human intelligence alone as illustrated in the Babylonian tower raised for the purpose of connecting the earth with heaven. The confusion of tongues by which the purpose intended to be accomplished was frustrated shows what precious little unaided human intelligence and human power can accomplish. The story is certainly a myth but illustrates, all the same, the ideal the Babylonians had.

The history of ancient civilisations presents a brilliant record of glorious achievements in the earlier stages of their growth but in their later stages tell a harrowing tale of disintegration and ruin. The existing monuments of the ancient Egyptian civilisation bespeak, in eloquent language, a highly gifted race whose culture served as models to other races that then existed or were yet to be born in realms unknown. The existing records present histories

of kings who yielded to no monarch of modern history in wisdom, goodness or greatness. The catacombs of Egypt in which can be seen, even at this distant date the persons of the very monarchs who held away thousands of years ago and the information that can be gathered from the writings on the pyramids and from the literary records of ancient Greece, evidence a surpassing development on the part of ancient Egyptians in art and general culture. But now, what do we see of the glory of this ancient civilisation? Nothing is left of it but its mummies, its catacombs, its pyramids and its hieroglyphics. What could have been the cause of this decay? Here is what Compayre concisely puts forth on the subject:—

"Of all the oriental nations, Egypt is the one in which intellectual culture seems to have reached the highest point, but only among men of a privileged class. Here, as in India, the priestly class monopolized the learning of the day; it jealously guarded the depository of mysterious knowledge which it communicated only to the kings. The common people, divided into working classes, which were destined from father to son to the same social status, learned scarcely more than was necessary in order to practise their hereditary trades and to be initiated into the religious beliefs."

The ideal seems to have been a system to equip the ruling class which was as it were the intellect of the nation with all the available learning and to make of the other less fortunate classes fit organs for carrying out, whatever was dictated by the ruling class for the good of the nation. The system succeeded very well for a long time in ancient days but it could not for ever be a success for the reason that the system did not satisfy all the aspirations of each individual composing the nation. It also wanted some of the most important elements that make for character and hence it is that the ancient peoples of Egypt and their advanced civilisation have now become things of the past.

From Egypt whose civilisation and culture are lost in mystic antiquity, it is refreshing to take a survey of the educational systems of the countries with whose history the student of modern days is more intimately acquainted. Except India the foremost country that one would think of for this purpose is certainly Greece and the next one in point of importance and time is Rome. In Greece we come across two branches of the ancient Aryan settlers who worked with two different ideals. These two peoples, as any student of Greek history knows, were the

Athenians and the Spartans. Along with a wide divergence in their educational ideals there was also a common aim that both the peoples kept in view and that was to subordinate the individual to the nation. It was not the aim to secure individual advancement in such a manner as to make each man or woman perfected and rounded in all respects but to shape each one either square or round like bricks to serve as fitting materials for the building of the national edifice. Athens wanted to build it by means purely intellectual with particular attention to grace and style and consistency with nature, whereas Sparta put a higher premium on the value of a highly developed physique than of the mind. "At Athens, while not neglecting the body, the chief pre-occupation is the training of the mind; intellectual culture is pushed to an extreme, even to over-refinement; there is such a taste for fine-speaking that it develops an abuse of language and reasoning which merits the disreputable name of sophistry. At Sparta mind is sacrificed to the body; physical strength and military skill are the qualities most desired; the sole care is the training of athletes and soldiers. Sobriety and courage are the results of this one-sided education, but so are ignorance and brutality." In a word grace and refinement were the goal of the Athenian culture and physical culture of the educational system of Sparta.

The sister land of Italy, though inferior to her elder sister Greece in point of culture and refinement, surpassed her in her political institutions and military glory. The poets, the philosophers, the orators and the artists of Rome would have brought glory and renown to any land. But Rome was born with a political instinct and a capacity for political organisation. From the early days of the Roman Republic to the halcyon-days of the Roman Empire it was one proud and wonderful story of a well organised and symmetrical growth which exhibited in itself all signs of permanency. In her days of youthful vigour Rome became not only the mistress of her elder sister but spread her wings far and wide over the world, then known to man. Large portions of Europe and Asia came under her sway and received the benefit of Roman institutions and Roman culture. Even the distant India came under the wave of Roman influence which has left indelible marks on the literature of India. Except in the spirit of modern political institutions and the indirect influence she exerts through her literature, ancient Rome is practically dead to the world.

One would naturally ask why should it have been so. The incapacity of ancient Rome to endure for ever was due undoubtedly to the one-sidedness of her culture. Her culture was only a copy of Greek culture by the two educational systems of Greece being imitated in succession. Up to the conquest of Greece preference was given to the education of the Spartan type; while under the emperors the Athenian system of education was dominant, with a very marked tendency to give the first place to an education in literature and oratory. As failing to be all-sided calculated to bring out and nurture all the innate capacities of each individual the systems of Greece and Rome had their drawbacks and therefore the seeds of impermanency in them.

In Asia, except the Hindu system which naturally includes the Buddhistic, there were two other systems in ancient days, which, more or less unimpaired, are in vogue even now, one the system of Islam and the other the Chinese system. All the north-western parts of Asia came under the Islamic influence, while all the north-eastern parts, inclusive of Japan, came under the influence of the Chinese system. The Islamic system was intensely religious in character. At the same time it did not neglect the other branches of study. The ancient Arabs not only set up new schools of learning but also brought within their scope all the available knowledge of the world. In their system there was, as far as possible, a harmonious combination of learning, both secular and spiritual.

The Chinese system, which until very lately was what was in operation in all the Buddhistic countries of Asia was a system of drill and formality more intended to estimate merit for offices and for promotions than for the unfolding and the developing of the latent faculties of man. There was more of the appearance of capacity and more of routine than of the acquisition of real worth. Neither the religion of Buddha nor the wealth of the invaluable moral teachings of Confucius had any influence over the inner life either of the nation or the individual. Their system was a chain of adamant cleverly forged to bind down the nation to a dry formality and a routine observance of tradition which have maintained the old forms intact leaving very little scope for improvement with the advance of the world's knowledge.

It is the general view of educationists that modern education begins with the Renaissance. From the 16th century until now the science of education has been one of continuous ex-

pansion by the unremitting labours of modern educationists and philosophers. But the seeds of the new discoveries were not laid in the days of the Renaissance but long before that when the Gospel of Jesus began to be preached on the land of the ancient classical culture. The spirit of the Israelites which preferred the individual to the State was ingrafted in the teachings of Jesus who said that each individual must shape his or her destinies and that what is of the earth must be subordinated to what is of heaven. To the State must be rendered all help and all obedience, but obedience and devotion to God were primary and obedience to the State was secondary. The latter duty as well as the other earthly labours of man were to conform to the will of God by which is meant the dictate of one's own conscience. Never demur against the State; let not the State dictate spiritual convictions to you. Thus were laid the first seeds for the strengthening of free will and for the restoration of man to the personal dignity which is naturally his right. "A full half of man henceforth escaped the action of the state. Christianity taught that man no longer belonged to society except in part; that he was under allegiance to it by his body and his material interests; that being subject to a tyrant, he must submit; that as a citizen of a republic he must give his life for it; but that in respect of his soul, he was free, and owed allegiance only to God."

Though the seeds for immense future possibilities were already in the beginnings of Christianity, yet nothing was seen of their influence in the early centuries of the spread of the Gospel. This, as you all know, arose from three causes:—(1) That the first converts were from the barbarous and ignorant classes; (2) that the early evangelists could not attend to other duties except the spread of Christianity in their struggle against opposing forces; (3) that both from social ostracism and from a misconception of the real significance of the teachings of Christ the practical and humane side of life was neglected and consequently to the early fathers of the church 'philosophical curiosity was a sin and the love of letters a heresy,' though even in these days, there were men who wanted to bring about a wholesome combination of religious faith and literary culture. While Tertullian would reject all pagan erudition as heresy, Saint Basil would require the young Christian to be conversant with the orators, poets and historians of antiquity. While St. Jerome would demand ascetic mysticism of the extreme type, requiring

his Paula to read only the Bible, which too, according to him was too much, and advising the young girl to be unmindful of her other duties forbidding her even to bathe, there were men like Sidonius, Lupus of Ferrieres and Adalberic, who would lament the disappearance of literary culture of all forms from convents.

It was not until the time of Charlemagne that literary revival of the true type was attempted. It is known to all students of the History of Education that this revival, though brilliant, was only short-lived. Educationists would call this revival the first Renaissance. The second took place in the 12th century, which resulted in Scholasticism. The third was the great Renaissance, which even now lasts and which reached its culmination in the French Revolution. The evils of Scholasticism are too well-known for any description here. All arguments were based upon certain facts taken for granted and so, the whole structure of knowledge stood upon a weak foundation. Such sciences as enable us to know the world and man did not form the subjects of study. Observation and the building up of knowledge on the results of observation were entirely neglected. Attention was paid only to two courses of study, the trivium and the quadrivium, the former comprising Latin Grammar, Dialectics or Logic and Rhetoric and the latter comprising Music, Arithmetic, Geometry and Astronomy—merely abstract and formal studies, incapable of imparting any knowledge of nature and her workings. The ideal of these ages resembled exactly the ideal that was set up in India during the latter years of the Puranic ages, in which religion sank into mysticism and attention was paid more to words than to the things themselves.

It needs no saying what the results of such an one-sided development were. Europe relapsed into bigotry and ignorance, intellectual development became narrow and moved on traditional grooves, and personal bravery and physical strength settled the superiority of one man over another. From this state of ignorance and narrow orthodoxy Europe was saved by the dawning of a better ideal with the coming on of Renaissance, whereas India had to wait until the days of Lord Dalhousie for the establishment of the Indian Universities.

The new era that dawned on the world with the advent of the 16th century was one that was to create a thorough departure from the existing order of things by an entire revolution in the method of the approach of man to the altar

of knowledge. Man was no more to construct theories regarding the nature of the worlds, visible and invisible, by certain hypotheses taken for granted, but he was to get at the truth through the door-way of nature. He was not to twist nature to suit his syllogistic reasoning, but he was to settle the premises of his syllogism by a close observation of nature for truth to be deduced therefrom. There were to be no dogmas, no blind faith, nothing to be taken for granted, but every truth was to be tested on the touchstone of observation. To use the words of Compayre with some alteration "the new age was to enfranchise the intelligence hitherto the prisoner of syllogism, to call into play the moral forces instead of repressing them, to substitute real studies for the verbal studies of dialectics, to give preference to things over words, to seek to develop the whole of man, mind and body, taste and knowledge, heart and will, instead of developing a single faculty, the reason, and instead of reducing man to a sort of dialectic automaton." It is a matter of common knowledge what an impetus was given to the new spirit by the monumental works of the author of *Novum Organum*. With the ushering into existence of a new Logic constructed on the basis of induction a new science of pedagogy came into existence and the old scholiasts who would say to their disciples "I say; so shall you believe" were substituted by teachers of the true type who were to guide their charges to the sanctuary of knowledge by the look-and-know method.

It is unnecessary to detail to an audience of teachers the works of the great educationists of the modern times, who contributed not a little to the spread of knowledge and of the theories bearing on it—educationists who form a continuous galaxy of stars beginning with Erasmus, Rabalais and Montague, in the 16th century, continued in an unbroken line of philosophers, philanthropists, scholars, teachers and reformers like Calvin, Luther and Comenius, Fenelon, Malebranche, Locke and Kant, Rousseau, Pestalozzi and Froebel down to Spencer and Dr. Bain of our own time. By the works of these great men, by the invention of printing, by the Protestant reformation, by the new spirit that Catholicism received by the impetus given by reformation, by the French Revolution and the changes it wrought on individual conscience and the social fabric of humanity, by the establishment of Universities and the development of modern science, the educational systems of the world have undergone such astonishing changes that, by their effects, a new world of

knowledge has been laid open before man's view, which is of more potent value than even the discovery of the New World.

We may pause a while here to reflect on the ideal that modern education has set forth before itself. If the ideal is determined, its defects, if any, can be easily discovered. The ideal of the innovators in the early fifteen hundreds was the harmonious development of all human faculties, mental, moral, physical and spiritual and to fashion man after the model of his maker. But this ideal has not been reached by the educational work not having been intelligently directed towards it by the ever changing theories of the new leaders of educational thought. In the mad rush to fathom the depths of nature, the author of nature has come to be forgotten, which has led to the supreme indifference, if not to the utter neglect of the study of the self in man. How best to conquer nature, how thereby to increase human comforts by adding to man's material prosperity is the aim of the present day system of education. The race is for the merry side of life but not for its serious and consequently the real and happy side. Herbert Spencer correctly comprehends the present day ideal when he says, "In general, the object of education ought to be to acquire as completely as possible the knowledge that is best adapted to develop individual and social life under all its aspects and to do more than glance at the subjects which contribute the least to this development." The philosopher simply voiced forth the spirit that pulsates in the present-day system of education, thirsting only for that knowledge which is most worth from a utilitarian point of view. His system of moral education which is most in vogue in many an educational centre is one that derives its value from its utility for the social life of man, not from its absolute standpoint of perfect goodness, quite in a line with the goodness of Him, who is the moral governor. The goal which modern education keeps in view is a perfected physical, a perfected intellect and a social morality of the type that is required from the standpoint of utility. Though this is the general ideal there are exceptions to this rule. The two oldest Universities of England are happily free from the contaminating influence of this one-sided ideal, as also the German system of education. Other exceptions do exist, here and there, in other parts of the world. These, while not losing sight of the modern spirit, would not overlook morality of the absolute type, but while positively working to

inculcate it, would enliven it with the spirit of the Living Good.

With such ideals as those outlined above it will best serve our purpose to see with what ideal in view the ancient educational system of India was fashioned. If this is done, it will enable us to institute a comparison between our own ideal and the ideals of the other countries for a profitable lesson to be derived with a view so to alter or improve our present system of education as to serve the best interests of the Indian nation. The following is a short summary of the ancient educational system.

In a word the aim of the ancient system was the performance by each, of the duty ordained for him. It was rightly perceived that neither individual salvation, nor national salvation was possible without each individual having a right conception of duty and a strict adherence thereto. The Hindu nation was considered as one corporate whole of which the mouth was the Brahmin, the arms were the Kshatriyas, the thighs were the Vaisyas and the feet the Sudras. This conception is figuratively expressed in the *Purushasukta*, which says that the Brahman came out of the mouth of Virat—the all permeating enlivener of the universal structure—the Kshatriya from His arms, the Vaisya from His thighs, and the Sudra from His feet. The performance, by each, of his duty was a sacrifice to the Lord. Each was to strive in the sphere appointed for him for no other purpose but to secure divine grace. In this selfless work which counted wealth and power as of consequence only in so far as they served the common purpose of the nation, each individual could not but become highly spiritualised. The work of life being over, even at death there was the supreme satisfaction to the dying man of his having played his part well in the drama of life. The national education was organised so as to teach each individual his proper function in the national polity. The scope of studies for the *Dwijis*—the Brahmanas, Kshatriyas and Vaisyas—included the *Srutis*, the *Smritis*, the *Puranas* and *Epics* and the existing arts and sciences. The *Sudras* could study all branches of knowledge except the *Srutis*. The prevalent notion that the *Sudras* were entirely left out of account in the scheme of national education has no historic basis. No other evidence of this is more conspicuous than that *Sûta*, who was a *Sudra* sage, was the greatest of the ancient *Puranikas*, and Brahman sages sat around him to hear his recitals. From the earliest times there have been poets, philosophers, saints, and scholars even among the *Sudras*.

The disciple was taken, step by step, from the phenomenon to the noumenon, from nature to nature's God. Hence the study of nature formed part of the curriculum of studies unlike the studies during the dark middle ages of Europe; it is these studies that led to the discovery and the development of arts and sciences. This fact is proved by the *Neti Vakyas* in the *Srutis*, by the way in which the problem of life is solved by the Guru to his disciple in the *Upanishads* by a close scrutiny of the objects of nature and by the fact also that the ancient arts and natural sciences owed their origin to the *Rishis* who existed during the glorious days of the Hindu nation. Education was entirely free either undertaken by individuals who gave lodging and instruction gratis while the community contributed for the boarding on the system of *Bhiksha*, or by *Kulapatis* who managed colleges for large numbers, supported by the State. It was clearly perceived that, if there was any place most uncongenial for education, it was under the parental roof. Those whose boast it is to have discovered new systems on the most realistic and scientific basis have only to study how *Visvamitra* instructed *Rama* and *Lakshmana* and to compare it with the principles illustrated in *Gargantua of Rabalais*, in the *Emile of Rousseau* and in *Leonard and Gertrude of Pestalozzi*. One of the remarkable merits of the ancient system was that there was nothing like the public examinations of these days with their attendant grind and worry. In a word the Hindu system anticipated all the possible sides of education and made efficient provision for them by which means the moral conscience was sought to be perfected to make each man a man of character and a conscientious performer of his duty, whether small or great, to secure the grace of the author of all good.

It will be no small astonishment to any one that is acquainted with the ancient system of education in this country to see what a poor presentation is given of it in *Compayre's* book on pedagogy. Here is *Compayre's* verdict: "While the ideal in modern societies is more and more to enfranchise the individual and to create for him personal freedom and self-consciousness, the effort of the Hindu Brahman consisted above all in crushing all spontaneity, in abolishing individual predilections, by preaching the doctrine of voluntary self-renunciation of voluntary abasement and of contempt for life."

Every point in this verdict is one in regard to which there cannot be agreement on the part of

the student of the ancient literature of this country conversant with the system of pedagogics of the Hindu Brahmin. It is beside our point to subject the verdict to any detailed criticism. It has been alluded to in the course of this paper only to show how necessary it is that the histories of the languages and the peoples of this country, from which must not be omitted the history and science of pedagogics, should be written by the scholars and leaders of thought either in this land or by Europeans who have intimately known the peoples of this country and their literature, arts and sciences by long sojourn in the country; that is done it will save our youth from the many misconceptions contained in the moral forces drawn from information not of first-hand.

The discussion in which we have been hitherto engaged will be of no avail unless we make use of it for the purpose of considering the possibility of either altering or improving the existing educational system in this country. To do this we have to know (1) what the ideal is for which we are working; (2) whether any departure is necessary for the adoption of any of the ancient or modern ideals; (3) towards what goal we are to work our educational system.

The ideal of the present system of education cannot better be described than what is contained in *Macaulay's* famous despatch. As this is no place for a long quotation the sum and substance of the despatch may be stated as having for its object liberty and equality under the suzerainty of Britain, with the knowledge, capacity and character to deserve the privileges, which should be obtained by the study of the literature, sciences and arts of the West. From his scheme of education all religion was to be excluded. The ancient literature, sciences and philosophies of the land were to receive an indifferent or no attention. For education on the new lines Indian Universities were founded on the model of the London University. It is unnecessary to enumerate here the benefits we have received under the operation of the new system during the past half-a-century. At the time of the despatch the old system was found unfit to be continued. The Indian Society then was not the Indian Society of a thousand years previous to the new changes. It must be admitted that, had the old system continued, we could not have become the enlightened peoples that we are to-day. Our outlook of life has widened, our character has improved, knowledge has been sown broad-cast without distinction of caste, creed or color, and, in fact, India is awakening

to a new and a higher sense of responsibility. Along with these benefits, it has also brought some evils, as it is a system wholly transplanted from a foreign land requiring vigilant provision of foreign climatic conditions. Instead of a wholesale adoption of the foreign system it would have been better to have altered and modified the old system to suit the changed conditions in this country.

Can the modifications be made on the lines of any of the ideals set forth above? The Egyptian or Babylonian ideal is too uncertain and too much lost in mystic antiquity to be thought of for our purpose. The Chinese system with its recurrent examinations and dry routine has no true educational value. The Athenian ideal partakes too much of the æsthetic to the detriment of the other sides of human culture. The Spartan ideal merges the individual in the state and leaves very little room for self-culture. The early Christian ideal was the individuality of man whose duties to the State were not to be of the Roman type, but whose obligation to it ceases with the payment of the taxes and a willing obedience to the command of the sovereign. The ideal of the scholastics, which was the ideal of the middle ages is out of consideration from its obvious defects. The defects of the modern ideal in which nature is all in all and the author of nature receives but an indifferent consideration have been already discussed. The ancient Hindu ideal has to undergo good deal of modification for adoption, as the composition of the population, though mainly Hindu, is not entirely Hindu. Therefore the basis of the new ideal must be Hindu in spirit with the superstructure constructed on the modern lines of the West.

That the present system is somewhat unnatural can be and has been admitted by all friends of India, whatever their nationality, creed or school of thought. The special correspondent to the *Times* has admitted it. Mrs. Kesant's praiseworthy attempt to establish a national university is because of the serious defects in the system now in actual working order. The establishment of the Central Hindu College and the Aligarh College with provision for the residential system and for religious and moral instruction is a practical demonstration of the admission of defects and an effective attempt to bring up their alumni on better lines than in other schools and colleges. The object of Government to establish colleges for the sons of the landed aristocracy and of the ruling princes is mainly to shield them from the contaminating influence of the present-day evils.

The work of education in this country should be so modified as to enable each one to realise his Dharma, the grand ideal of the ancient educational system. This ideal is of universal application to the Hindu, to the Muhammadan, to the Christian, to any Indian, whatever his creed or nationality. The modified system should enable us to realise our duties to ourselves, to our family and community, to the Indian nation as a whole, to the State that has been called to rule over us by Providence, and to God Himself. The duty we owe ourselves consists in our attempt to reach perfection in matters, physical, mental, moral and spiritual. It is an admitted fact that the moral and the spiritual aspects of education are sadly neglected in the present-day-system of education. All the world over it has come to be positively admitted that moral education must find a necessary place in the scheme of studies of every school and college. People, especially in our Presidency, were scoffing at this idea some time back. Even at present there are not wanting sceptics who would vote against religion going along with morals. My own view is that morality without religion is dry sand and religion without morality is fanaticism. The practice of morality without an intellectual perception of and firm faith in a moral governor is well nigh impossible, because man by his very nature is a selfish animal. In the absence of religion there can still exist a kind of morality useful only from a social and utilitarian standpoint, but not that one which is practised as a matter of duty. Our duty to the family and the community to which we belong can be well-known only by a study of the literature of the land, of its philosophy, sciences and arts. No effective provision has yet been made for them in the prevailing system of education. The charge now laid at the door of the Indian student is that he is getting more and more denationalised, irreverent and apish with no respect for the past and no correct perception of his duties and responsibilities. It cannot be that the charge is wholly untrue. The remedy lies in enabling the student to know much more than now of his past tradition through a compulsory study of his national literature. It may not be possible to supplant English by an Indian language, but it should be possible to make the ancient literature, at least in its translated works and its history compulsory subjects of study. It will effectively guard against anarchical ideas from gaining ground in this country for the reason that loyalty is enjoined as religious duty in the Dharma Sastras. The study of the ancient literature will revive and strengthen those beautiful family

affections which are the peculiar feature justly admired by all, of Indian households. The educated man's duties to his community are diverse and varied which have to be learnt only by a study of the ancient Sastras or other works of the ancients connected with the respective religions. For instance in respect of Hinduism it is only by the study of the ancient literature that we can learn what are the later accretions in our religion and customs, what is optional and what is obligatory, which of our customs are *sastraic* and which *nasastraic*, what are the urgent social reforms and what are the reforms that are un-Hindu in their nature. And our duties to the nation cannot better be described than in the sympathetic utterances of Sir George Clarke, the statesman-like Governor of Bombay:—"I need hardly tell you that there is work to be done, that no government can accomplish, work that depends upon the efforts of Indians and most especially upon the educated classes...I suppose that you have, in a greater or less degree, imbibed the idea of Indian nationhood. That is a fine idea worthy to be cherished and worked for. You are living in times when peace and orderly government prevail throughout India and it is quite natural that in such conditions the achievement of nationhood may seem an easy task. All the disruptive forces are held in check. Of foreign aggressions you know no more than occasional frontier raids. Now, if you reflect, I think you will come to the inevitable conclusion that only under the present conditions can the building up of an Indian nation gradually proceed....In a nation, as you conceive it, there can be no depressed or untouchable classes, which, in India, number 60 millions. The sharp cleavages which caste rules have created are wholly incompatible with nationhood."

Another important portion of our educational system consists in teaching students their duties to the State. They must be made to see that the British rule of India is a providential dispensation for the good, not only of the Indian continent but of mankind in general. In addition to peace and prosperity that the Government has conferred upon us, it is slowly helping in the formation of a hitherto unknown Indian nation with increasing rights and privileges. As Mrs. Besant has said the problem of the future destiny of the world, the highest destiny under human conditions, which can only be brought about by a harmonious commingling of the East and West is going to be solved on this land of many nations. It is therefore clear that

we stand or fall with or without the British Government. A right conception of our duties to Government must form a compulsory portion of our school and college studies.

Gentlemen, I have done. The teachers of my age have run more than half their race in the field of education. The work of shaping the destiny of the rising generation rests in your hands. Your duties are many and onerous. It may not be possible to reach the ideal all at once, but you must gradually work to reach it. It may not even be possible to effect a desirable modification or improvement either by individual or collective effort in the near future. But all the same when the ideal is kept in view, it should be possible to find ample opportunities for instruction to be imparted on the lines you may have in view. Incidentally many topics may be introduced to implant in the minds of students, faith in their religion and in God, a sincere devotion to the British Raj, a high sense of character, right ideas of citizenship, a strong fellow feeling between the members of the several communities and a correct sense of duty to one's family, to one's community and one's country. Topics introduced in this way have a more enduring effect than what is taught as a matter of compulsion from set text-books. These need not be introduced so as to be detrimental to the regular studies of the school, but only as illustrative of and supplementary to the subjects of regular instruction. The teacher who minds nothing else but the mere teaching of the subjects entrusted to him is a mere coach and mercenary man. The most important aim of a teacher is to prepare his student for his future work in life as a responsible citizen and as a man of character. In the interests of your young charges you are pledged to be engaged in this divine mission. It may be asked what the recompense is for the labours that are expected of you. From a money point of view the teacher's lot is not very enviable. The average salary of a teacher may not compare favourably with the salary of one engaged in any other profession, yet it is necessary that the teacher who has served out his life must have something to fall back upon, some provision for his old age—a provident fund or pension. A teacher in a recognised private school is in a sense as good as a public servant inasmuch as he works for those who are to become useful subjects of the State and prepares get it by respectful and constitutional representation. It may be that the local Government feel its hands tied to sanction a provident fund

or pension scheme of the kind you want. Even the India Government may have to be approached with this object in view. For this purpose and generally in the interests of education it appears to me that the time has already come for all-India educational conferences to be annually held. Government is now beginning to pay more attention to education and the time is not probably far off when your prospects may become brighter. Even if your most sanguine expectations are not realised, your duty in the glorious work of spreading the light of knowledge is still the same. That is your Dharma, your divinely appointed mission, your inviolable duty. The discharge of one's duty brings spiritual satisfaction, which is next-door to salvation. Can any reward be of a higher value?

May your blessed work on behalf of the tender buds to be entrusted to your charge be so crowned with success, that tended, nurtured and grown under your watchful care, they may blossom forth into lovely flowers of perfected virtue wafting love, goodness, humanity and wisdom all around so as to transform this ancient land of sages and saints, now alas! degenerate, into a renovated Eden!

SCHOOL RECORDS IN RELATION TO THE SCHOOL FINAL SCHEME

WITH reference to an article that appeared in the September number of the *Educational Review* on the above subject I want to enter first of all a protest against the falsehood which the writer wants to encourage among teachers in the middle of the second column of page 372, where he wishes to guard against the inference on the part of pupils that because they have once been examined there will be no further examination during the month so far as they are concerned. He says: "This can effectively be done by putting some questions also to those who have been once examined accompanied by a show of mark-entry." Aside from the fact that this is entirely immoral how long do you suppose it will take the pupils to find out that the matter is only a show?

I have had some experience with marking systems both here and in other lands. The

simplest plan for the purposes of the School Leaving Certificate, I believe, is as follows:—Let each teacher have a Marks Register in which he enrolls all the students of his classes, a class to a page, and if he has a class in more than one subject he should repeat the names of his students in as many subjects as he takes them. As to the size of the Marks Register I think it will be convenient to have it large enough so that all the names of any given class can be entered on one page. I believe this is important so that the teacher need not turn the pages of his Register when calling upon different boys to recite. A book whose pages measure 12" x 6" is ideal. This would measure 12" x 12" when open. But the ordinary foolscap size page will do equally well. It will not be necessary to enter the admission and register numbers of pupils. These can be determined at any time when necessary but it will be convenient to have the pupils' names in the Marks Register maintained in the same order as in the ordinary Attendance Register. Then as to the ruling: Have six columns for each month. The first four columns may be used for assigning marks to the ordinary oral class work. The fifth column may be reserved for marking written examinations to be held once each month not at a fixed time but as a surprise. In the sixth or last column the average for the month should be entered on the basis of 100 including both the oral and written work. At the end of the sixth column have a double line or one in a different colour. In the book described there will be room for enough columns for the five or six months of a whole term on one page.

Now as to the details, I believe the entries in the first four columns can best be made on a basis of 5. A pupil will be marked 5 when he gives a perfect answer, 4, 3, 2, 1 or 0 according as he is less and less perfect. It is not necessary that each pupil should be given four chances a month where the questioning is done in considerable detail. It will not always be convenient to get through the class four times a month. It is not necessary that all pupils be asked an equal number of times. Some might get only two chances a month, others three or four. Only the marks that are recorded will be taken account of in

the monthly average. With regard to the written examination I would suggest that it be held during the usual class hour at any time the teacher may choose. Since the class period is short the examination will necessarily be limited in its scope; nevertheless, the teacher will be able to judge by means of a few questions, say 5 or 6, how much attention each pupil has been giving to the lessons for the month. I consider the written work somewhat more important than the oral work, and would suggest that the marks be entered on the basis of 10 and that the entry in this column be counted as two entries.

The teacher must always have his Marks Register with him in the class room. Usually he should have it open before him while teaching. The Register should never be left out of a teacher's proper custody. Ordinarily a mark should only be given as the result of, say five oral questions or an answer that has required at least three minutes to give. In questioning pupils when a boy fails to answer, the practice of passing to the next boy for an answer should be discouraged. Let the teacher select another boy at random or in certain cases the teacher may answer the question.

In order to obtain the percentage of marks that a student has obtained in a given month, add two ciphers to the sum of the marks of the month: divide this figure by five times the number of entries, the quotient will be the percentage. Always remember, however, that the entry in the column for the written examination must count as two entries. For example, if the entries for the first four columns are 3, 2, 4, 2; for the fifth column 7; add together, the sum is 18. The number of entries must be counted as six. Divide 1800 by 5 times 6 or 30, and the result is 60, which is the percentage required. To avoid all this figuring work it will be very easy to construct a ready reckoner in columns giving the number of entries on the top and the sum of the entries along the side and finding out once for all the required percentages and using this as a ready reckoner in entering the results at the end of the month.

For convenience I give herewith a ready reckoner according to the plan outlined:—

The Top Row is the Number of Entries.						
	1	2	3	4	5	6
1	20	10	7	5	4	3
2	40	20	13	10	8	7
3	60	30	20	15	12	10
4	80	40	27	20	16	13
5	100	50	33	25	20	17
6		60	40	30	24	20
7		70	47	35	28	23
8		80	53	40	32	27
9		90	60	45	36	30
10		100	67	50	40	33
11			73	55	44	37
12			80	60	48	40
13			87	65	52	43
14			93	70	56	47
15			100	75	60	50
16				80	64	53
17				85	68	57
18				90	72	60
19				95	76	63
20				100	80	67
21					84	70
22					88	73
23					92	77
24					96	80
25					100	83

I think there should be no secrecy regarding these marks. In fact the monthly percentages should be announced to the students so that they may know their progress. Moreover, let each student be given a card on which his monthly percentage is recorded in each subject. This he should take home for signature by his parent or guardian and then return to the school. By means of columns for the different months a single card may be made to answer for a whole term. In this way the parents may also know what progress their boy is making in school.

Now that we have a careful means of finding out the daily progress of any pupil it will not be necessary to hold more than one examination at the end of each term. Let there be an examination, therefore, at the end of December and another in April. The examination in December may be for the portion that was covered during the longer term and the examination in April may be on the whole portion that was covered during

the year. Since the second term is much shorter than the first term the final examination in April need not count for any more than the term examination in December. Let marks be given therefore in each of these examinations on the basis of a maximum of 50. The average percentage given during the months of the term according to the daily Marks Register should at the end of the term also be reduced to a basis of 50. To do this add together the monthly percentages and divide by twice the number of months that are being considered. The mark thus secured should be added to the mark obtained in the examination at the end of the term and the result will be the average percentage for the term. Thus the record secured at the examination will count equally with the record secured daily in the classes. The resulting figure is the one to be entered in the School Final Leaving Certificate of the pupil. I think it will be the universal experience of teachers that pupils will work better under the new system by which a record is kept of their daily progress.

EXPERIENCE.

THE THIRD SARASWATI EXHIBITION, PUDUKOTA, 1910.

[By our Correspondent.]

The third Saraswati Exhibition was held after an interval of two years after the second during the Dussarah festival from the 4th to the 14th October, 1910. The Exhibition which has become an annual institution owes its origin to the late Dewan Mr. Venkataramadas Naidu (now Presidency Magistrate, Madras) who conceived the idea of holding one in the State for the benefit of the educational profession and to Mr. S. T. Ramachandra Sastri, B.A. (Senior Lecturer of the College) who embodied it in a practical scheme and as Secretary for two years convinced all of its feasibility and utility by carrying out his plan in a successful manner. From the very first year of its birth, the Saraswati Exhibition has been managed by a small committee consisting of the lecturers of the College, the manager of the local Mission Secondary School and a few others not belonging to the Educational Department. It may be questioned whether the Darbar were adding to the strength and efficiency of this body by putting in it a number of persons who were not familiar with

educational ideas and their recent developments and who could not be expected to contribute to the usefulness of the Council's deliberations by their presence in it. This weakness in the constitution of the managing body has been accentuated this year by the removal from it of the name of the Principal, who had been its President for two years.

The scheme in the shape finally conferred on it by Mr. S. T. Ramachandra Sastri and accepted by the Darbar embraces three sections, viz., Exhibition proper, Competitions and Games, and Teaching.

In the Exhibition side, the Committee receive and display exhibits of all kinds connected with education work:—the printed notification in the State Gazette enumerates eight groups under which alone exhibits are eligible for admission. In the first year, the number was small and poor in quality, but the succeeding years have brought with them an increasingly large number of exhibits and, what is more gratifying, an improvement in quality also. An idea of the quantity of the collection may be formed from the fact that the exhibits this year occupied eight rooms in the College including the spacious Lotus Hall. The Committee were fortunate enough to secure the loan of a selection of the British exhibits in the possession of the Director of Public Instruction, Madras, which added considerably to the grandeur and effectiveness of the Exhibition. Not only in quantity but also in variety did this year's exhibits surpass those of the preceding years, including as they did such different kinds of articles as (1) Botanical, Zoological and Anatomical charts, (2) Geographical and Historical maps and charts, (3) Drawings with pencil, brush and crayon, (4) Sloyd work in paper, Kindergarten work of various kinds including rattan work, paper and straw plaiting, bead and string work, stick and ring laying, wax and candlework, modelling with clay and pith, needle and embroidery work, textile fabrics such as carpets, towels and sashes, collections of fossils, rocks, stamps and coins, athletic goods and scientific apparatus. Some of the maps and charts, especially, those prepared in the College to depict scenes and incidents in English history and those prepared in the State Training School to illustrate human anatomy, vegetable and animal life may compare favourably with English productions of the same kind. It would be very encouraging to the well-wishers of the depressed classes to learn that some of the best exhibits under this group were the handiwork of the Panchama teachers that had been trained locally. The rest were the productions of the State Training School staff and pupils—all done like the previous ones under the guidance and supervision of the able and energetic

counteract it. It is therefore necessary for psychologists and teachers to set themselves to the task of creating a science, "psycho-pedagogy." The work of the alienist and the psychologist, we are told, has reached such a pitch of scientific accuracy that there is no longer any need for the schoolmaster to rely on his intuitions and individual insight into the mental conditions of his pupil: he will be able to subject him to a thorough inspection by some scientific system of psychometry. There are golden days ahead of schoolmasters, and hard times in store for the youth who now is ready and plausible and excuseful. I can remember my Headmaster—"some day it will be a pleasure to remember"—who used to confront his pupil with the awful alternative—"are you a perfect idiot, or have you not prepared your work?" I never remember a boy choosing either alternative: it was always construed as a rhetorical question. But soon there will be no need for any questioning: the tape will tell us. Mr. Legge startled the company—we are still in Bradford—by proposing that for children over twelve the time-table should be equally divided between constructive and literary subjects. Mr. Legge is Director of Education in Liverpool, and what has a Director of Education to do but to coquette with the faddists? Mr. Legge is now in the arms of the manual-training experts, and wood-work and modelling are his pet subjects. He might almost be said to have wood on the brain.

Mr. Oscar Browning has published his "Memories of Sixty Years at Eton, Cambridge, and Elsewhere." Who that knows him will be surprised to learn that it is mostly about 'elsewhere'? (We thought of him instinctively yesterday when hearing of the flight of King Manuel of Portugal—"the kindest king, I have met for some time.") Does he not know India? Did he not write to the *Cambridge Review* letters from your country? "Bombay, as its name implies, is one of the greatest bays in the world." I must confess that I have not yet seen his 'Memories.' The price is fourteen shillings, and libraries are cold places, but it will fall into grateful hands ere long. The reviews point to its being a typical and characteristic product of a man who has to be seen to be believed. Future generations will count Mr. Oscar Browning a myth. We could almost forecast the way in which it will be proved. The name itself is almost conclusive proof of lack of genuineness (there was an Oscar and a Browning, but no Oscar Browning), and it is incredible that the Eton Master should start a Day Training College at Cambridge and stand

three times for a Parliament that never saw him except in its Lobbies: and a Liberal too!

Reviews and Notices.

DICTION EXERCISES FROM STANDARD AUTHORS, BY RANKIN WENLOCK. MACMILLAN & Co., LTD. (1s. 6d.)

The days of Dictation Guides and Spelling Books seem to have disappeared but there must be room for Mr. Rankin's *Dictation Exercises*. In these days of educational fads and over-attention to the lighter aspects of school-work it is good to make ourselves sure of such an essential part of elementary education as accuracy in spelling. The passages have been selected with remarkable discrimination, so as to give the most trying forms of exercise. They have also been graduated according to difficulty and must prove highly useful in our Secondary schools. They serve another useful purpose—since the selections are from standard authors, they are sure to kindle a love of literature in young minds. The glossary of words at the end and the useful appendix of question papers enhance the value of the book.

CHAMBERS'S PROGRESSIVE POETRY, EDITED BY R. C. H. MORRISON AND W. WOODBURN. BOOKS I—VI. (FIRST THREE PARTS, 1d. EACH, AND SECOND THREE PARTS, 2d. EACH.)

These are a series of poetical selections for the use of elementary classes. The choice is really sound and as school-books they are very valuable. An interesting feature of the series is the Notes and Explanations and an account of the authors at the end. The editors might have however avoided the mistake of including too many extracts of a light nature in their zeal for simplicity. It is not very encouraging to see passages of this type abounding in volumes intended to kindle a love of poetry in children:

A jolly old sow once lived in a sty,
And three little piggies had she;
And she waddled about, saying 'Umph! Umph! Umph!'

While the little ones said, 'Wee! Wee!
My dear little brothers' said one of the brats,
'My dear little piggies,' said he;
Let us all for the future say, 'Umph! Umph! Umph!'

It is so childish to say Wee! Wee!

THE MERCHANT OF VENICE, WITH NOTES AND INTRODUCTION, BY MR. GLYN BARLOW, M.A., PROF. OF ENGLISH, PACHAIYAPPAH'S COLLEGE. MESSRS. LONGMANS GREEN & Co. (RE. 1).

We welcome this edition of the *Merchant of Venice* intended for Indian students. Mr. Glyn Barlow's long experience as an enthusiastic and sympathetic teacher in this country has enabled him to discharge his editorial task in a very useful manner. The notes are exhaustive and in several places display originality and strong common sense. The introduction is well-written and the pages on *The Theatre in Shakespeare's Time* are very clever, though they run the risk of being charged with the accusation of being too light for a serious commentary of Shakespeare. We must however admit that we were not prepared for sentences of this type in a literary work:

'He (Shakespeare) is now by common consent the master-playwright of the world—peerless—untouchable!'

'At the age of twenty-three he went off to London, to escape a prosecution.'

'And a tender glance from her large Jewish eyes undoes him.'

MATRICULATION GEOMETRY. BY SARADAKANTA GANGOPADHYAYA, M.A. (THE STUDENT'S LIBRARY, CALCUTTA.)

The book is prepared in accordance with the Matriculation Syllabus of the Calcutta University; and all the other Indian Universities having almost the same syllabus, the book may be said to be useful to the Matriculation students throughout India.

The propositions are arranged in conformity with the University Syllabus; almost every proposition is led to, by practical examples; a large number of practical, numerical and theoretical exercises are appended to each proposition; and "questions for examination" are given at short intervals so as to test the intelligent grasp of the subject by the students. These are some of the special features which go to make the book very useful to those for whom it is intended; and we can safely recommend the book to the students in the High Schools of this Presidency.

CONIC SECTIONS MADE-EASY. BY SARADAKANTA GANGOPADHYAYA, M.A. (THE STUDENT'S LIBRARY, CALCUTTA.)

This is a book prepared in accordance with the Intermediate Syllabus of the Calcutta University. The treatment is good so far as it goes, and the book has the same good features as the author's Matriculation Geometry a review of which is given above. But the Intermediate students of the Madras University do not bring up 'Conic Sections' and the portion of the subject dealt with in the book is too limited to be of use to the B.A. students of this University.

Some Vernacular Publications.

STORIES FROM INDIAN HISTORY IN TELUGU, BY MR. K. A. VIRARAGHAVACHARIAR. MESSRS. LONGMANS, GREEN & Co. (5 ANNAS).

This is an excellent little volume intended for use in the elementary classes. The stories are told in a breezy popular style and have been made very attractive to young children. Some of the lessons are of peculiar interest to Southern India. The stories form a very good course of study and are sure to kindle patriotism in young minds and rouse in them a keen interest in the history of the land. The author has already won reputation as an enthusiastic teacher of History and this adds to his reputation.

SCHOOL HISTORY OF INDIA, BY MR. K. A. VIRARAGHAVACHARIAR, ADAPTED FROM SRI HEMLOTA DEVI'S HISTORY OF INDIA. LONGMANS, GREEN & Co. (12 ANNAS.)

We have nothing but praise for this school manual which is eminently suited for use in secondary schools. The facts have been verified from the latest researches in the subject and the volume is a remarkable combination of vividness and accuracy. The narration has been brought to the present day and the value of the book is considerably heightened by excellent illustrations (some of them coloured) and a sober chapter on the *Benefits of British Rules*. Some valuable portraits have been procured with great difficulty and reproduced here for the first time. We strongly recommend the book for wide use in Southern India.

'VIJAYASUNDARAM' BY RAO SABER T. M. PONNUSWAMY PILLAI. THOMSON & Co. (Rs. 2-8-0) is one of the very few novels in Tamil of real merit. The language is not above the understanding of the average reader, and though in some places, the sentences are heavy and technical and dialectic expressions are introduced, the style throughout maintains a fair average of clearness and lucidity. The plot is unusually long and here and there some details might have better been omitted. The hero 'Vijayasundaram' comes out with all that is best in man, and as a happy conclusion, marries the woman whose life he saved. Singaram, though for a time suspected of homicide, is afterwards cleared of the charge; and he too lives happily ever after, being also freed from the taint which was attached to his birth. In the end, the good become happy and the wicked get their punishment.

The novel, apart from the interest in the plot it affords, is a good picture of the life of the Vellala community at its best. Not even intimate acquaintance will enable one to get so thorough a knowledge of the ideas which permeate the minds of those people as a thorough study of this book. The Saiva Siddhanta, the Vellalas are especially fond of, is also a sharer of the pages of 'Vijayasundaram.' In the novel we find new ideas about marriage, the dignity of women, their free social intercourse with men, and other kindred topics, as they exist in the minds of our social reformers, consistent with the upholding of the continuation of ancient traditions. These are only some of the many characteristics that must make the novel command wide popularity in 'Tamilagam.'

OTHELLO IN TAMIL.

[YUDDHALOLAN, AN ADAPTATION OF SHAKESPEARE'S OTHELLO (IN TAMIL) BY P. S. DURAISWAMI AIYANGAR. PRINTED AT THE INDIA PRINTING WORKS. PRICE AS. 8.]

A recent publication that will immensely interest the Tamil public is *Yuddhalolan* an adaptation in Tamil of Shakespeare's *Othello* by Mr. P. S. Duraiswami Aiyangar. The author is to be congratulated upon his excellent production which leaves nothing to be desired in accuracy, finish and literary merit. Wherever there is any departure from the original, it has only been to give the drama an Indian setting—a form in which the book will not be found to be a mere lifeless rendering from one language to another but an exact reproduction in spirit. The book is dedicated to the Hon'ble Mr. Justice V. Krishna-

swami Aiyar and is priced very cheap, considering the excellence of the get-up. We strongly recommend this book to all lovers of Tamil literature. The book will be of special interest to our ladies.

KARMATURA: A PHILOSOPHICAL NOVEL ON DUTY AND EVOLUTION OF KNOWLEDGE BY MR. VEMBU SASTRIAR. MESSRS. THOMSON & Co. (As. 6)

A scion of a family of Pandits in the Tinnevely District is given to too much reflection. Becoming a monomaniac, he seeks relief in natural scenery and observation of people. In his desire to improve the morals of his fellow-villagers, he offends influential people. They arrange to punish him under the pretext of thieves' attack. His mother learns it and cautions him to be more prudent. He becomes disgusted and leaves his native village in quest of a Guru. He received sound education in Sanskrit and also learned a little English owing to the help of a rich man, whose son's class-mate he was. But, the latter was discontinued owing to his death.

2. In his travels, he comes into contact with a mystic who advises him to take one meal a day, a Sanyasin who felt wounded at people not generally reverencing him, a Nattukkottai Chetty, a pleader, and a clerk in the Taluk Cutcherry. This is made the occasion for remarks on reform.

3. He then meets with a person who prepares him to meet his Guru whom he has the good fortune to receive instruction from at Chidambaram. Here is a dialogue on philosophical problems. As he is only 18, he is told to go back to his mother then a widow, to marry and lead a householder's life as a training ground for the control of emotions and to win by love those very villagers whom he had offended by hatred.

4. There is no plot-interest. As in Dr. Johnson's *Rasselas*, the hero only meets different specimens of people and makes observations on their ways. But, the importance of character is kept in view. The ideas on reform and philosophical problems are familiar to the English-educated. If they are rendered into the vernaculars and in such an attractive garb as to popularise them, the masses will learn some things useful to them. The reader would wish to have more details on improvements made after his return from Chidambaram.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—Mr. H. Malim, Principal, Government College, Mangalore, has leave on medical certificate for three months with effect from the 2nd September 1910.

Mr. S. Venkateswara Aiyar, Senior Assistant, Government College, Mangalore, to act as Principal of the College in the 9th Grade of the Provincial Educational Service, during the absence of Mr. H. Malim on leave or until further orders.

The Hon'ble Mr. J. H. Stone, M.A., Principal and Professor of English, Presidency College, Madras, to act as Director of Public Instruction and Commissioner for Government Examinations during the absence on leave of the Hon'ble Mr. A. G. Bourne, C.I.E., D.Sc., F.R.S., or until further orders.

Mr. E. W. Middlemast, M.A., Inspector of European and Training Schools, to be Professor of Mathematics, Presidency College, Madras, and to act as Principal of the College, during the absence of the Hon'ble Mr. J. H. Stone on other duty.

Mr. R. Littlehales, M.A., Professor of Mathematics Presidency College, Madras, to be Inspector of European and Training Schools, vice Mr. E. W. Middlemast.

Mr. Mark Hunter, M.A., Principal, Government College, Rajahmundry, to act as Professor of English, Presidency College, Madras, during the absence of the Hon'ble Mr. J. H. Stone, on other duty.

Mr. O. J. Coudrey, B.A., Inspector of Schools, 3rd Circle, and Acting Inspector of Schools, 1st Circle, to act as Principal, Government College, Rajahmundry, during the absence of Mr. Mark Hunter, on other duty.

Mr. Moulavi Muhammad Azam Sahib Bahadur, B.A., Acting Inspector of Schools, 2nd Circle, to act as Inspector of Schools, 1st Circle, during the absence on leave of Mr. J. A. Yates, or until further orders.

Mr. J. A. Yates, B.A., Inspector of Schools, 1st Circle, to act as Principal, Government College, Kumbakonam. To join on return from leave.

Mr. T. O. Hodges, B.A., Principal, Government College, Kumbakonam, to act as Inspector of Schools, 6th Circle. To join on relief by Mr. J. A. Yates.

Mr. Y. Jogayya Pantulu, Sub-Assistant Inspector of Schools, Ichapur Range, has privilege leave for six weeks from or after the 20th September 1910. R. Lakshminarayana Panik, Supervisor of Elementary Schools, Ichapur, is to act for him in the probationary class during his absence on leave or until further orders.

Mr. H. G. Krishna Rao, Sub-Assistant Inspector of Schools, Gooty Range, is granted privilege leave for seven weeks with effect from the 21st September,

1910. Mr. R. Krishnasawmy Aiyangar, Supervisor of Elementary Schools, Gooty, will act for him in the probationary class in addition to his own duties during his absence on leave or until further orders.

Miss E. Hunter, Sub-Assistant Inspectress, Godavari Girls' Range, and Acting Assistant Inspectress, Kistna-Guntur Girls' Range, is granted privilege leave for three months with effect from the 1st October 1910. Miss Hunter will be considered as having reverted to her permanent appointment with effect from the above date.

Mr. T. S. Muhammad Hussain Sahib Bahadur, Assistant Inspector of Schools, Guntur district, is placed in charge of the Office of Assistant Inspectress, Kistna-Guntur Girls' Range, in addition to his own duties as a temporary measure.

Mr. K. Visvanatham Pantulu, Sub-Assistant Inspector of Schools, Palakonda Range, is granted privilege leave for one month and fifteen days with effect from the date of relief. Mr. A. Thammanna Pantulu, Supervisor of Elementary Schools, Chipurupalle, will act for him in the probationary class during his absence on leave or until further orders.

The privilege leave already granted to Mr. P. Mangesha Rao, Sub-Assistant Inspector of Schools, Kasaragode Range, is extended by twenty days.

Mr. M. Ramaswami Aiyangar, Assistant Inspector of Schools, Nellore district, and Acting Second Assistant, Teachers' College, Saidapet, is to act as Vice-Principal, Training College, Rajahmundry, during the absence of Mr. M. Venkataratnam Garu on leave or until further orders. To join on relief.

Mr. W. A. Hensman, Acting Lecturer, Arts College, Rajahmundry (on leave), is to act as Second Assistant, Teachers' College, Saidapet, during the employment of Mr. K. Rangachariyar on other duty or until further orders. To join on the expiry of his leave.

Mr. S. Kameswara Rao, Sub-Assistant Inspector of Schools, Amalapur Range, is granted privilege leave for twenty-four days with effect from the 10th October next or from the date of relief thereafter. Mr. P. Venkayya, Supervisor of Elementary Schools, Amalapur, will act for him in the probationary class during his absence on leave or until further orders.

Mr. T. K. Venkata Rao, Sub-Assistant Inspector of Schools, Coimbatore Range, now on leave, to be Sub-Assistant Inspector of Schools, Namakkal Range. To join on the expiry of his leave.

Mr. K. S. Appasawami Iyer, Sub-Assistant Inspector of Schools, Namakkal Range, to be Sub-Assistant Inspector of Schools, Coimbatore Range, vice Mr. T. K. Venkata Rao. To join on relief.

Mr. H. Parayya Sastri, Sub-Assistant Inspector of Schools, Guntur Range, has privilege leave for twenty days with effect from the date of relief. Mr.

V. Lakshminarasimham, Supervisor of Elementary Schools, Narasapur, is to act for him in the probationary class during his absence on leave or until further orders.

Mr. M. Kameswara Rau Pantulu, Assistant Inspector of Schools, Godavari district is to act as Inspector of Schools, II Circle, vice Mr. G. V. Subbarayudu Sastri, on leave or until further orders. To join forthwith.

Mr P. Appalanarasayya Pantulu, Sub-Assistant Inspector of Schools, Chicacole Range, is to act as Assistant Inspector of Schools, Godavari district, in the subordinate service, vice Mr. M. Kameswara Rau Pantulu.

Industrial education.—An informal meeting of gentlemen interested in the quest of industrial education, was held at the Office of the Director of Industries, on the 5th and 6th of October. The meeting was well attended and considerable interest shown in the subjects submitted for discussion. These dealt mainly with the classification of Industrial Schools, the conditions of recognition, the subjects to be taught, the curriculum to be followed, and the separation of literary and industrial education. On these points no uniform line of policy has as yet been adopted by the various institutions and organizations which have been established in this Presidency for the purpose of imparting industrial education and a definite understanding relative thereto is clearly much to be desired. Although it cannot be claimed that these important questions were definitely settled, the discussion served to elucidate several important points and the fact that 22 institutions were represented attaches considerable weight to the conclusions arrived at. Among those present were Dewan Bahadur Rajarathna Mudaliar, C.I.E., Hon'ble Mr. Theagaraya Chettiar B.A., Br. Bawdon and Mr. Eaker from Ongole, Mr. Miller from Madura, Mr. Hollis from Kolar, Mr. Farrar from Arni, Mr. Embury from Karur, Mr. Barmester from Nayudupet, Mr. Andrews from Chingleput, and several other gentlemen and ladies.

Central College: Bangalore.—The Central College (Bangalore) is arranging to hold its College Day about Christmas. This function is essentially one for old boys of the College. The Committee is sparing no pains to ascertain the names and addresses of all former alumni of the College, who could help greatly in this matter by making known to it their addresses and those of other "old boys" they might be acquainted with. To carry thorough functions of this sort successfully funds are needed. A circular letter asking for contributions is now on its rounds among all past members of the College whose names and addresses have been traced.

The Tanjore Educational Exhibition.—The Second Educational Exhibition, got up under the auspices of the several elementary schools in the Tanjore

Taluk, was held recently in the Government Training School, and the Inspector of Schools for this division, Mr. V. K. Venkatarama Iyer, B.A., L.T., presided. There was a pretty large assemblage of pupils and teachers. The proceedings commenced with music in praise of God and then the National Anthem was sung by the girls accompanied by a harmonium. Mr. A. G. Pichaimuthu, B.A., L.T., Secretary to the Exhibition Committee, welcomed the audience in a short, well-delivered address, in which he pointed out the advantages of holding such exhibitions and added that even after so much spread of education there were found parents who took no real interest in such movements. He also said that the educational changes of recent times have brought great improvement on the old methods of teachings, while the teachers and the pupils had also become largely equipped in up-to-date knowledge and technical arts. The present day teacher was a more practical man and the pupil more informed. The district was a great centre of educational activities and he was glad that exhibitions of the kind have proved successful.

The President then spoke, thanking the Committee for honouring him with the Chairmanship and congratulating the Headmaster of the Government Training School, Mr. Sesha Iyer, and Mr. V. C. Srinivasachariar, Sub-Assistant Inspector of the Tanjore Range, on their earnest and devoted labours in the successful organization of the Exhibition in the district. For himself he only did his duty in helping the movement and he was happy to notice that the Exhibition held at Kumbakonam last year was very successful, worthy of that great seat of learning. The city of Tanjore was equally famous as the centre of arts and industries and he was sure that the efforts of the Tanjore teachers would be crowned with similar success. But this Exhibition had no golden or silver key to open it; he had only to invite the gentlemen to visit the rooms where the exhibits were arranged and to judge them, remembering, however, that they could not expect anything belonging to the hands of teachers who though belonging to the noblest of professions were only the tiniest of traders.

A letter from Mr. R. F. Austin, I.C.S., the Collector, was read expressing his inability to attend the Exhibition but conveying his best wishes for its success. Mr. Austin also in that letter requested the Exhibition to exhibit more female teachers who were a great desideratum at present, in view of the spread of female education.

The evening programme included a lecture on "Electricity" by Mr. S. Sriyanga Chariar, B.A., L.T., of the Kalyanasundram High School, besides interesting model drill and gymnastics by the pupils of the Municipal Schools.

Moral education in schools.—At a public meeting held recently at the Teachers' College, Saidapet, the Hon'ble Mr. P. S. Sivaswamy Iyer delivered an interesting lecture on 'Moral Education in Schools.' The speaker dealt with the form moral teaching

should take. The setting of their principles and illustrations, he advised his hearers, should have an Oriental colour, and they should be drawn from Indian sources, and here they had an ample and inexhaustible treasure-house in the epics of the 'Mahabharata.' They might also draw illustrations from the lives of heroes and warriors, and these would be far more impressive than illustrations from foreign history. He would not discard the latter altogether, for he did not think anything was said in Indian ancient literature with regard to the duty of patriotism or self-respect, or self-reliance. These were conceptions, more or less, of modern times and modern conditions. One warning he desired to give them—to avoid, if they wished to enforce any particular virtue the danger of exaggerating it. There should also be instruction in the principles and morals of civics, but by this he did not mean the principles of administration, but only the principles which bore on the conduct of the citizen towards the State. The lecturer then referred to the value of the personal element in moral teaching, and in conclusion asked the teachers to formulate a syllabus of moral instruction for High Schools. For this he offered a prize of Rs. 100, to be given to the teacher who prepared the best syllabus.

A Malayalee Technical Student.—We are extremely pleased to learn that Mr. K. Raman Menon, of Kumaranallur, who had gone to Baroda to prosecute his studies in Weaving and Chemical Technology have come out successful in both with honours. The subjects comprehended in the Weaving group are weaving, theory and practice, sizing, designing, mechanism and erection and in the Chemical Technology the dyeing of cotton, wool and silk, bleaching cotton, calico printing and sample matching.

Elementary Schools in Madras.—The Committee appointed by the Government of Madras, last year, to consider the question of the accommodation to be provided for elementary schools in the city of Madras has now submitted its report. The Committee, we understand, has reported that these schools (other than those under Missionary management) are badly located and has recommended that the Corporation of Madras should build 40 model schools, 2 for each Municipal division, at a cost of between Rs. 8,000 to Rs. 10,000 each, the cost being spread over 10 years. It is calculated that the cost of maintenance of each school will be about Rs. 1,500 per annum or Rs. 60,000 for the 40 schools, of which, it is expected, about Rs. 12,000 will be recovered from school fees. Thus, the Corporation will have to incur an expenditure of Rs. 48,000 every year. The Committee have recommended that, in view of the increased cost, Government should free the Corporation from the aid of about Rs. 20,000 which it is now giving to these schools annually.

District Mahomedan Educational Conference.—A District Mahomedan Educational Conference was recently held for the first time in the Mission School, Tindivanam, South Arcot District under the auspices of the Anjuman-i-Ithihadq-Tharakia-Ahlai-Islam of the same place. The Hon. Khan Bahadur Mahommed Habibullah Sahib Bahadur, who presided, delivered an impressive address in which he appealed for financing the Anjuman of Tindivanam, which was responded to by promises to the extent of nearly a thousand rupees. Resolutions were passed to adopt such measures as would improve their condition and ask the Government to improve the educational system concerning them.

Hindu High School, Srivilliputtur.—The annual distribution of prizes to successful pupils of the Hindu High School, Srivilliputtur, took place on the 13th instant under the presidency of Mr. J. R. Krishnamma, I. C. S., Divisional officer, Satur. The meeting was convened in the Saraswati Hall which was filled to overflowing with the respectable gentry of the locality. The proceedings began at about 8 p.m., with the reading of the annual report by Mr. T. Shanmugasundra Mudaliar, the present Secretary of the managing body. The report was very interesting as it disclosed several items regarding the efficient working of the institution. The most important of these is the special attention paid to drawing both as a separate and as a correlated subject. We are glad to learn that some students undergo training in painting. The report having been read, the President performed the function of distributing the prizes to their winners. This over, he rose up and delivered a short and interesting speech wherein he dwelt upon the importance of education and congratulated the public of the place for maintaining a useful institution. After making certain eulogistic remarks about the school athletic and sports associations, he resumed his seat amidst the loud applause of his audience. The meeting then terminated with a hearty vote of thanks to the chair.

The Government sanction as grants towards the purchase of furniture, books and scientific apparatus and appliances for the undermentioned colleges the amounts specified against each of them, or one-half of the actual cost of the articles purchased, whichever may be less:—

	RS.
(1) The Madras Christian College	4,586
(2) Pachaiyappa's College, Madras	3,200
(3) The Noble College, Masulipatam	1,386
(4) St. Joseph's College, Trichinopoly	814
(5) The S. P. G. College, Trichinopoly	560
(6) The Maharaja's College, Vizianagram	1,213
(7) Mrs. A. V. N. College, Vizagapatam	557
(8) The C.M.S. College, Tinnevely	850
(9) The Hindu College, Tinnevely	583
(10) St. Aloysius' College, Mangalore	742

Total ... 14,491

Ex-officio member of the Madras Students Advisory Committee.—The Governor-in-Council is pleased to appoint the Resident at Hyderabad to be an *ex-officio* member of the Madras Students Advisory Committee constituted in G. O., No. 542, Educational, dated the 29th September 1909.

BOMBAY.

Education in Baroda.—The working of the Compulsory Education Code in Baroda is very interesting. In each village the Patal, Talari and the Schoolmaster make a list of the residents who have children under their care and the schoolmaster publishes notices containing the names. Parents are allowed to appeal against the inclusion of any name, to the Wahiwardar, whose decision is final. Those whose children do not attend school within 30 days of publication of the lists are fined up to one rupee a month according to the discretion of the Wahiwardar. The compulsory standard of education has up to this been the third. A Commission has now recommended the raising of the standard to the fourth and has called for legislation. (1) to prevent the employment of children of the school-going age in mills, factories, or in works of such a nature as to prevent attendance at school, and (2) to increase penalties under the Child Marriage Act, so as to form a more satisfactory deterrent. (Girls have to be in schools till their eleventh year).

Advice to Students.—Bombay Judge on British Rule and History.—Sir Narayan Chandavarkar, Judge of the Bombay High Court, visited Ahmedabad recently to present a congratulatory address to Sir Chinubhai Madhavai, upon whom Knighthood has lately been conferred. The ceremony took place at the gathering of the Students' Brotherhood, and Sir Narayan took advantage of the opportunity to address some sound advice to the Gujarathi youths. He remarked that the spirit of fault-finding, in short, the over-critical spirit, was unfortunately too common among students now-a-days. To set back this gloomy tendency, the best method was to interest students in English poetry and make them enter into its spirit. He thought that the study of poetry was greatly neglected. In spite of shortcomings here and there, the country was making a sure forward march. Looking back to the history of British rule during the last 50 or 60 years, one could not but see a golden line running through them all—a golden line which spoke eloquently of the sound progress the country had made. The fact that the British Government was for the welfare and progress of the country required to be brought home to students as often as possible for they are likely to be led astray by hasty judgment on passing events. They ought to be loyal not only to the Sovereign, but also to the English nation, whose great culture, and literature and history and whose progressive institutions and society it was

India's great good fortune to come into contact with.

Students to Japan.—The following Press Note has been issued by the Bombay Government:—

The Secretary of State for India has brought to the notice of the Government of India that it not infrequently happens that natives of India, students or others, who have proceeded to England desire to obtain passports to enable them to travel to foreign countries in which the possession of a passport is necessary or desirable, and that difficulty often arises from want of evidence to show that the applicant is a British subject and therefore entitled to a passport. Appeals for assistance are also frequently addressed to His Lordship by destitute Indians who desire to return to their country and by students who, owing to embarrassed circumstances, are unable to complete their course of education.

2. The Government of India have also received intimation from the British Legislation at Tokyo that orders have been issued by the Educational Department of the Japanese Government to the effect that applications on the part of foreign students for admission to schools in Japan must be made through the Diplomatic or Consular Representatives of their country in Japan. It has been suggested to the Government of India, that it would be a great convenience to His Majesty's Legation at Tokyo, if Indian students, who desire to prosecute their studies in Japan, were provided with recommendations from a recognized authority in India, as it is undesirable that applications should be made to the Japanese Educational Department without some guarantee as to the character and antecedents of the persons on whose behalf such applications are made.

3. The Governor-General in Council accordingly desires to make it known that Indian students and others visiting England and Indian students proceeding to Japan for their education should provide themselves, before departure from India, with an authoritative certificate of identity signed by the head of the district (in a Presidency Town, the Commissioner of Police) in the case of residents of British India and by the Political Officer in that of residents of Native States. For a student proceeding to England, the certificate should be signed by the head of his last school or college and counter-signed by the District Officer (in a Presidency Town, the Commissioner of Police) or Political Officer, as the case may be.

4. It is believed also that the grant of such certificates of identity would be of use to Indian gentlemen proceeding to America for the purpose of study or otherwise, and with the approval of the Secretary of State, the Governor-General in Council desires to recommend such Indian gentlemen to obtain, before their departure from India, an authoritative certificate of identity signed by the officers mentioned above.

CALCUTTA.

An appointment.—The Secretary of State has appointed Mr. James William Holme, M.A., of Liverpool University, to the Indian Educational Service as Professor of English in the Presidency College, Calcutta.

Calcutta University Institute.—The Annual report states:—The growth in our numbers and in our work has brought with it increased responsibilities and it is felt that many improvements which are urgently called for cannot be effected unless the Institute gets additional help from Government and from the generous public. The amount of the present Government grant was fixed just when the Institute was started, about twenty years ago. The conditions of education in the country have immensely changed during that period, and the Government grant for educational institutions has been keeping pace with the growing needs. Shortly after the last annual meeting, the worthy President, the Hon'ble Mr. W. C. Macpherson, C.S.I., whose deep interest in the Institute the Committee cannot be sufficiently thankful for, wrote in a note:—"I agree that it will be right and proper in view of the increase in our numbers to ask Government for an increased grant. It is a strong point that the existing grant was fixed so long ago." The increase in our numbers which was then only anticipated, has actually come about. Our Library and our Athletic Section are both in an unsatisfactory condition for want of funds. Only half of our Lecture hall is properly furnished, we badly want benches for the other half. Our office is badly inconvenienced through want of a few necessary articles of furniture such as one or two almirahs, a rack and a type-writer. We should very much appreciate the owning of a good magic-lantern. In the course of the year the Executive Committee resolved to approach Government with an appeal for an increased annual grant and also a donation of a small sum for meeting some of the immediate requirements; but in consideration of the financial strain of the year, it was thought not to press that appeal immediately. No better arrangement in respect of a local habitation could be made for the Institute than if the Government were to guarantee to it a permanent occupation of its present premises with the necessary improved fittings and electrical installations. The accounts show receipts for the year of Rs. 4,767 and expenditure of Rs. 4,813, the Bank balance being now Rs. 1,336.

The Bengal Provincial Literary Conference.—The fourth sitting of the Provincial Literary Conference meets at Mymensing during the forthcoming Christmas holidays. A strong and well-represented Reception Committee has been formed with Maharaja Kumud Ch. Siuba, B.A., of Susang, Durgapur, as President and Raja Jogendra Kishore of Ramgopalpore, Babu Pramatha Nath Roy Chaudhuri, the well-known Zemindar-poet of

Santosh, and the Hon'ble Khan Bahadur Syed Nababali Chaudhuri as the Vice-Presidents. Two more Vice-Presidents are still to be elected, Babu Saroda Charan Ghose, M.A., B.L., Government Pleader, Kumar Saurindra Kishore Roy Chaudhuri of Ramgopalpore, Babus Heramba Chandra Chaudhuri of Ambaria, Babu Rebuti Sankar Roy, B.L., and Kadar Nath Mojumdar have been elected Secretaries. Babu Bijoya Kanto Lahri Chaudhuri of Kalipur has been elected Treasurer. The Magistrate Mr. Lambourn has expressed full sympathy with the organisers. The Committee mean to approach Dr. J. C. Bose, C.I.E., of the Presidency College to accept the Presidentship of the Conference. Steps are being taken to organise an Exhibition in connection with the Conference and short excursions in the neighbourhood. It is expected that all the litterateurs of Bengal will muster strong at the Conference to make it quite successful.

PUNJAB.

Punjab Agricultural College.—The question of the admission of students from the Native States and from the North-West Frontier Province to the Punjab Agricultural College has recently come under the consideration of the Punjab Government in view of the overcrowding of the institution. It has been decided that for the present the number of new admissions should be restricted to 38 per annum. In future 28 vacancies will be reserved for the Province and five each for the Punjab, Native States and Foreign Provinces. As regards the fees to be charged the following scale has been sanctioned:—Rs. 12 per mensem for all students from the Punjab and Rs. 16 per mensem for all students from Native States and from the Foreign Provinces. These fees will be paid by scholarship-holders in the ordinary way and are to be charged for 12 months and not for nine months as at present. The new rates will take effect from July, 1911.

A Punjab Historical Society.—A meeting was held in Simla on October 1st when a Punjab Historical Society was formed. The object of the Society is to promote the scholarly study of the history and antiquities of the Punjab and adjacent countries. Meetings will be held periodically, at which papers will be read and discussed and selections from the proceedings will be published. The Hon'ble Mr. E. D. MacLagan, C.S.I., is the first President, and the Society has the cordial support of Sir Louis Dane, who has consented to be its patron. It is hoped that the aims of the Society will appeal to Indian scholars in the province as to Europeans and though the proceedings will be published in English, papers may be read in Urdu or Punjabi as well. Pandit Hari Kishan Kaul, the Provincial Census Superintendent is the Treasurer, and among those interested in the Society are the Hon'ble Malik Umar Hayat Khan, C.I.E., the Hon'ble Khan Zulfikar Ali Khan, and Raja Sir Harnam Singh, K.C.I.E. The subscription has

been fixed at Rs. 10 per annum. Mr. A. C. Woolner, Registrar of the Punjab University, Lahore, has undertaken the duties of Secretary for the present, and will be glad to answer enquiries.

Punjab Technical Scholarship.—Mr. Hashmat Rai, B.A., M. Sc., Demonstrator, Government College, Lahore, has been awarded the State Technical Scholarship of £150 for the study of Technical Chemistry in England.

Education in Patiala.—H. H. the Maharaja of Patiala, has further ordered that every village prepared to collect 30 boys for the learning of the Gurmukhi language, shall have a Primary School in Gurmukhi provided at once, and that in selection and appointment of Zaildars, Safaidposh and Nambardars other qualifications and considerations being equal, preference should as a rule be given to those who are literate and educated and have assisted in the spread of or otherwise taken interest in education.

Educational appointment.—The Secretary of State has appointed Mr. Francis Robert Tomlinson, of the Egyptian Education Department, to be a Head Master in the Indian Educational Service in the Punjab.

UNITED PROVINCES.

Governor of the United Provinces on Rural Education.—The question as to how the best provision can be made for the teaching of pupils in village primary schools has engaged the attention of the Government for many years. As far back as March 1896, Sir Edward Buck, whose exceptional qualifications enabled him to form a weighty judgment in such matters, held a Conference on this subject, regarding the result of which the Government of India issued a resolution in 1897. After the Educational Conference at Simla of 1901 the Government of India issued a letter to the Local Governments calling attention to the suggestions of 1897, and urging the Local Governments to establish shorter and simpler courses for agriculturists, than are required for those who intend to use the primary stage of education as a preliminary only. Once more in the Home Department resolution of the 11th March 1904, paragraph 21, the Government of India reinforced the principles which they wished to be followed. A committee was appointed to examine the readers used in primary schools, and made a selection accordingly. The objects desired by the Government of India were not attained. Those objects were that the teaching in village schools for boys should be so designed as to interest pupils in country life, to induce habits of observation and thought regarding things in the village, fields, jungles and to equip boys with a capacity for leading useful lives on the land. The committee then appointed feared that readers, the teaching in which was designed to effect these objects, would not be within the capacity of the village school teachers

then in existence. Since then, however, a better qualified class of teachers has been introduced into the rural schools and it will now, in the opinion of His Honour the Lieutenant-Governor, be possible to fit the pupils in such schools for lives as agriculturists by developing their powers of observation by means of study of nature and object lessons and to quicken their interest in everyday surroundings by means of readers, the main features of which are to be associated with country life. It appears to His Honour essential that the instruction in rural schools should be differentiated. The Lieutenant-Governor has therefore decided to convene a committee to consider the whole subject of rural education. The committee will—

(1) draw up a scheme for the preparation of new series of readers;

(2) draw up a syllabus of object lessons for use in primary schools.

They will consider both questions in the light of the necessity of training the faculties of the pupils, so as to make them fit to apply their minds to the best advantage in the occupation of their later lives. They will consider in this connection the language used in the readers and see that it contains only such words as pupils of primary schools can understand without effort. The committee will also consider the propriety of introducing into these readers some elementary knowledge of improved methods of agriculture, and the elementary principles of health and village sanitation, and will also consider any other subjects which may in their opinion tend towards the improvement of education in primary schools. The committee will consist of the following gentlemen:—(1) The Hon'ble Mr. C. F. De la Fosse, President, (2) Mr. W. H. Moreland, C. I. E., (3) The Hon'ble Mr. J. Hoare, (4) Mr. J. R. Pearson, (5) Pandit Rama Shankar Misra, (6) Mr. R. Burn (on leave, England), (7) Saiyid Muhammad Hadi, Khan Bahadur, (8) Rai Gyanendra Nath Chakrabatti Bahadur, (9) Pandit Din Dayal Tiwari, (10) Dr. Zia-ud-din Ahmad, (11) Maulvi Sakawat Husain, (12) Mr. A. H. Mackenzie, (13) Munshi Kirpa Narayan, (14) The Hon'ble Thakur Kushalpal Singh of Kotla, (15) The Hon'ble Mr. M. Abdul Majid, (16) The Hon'ble Rai Sundar Lal Bahadur, C. I. E., (17) The Hon'ble Lala Ramanuj Dayal of Meerut, (18) Rai Ram Saran Das Bahadur, of Fyzabad, (19) Munshi Ratan Chand. *Secretary.*—Rai G. N. Chakrabatti Bahadur.

TRAVANCORE.

Public lecture.—Under the auspices of the Travancore Government Lecture Committee, Dr. Kunjan Pillay, Director of Agriculture, delivered two lantern lectures on agricultural topics last week at Neyyattincusray (some 12 miles away from the town) under the presidency of Dewan Rajagopalachariar. The lecture was very interesting and instructive, being well-attended by a large number of the agricultural population of the district.

Mr. J. Pyde, M.A., has been appointed Inspector of Secondary Schools in Travancore.

COCHIN.

Cochin education.—It has been notified by Mr. Pope, the Special Educational Officer for Cochin, that all the teachers of the Lower Secondary and Primary Departments of the State should undergo a written examination every year in the principles and methods of education. In pursuance of the above notification a circular was recently issued by the S. E. O. that arrangements should be made by the convener of the teachers of each circle, for giving instruction to the teachers of his division, in the subjects to be got up. Accordingly a preliminary meeting of the teachers of the second group was convened by the Principal of the Ernakulam College at 1.30 P.M., on the 1st instant. Copies of the programme of work to be gone through were distributed among the teachers, and the programme was also clearly explained to them. There was a large attendance of teachers on the occasion, and they all appeared keenly interested in their prospective work.

Two meetings a month—and that on Saturdays—are to be held in the Ernakulam College for the benefit of the teachers of the second group. The subjects that will be taught at these meetings are:—(a) Principles of education; (b) Methods of teaching the several subjects; (c) Kindergarten; (d) Notes of lessons; (e) Management; (f) Hygiene. These subjects are to be taught by the trained and experienced teachers of the College under the supervision of the Principal and the lecturers. Model and criticism lessons, demonstrations of objects of educational value, blackboard exercises, lessons on elocution and reading are to form a special feature at these meetings.

The teachers were advised as to the books they should read in the various subjects. It is to be hoped that the training classes that have thus been arranged by the indefatigable Principal of the College, Mr. F. S. Davies, will turn out to be popular and successful.

INDIA (GENERAL).

Eurasian Education in India.—The Bishop of Calcutta announced recently, at a meeting at the Bishop's House, that a Non-conformist gentleman, who had known India for many years and who owed it a good deal, had promised £50,000 towards a fund to promote English and Eurasian education in India. Undenominational Churches had invited the Church of England to join in the administration of the money.

University of India: Petition to the King-Emperor.—Mrs. Besant writes in the current number of the "Theosophist":—I hear that the petition to H. M. the King-Emperor for a Royal Charter for a University of India has been forwarded by H. E. the Viceroy to the Secretary of State for India. I am profoundly grateful to the

Viceroy that H. E. has been good enough to forward it, and for the sympathy with its object that he has expressed.

Foreign Notes.

GREAT BRITAIN.

London centre for Indian students.—The house at 21, Cromwell-road, South Kensington, rented by the Secretary of State in Council as the headquarters of the Educational Adviser of Indian Students and of the societies working for them was opened without any ceremony towards the close of last month, and already encouraging results have been achieved. This is the period of the year when there are most arrivals from India, and it is estimated that in the last three or four weeks at least 150 students have reached London. A great proportion of them, at the instance of the provincial committees in India, or of agents by whom they are met on arrival, have made their way at once to the new centre. Many have been given temporary accommodation, not exceeding a week, at the house, on payment of a moderate fixed charge; but, although 20 can be accommodated at a time, from the day the house was opened the applications for admission have been sufficient to fill the bedrooms two or three times over. For many of those whom it has been impossible to accommodate suitable lodgings have been found either by the Educational Adviser or by Miss Beck, the Hon. Secretary of the National Indian Association. The Indian membership, both of that institution and of the Northbrook Society is increasing in view of the club life available for members and their friends at the new quarters. Mrs. Arnold, wife of the Educational Adviser and Miss Beck gave an 'At Home' in the drawing room of the National Indian Association. The attendance of Indian students was very large, and the company included Sir Theodore Morison, Sir James La Touche, and Mr. Abbas Ali Baig (members of the India Council), Princess Sophie Duleep Singh, Sirdar Gurchon Singh, the Hon. Montagu Waldegrave, and Sir M. M. Bhowmree. Sir Theodore Morison briefly welcomed the assembly, and expressed a hope, on behalf of the societies concerned, that the Indian students would freely avail themselves of the facilities for social intercourse with one another and with English friends which the centre would provide on a larger scale than had before been attempted.

The London Matriculation Examination.—Amongst the many degrees now obtainable at our universities there are none that for practical purposes rank higher than those of London. Oxford and Cambridge may confer more social status, but as a guarantee of sound knowledge and ability a London degree cannot be beaten. Before a pass degree in any branch of knowledge can be obtained three examinations must be passed. The first of these—Matriculation—is common to every branch,

and must be negotiated by every student. The minimum age limit is sixteen years, but there is no maximum. It is not uncommon, therefore, to see in the examination hall men who have left their schooldays far behind but who, for various reasons, have decided to resume their studies. Many men and women, too, enter upon a course of study at the beginning of the winter and sit for the Matriculation Examination in June. Examinations are held in London and various provincial centres in January, June, and September, and the fee payable is £2 if examined in London, and from £1 to £22 extra if at a local centre. After the Matric comes the "Intermediate" and then the "Final."

THE EXAMINATION.

The Matriculation subjects are comparatively simple. It is necessary to pass in English and elementary mathematics. One of the following must also be taken:—(1) Latin; (2) mechanics; (3) heat, light, and sound; (4) chemistry; (5) botany and two from a list containing nineteen subjects usually taught in schools. If Latin is not taken, a language must be one of the two selected subjects. The syllabus, therefore, is a broad one, and an intending candidate should not only bear in mind his own knowledge of each subject, but also the use it will be in any future examination. For example, a student wishing to take a science degree would select either French or German and the sciences in which he is strongest. It would be useless taking, say, history, although it might be a strong subject. English is one of the most important branches, and tends to increase in severity. Great attention is given to English authors, and to do very well a candidate must be fairly widely read. At the June examination twelve Shakespearean characters were named of which six had to be identified and the play named, and the action of three described. Grammar also plays a fairly conspicuous part in the paper, and a precis and an essay are also required. About eight subjects are usually given as a choice for an essay, and at the last examination the subjects were certainly stiff, the only consolation being that they were the same for all. The elementary mathematics paper is a thorough one, generally requiring some good thinking and some long calculations. Two papers of three hours each are set, and special attention should be given to approximations and contracted methods, areas, and volumes, but a careful study of previous papers is the best guide to the mathe-

matics paper. In the French and German papers, passages for translation into English are set, and easy pieces for translation into the language; there are also questions on grammar, but they are limited to accident and elementary syntax. A science candidate should always endeavour to take chemistry at Matriculation, as at the Intermediate and final it will be almost a necessity.

Cambridge Language Professorship.—Sir Harold Harmsworth has offered £20,000 to found a Professorship of Languages at Cambridge.

FOREIGN (GENERAL.)

Hongkong University.—Sir Frederick Lugard, the Governor of Hongkong, sends us an appeal for funds on behalf of the University, which is now being established there. The idea of a university in Hongkong was started in 1905, and was taken up by Sir Frederick Lugard in 1907, in response to whose appeal a Parsi merchant in Hongkong, Mr. Mody, offered to erect the buildings. The scheme proved most popular, even among the Chinese the Viceroy of Canton, subscribing £18,000 and the Central Government at Peking sending a contribution. The buildings are now in course of erection and the endowment fund stands at about £115,000. A further sum of £25,000 is required to secure the annual income considered necessary. £16,500 is required for furniture and fittings, and an additional £50,000 is asked for 'to enable the University to inaugurate all requisite chairs.' In all, £1,000,000 is wanted 'to place the University on a thoroughly satisfactory basis.' The British Government has promised £300 a year. The University may be opened early in 1912, and the first three chairs to be established are 'Medicine' (incorporating the Hongkong College of Medicine, which for 20 years has done excellent work in this direction); 'Applied Science' for the education of railway, mining, and electrical engineers, surveyors, &c., of whom China stands greatly in need for the development of her resources; and Arts to meet the requirements of those who desire to adopt an official career in China—to include political economy, Chinese language and literature, general history, geography, and mathematics, &c. English will be the language of instruction, though we should hope that the professors will be encouraged, if not compelled, to acquire an adequate knowledge of Chinese.—*The Economist*.

The Educational Review.

The Board of Education in England has issued an English translation of the mathematical syllabus issued last year

Teaching of Mathematics.

for the Austrian Gymnasien. This syllabus is the result of an educational conference held at Vienna in 1908 and deserves the thoughtful consideration of all those who are interested in the efficiency of the educational system in India. Some of the salient features of this syllabus are the following. The Indian teacher is not a stranger to the replacement in recent years of the theoretical teaching of mathematics in secondary schools by the practical. The Austrian authorities have adopted very drastic measures in this direction. The course of arithmetic is limited to multiplication and division of decimals, contracted methods, proportion and interest. We do think that the time spent on mixtures, discount, stocks, and the various other specialised arithmetical problems, which occupy so much space in text-books of arithmetic, might be spent with greater advantage in acquiring a working knowledge of the elements of trigonometry and the calculus. Another noteworthy feature of the syllabus is the combination of plane and solid geometry throughout. There is very little attention paid in our schools to the cultivation of the power of thinking in three dimensions. It is our bitter experience that under-graduates of our universities who come up to the mathematics and physics divisions of the B.A. class rarely understand what is meant by planes intersecting each other or solid angles. Even in England the complaint is that many even of those who win mathematical scholarships at the universities possess no know-

ledge of the rudiments of solid geometry. The last feature of interest in the syllabus is the stress laid upon the idea of functionality. "The notion of function," it is pointed out, "is recognised as the idea which differentiates higher from elementary mathematics, and a full grasp of it is held to be the proper aim of school teaching....the habit of looking at variable quantities as varying continuously and in obedience to law is to be fostered from the beginning." Prof. Klein of Gottingen has for many years past been urging the necessity of introducing the idea of function early in the teaching of mathematics in schools. Through his instrumentality the teaching of elementary notions of calculus in the *Mittelschulen* of Germany has become an accomplished fact. We believe that much of the graphical work in algebra will prove only a useless mechanical operation and produce no good result, if it is not designed to illustrate the law of continuity.

Mr. Rafell Shaw has written a very interesting book on Spain, entitled *Spain from Within*, which is of great value to the student of education, as it enables him to understand what is likely to be the result of placing a country in the grip of the priest. Mr. Shaw has lived long among the Spanish people and obtained his information at first-hand. Therefore, what he says on the influence of theocracy on education may be taken as trustworthy. The educational system of Spain is ludicrous in its inefficiency. Young men can pass through a university course and come out illiterate. In Government schools the master has an allowance with which to provide books for his pupils. This allowance is used to eke out his miserable salary and such scholars

as can afford it have to pay for their books. Supervision by inspectors is grossly neglected, so that it is not uncommon for a teacher to absent himself altogether from his duties during school hours. As far as can be gathered from the book, the private schools appear generally to be less inefficient, and are preferred by those working people who can afford to pay the fees, though it is added that unless the master receives presents the pupils are neglected. Nominally education is compulsory and free—in actual practice that ideal is very far from having been attained. In some 30000 towns and villages government schools exist. As to the accommodation the following extract from a report of the Minister of Education to the Cortes will give an idea: "More than 10000 schools are on hired premises, and many of these are absolutely destitute of hygienic conditions. There are schools mixed up with hospitals, with cemeteries, with slaughter-houses, with stables. One school forms the entrance to a cemetery, and the corpses are placed on the master's table while the last responses are being said. There is a school into which the children cannot enter until the animals have been taken out and sent to pasture. Some are so small that as soon as the warm weather begins the boys faint for want of air and ventilation. One school is a manure-heap in process of fermentation (sic) and one of the local authorities has said that in this way the children are warmer in winter. One school in Cataluna adjoins the prison. Another, in Andalusia, is turned into an enclosure for the bulls when there is a bull-fight in the town." The world knows what fate befell the rationalist Ferrer when he endeavoured to set right this ghastly state of affairs. His efforts to benefit the Spanish people aroused the

frantic hostility of a party which never lets slip an opportunity to slander and vilify secular schools. Mr. Shaw says that there is no doubt that Ferrer's educational work cost him his life. It is not uncommon to find the Christian Missionary in India talking glibly of Christianity as the most powerful agent of civilisation. But we ask: What has Christianity done to civilise Spain?

Mr. Lloyd George, Chancellor of the Exchequer, speaking at the Penrhos College for Girls, addressed himself to the question of pensions for teachers. He said:—

"There is no object with which I have greater sympathy. I had a deputation of teachers just before I left for my holidays and it came from Ireland. They told me a story that I think, on the whole, is rather discreditable to the empire—of teachers plodding all their lives to teach on behalf of the Empire at a wage which a navvy would refuse. At the end of their days, when they are broken down in health, not even enough is given them to keep themselves and their families from the workhouse. And they told me that at this very hour there are men who have given their lives in the schools of Ireland—who are old, abandoned, deserted by the country they have served—in the work-houses. Now, I think that this is a very disgraceful story of the richest nation under the sun. As the lady principal said, that is not what they do in Germany.....they pay the little village teacher there.....a salary which is twice as good as what we pay our village teachers. Not only that, when they are too old the teachers get a handsome pension from the State. What is the result? The teachers ought not to be worried about the

prospect of having daily bread for themselves and their children—whether they will be able to earn it the moment they break down in health. It is quite as much as they can do to teach the children, and they ought to have the best brains and their best energy and the best heart for their work. And when they go to school their heart strings ought not to be worn and torn till they are ragged about the anxieties of their daily bread. Germany has solved this problem. Now, the nation that knows the importance of the teacher in the life of its people—knows the importance of the school in the life of the generations to come—is a nation which is worth copying in its best things—not in its worst. These are the things that are worth considering—worth dwelling upon. Next year it will be my privilege to bring in a great scheme of insurance by means of contributions from the workers of the kingdom, which will place the ordinary daily worker above any worries about his daily bread. That is a scheme already got in Germany. They have thought out these little problems, and I hope to have a scheme much better than theirs. I do not believe in copying Germany; I believe in having one better. I shall be very pleased if it is in my power in connection with that scheme to do something for the teachers, because I am a great believer in the desirability of it from the national point of view. I believe it is an obligation of honour which we ought to discharge."

We specially commend these encouraging words of Mr. Lloyd George to the Government of Madras. The Madras Government specially deputed Mr. Stone, the Acting Director of Public Instruction, to go into the question of a provident fund for teachers

and submit a scheme, and nothing has yet come of it. The remarks of Mr. Lloyd George, if so true in the case of teachers in England apply with redoubled force to teachers in India. The nobility of the teaching profession is in season and out of season so greatly praised that we are sadly grieved at the absence of all attempts to relieve the teacher from the anxieties of his daily bread.

At the fifth Beharee Students' Conference held at Arrah in the first week of the current month, the Hon'ble Mr. Sacchidananda Sinha delivered the presidential address. Mr. Sinha, we are glad to note, regards the attacks directed against English education and Indian students in certain quarters as purely malicious. "My opinion," said he, "is that the vast bulk of our students are quite as good, well-behaved, obedient and reverent as in any other part of the world, and it is ungenerous and unfair to cast a slur upon them by a process of false generalisation based upon the conduct of but a handful of them—that too here and there." Mr. Sinha dwelt at some length on the formation of character, under which single word he would comprehend all that would make a young man keep high ideals and become great in life. Before this can be attained, the defects in Indian character must be removed. Mr. Sinha summarises the defects of Indian character as follows: "Our deep-rooted selfishness, our ingrained spirit of disunion, our blind confidence in the existing state of things, and our reluctance to accept the efficacy of change, our helplessness in the face of natural evils and sudden difficulties, our short-sighted covetousness that impels us often to kill the goose that lays the golden

egg, our habits of sheer indolence and procrastination, our loose, careless talk and reckless promises and assertions, our distrust of each other and the absence of any feeling of co-operation in us—these and many other failings of a like nature—all conduce to make earnest work difficult, slow, exasperating and as often as not abortive." The main question now is how is character to be formed and strengthened? Is it the work only of the teacher? Is the school the only arena of training? We suspect that in the common talk about the formation and strengthening of character there is much cant. Few teachers are unaware of their duty in this direction. But the outsider rarely takes into account the influences external to the school-room that hamper the efforts of the teacher. We hope that judges outside the school would take home to themselves also the precepts they are good enough to lay down for the conduct of the teachers who are formally entrusted with the training of the young.

A writer in the *Morning Post* makes some wise suggestions as to the modernisation of the secondary school curriculum. "The thing that is really needed is a great simplification. What dons and schoolmasters are not aware of, is that within the last fifty years the whole conditions of life have altered. In earlier days, when competition for livelihood was not so severe and when things went largely by influence and by interest, it was possible to segregate the sons of wealthy parents and to put them under a system of sound, if austere, culture. But now the pressure of the democracy is being felt everywhere. Others are demanding, and rightly demanding, the privileges and advantages of higher education; they

are more and more entering into competition with the sons of the wealthier classes. It is becoming more and more imperative that all boys and young men who have to make their way in the world should be efficiently equipped. And more than that. The increased facilities of communication, the enlarged independence of national interests, the development of the influence of the Press, the pressure of social problems, render it absolutely necessary that boys and young men should make acquaintance with all kinds of national and international problems. We cannot hope to prosper by enclosing boys up to manhood in so antiquated an atmosphere of knowledge and thought and then launching them bewildered on a very complicated world. The whole thing must be modernized. History, geography, economics, modern literature must all take their due place..... It is not that one desires the intellectual standard to be lowered; one rather desires it to be vitalized and enforced. One desires the curriculum to deal with matters which a man and a citizen ought to know. If ideas and knowledge have any expanding force at all, it cannot be to their detriment that those ideas and that knowledge should be concerned with the actual problems and interests of the world, rather than with the solved problems and faded interests of the remote past." The writer thinks that all this is worthy of the attention of a Royal Commission. We agree with the writer in saying that in attempting to co-ordinate the higher education of the country the aim should not be to limit education, as has been the case with Lord Curzon's Universities' Commission, but to simplify it. It must be plainly realised that the universities and schools exist to serve the State and that the State exists for the service of the people.

Prof. Dewey is well-known to students of philosophy, ethics and pedagogy. He was for a long time Professor of Education in the University of Chicago and afterwards at Columbia University, New York. He has given a new exposition of pedagogy. He insists on the school being the agent of modern living society, not merely a place where are propagated the conditions of instruction and discipline suited to a by-gone state of society. The school, he declares, must not be merely a place for the acquirement of traditional aptitudes—it must be a place for training for social life. In his *School and Society* the Professor draws a vivid picture of the sterilising intellectual conditions of modern social life in a great city, where all the fundamental and necessary operations of human life—tillage, the preparation of food, the making of clothing—are carried on out of sight; where the child sees nothing made and makes nothing, but every thing he consumes has come out of a factory or a shop. He points out how every old society is built upon a foundation of the primitive occupations, whereby its members were educated and disciplined. The children, with their artificial accomplishments, begin at the top, and receive no such training as their forefathers received; the race, therefore tends inevitably to become anæmic and lacking in moral fibre. In his *Educational Essays* Professor Dewey discusses in three lectures the ethical principles underlying education, the training of the will and social practice, and the book is closely packed with wisdom. In one place Dewey discusses why it is found difficult to maintain discipline during instruction and exercises, and shows that this difficulty arises from the failure to

secure within the schools the conditions of *real interest* in what is going on. "Our moral training is *pathological*, inasmuch as the stress comes to be laid upon wrong-doing instead of upon forming habits of positive service. The teacher is necessarily forced into a position where his concern with the moral life of the pupils takes largely the form of being on the alert for lapses of rules... These rules have to be made that the existing modes of school work may go on... but the lack of inherent necessity in the school work reflects itself in a feeling, on the part of the child, that the moral discipline is somewhat arbitrary... Any conditions which compel the teacher to take note of failures rather than of healthy growth put the emphasis in the wrong place. Attending to wrong-doing ought to be an incident rather than the important phase." What then is the proper remedy? "The child," says Prof. Dewey, "ought to have a positive consciousness of what he is about." This rules out all unintelligent memorising, all attempts to force abstract truths on minds capable only of the concrete, all enforced repeated attendance at religious exercises. "As a matter of fact," says Dr. Dewey, "the doctrine of discipline has not succeeded." "The child," says Dr. Dewey, emphasising the cardinal fact upon which all modern reforms in secular instruction are turning, "is born with a natural desire to give out, to do, in other words, to serve." Enforced passivity runs counter to the laws on which the child's mental, moral and physical nature plainly rests. Some inhibition is doubtless necessary, but at present inhibition is enormously overdone. It is absurd to suppose that a child gets more intellectual or mental discipline when he goes at a matter unwillingly than when he goes at it with

complete interest and out of the fulness of his heart. We are glad that Dr. Dewey is perfectly at one with us in thinking that moral teaching as such should not be by way of direct lessons as by means of situations that actually occur in social life. If teachers made a proper choice of subjects, arrange properly their methods of teaching and their methods of dealing with pupils, there would be no difficulty in exercising a real moral influence.

Indian Universities rarely concern themselves with the class of

Higher education of poor students. are providing education.

In a few colleges, pre-eminently Pachaiyappa's College in Madras, special provision is made for the education of deserving poor students. In other countries the universities, being teaching corporations, concern themselves with the subject of making provision for poor students. We have before us the example of the University of Melbourne, the Council of which has recently been consulting with the Minister of Education on this subject. It has been suggested to the Council by the Senate of the University that a fund be formed to provide loans to desirable but poor students for the payment of their fees and expenses; interest at five per cent. to be charged, and repayment of loans to be required after graduation. The idea is a praiseworthy one. There can be nothing objectionable in a Government making provision for poor students during their course through a University. The generosity of private benefactors would be specially well-applied if they would provide in connection with our universities or colleges such a loan fund as is suggested by the Senate of the University of Melbourne. If there are poor

students who are so desirous of obtaining academic education that they are willing to pledge themselves to repay the necessary pecuniary help rendered them, their zeal, we think, is eminently deserving of encouragement, and any money given for a loan fund of the kind suggested would go further than endowments for ordinary scholarships.

"The Child" is the name of a new monthly journal started in Germany. The care of the Child. Its aim is to serve as a sort of clearing house for the ready transfer and exchange of reliable information concerning truths relating to childhood and to constitute, in short, a form of institute for child welfare. The contributors are not only numerous but they are also without exception experts of the first rank on the subjects on which they write. One of the most instructive articles in the first number of this monthly is on "The Child in Germany." We are told that in Germany the child goes to school continuously from six to fourteen, and during this period his physique is "in the care" of the school doctor, who is, however, not a doctor so far as the child is concerned, but a "medical inspector." This "school doctor"—and herein lies our interest—is in touch with a variety of charitable agencies and can secure for some of his charges the benefit of a stay at the seaside or in the country during the summer. In Germany much attention is paid also to the teeth of the children. School dentists are appointed, and even the kindergarten children between three and six receive attention, and no child is admitted to a holiday camp without a clean bill of health from the dentist. In many things we have much to learn from Germany.

There is much talk now-a-days of having religious instruction in secondary schools. But few seem to ask themselves whether the religious teaching given at present in some schools has any permanent value. As gauged by those who are closely connected with the teachers and the taught, the results do not appear to be beneficial. A writer in an English educational periodical summarises these results as follows: Religious instruction has created a positive distaste for reading the Bible. The number of young people who ever look at the Bible when they are not obliged to do so is inappreciable. What is told children concerning good and evil is sometimes so much against common sense that they attempt to decide for themselves, and in their inexperience often decide wrongly; in this way real good is often confused. As there is a contradiction between the religious lessons and science lessons, pupils lose confidence in the wisdom of their elders. By losing faith in their elders, the pupils form an undue estimation of themselves and the value of their opinions. The natural consequence is the lack of reverence for elders of which there is much complaint and the increasing growth of scepticism. The growth of scepticism engenders a flippant view of life and "success" is regarded as the best aim.

So long as religion is based on superstition, tradition, the will to believe, or pragmatic utility, and not on reason, the results of religious instruction in schools must be more baneful than beneficial. While everything in connection with religion has to be taken for granted, in science lessons boys are encouraged to question and are trained to search for causes. The spirit of scientific inquiry produced and fostered by the science lessons, can not but prove antagonistic to the religious spirit

which consists in evading difficulties and giving the semblance of rationality to what is really irrational and absurd. Nor can children be expected to be touched by the talk about their inborn sinfulness and saving their souls. Children in their teens are beginning to realise the nature of the things about them and want to know how and why.

The only way of obviating the bad results of religious instruction is to completely avoid it. It is the personality of the teacher that counts for most in any instruction. If the teacher is himself high-souled, he knows how to guide young ideas and aspirations and how to indicate the right attitude towards life. He will make the best behaviour a standard for all occasions and then his example, maintained unbroken amid all the stress and occasional worry of school, will inevitably tell more powerfully than even the most judicial and tactful precepts.

The Board of Education in London has issued a volume of statistics of public education in England and Wales for the year 1908-09. In the preface Sir Robert Morant, Secretary to the Board of Education, states that certain improvements have been made in certain tables, and "new tables," he says, "have been added giving particulars as to the occupation of the fathers of pupils and as to the previous education of pupils in secondary schools, and further tables have also been introduced showing the extent to which the populations of individual areas avail themselves of State-aided secondary schools. The figures relating to pupil-teachers, bursars, and student-teachers have been improved by the inclusion of new tables showing the number of pupil-teachers who entered training colleges or were recognised in various grades of

teaching or who failed for one reason or another to enter the teaching profession in course." The following figures are of interest to the Indian educationalist. On July 31, 1909 there were in England and Wales 21,123 schools, providing accommodation for 7,162,615 children. Voluntary schools numbered 13,173 with 3,261,432 scholars and there were 7,950 council schools accommodating 3,901,183 scholars. The denominational schools and their accommodation were: Church of England, 11,102 schools and 2,580,592 scholars; Wesleyan, 265 schools and 92,379 scholars; Roman Catholic, 1,066 schools and 402,667 scholars; Jewish, 12 schools and 10,692 scholars. Classed as "und denominational and other schools" were 542 with 143,153 scholars. In the certified schools for the blind there were 2,253 children; deaf, 4,123; mentally defective, 11,147; physically defective, 3,715; and epileptic, 404. The number of schools in England alone was 19,286 (of which 12,479 were voluntary), providing accommodation for 6,638,786 children. In Wales the number of schools was 1,837 (694 being voluntary), with accommodation for 523,829 children. In England 159,514 teachers were employed, and in Wales 14,221. The average attendance during the school year was 4,963,783 in England and 380,921 in Wales. In England 299,080 girls attended cookery classes while 109 boys attended similar courses. Other special classes were attended as follows: Laundry-work, 93,474; combined domestic subjects, 15,826; dairy-work, 71; handicraft, 216,710 (boys); gardening, 27,528 boys and girls. The staff of teachers in English schools was composed as follows: certificated (trained), 20,543 men and 26,522 women; certificated (not trained), 8,846 men and 33,110 women; uncertificated, 4,828 men and 34,843 women. The number of grant-in-aid secondary schools in England

was 804, with 8,436 teachers and 185,671 pupils. There were also 40 recognised technical schools. A very important section of the volume deals with the training of teachers.

At the meeting of the Senate of the Madras University held on the 21st instant two important questions were brought up for discussion. The first of these dealt with the appointment of Special Boards for conducting the Matriculation and Intermediate examinations. It was resolved to appoint Boards to supervise and moderate these two examinations. It looks to us extremely strange why two independent Boards should not be appointed with power both to examine candidates for these examinations and to moderate the results. Boards of Examiners are at present appointed for different subjects, but the regulation can be easily altered to give power to the Syndicate to appoint Boards for the different examinations as is the case now in Calcutta, Bombay, and London Universities. The second question of importance that came up for discussion was the expansion of the Syndicate. According to the Indian Universities' Act the Syndicate consists of the Vice-Chancellor as Chairman, the Director of Public Instruction and not less than seven or more than fifteen ex-officio or ordinary Fellows. At present the Syndicate of the Madras University contains only ten members, and the object of the mover of the proposition was to raise the number to the maximum limit. Strange to say this proposition was rejected. In other Indian Universities the number of members in the Syndicate is fifteen, and the larger number makes it possible to have all interests connected with higher education represented in the Syndicate. The expansion of the Syndicate would also pre-

vent the possibility of university education falling into the hands of a ring which can thwart the demands of the public. We hope that these two questions will be again brought up for discussion at a future meeting. We are glad to note that the strange proposition to pass a vote of censure on the Government for the expression of opinion on a previous resolution of the Senate was withdrawn ultimately by the mover of the proposition.

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MATHEMATICS

[Conducted by B. KRISHNAMACHARI, M.A.]

56. M. BHIMASENA RAO.] From a point P, perpendiculars PD, PE and PF are dropped on the sides BC, CA and AB of a $\triangle ABC$. On PD, PE and PF, points D', E' and F' are taken such that $PD \cdot PD' = PE \cdot PE' = PF \cdot PF' = k^2$. Show that AD', BE', and CF' are concurrent, and find the locus of the point of concurrency if k varies.

Solution by G. V. Telang.

(I) To show that AD', BE' and CF' are concurrent

Let $PD = x$, $PE = y$ and $PF = z$. $\triangle ABD' = \triangle ABP + \triangle BPD' + \triangle APD'$

$$= \frac{1}{2} c \cdot z + \frac{1}{2} BD \cdot \frac{k^2}{x} + \frac{1}{2} \frac{k^2}{x}$$

 $(c \cos B - BD)$

$$= \frac{c}{2} \left(z + \frac{k^2}{x} \cos B \right).$$

And $\triangle ACD' = \triangle ACP + \triangle CPD' - \triangle APD'$

$$= \frac{1}{2} b \cdot y + \frac{1}{2} cD \cdot \frac{k^2}{x} - \frac{1}{2} \frac{k^2}{x} (cD - b \cos c)$$

$$= \frac{b}{2} \left(y + \frac{k^2}{x} \cos c \right).$$

$\therefore$ AD' divides BC in the ratio of $c(zx + k^2 \cos B) : b(xy + k^2 \cos C)$. Similarly it may be proved that BE' and CF' divide CA and AB respectively in the ratio of $a(xy + k^2 \cos C) : c(yz + k^2 \cos A)$ and $b(yz + k^2 \cos A) : a(zx + k^2 \cos B)$. Since the product of these ratios is

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unity, the lines AD', BE', and CF' are concurrent.

Note.—It can be easily proved that the sides of the $\triangle D'E'F'$ are perpendicular to PA, PB and PC. $\therefore$ the two triangles ABC and $D'E'F'$ are such that the sides of one are the polars of the vertices of the other. $\therefore$ they are in perspective. [Vide proof of example (2) on page 142 of Casey's Sequel to Euclid].

(II) To find the locus of the point of concurrency when k varies.

Let α, β, γ , be the trilinear co-ordinates of the point of concurrency. Then from the foregoing proof, the equations of AD' and BE' are found to be

$$\beta(xz + k^2 \cos B) - \gamma(xy + k^2 \cos C) = 0 \quad (1)$$

$$\gamma(xy + k^2 \cos C) - \alpha(yz + k^2 \cos A) = 0 \quad (2)$$

Equating the value of k^2 found from the two equations, the equation to the locus required is

$$\beta\gamma x(y \cos B - z \cos C) + \gamma\alpha y(z \cos C - x \cos A) + \alpha\beta z(x \cos A - y \cos B) = 0.$$

This is evidently an equation of an equilateral hyperbola circumscribing the triangle ABC and passing through P and the orthocentre and is the isogonal transformation of the diameter of the circumcircle of the triangle ABC passing through the isogonal conjugate of P.

65. [M. BHIMASENA RAO.] ABC is a triangle and S the circumcentre. AS, BS and CS meet the sides in D, E and F. If

I_a, I_b , and I_c are the excentres show that I_aD, I_bE and I_cF meet on the line joining the incentre and the orthocentre of the triangle, and that the pedal circle of the point of concurrency with respect to the triangle ABC touches the nine-points circle.

Solution by G. V. Telang.

The triangle $I_aI_bI_c$ is escribed to and the triangle DEF inscribed in the $\triangle ABC$, both being in perspective with $\triangle ABC$. Hence I_aD, I_bE and I_cF are concurrent. [Vide Question 97 in December 1909 issue].

The trilinear co-ordinates of I_a and I_b are $(-1, 1, 1)$ and $(1, -1, 1)$ and those of D and E $(0, \cos B, \cos C)$ and $(\cos A, 0, \cos C)$.

$\therefore$ The equation of line I_aD is

$$\begin{vmatrix} \alpha, \beta, \gamma \\ -1, 1, 1 \\ 0, \cos B, \cos C \end{vmatrix} = \alpha(\cos C - \cos B) + \beta \cos C - \gamma \cos A = 0 \text{ and that of line } I_bE$$

$$\begin{vmatrix} \alpha, \beta, \gamma \\ 1, -1, 1 \\ \cos A, 0, \cos C \end{vmatrix} = -\alpha \cos C + \beta(\cos A - \cos C) + \gamma \cos B = 0.$$

$\therefore$ the point of intersection of lines I_aD, I_bE is given by the following equations:

$$\frac{\alpha}{-\cos B \cos C + \cos C \cos A + \cos A \cos B} = \frac{\beta}{\cos B \cos C + \cos A \cos B - \cos C \cos A} = \frac{\gamma}{\cos B \cos C + \cos C \cos A - \cos A \cos B}$$

$$\text{or } \frac{\alpha}{-\sec A + \sec B + \sec C} = \frac{\beta}{\sec A - \sec B + \sec C} = \frac{\gamma}{\sec A + \sec B - \sec C} = k \text{ (say).}$$

The equation of the line joining the incentre to the orthocentre is

$$\begin{vmatrix} \alpha, \beta, \gamma \\ 1, 1, 1 \\ \sec A, \sec B, \sec C \end{vmatrix} = \alpha(\sec C - \sec B) + \beta(\sec A - \sec C) + \gamma(\sec A - \sec B) = 0$$

Since the values of α, β and γ obtained above satisfy this equation, the point of intersection of

I_aD and I_bE lies on the line joining the incentre to the orthocentre.

Again the equation to the locus of a point whose pedal circle with respect to a $\triangle ABC$ touches the nine-points circle of the $\triangle$ is

$$\frac{\alpha(\beta^2 - \gamma^2)}{\sec A} + \frac{\beta(\gamma^2 - \alpha^2)}{\sec B} + \frac{\gamma(\alpha^2 - \beta^2)}{\sec C} = 0.$$

The values of α, β and γ satisfy this equation $\therefore$ the pedal circle of the point of concurrency touches the nine points circle.

Note.—The first part of this question is a particular case of the following proposition:—

If AP, BP and CP meet BC, CA and AB in D, E and F respectively, then I_aD, I_bE and I_cF meet on the line joining the incentre to the isogonal conjugate of P.

137. [M. BHIMASENA RAO]. D, E and F are the feet of the perpendiculars from a point P on the sides of a triangle ABC. If the sum of the angles PAB, PBC and PCA is one right angle, show that the circle DEF touches the nine-points circle of the triangle ABC.

Solution by G. V. Telang.

Let PD = x, PE = y and PF = z.

Since $\angle PBC + \angle PCA + \angle PAB = 90^\circ$

$$\tan \angle PBC \tan \angle PCA + \tan \angle PCA \tan \angle PAB + \tan \angle PAB \tan \angle PBC = 1.$$

$$\therefore yz \cdot BD + zx \cdot CE + xy \cdot AF = BD \cdot CE \cdot AF \quad (1)$$

$$\text{Again } BD = \frac{z + x \cos B}{\sin B}; CE = \frac{x + y \cos C}{\sin C}$$

$$\text{and } AF = \frac{y + z \cos A}{\sin A}.$$

Substituting these values in I we get:

$$yz(z + x \cos B) \sin C \sin A + zx(x + y \cos C) \sin A \sin B + xy(y + z \cos A) \sin B \sin C = (z + x \cos B)(x + y \cos C)(y + z \cos A)$$

whence the following result is obtained:

$$x \cos A (y^2 - z^2) + y \cos B (z^2 - x^2) + z \cos C (x^2 - y^2) = 0$$

which is an equation of the point whose pedal circle touches the nine-points circle. [Vide M. Bhimasena Rao's solution of Question 74 proposed by him].

142. [G. V. TELANG]. AB, AC are tangents to a $\odot$:—

(a) Draw a tangent to the $\odot$ so that the portions of it between the pt. of contact and the points of intersection on AB and AC may be in a given ratio.

(b) Draw a tangent to the $\odot$ so that the portion of it intercepted by AB and AC may be of given length.

Solutions by M. S. Sundareswaran, and G. Ramachandran.

(a) Divide BC in the given ratio at D.

Draw $DE \perp BC$ to cut the $\odot$ at E.

Draw FEG tangent at E to the $\odot$ cutting AB, AC at F and G.

Then FG is the tangent reqd., such that $FE = EG$: the given ratio.

(b) Let l be the given length.

Join A to O the centre of the $\odot$.

In AO mark off $OO' = l \sec \frac{A}{2}$.

With O' as centre and the perp. distance of O' from AB or AC as radius, describe a $\odot$.

Draw an interior common tangent to this $\odot$ and the given $\odot$ cutting AB, AC in P, Q.

Then PQ is the reqd. tangent.

143. [G. V. TELANG]. Two posts of given lengths are fixed vertically in the ground. Strings are tied to the top of one and the bottom of the other. Show that the two strings cross each other at a fixed height from the ground irrespective of the distance between the two posts.

I. *Solutions by M. S. Sundareswaran, N. S. Ramanatha Iyer, and G. Ramachandran.*

II. *R. Vaidyanathan.*

Let AB, CD be the posts, O the point of

intersection of AD, BC and OM the perpendicular from O on the ground BD.

$$\frac{OM}{AB} = \frac{DM}{DB}; \quad \text{again } \frac{OM}{CD} = \frac{BM}{BD}$$

$$\therefore OM \left\{ \frac{1}{AB} + \frac{1}{CD} \right\} = \frac{DM}{BD} + \frac{BM}{BD} = 1$$

$$\therefore OM = \frac{AB \cdot CD}{AB + CD} \text{ which is independent of BD.}$$

II. This is merely a case of Q. 136. It will be seen that the distance of the cross point from the ground is $\frac{1}{2}$ the H. M. between the lengths of the two posts.

144. [G. V. TELANG]. A merchant had 3 pots which could contain 20, 13, and 7 seers of oil. The 20 seers pot was full and the others empty. Show how he measured out 10 seers of oil to each of 2 customers by means of the 3 pots.

Solutions by M. S. Sundareswaran, N. S. Ramanatha Iyer, R. Vaidyanathan and G. Ramachandran.

Let A, B, C stand for the 3 pots. The successive operations are indicated by the contents in the pots.

A	B	C
20	0	0
13	0	7
13	7	0
6	7	7
6	13	1
19	0	1
19	1	0
12	1	7
12	8	0
5	8	7
5	13	2
18	0	2
18	2	0
11	2	7
11	9	0
4	9	7
4	13	3
17	0	3
17	3	0
10	3	7
10	10	0

QUESTIONS FOR SOLUTION.

160. [T. SUNDARA RAO, B.A.] Shew how to describe cyclic quadrilaterals whose sides, diagonals, diameter of circumcircle and area are integers.

161. [T. SUNDARA RAO, B.A.] A variable circle passes through a fixed point and cuts a given straight line at a given angle; find the locus of its centre.

162. [T. SUNDARA RAO, B.A.] ABC is a triangle and BC is bisected in D. Through O any point in AD, BOE and COF are drawn meeting AC and AB in E and F. Prove that EF is parallel to BC.

163. [S. SITA RAMA RAO.] If a, b, c denote the three sides of a triangle and α, β, γ its bisectors, then $\alpha\beta\gamma = \frac{8abc\Delta}{(b+c)(c+a)(a+b)}$, where Δ is the area of the triangle.

164. [S. SITA RAMA RAO.] With the usual notation prove that in a triangle $(1 + \cot B \cot C) A Q^2 + (1 + \cot C \cot A) B Q^2 + (1 + \cot A \cot B) C Q^2$ is a minimum when Q is the centre of the nine-points circle.

165. [G. V. TELANG.] ABCD and A'B'C'D' are two squares. Show that $AA'^2 + CC'^2 = BB'^2 + DD'^2$.

166. [G. V. TELANG.] Three circles are described each touching two of the sides of a triangle AEC and the circumcircle of the triangle (either all internally or all externally). If A', B', C' be the corresponding points of contact with the circumcircle, AA', BB', and CC' are concurrent.

167. [N. S. RAMANATHA IYER.] Sum the following recurring series to n terms:

(i) 1, 2, 3, 13, 47, 170,...

(ii) 1, 1, 1, 3, 7, 15,...

168. [N. S. RAMANATHA IYER.] If $a^2 + b^2 = c^2$ and a, b, c are integers, show that one of them is divisible by 5.

169. [G. V. TELANG.] In a $\triangle ABC$, AO, BO and CO meet BC, CA and AB respectively in X, Y and Z. If $OX = OY = OZ = r$, and the ratio of $AX : BY : CZ = k : l : m$ then

$$(i) a^2 = \frac{r^2(l+m)}{k^2 l^2 m^2} (lm + mk + kl) \times \{k(l-m)^2 + lm(l+m)\}$$

(ii) Hence or otherwise show that the perpendiculars at X, Y and Z to BC, CA, and AB respectively are concurrent [vide Qn : 23]

$$(iii) \cos YXZ = \frac{k}{\sqrt{(k+l)(k+m)}}$$

$$(iv) \triangle ABC = \frac{\triangle BOC \cdot \triangle COA \cdot \triangle AOB}{r^2}$$

$$(v) \cot AXB + \cot BYC + \cot CZA = 0.$$

(vi) if t_a, t_b and t_c be the lengths of tangents from A, B and C to the circle XYZ

$$2 \left\{ \frac{t_a^2}{k} + \frac{t_b^2}{l} + \frac{t_c^2}{m} \right\} = \frac{a^2}{l+m} + \frac{b^2}{m+k} + \frac{c^2}{k+l}$$

170. G. V. TELANG.] From any of the following three equations deduce the third:

$$(a) p^2 + q^2 - 2pq \cos \alpha = x^2 + y^2 + 2xy \cos \alpha$$

$$(b) p^2 + x^2 = q^2 + y^2.$$

$$(c) (xy + pq) \sin \alpha = px + qy.$$

171. [G. V. TELANG.] Three brothers kept a number of plantains in a room. The eldest of them entered the room and divided them into three equal parts and found one remaining. He took his share and the remaining one. His next brother came and not knowing that his eldest brother had taken away his share, divided them into three equal parts, and found one remaining. He took his share and the remaining one also. The youngest also not knowing this

repeated the same process and found one remaining. He took away his share together with the remaining one. Then the three brothers came together, and divided the remaining plantains equally among themselves. Find the least number of plantains, and show that the subsequent numbers are found by adding a fixed number.

172. [E. R. NATARAJAN.] In a triangle ABC, the perpendicular from the vertex A to the base BC, the bisector of one of the base angles B, and the median from the other base angle C to the opposite side AB are all equal and concurrent. Prove that the triangle is equilateral.

173. [E. R. NATARAJAN.] Construct a triangle having given its altitudes.

174. [E. R. NATARAJAN.] Construct a triangle having given the distance between the incentre and excentre and sides BC and CA.

175. [R. VAIDYANATHAN.] Describe a trapezium having given the lengths of the 2 diagonals and the two oblique sides. Also obtain an expression for the length of a parallel side in terms of the given lengths.

176. [R. VAIDYANATHAN.] Construct a triangle having given any two sides and the bisector of the angle between them.

MORAL EDUCATION IN JAPAN.

TO those who have watched the recent history of the Land of the Rising Sun, all aspects of her national life have an indescribable charm. Enquiries into her main-springs of success must be fruitful as the country's progress is based on a solid foundation of effort and deliberate evolution. At

a time when the imparting of Moral Education is agitating the minds of educationists in Southern India, an account of what the Japanese have done in the same direction will be of immense interest. It must be too much to claim for any system of moral education in schools, immediate and far-reaching results visible in national activity and progress. Japanese education must necessarily be viewed in the same light as the scheme of moral instruction is only of recent initiation and cannot by any means account for all the virtues which the 'Golden Race'—as they call themselves with pardonable pride—have exhibited within the last one or two decades. Its marvellous history has been made more by the genius of its statesmen, and the martial spirit and other inherent virtues of the race. Its foundations must be traced to the national code of honour, the instinctive patriotism of the people and the unremitting labours of its rulers.

In a voluminous book on *Japanese Education* issued last year by John Murray there is a long account of the scheme of moral education adopted in Japanese schools. The author, Baron Kikuchi, can claim to talk with authority as he was for some time Minister of Education and President of the Imperial University at Tokio and now holds the important places of an Honorary Professorship at Tokio and the Presidentship of the Imperial University at Kyoto. It is a pity that one has to wade through a mass of statistical detail in the book before coming to appreciate the prominent features of the educational system of the country. The pages dealing with moral education are probably the most interesting in the volume and they must appeal strongly to those grappling with the problem of moral instruction in Southern

India. In the absence of good text-books of Hindu religion and the possibility of common religious instruction in a country of such diverse creeds and sects, it may be worthwhile considering the suggestion of a scheme of moral instruction based on the syllabus obtaining in Japanese schools. It is hardly necessary to point out that it must be looked upon only as a scheme suggesting ideas and not as one to be applied either in its entirety or in parts to the conditions of this country.

The necessity for moral education is promulgated in the Imperial Rescript on Education which forms the basis of all national education in the country. The Imperial mandate runs:

"Ye, our subjects, be filial to your parents, affectionate to your brothers and sisters; as husbands and wives be harmonious, as friends true; bear yourself in modesty and moderation; extend your benevolence to all; pursue learning and cultivate arts, and thereby develop intellectual faculties and perfect moral powers; furthermore advance public good and promote common interests; always respect the Constitution and observe the laws; should emergency arise offer yourself courageously to the State."

With a view to encourage the exhibition of these virtues in the citizens of the land efforts have been made in the educational system of the country to teach them to young minds when they are receptive of such hortatory influences.

In accordance with the spirit of this Imperial Ordinance, regulations have been framed for the imparting of moral instruction in the Elementary and Middle School classes. The principles regulating moral instruction in Elementary Schools are enunciated in these provisions made by an Imperial mandate:

"In the ordinary elementary course, easy precepts appropriate for practice concerning such vir-

tues as filial piety and obedience to elders, affection and friendship, frugality and industry, modesty, fidelity, courage, etc., should be given and then some of the duties towards the State and society, with a view to elevate their moral character, strengthen their will, increase their spirit of enterprise, their will, increase their spirit of enterprise, make them value public virtues and foster the spirit of loyalty and patriotism.

In the higher elementary course, the above must be further extended and the training given made still more solid.

In the teaching of girls, special stress must be laid on the virtues of chastity and modesty.

Encouragement and admonition should be given by means of wise sayings and proverbs and by tales of good deeds, so that children may lay them to heart."

It is interesting to study this scheme as it is worked out in both the stages of elementary education, in the Ordinary Elementary course which extends over four years and in the Higher Elementary course which may extend to two, three or four years. The one great aim in graduating the virtues to be taught to the children is their adaptability to the comprehension of young minds. Ideas like self-sacrifice, philanthropy, and public spirit cannot naturally be taken up for teaching in the early stages of instruction. Boys and girls of five and six cannot be expected to show any adequate appreciation of such virtues. Those who have been entrusted with the work of planning the syllabus—it was drafted by a commission of distinguished educationists—have therefore arranged to introduce only elementary ideas of morality and discipline in the lower classes. A number of text-books with entertaining pictures and short sentences have been prepared but in the first year's course even books are dispensed with and instruction is entirely oral, conducted with the help of pictures,

An idea of the instruction imparted in the first class may be formed by an acquaintance with the titles of the lesson taught during the year. *The School* furnishes ideas on the usefulness and necessity of education, the virtue of diligent application to study and earnestness in work. *The Teacher* serves to instil ideas of obedience and respect. *The proper attitude, order and punctuality* are other subjects which are taken up with immense benefit to the children. Lessons on work in the classroom and in the play-ground are useful additions.

After a course of lessons on duties in schools, come a series of subjects relating to the virtues of home. The first lesson on home relations is necessarily that on Father and Mother. The picture of a young child nursed by its mother or fondled by the parents serves to evoke ideas of filial affection and love. The grandmother and the grandfather and other relations are not forgotten and the young souls are made to feel what they owe to them all. The following sample questions given in the regulations afford an idea of the means by which such lesson are impressed on the pupils:—

- (1) When you were ill, how did your father and mother take care of you?
- (2) When you are well, how do your parents take care of you?
- (3) Why is a young sparrow fallen out of its nest to be pitied?
- (4) To whom do you owe your happiness?

There are also lessons on *filial piety, brothers and sisters, happiness of home, friends, and the noteworthy subject, the Emperor*. The initiation into ideas of citizenship and loyalty is thus done so early as in the first year at school. His Majesty the Mikado's anxiety for the welfare of his subjects,

his efforts to bring them peace, happiness and prosperity are commented upon and an attempt is made to make them feel his greatness and goodness.

The course of moral instruction even in the first year does not stop with this. An enumeration of various other lessons which come within the first year's course form an interesting study. They are: The body; Be active; Manners; Don't quarrel; Don't tell a falsehood; Don't conceal your fault; Don't be in the way of others; One's own and other people's things; Living things; Neighbours; Don't hurt others—and to sum up the instruction of the whole year, a lesson on *good children*.

It is hardly necessary to pursue the course in all its details. In the second year more advanced ideas are introduced under each head. The Emperor is shown in other capacities of activity; the *Flag of the Rising Sun* forms the subject of a discourse on patriotism in its elementary aspects; these are associated with national songs—there is thus a distinct advance, a large number of stories also being narrated.

Examples of virtue and greatness from among historical characters are reserved for the third year's course when more advanced virtues like frugality, magnanimity, charity, perseverance, reverence for ancestors, etc., are taught. As has been pointed out already, the aim is to make pupils comprehend ideas which imply a more matured state of intellect. In the last year of the ordinary elementary course special stress is laid on civic virtues, since that is probably the last year at school for a large number of persons. Instruction is imparted along the same lines in the Higher Elementary course, a more systematic teaching being attempted during the last two

years. Benevolence, bravery, pity, habits, honesty—all receive adequate attention in these classes. The last two years are devoted to a treatment of the duties of man, to himself, his home, society and the State.

One remarkable feature is the constant emphasis laid on the virtue of Patriotism and the various means by which it is taught to children in all the stages of their education. It is interesting to note that every opportunity is embraced to bring to bear upon them healthy impulses towards love of their own country and good citizenship. During the late Russo-Japanese War for instance, we are told that school-children were kept busy sending off out-going soldiers or welcoming the home-coming with vociferous greetings of 'Banzai!' The most pleasing welcome which Admiral Togo had on returning from his victorious career was from three-thousand school-children of Tokio whose bright faces beamed with joy at the sight of the great hero.

The same spirit is observed in imparting of moral instruction in Middle Schools which correspond to our Secondary Schools. The Imperial Regulation on the subject runs:—

"Its object is to foster the growth of moral ideas and sentiments, and to give boys the culture and character necessary for men of middle and higher social standing, and to encourage and promote the practice of virtues. The teaching should begin with explaining the essential points of morals in connection with daily life by means of good words or maxims and examples of good deeds, to be followed by a little more systematic exposition of the duties to self, to family, to society and to the State. The elements of Ethics may also be taught."

That the subjects are of a higher class is evident from the inclusion of themes like temperance, public virtues, loyalty, the

dangers of temptation, and righteousness. The obligations to the State receive fuller attention and the student is enlightened on the 'fundamental character of the Empire,' the founder and other ancestors of the Imperial House, the Constitution and laws of the land. Instruction is also imparted in an appreciation of military service, education and publication duties while the pupils are also educated in the principles underlying taxation and international relations.

Without entering deeper into the details connected with the system of moral education in the country it can be seen that extraordinary attention has been bestowed on this question by the statesmen of the land. It is hoped that this short account based on a work of one of her own national exponents will be suggestive of thoughts to those interested in the problem in Southern India.

P. SESHADRI.

BAD SPELLING—ITS REMEDIES.

THE dreadful bugbear of every Indian student learning English is the unphonetic feature of the English orthography. Boys whose habits of reading and writing have from their fifth year been adjusted to a language of phonetic orthography stare at the spelling of the English words—the symbol not corresponding to the sound. A clear knowledge of the specific value of the characters of the vernacular alphabet makes the way for a thorough grasp of the pronunciation and the spelling of the words. Pronunciation and spelling are not extra lessons to a boy even of the infant standard; a lesson in dictation is rather an anomaly in the timetable of the vernacular. But with English lessons the case is quite the reverse. The

earliest difficulty to be met with there is as regards the teaching of good spelling.

It is not the spelling of the words that occupies the attention of the advanced student; he thinks of the matter and the structure of the sentences. As he lets his pen run smooth on the paper, the words are as a matter of course spelt correctly. It can be even said that the words are spelt not by him but by the pen. His mind is engaged with the matter of his thought; his eyes are occupied with the get-up of the work; the fingers, with the drudgery of it; may we not therefore ejaculate that the pen is responsible for the spelling of the words! Spelling is such a mechanical process that it is successfully carried on in but a half-conscious state rather in an automatic manner. Nay, any little disturbance of this automatic state of mind lands us in a series of doubts which are not sometimes solved except by the aid of a dictionary. How often do we blink when we are asked to spell a word? Do we not in an automatic way write the word in air at least and then answer the question? A successful teaching of correct spelling is to cultivate in the boy such a mechanical attitude or to put it better, to form a *habit* of spelling.

Here is not needed a detailed account of the process of habit-formation. Besides the too familiar process of repetition, there are two points worth iterating—attention or interest and the scrupulous elimination of any wrong step in the formation. Of these two the former is violated and the latter neglected. Repetition of a process that does not command our attention or enlist our interest is worse than useless; it is like the sleep of the sluggard, which instead of refreshing his brain, all the more entangles him in lazy and half-awake rollings on the bed. Such repeti-

tion can at the best be a shabby application of the principle; a few repetitions with attention enlisted are of greater profit than a thousand mechanical repetitions. Secondly, in the process of habit-formation, every opportunity of excluding wrong steps is to be best utilised; a wrong step avoided is but a league gained in the race. As every act, however trifling it may appear to us, leaves its own impression on the plastic brain which cannot be easily erased, it needs no telling that every erring step is but a barrier thrown in the way of a healthy cultivation of the habit. Such is therefore the importance of the scrupulous avoiding of any erroneous step. It is with reference to these two principles that the methods of teaching good spelling are to be valued.

Of the few methods in stock, dictation aided by heavy imposition of all the mis-spelt words are the oft-invoked traditional spells to exorcise the devil of bad spelling. This method is of various species. Strings of unfamiliar words hunted from the dictation-manuals, lists of riddling words, are replaced by a catalogue of words selected for the occasion from the Class Reader. Connected passages either from outside and from the class books sometimes serve the purpose. A passage is believed to have the advantage of directing the attention of the boys more to the content.

Before the merits of this exercise are considered, a question needs to be put to all those who are its advocates. Is this dictation-exercise, be it in the form of strings of words or connected passages, expected to be a method of teaching good spelling or a test of the spelling abilities of the students? To a large extent there is a confusion here. It is employed to fulfil the purposes of one and

believed to fulfil those of another. Calm consideration proves that it cannot be regarded as a method employed to form the spelling habit of the boys or to better their spelling abilities. Though it is argued that a lesson or two are set for preparation previous to the employment of the method, even then it can be not a method but a test to see how the boys are come prepared. It may be suggested that in the very testing of the abilities, the boys have the exercise of writing the words, and hence can there be a claim to its being a method. If it be a method it is only in its being a test. As such, it errs grievously in two ways. Firstly it is against the very nature of the spelling attitude of the boys. It is mechanical—we have seen! But this test keeps the boys conscious of the spelling of the words and hence creates manifold tendencies to mis-spell the words! Even in the case of a passage whose content is expected to arrest the attention of the boys, chances are not curtailed. And secondly therefore the important principle of scrupulous elimination of every wrong step is violated. Instead of minimising the tendencies to bad spelling, chances are made available here. Dictation fails to be a test; and as a method it will defeat the very end to accomplish which, it will be employed.

If dictation fails to serve the purpose, its ally—imposition of mis-spelt words—will be largely fruitful! But worse are the consequences of this ally. Enthusiastic teachers that sincerely wish for the welfare of the boys believe that heavy impositions—say 100 times or so—will be surely useful to prevent the boy from again mis-spelling the word. Pity, does the boy earnestly desire to mis-spell? If he is really naughty to mis-

spell a word, such a mild punishment of a heavy imposition is not at all enough. Voluntary naughtiness should be crushed. But to the credit of the boys may we confess to ourselves that they do not, for its own pleasure, seek opportunities to mis-spell words. Ignorance of the spelling of a word or to be more accurate, insufficiency of the spelling of the word being made automatic, is perhaps the real reason for the mistake. But how far does this ally assist the removal of this insufficiency? It may be said that the factor of repetition is to be conveniently had from this exercise. Repetition is no doubt a sure condition of habit-formation; but the repetition had of this heavy imposition vitiates the purpose for which it is intended. This imposition of a word becomes more a task. The boy does not feel any sort of pleasure in the work before him: nay, he may even murmur against the teacher and finish it as a task. Further the boy is cock-sure that the poor teacher will never look into the work; and therefore the task cannot but be most carelessly finished. These repetitions therefore are those that exclude all attention, care, and interest. In the process of habit-formation it is careful, attentive, fully conscious repetitions that are useful. But repetitions without attention are worse. Besides, in such careless performance, chances to bad spelling are many. No doubt the intention and the motive of heavy impositions is good but the fulfilment thereof defeats the very intention.

There is another exercise which is made to serve two purposes—an exercise which is maintaining so many copy-masters in schools. In the lower forms of many schools one or two periods a week are devoted to what is called transcription. A word, a broken sentence or at the best a pithy moral are set as

a model which is to be taken and written on their copy-books. This is sometimes done by getting a passage written. The primary aim of this exercise from its nature and from the nature of the teacher, appears to be to improve the hand-writing of the boys. Remarks as to its utility are out of place here. But some teachers argue that in the transcription of a passage—there alone the hope can be a hope—there is some scope for the learning of the spelling of some of the words at least. Two birds are shot—handwriting and spelling. But both perhaps are vitiated. One of the two should be primary; that which is not, cannot therefore be said to accomplish the end desired. Moreover when attention is paid to the handwriting, chances to mis-spelling are created. But if the exercise is made to serve as a method of teaching the spelling of the words, the method may be of some use then. Yet a complaint or two are possible. When in the transcription of the passage the boy reads a part of the sentence and copies it on his books, there is no conscious effort made to copy the words correctly and in the hurry to finish the passage, mistakes lurk here and there. Further there is nothing even in this form to sustain the interest of the boy. The exercise may be felt as a task..... But this transcription appears to be a useful form of exercise which by an amendment or two made, may be turned into a fruitful one.

Such an amended form I shall suggest. Perhaps this amended form will be an object of wrathful and crushing criticisms from the enthusiastic advocates of Imposition or from the zealous sceptics of Reformed Methods. This method lays no claim to undisputed superiority. At best this is a suggestion.

The amendments shall be directed towards the defects suggested above. It shall not be felt as a test in handwriting but shall guarantee against shabby execution. A part of the sentence read and then copied—its evil shall be mitigated. Attention to the spelling of the words will have to be cared for. Boys will find interest in the work. Firstly let the boys do the work on ruled paper bound in note-books. No shabby work will it be. The work set shall be as short as is necessary. Instead of copying a whole passage, the boys may be asked to collect the words in the passage—a word occurring twice need not be repeated. Here each word is isolated for the purposes of spelling and not so for the purposes of the content. The sentence is read; the words are selected and each word is written. In so far as each word is separated and written, the word is looked at more than once. The words may be required to be grouped according to the initial letter—all words beginning with a form a list. That the boys' task may not be unnecessarily too much, a direction may be given. In their note-books separate pages are kept—a page for words beginning with a and so on; the words shall on no account be written on shabby, unruled slips of papers. That all these directions may be carried out, every word will have to be looked at more than once—once in reading the sentence, once in the selection of the words to be written, once in finding the initial letter and for the last time before it is written down on the page in the note-book. The boy may, before he turns to the next word, compare if the word is correctly spelt. Every lesson or a part of the lesson may be selected as a lesson for the purposes of the exercise. In the lower forms

this work may be done in the class under the supervision of the teacher. A word occurring twice may be written only once. As each lesson is used for an exercise, there is every probability for a word to be repeated twice or more so that by having so grouped the words in a number of lessons some words especially the familiar ones will be soon learnt. Improvements on this exercise can be made. Varieties of this exercise will readily suggest themselves to individual teachers.

This exercise isolates a word from a sentence which will have to be looked at a number of times; there is thus the conscious attention to the spelling of the word, whose absence we have found as a defect in some of the above methods. As the boy reads the whole sentence before he selects the word, and as the lessons used for this purpose are those that will have been studied by the boys, the sentences are understood by the boys easily and there will be very few chances for any automatic way of collecting words. The guidance and the supervision of the teacher will be of some check against any misuse of the exercise. Evils not dealt with here may creep and measures to check them will suggest themselves. The idea of preparing a catalogue of words learnt by the boy, the feeling of curiosity to know how many different words are used in a lesson and to know how many new words the different lessons contain, and to group words of almost the same nature and such like are enough stimuli to sustain the interest of the boy. Feelings of curiosity, emulation, and others may be roused and utilised.

The same form of the exercise can be set in a number of ways. To collect all the nouns, adjectives, etc., is one form. To collect words which are of the same root, &c., is

another form. As the boys advance, the exercise can be modified. It may once be suggested to see if the same word has the same meaning in all contexts—if the meaning varies, the variation may be noted. This kind of exercise well serve as a preliminary step for many lessons in grammar and language, which are to be taught inductively. A lesson in conjugation, a lesson on the degrees of the adjectives, one on derivatives, &c., will require such a grouping. Lists prepared in one class will not be destroyed but continued in the next class. As the boys advance, a number of lessons will serve as one lesson. Such lists serve different purposes. Lessons will be revised. A word suggests the context where it occurs. Sentences may be constructed. Manifolds are the ways in which such lists may be made use of.

This novel method is not purely of imagination. I shall append a statement to show how an experiment has fared. The experiment does not prove the case, though the case is strengthened. The boys of the IVth Form were given two questions to reproduce two stories read by them. One of these lessons was treated in the previous manner; the other was not. The miss-spelt words were calculated. The proportion was as 1 : 3.

Number of mis-spelt words in the reproduction—

	of a lesson treated as suggested above	of a lesson not treated so
A ...	... 2 ...	... 6
B ...	... 0 ...	... 9
C ...	... 0 ...	... 11
D ...	... 5 ...	... 4
E ...	... 0 ...	... 5
F ...	... 1 ...	... 2
G ...	... 2 ...	... 6
H ...	... 0 ...	... 10
I ...	... 2 ...	... 1
J ...	... 0 ...	... 1

	of a lesson treated as suggested above	of a lesson not treated so
K ...	... 1 ...	... 2
L ...	... 2 ...	... 3
M ...	... 0 ...	... 2
N ...	... 4 ...	... 6
O ...	... 2 ...	... 15
P ...	... 2 ...	... 2
Q ...	... 0 ...	... 2
R ...	... 1 ...	... 5
S ...	... 4 ...	... 6
T ...	... 4 ...	... 12
	32	Total ... 110

P. JAGANNADHASWAMI.

ON DEATH.

- Behold the mortal on the bier,
Enjoying his eternal sleep,
Calm like the waters of a mere
That is full many a fathom deep.
Serenity with lustre lights his face,
And *there* is not grim death's grimace.
- But all this pomp and splendour why?
Why all this band and music sweet?
He wants them not nor need you cry,
For both of them are now unmeet:
To spheres where better music rings
His happy soul with fleetness wings;
- Who gave you him does him now need,
And so with little pain you part!
God gives us all our proper meed,
And should it greatly rend our heart,
The fault is not of God but men;
Leave all this woe and splendour then.
- If death is cruel, so is love,
Nor differs much sweet love from death!
If cruel death does us remove
To graves, so can sweet love our breath!
For disappointed love, we know,
Has many a man and maid laid low.
- Of death who thinks not kindly,
pray.
But once at least in all his life?

Who 'None' by way of answer say,
That know this world with miseries rife—
This world where truth and joy are rare,
Where anything but good seems fair?
6. So grieve not for the mortal there,
Who seems as tho' he meant to say:
"I now depart to lands more fair
Than yours, where there is no Decay,
To blissful lands no more to know
Of cold ingratitude nor woe!"

- "Now higher up to Heaven I soar
Where men unlike their brethren here
Do obligations ne'er ignore,
And promises once made hold dear;
Where flourish only the upright
Who know not what is guile or spite."
- If Lachesis the distaff held,
And Clotho spun the thread of life,
While Sister Atropos beheld,
And did not put to use her knife,
The state of our world then would be,—
Well, 'tis so difficult to see!

S. SRINIVASAN.

THE HON'BLE MR. S. SINHA'S ADDRESS AT THE BEHAREE STUDENTS' CONFERENCE.

We print below the full text of the presidential address delivered by the Hon'ble Mr. Sachchidananda Sinha, at the Fifth Beharee Students' Conference, held at Arrah, on the 8th October, 1910:—

Young men of Behar! I am highly sensible of the privilege you have been pleased to confer upon me, by electing me to the presidential chair of this, the fifth session of your Conference, and I assure you I appreciate your high compliment all the more, when I remember that (except in the First Session held at Patna in 1906) I have not been able, owing to pressure of other public work, to take an active part in your deliberations during the last three sessions. But though I had to deny myself this pleasure, I need

hardly tell you that I have none the less been keenly and sympathetically following your proceedings and have felt highly gratified at the success which has accrued to your youthful but earnest endeavours. My reluctance, however, to comply with your request on the present occasion, to preside over your Conference, was due not to any want of sympathy with your movement—he would be no true Beharee who did not sympathise with so hopeful and progressive an organisation as yours—but to two other causes, to which I shall briefly refer, though they are both more or less of a personal character. One was, you will believe me, a sense of diffidence, arising from the fact that the public activities in which I have hitherto borne my humble share, have not been directly connected with your community. I therefore felt that I was not likely to maintain the high traditions associated with the presidential chair of this Conference, owing to my predecessors having been men of such distinction, talents and culture as the Hon'ble Mr. Justice Sharfuddin, the Hon'ble Mr. Deep Narain Singh and Messrs. Parmeshwar Lal and Sayed Hasan Imam, the last—my immediate predecessor—one of the most virile forces in our public affairs, and the brilliant and remarkable address delivered by whom last year was deservedly eulogized by the press of the country. But apart from the sense of diffidence due to these considerations, it seems to me that it is not to your advantage that you should have hitherto chosen all your presidents from exclusively one and only one class of the community—the members of the English Bar. Surely, there are other important classes in the province from amongst whom you may have chosen your president this year, and if I may be allowed to specify one particular class above others which, in my opinion, can furnish a Conference like yours most eligible presidents, it is the members of the Educational Services and those who are directly connected with the education of our young men. And in choosing your presidents in future from amongst educationists and experts, I shall suggest to you the desirability of casting your net rather wide, even beyond the confines of your own province of Behar. Who could, for instance, more worthily fill the chair of such a Conference as yours, than my esteemed friend, Mr. G. S. Arundale, of the Central Hindu College, Benares? And you will have no difficulty in finding other European and Indian experts in education to preside over your deliberations, if only you will cast about for them. Much, therefore, as I value the compliment paid by you, so far, to my class—the much-abused class of lawyers—and convinced as I am of the advantage

of having laymen also to guide your deliberations, as they are likely to bring to their task a freshness of mind which is not always associated with experts; I nevertheless think it my duty to suggest to you, in all earnestness, not to make your presidential chair the happy-hunting ground of members of the long robe—that too of only one section of the fraternity, the members of the English Bar. I hope to see in this respect a new departure in your next year's programme. But for the present, your choice having fallen upon myself, I am ready at your call for better or for worse.

THE LATE EMPEROR.

Since you met last year, at Gaya, we have all had the dire misfortune of losing our late Gracious Sovereign, our beloved King-Emperor, Edward VII. His sudden demise has plunged the whole British Empire into mourning, but I venture to say that in no other part of the Empire has the loss occasioned by His Majesty's death been so much felt and so genuinely regretted as in our own country. And this is not surprising, for the people of India were always in the thoughts and affections of the late Emperor. I have no doubt your first duty on the present occasion will be to place on record your sense of regret at the grievous loss we have all sustained. Your next duty is to offer your loving allegiance to his successor, King-Emperor George V, whose reign, let us hope, will mark as great an epoch in our annals as did that of his late lamented father by the introduction of the germs of representative principles into our Government. I venture to hope, in connection with this subject, that in the proposed Provincial Memorial to be built in Calcutta in the shape of a Students' Hostel, a wing may be specially reserved for the Beharee students. This, both because it is a keenly-felt want and also because Behar has subscribed most liberally to the Provincial Memorial Fund.

PAST WORK.

This is the fifth session of your Conference and you may claim to your credit a record of four years' good work. From the first, the unique character of your movement has been recognised on all hands. It was the first—though unfortunately it is yet the only—gathering of the students of a whole province, assembled together, without any distinction of caste and creed, to foster healthy, wholesome and sound ideas amongst young men on all questions affecting their well-being and advancement, and to disseminate and popularise them amongst the student

community. Almost all the resolutions you have passed have been such as have unreservedly commended themselves to public men and publicists in all parts of the country. Critics, not always quite friendly to the aspirations of your elders in public matters, have unhesitatingly associated themselves with your propaganda. And one of your resolutions—in which you tried to lay the axe at the root of my much-maligned profession, by dissuading young men from joining the Bar—was declared by a leading Indian paper of Calcutta to 'show a true insight into the actualities of our present situation.' Of course, the writer of the above is not a lawyer or he too could have realised the true inwardness of the resolution, though not perhaps as keenly as I do, at the present moment, when I am really face to face with a band of incipient enemies of my profession. I can only hope that a more careful consideration will satisfy you that the legal profession is not, after all, such an evil as to make you contemplate its extinction with equanimity. But I quite agree with you that the over-crowding of the professions and services is one of the growing evils, and you have certainly done well in raising your voice against it and in favour of a fairer distribution of the indigenous talent in other walks of life. Similarly, most of the resolutions you have passed hitherto, have commended themselves to all sane and sober critics of public affairs, even amongst the ranks of Anglo-Indian publicists. Thus the *Empire* has declared that 'the Beharee students are settling down to reform themselves and are beginning at the right end,' while no less cautious a journal, in expressing approval of Indian activities, than the *Pioneer* has highly complimented you upon your programme and proceedings and summed up its observations, in its characteristic vein, by saying that 'if chickens are scarce in Behar, admirable sentiments abound.' And yet more than that. Your excellent work has been contrasted to your credit and advantage with that of your brother-students of Bengal, by some of the most thoughtful journals of the country. The *Indian Mirror* wrote, in noticing the proceedings of your previous session, that 'the students of Behar have set up with a practical programme for the furtherance of progress among them and they have given a lesson in this respect which the students of Bengal may do well to follow.' I shall only add one more testimony, in appreciation of the good work done by your Conference. It is from the *Indian Spectator* of Bombay:—'While some students in Bengal are earning a notoriety for the exuberant display of the animal spirit, their brethren in

Behar are setting a commendable example in another direction. That there should be such a remarkable difference between the young men of two contiguous provinces is evidently an instructive commentary on the variety of racial characteristics found in India and on the influence of individual leaders on the public opinion around them. Whatever the causes may be, the difference is real and striking. The leaders of young men in Behar are to be heartily congratulated on the direction which they have given to the thoughts and aspirations of the rising generation in that ancient and sacred province, the very name of which is suggestive of study and serene contemplation.'

THE FUTURE.

All this is certainly very high praise, but my object in drawing your attention to the appreciation of your work in the past is not, I need hardly say, to flatter you but to show that you have evidently begun your work on right lines, that hitherto you have done very well, and that it is therefore your duty to persevere in the same direction and press forward along the same lines with even greater earnestness and diligence. The good work you have done in the past and which has been so generously appreciated, should not make you vain or inconsiderate enough to think of resting upon your laurels, but that it should rather serve as an incentive to further activities, more strenuous, more far-reaching and more comprehensive, than heretofore. I trust the day is yet far distant when you will be thinking of resting on your oars. At the best, you have made but a good start. That is hopeful and encouraging, but you should never lose sight of the fact that you have yet to traverse the whole journey from shore to shore. You will have to ply your oars vigorously and steadily for yet many a day, before you will see land, when you may fairly hope to give a long pull, a strong pull and a pull altogether and land yourselves on the other side of the shore.

My predecessors in this chair delivered inaugural addresses abounding in instructive observations and reflections on your duties and responsibilities. Much of what they said is of permanent value to you and you will do well to keep in mind and try to act up to what they enjoined on you. If you do that, I am sure you will be all the better for it. Apart from the valuable lessons embodied in these addresses, there is fortunately no dearth of good and healthy literature, in English, on the duties and responsibilities of young men. It is not necessary to

enumerate these books, for many of them must be, more or less familiar, to you. Under these circumstances I would have asked you not to compel me to add anything to the literature already available and for which I keenly realise my own limitations. But I know the tyranny of customs in this land of customs and shall not, therefore, place you in a false position by making to you a request, which I know you are not likely to grant. I shall, therefore, try to place before you, as briefly as I can, a few thoughts on such subjects as are likely to interest you. In doing so, I shall keep in mind, that yours is not an educational conference but a students' conference and that things which may appropriately be placed before the former by its president, would not only be quite inapposite here but perhaps uninteresting to you. And yet the functions of the two overlap each other at certain points, and it is obviously impossible to exclude from any address, intended for students, all reference to the educational problems agitating the public mind.

HIGH EDUCATION AND NEW LIFE.

You are no doubt aware that the results of University education have, of late, been carefully examined by several competent critics from different standpoints, specially in connection with what has been called the Indian Unrest. Until a few years back, there was almost a consensus of opinion that University education in this country had—in spite of some deficiencies incidental to educational institutions which attempt to meet with the requirements of an eastern people on western lines—on the whole been a success, and that it had brought in its train healthy and beneficial results. You will find a large number of testimonies to that effect, from most competent and qualified critics, European and Indian, collected in the late Mr. Syed Mahmud's valuable history of Indian Education. But to come to more recent times, Lord Curzon—who was by no means an out-and-out admirer of our educational system and who tried to reform it to the best of his lights—speaking as Chancellor of the Calcutta University, at its Convocation held in 1899, made the following admissions:—“When the able officials by whom I am surrounded declare ‘without dissent that there has been a marked upward trend in the honesty, integrity, and capacity of Indian officials, I decline altogether to dissociate cause and effect and I say that knowledge has not been altogether shamed by her children.’ Five years later, the Government of Lord Curzon, issued a resolution

on the subject from which I quote a passage:—“It is almost universally admitted that the advance made in the Indian education within the last fifty years has had a marked improvement in the ranks of public servants now chosen from the ranks of educated Indians, as compared with those of the days before schools and universities had commenced to exercise their elevating influence.” Yet one more testimony, on the highest official authority, I may quote from the Parliamentary blue-book issued only last year by Lord Morley, called a ‘Memorandum on the Results of Indian Administration, during the last fifty years.’ It says:—“With the improvement in education has come a much higher standard of probity and sense of duty, and there has been ‘great improvement in character and attainments in the public service.’ These three official testimonies, though dealing principally with the public services manned by Indians, are conclusive on the point that the results of University education have been conducive to the best interests of the country. But apart from its wholesome influence on the Indian officials, its effect on the much larger number of educated Indians, who have chosen to work, outside the rank of public services, in other walks of life—in the professions and in trade and commerce—has been even more remarkable. It has brought about that great intellectual ferment which is known to us as the Indian Renaissance, but which our unsympathetic critics call the Indian Unrest. As in the case of the effect of University education on our public services, so here also I shall mainly rely on the highest official and European testimony. Some years back Lord Morley described it as ‘a living movement in the mind of the Indian people for objects which we ourselves have all taught them to think desirable objects.’ Sir Macworth Young, ex-Lieutenant-Governor of the Punjab, has spoken of this ‘living movement’ as follows:—“What is happening in India is a development, not a phase but a new birth and the proof of it lies in its universal acceptance by all classes of people in that country. The interesting movement is due to a strong desire to emulate the West. ‘Why should we lag behind,’ is the voice of India from Peshawar to Cape Comorin.” The Bishop of Lahore has said that ‘a new life is coming in birth in India with new thoughts, new standards, new ideals of life and new conceptions of society.’ And the Rev. Mr. Andrews has sketched out the movement in words which, I am sure, will appeal to you: ‘One feature is apparent in educated India—there is life where there was stagnation. The spiritual nature of Indian thinkers and writers

is absorbed in the prospect of an awakening East, an Indian nation, a free and enlightened people, a deliverance from the nightmare of superstition and the tyranny of caste. Before now a note of helplessness and despair ran through the thoughts and writings even of those who were more persistent workers for the good of the country, but now educated India is tingling with a new life, and though the form taken may be at times extremely crude and even repellent, it is none the less life, life, life.’

STUDENTS AND THE RENAISSANCE.

The declarations substantially sum up the views of all sound critics, who have brought to the discussion of the subject a fair and impartial frame of mind. We may safely adopt and adapt to our purposes the language of Lord Morley—in his essay on ‘Compromise’—that if ‘every age is in some sort an age of transition, our own is characteristically and cardinally an epoch of transition in the very foundations of belief and conduct.’ That such a momentous ‘epoch of transition’, such mental upheaval and intellectual and social ferment should be accompanied by some extravagances, some impatience, haste, folly or even violence, is not surprising. The responsible leaders of public opinion have strongly condemned these undesirable manifestations and have so guided public affairs that you may fairly hope that these objectionable elements will disappear in due course and will be remembered as but the passing phase of the great renaissance which we witness on all sides, and which is changing with an almost kaleidoscopic rapidity the perspective, outlook and standpoint of educated Indians. I do not, therefore, share the pessimistic sentiments recently given expression to by some critics who—in their anxiety to impress upon the British public such views about Indian education as, on grounds of political expediency, should lead to a change of policy—have tried to adjust their preconceived conclusions to such facts only as were likely to support them. My own opinion is that the vast bulk of our students are quite as good, well-behaved, obedient and reverent as in any other part of the world, and it is ungenerous and unfair to cast a slur upon them by a process of false generalisation based upon the conduct of but a handful of them—that too here and there. Some months back, I was present at a meeting of the Calcutta University Institute which was presided over by the Hon’ble Mr. S. P. Sinha—the Law Member—and I was gratified to find him giving expression to these very sentiments, which within the

last few days have been endorsed by another distinguished countryman of ours—the Hon’ble Mr. P. S. Sivaswami Aiyer, C.I.E., Advocate-General, Madras. My object in drawing your attention to these facts is that you should always bear in mind your great responsibility in all that you say and do. There are men, whom I am afraid I must reluctantly call ‘our enemies’—to borrow with apologies an expression of Lord Morley’s—who are always on the look-out to cast discredit on the education you have received, to serve their political ends, and who with a view to make capital out of the occasional failings or foibles of a few members of your community, strain every nerve to bring into odium and disrepute high education in India, which they declare to be at the bottom of the so-called Indian Unrest, the condemnatory designation by which they call the great ‘living movement,’ which we call the Indian Renaissance. You cannot therefore be too careful not to play into the hands of your enemies, and I hope that not only in your resolutions in this Conference but in all your acts and declarations, you will steadily keep it in mind, so as not to give a chance to your unfriendly and unsympathetic critics to hold up your class and the education you have received to opprobrium.

THE QUESTION OF IDEALS.

I have said to you that you are living in an age of remarkable transition, and I want you, therefore, to fully realise your duties and responsibilities. In due course, you will be the leaders of the great movement which I have sketched and it will depend upon your ideals and method of work as to the turn which it will take. The great leaders who have guided it so far have done it to the best of their lights. It will now rest with you—a few years hence—to give what shape to it you may think proper. It is a trite saying that a citizen must have high ideals, though it is difficult to lay down in actual practice any exact definition. One thing however is certain. It will not be right for young men to be taught that they should be only so-called ‘practical’ men, who should confine their talents and energies to the immediate work before them, work under their very nose, irrespective of any larger issues or possibilities and regardless of any high, soul-stirring ideals which may open out to them distant vistas for the development and full growth of Indian manhood and womanhood. You may rest assured, I am not going to hold up before you any such low, grovelling, sordid ideal, though it may be dignified by the

name of 'practical politics' or 'practical reform.' I do believe in the Greek saying that 'to blot out the ideal is to take out the spring from out of the year' and I shall be the last person to think of doing so, being myself a firm believer in the dictum of the late Lord Acton—the most philosophic of British historians—that 'the pursuit of a remote and ideal object arrests the imagination by its splendour and captivates the reason by its simplicity and thus calls forth energy which would not be inspired by a rational, possible end, confined to what is reasonable, practicable and just.' In the view therefore that I take of this question, I feel justified in asking you to keep always in mind high ideals in the work before you. But while I warn you against your always proceeding on so-called 'practical' considerations, it is none the less my duty to point out to you the limitation of the view of keeping high ideals, in the absence of which your work may not only be fruitless but perhaps fruitful of harm and mischief to the cause you may have at heart. The obvious limitation to keeping high ideals in view is, that they should not be so high as to be incapable of being even measurably realised. If you do not subject your ideals to this necessary limitation, you will run the risk of possessing such 'airy aspirations' as will come under the category of being fantastic and be quite impossible of realisation; and experience of public affairs will satisfy you that the impracticable visionary, the transcendental idealist, is even more a hindrance to the real reformer than the person of low ideals who masquerades under the mantle of a 'practical' man. While, therefore, I hope, that none of you will think of emulating the so-called 'practical' man, whose 'practicality' is but a cloak for the disregard of high standards of living and conduct and of the noblest emotions, against degenerating at the same time guard yourselves but real ally, the man who, into his 'nominal enemy' a mere visionary, who kicks at fantastic ideals, who is butts his head against the stone against the prick or injury to himself and with advance wall, only with The true conception of combining it to none. With the necessary limitation, I have high ideals out, has been happily set forth by the most successful administrator and work perhaps public interest, I mean ex-President Theodore Roosevelt, in the following dictum:—'Common sense is essential above all other qualities to the idealist; for an idealist without common sense, without the capacity to work for actual results is merely a boat that is all sails, with neither ballast nor rudder.' If you keep these considerations in view, you are not likely to go wrong and

see your efforts brought to naught, whether in the field of social, educational, industrial or political activities.

IMPATIENT IDEALISM.

Another danger you have carefully to guard against is that of being an 'impatient idealist.' As you are no doubt aware the country has recently had to pay a heavy penalty for the acts of a handful of impracticable visionaries and 'impatient idealists.' Their nefarious deeds have disgraced our people and country and put back the hands of the clock of progress by at least half a century. Never had such serious limitations been placed on the rights of free speech, free association for public purposes and liberty of the press as during the last few years. And why? Because a handful of young men in some parts of the country did not care to grasp the true lines of human progress, because they thought they could reproduce in this country, in the course of a few years, the prototypes of Western institutions which it has taken European countries a number of centuries to evolve. These peoples did not realise, what all of you should, that real advance by a people in any sphere of activity is only very slowly achieved and that if it is to be permanent and enduring it must be built up by a very slow process. As has been well put by Herbert Spencer:—'As between infancy and maturity there is no short cut by which there may be avoided the tedious process of growth and development through insensible increments, so there is no way from the lower forms of life to the higher but one passing through small successive modifications; and if we contemplate the order of Nature we see that everywhere vast results are brought about by accumulations of minute actions.' 'Similarly' continues Spencer 'before there arise in human nature and human institutions changes having that permanence which makes them an acquired inheritance of the human race, there must be innumerable recurrences of the thoughts and feelings and actions conducive to such changes.' And he sums up by saying that 'the process cannot be abridged and must be gone through with due patience' and that 'the man of higher type must be content with greatly moderated expectations while he perseveres with undiminished efforts; he has to see how comparatively little can be done and yet to find it worth while to do that little.' I want you to take to heart these wise words of one of the greatest of the world's thinkers, and if you will simply keep them in mind you are not likely to spin for the moon.

THE EVOLUTION OF AN INDIAN NATION.

The principles enunciated by Spencer are of particular value to us at the present moment when so many educated Indians are interested in the question of the evolution of an Indian nationality. I am sorry to have to say it but say it, I fear, I must, that the problem of Indian nationality has not yet been approached by most of our leaders in the true spirit or attempted to be worked out on right lines. If I may say so without impertinence, there has been too much of the tendency to resort to those 'shortcuts', which Spencer deprecates. It has been more or less taken for granted that by merely calling ourselves an 'Indian nation' in our writings and speeches and by being as a kind of permanent opposition to his Majesty's Government, we shall become what is understood in the West as 'a nation.' This absolutely erroneous idea has come to prevail amongst us, principally owing to the fact that such veneer of political unity as is possessed by the educated classes is largely the outcome of a sense of common grievances against the authorities and a feeling of opposition to the constituted Government. This may help in the formation of a class or a party opposed to the ruling power, but it is apparent that its very existence would disappear with the disappearance of the latter. On the contrary, true unity, which alone is the basis of nationality, does not result merely from any such fortuitous circumstances as a sense of wrong against a common opponent, but must spring from within and derive its sustenance from the indigenous elements of the community. That which is the result of such adventitious aids as opposition to a common adversary, is simply artificial and cannot in the nature of things retain any elements of permanent life. No sooner the antagonistic factor disappears, the artificial unity will cease to exist. Not so, however, the nationality which is built upon the rock of genuine unity and the prime cause of which is intellectual necessity which only comes into existence when each unit or component part of a people realises the fact that its individualisation has reached a point in self-expression, when it is desirable, in the interest of further advance or progress, to merge itself with others. Before, therefore, there can be a true effort at nation-building, the integral factors of the community must feel that their specialization has reached a point at which they may feel it to their advantage to merge their differences. Unfortunately, such is the barrenness of thought existing on this subject amongst even thoughtful persons, that the struggle by your own province, Behar, to

realise its individualisation—the condition precedent to the formation of a true nationality—has been condemned by even critics from whom we expect a better knowledge, as an 'anti-national' movement. Who can after this blame some of our young men for having caught on the shibboleths of the current political cant and for having set themselves in opposition to the efforts of Behar at this natural expression of the evolutionary process? We know that the power of labels and shibboleths is stronger in the East than in the West and to people living in this land 'shortcuts', which hold out the prospect of taking one at a jump to the goal, without traversing intervening space, offer greater attractions than long and tedious processes. However that may be, I hope you will fully realise that it is only after the full self-assertion and complete individualisation of each component part of India that anything like true Indian unity can be or shall be achieved. Unless and until all the parts making up the country become self-expressive and self-subsistent, no Indian nation can possibly come into existence, for, as I have stated above, unity can only be the direct result, not the negation, of a full-developed individualism of each organic part of the whole organism. The current and popular theory in this country that Indian unity can be brought about by ignoring, nay suppressing, the component parts and wholly independent of them, is, therefore, to my mind, not only unscientific but also unwarranted by experience and the teachings of history. That it is practically unsound is evident to all those who have followed the course of events during the last few years, the outstanding feature of which is the gradual disappearance of the veneer of artificial unity, under the pressure of the feeblest of disruptive forces, as represented by the Muslim League—except in your province, Behar, where true unity is fairly complete as the result of the joint self-expression of the individualism of both the Hindu and Mussalman communities, a state of affairs which nowhere else in India has yet come into existence. It should thus be clear to you that if are desirous to evolve a true Indian nationality, your duty is plain. It is not simply to shout with the crowd and mouth popular platitudes and thereby play to the gallery. But your duty is to see that your province fully develops itself to the utmost in the struggle for existence and in its capacity to hold its own, till it becomes self-contained, so that when similar conditions have come to exist in the other provinces, the time shall have come for a recognition of the absolute necessity of unification and co-operation as the only course open for solving the conflicting

problems which will then have arisen.

DEFECTS OF INDIAN CHARACTER.

To evolve in your country a true and genuine nationality, it is not only necessary that you should realise the right lines on which to proceed, but also the requisite qualifications which you as citizens should possess. You know the popular saying that every people has the government it deserves, which means that the type of each government depends upon the character and capacity of the people it rules over. That is a truism, and hence if you want to enjoy the benefits of self-government under British rule, it is your bounden duty to equip yourself with such capacity and character as will enable you to exercise, with credit to yourself and with advantage to your people the high privileges which citizenship in a self-governing State brings in its train. Immense as has been the progress in the intellectual and moral advancement of educated Indians, not even our greatest admirer can honestly say that we are not wanting in the possession of many of those public virtues which are necessary equipments of the character of a citizen. Leaving aside the masses, that is the vast bulk of our people, it cannot be honestly said that even the educated classes have yet displayed in any appreciable degree the possession of that kind of character which one has to pre-suppose as existing in citizens of self-governing states. Our deep-rooted selfishness, our ingrained spirit of disunion, our blind confidence in the existing state of things and our reluctance to accept the efficacy of change, our helplessness in the face of natural evils and sudden difficulties, our short-sighted covetousness that impels us often to kill the goose that lays the golden egg, our habits of sheer indolence and procrastination, our loose, careless talk and reckless promises and assertions, our distrust of each other and the absence of any feeling of co-operation in us—these and many other failings of a like nature—all conduce to make earnest work difficult, slow, exasperating and as often as not abortive. They have a saying in the West that 'all are for each and each is for all', whereas with us it is a case, I fear, of 'each for himself and only God for us all.' If, therefore, you desire to develop the character which will enable you to discharge properly your duties and responsibilities in the State, you have a treble duty to perform—firstly, to conquer the many shortcomings of your character, to extirpate from your mind the pernicious effects of early teachings and surroundings; secondly, to teach and help your co-

adjutors in public work to do the same; and thirdly, to organise the work itself.

Here again a large fund of patience is necessary and nothing will be gained by being 'impatient idealists.' Even at the present rate of progress, many generations will pass away before the country will have reached a state of thorough working order, but it behoves each of you to do what little you can to pioneer your people in its forward march to the goal—firstly, by working in your person, and secondly, by working on those, with whom you come in contact. You should, therefore, be prepared to get rid of the obstacles which stand at present in the way of your progress towards a new national life. These are principally an undue reverence for the past and a reluctance to alter the present. And here I may point out to you that in judging of national character as an important element of self-government, the capacity of a class—the educated few—is not quite relevant. If you will study English history carefully, you will find that it was never the case that at any time England possessed an indubitable superiority of intellectual capacity or culture in her statesmen, over those of other European countries, but it was rather that since the Elizabethan times the vast bulk of the people of England have displayed a sense of national unity and a conception of national principle which are the concomitants of a high yourselves to mould and develop the aggregate of the racial character of the people of your province and your country, your dream of an Indian nationality is likely to remain unrealised. I say this not to discourage you or damp your enthusiasm, but to point out how vast a field of useful work is lying before you in the matter of the education of the masses and the reclamation of the depressed classes, who number quite six crores, just about one-fifth the total population of India. Here is work which may profitably occupy all of you for years—work than which none nobler and more patriotic can possibly be conceived or commended to earnest youngmen like yourselves.

INTELLECT *versus* EMOTION.

If you have ever gone in for self-introspection you must have realised that some of your failings, which are hindrances to public work, are due not so much to bad habits as to the fact that though you intellectually assent to many things, your feelings and emotions stand in the way of your carrying them out in practice. It may at first sight seem paradoxical that your feelings

should not permit you to do what commands your intellectual assent. It is one of the most common things in Indian public life, in all spheres of activities, to find people professing views and sentiments which they dare not think of putting into practice. It is, in fact, a matter of everyday knowledge that the educated Indian is in many matters considerably wanting in the courage of his convictions. Now why should that be? The question is discussed by Spencer in a luminous essay on 'Feeling *versus* Intellect.' This is how he explains the apparent inconsistency:—'It is assumed that when men are taught what is right, they will do what is right—that a proposition intellectually accepted will be morally operative. This undue faith in teaching is mainly caused by the erroneous conception of mind. Were it fully realised that the emotions are the master and intellect the servant, it would be seen that little could be done by improving the servant while the masters remain unimproved.' That being so, how necessary it is that our young men should have a chance of improving by proper exercise their emotions as well as their intellect! For obvious reasons, however, it is not possible for our schools and colleges to offer the students suitable opportunities for what can be properly developed and exercised only in the more congenial surroundings of a home. And as the home implies the influence and guidance of women, it is clear that there cannot be surroundings favourable to the growth of emotions in our homes, unless our women are qualified by education to play their parts as they should. In this view of the matter, you are brought face to face with one of the greatest problems of Indian reforms—namely, the emancipation—physical and mental—of our women. I shall ask you to address yourselves in right earnest to this problem of all problems, than which none is more pressing or more emergent. Unless you take up in right earnest this great cause which is clamouring for reform—the woman's cause, which is no less man's—you will have failed in your duty as educated persons and will not have proved yourselves worthy of the education you have received.

NEW OCCASIONS TEACH NEW DUTIES.

I fear, I have taxed your patience too much and shall not be justified in trespassing on it much longer. But I desire to impress upon you with all the emphasis at my command that while you should conserve in your habits and character, all that is healthy and wholesome in our traditions and institutions, it is your bounden duty to

modify and adapt them to your present requirements. In addition to revising the old standards of ideals and conduct in the light of the present situation, you should so attune your mind as to make it open to receive new impressions, new ideals and new lines of conduct. Only thus by proper conservation and assimilation, you will have combined in yourselves the true culture of both the East and the West, and falsified the half-truth that they can never meet. You have thus before you a limitless field for your activities. To keep yourselves healthy—a sound mind in a sound body—to eschew bad habits to acquire and develop good habits—specially those that educated Indians are wanting in—to acquire Western knowledge and assimilate Western culture while conserving the best that you have inherited from the past, the education of the masses and of our women, the reform of baneful customs which have wrought havoc in our society and, if necessary, their complete eradication—these and others I have pointed out above, with others suggested to you by my predecessors, will afford you enough work for a life-time, if only you are minded to do it. You are living in an age of conflict of ideals, and I cannot do better than commend to you the well-known lines of the great American poet, James Russel Lowell:—

New occasions teach new duties;
Time makes ancient good uncouth,
They must upward still and onward
Who would keep abreast of truth.
Lo! before us gleam her camp-fires;
We ourselves must pilgrims be,
Launch our Mayflower and steer boldly
Through the desperate winter sea,
Nor attempt the future's portals
With the past's blood-rusted key.

If only you will address yourselves to your work in the spirit suggested by the poet, you will find a great deal to do in life and that too of an absorbing interest. Though much good work has been done in the past by your leaders, very much more yet remains to be done. You may still dream many bright dreams about your country and do bright deeds for your people. The work before you, in the way of regenerating our dear Motherland, is yet so vast and so interesting withal, as to call forth all that is best in you; and if only you will approach it in the right spirit, you may depend upon it that no young Alexander amongst you need despair, because there are no more kingdoms left for him to conquer on the ancient shores of the Indus and the Ganges.

MR. ASQUITH ON CULTURE.

RECTORIAL ADDRESS AT ABERDEEN.

Mr. Asquith, as Rector of Aberdeen University delivered his Rectorial address recently in the Mitchell Hall, Marischal College. The Vice-Chancellor (Principal George Adam Smith,) presided, and the hall was crowded, those present including Mrs. Asquith, Mr. Asquith's son, Mr. Arthur Asquith, and two of his daughters, who occupied seats in one of the galleries. While Mr. Asquith was speaking the conduct of the undergraduates was somewhat hilarious although quite good-humoured. The Prime Minister on the whole obtained a fair hearing. One ludicrous incident occurred while he was speaking. A divinity student in female attire suddenly mounted a chair and, blowing a trumpet from which depended a yellow flag inscribed with a 'suffragette' motto, effectually stopped the proceedings for the moment. It was some time afterwards before it was generally realized that the interrupter, who was at once ejected, was a male student and not a 'suffragette.'

Mr. Asquith said:—The office to which you have elevated me is associated with some of the most splendid periods in the history of learning. It goes back to the time when the Church and the Empire, in theory at any rate, exercised an unchallenged supremacy over the spiritual and temporal concerns of the Western world. Three out of our four Scottish Universities are of Papal foundation. Aberdeen, the youngest of the three, owes its origin in 1494 to a bull of Alexander VI, which may, I suppose, be regarded as a redeeming act in the career of one of the most infamous of the Popes. It was at any rate the final gift of the Papacy to learning and the humanities in this island, for of the two great disruptive forces, the Renaissance and the Reformation, which within the next half century undermined and overthrew the spiritual and ecclesiastical unity of Europe, the one had already begun its invasion of Great Britain, and both in England and in Scotland by diverse routes the way was being prepared for the triumph of the other. But in neither country ought we to erase from the national memory the debt of obligation which British learning owes to the great Churchmen of the Middle Ages—a debt which I am glad to know we here in Aberdeen are about to recognize by a fitting commemoration of our real founder, Bishop Elphinstone.

THE MEDIEVAL UNIVERSITY.

When we look back to the way in which organized education has been developed in Western

Europe, and particularly in Great Britain, we are struck by the fact that it apparently began at top of the scale with the more advanced forms of teaching. In point of time you have first the Universities, then what we call in England the public schools and the grammar schools, and finally the parish school, which the whole English-speaking world owes in so large a degree to the insight and foresight of John Knox. We must, however, not be misled into wrong inferences which may easily be drawn from a superficial survey of the facts. The medieval University was never intended to be, and was not in fact, an aristocratic or exclusive institution which opened its doors and offered its teaching only to the children of the well-to-do. As I tried to show some years ago when, on a similar occasion to this I was addressing your fellow-students at Glasgow, the typical University of the Middle Ages whether at Paris or Bologna or Oxford, was cosmopolitan in composition, to some extent at any rate (as this institution of the Rectorship proves) democratic in government, and recruited by students drawn from all ranks and classes, but for the most part the sons of low-born parents. University education was then, except of course for the few who pursue learning for learning's sake and who are at all times in every home of learning a minority of a minority the most accredited qualification for admission to and for the practice of certain indispensable and much-frequented professions—in particular the law and the higher branches of medicine and the Church.

THE SPREAD OF CULTURE.

As time went on and the so-called ages of chivalry were submerged by the Renaissance, what we now describe as culture in the academic sense came to be looked on as the proper and necessary accomplishments of a gentleman. It is true (as Mr. Sidney Lee has pointed out in the learned and interesting book which he has just published on 'The French Renaissance in England') that the process was slower in this island than elsewhere. More, Colet, Linacre, and their teacher and friend Erasmus, sowed the seed which did not ripen for harvest until Elizabeth had been more than 20 years on the Throne, but the illustrious Queen herself, according to the unimpeachable testimony of the younger Scaliger, was better educated than all her contemporaries among the great of the earth, and was familiar with no fewer than five languages in addition to her native tongue—Latin and Greek, French, German, and Italian. I hesitate to trespass even for a moment upon thorny ground, but with all the progress that female education has made in the last three cen-

turies, can it produce a more conspicuous example of the combination of culture and capacity? Culture, as I have said, came to be looked upon like good manners or good clothes, as a part of the social and personal equipment of the well-born and well-to-do. It continued also in its more specialised forms to be the recognized avenue to eminence in the learned professions and the Church.

POPULAR EDUCATION.

But the notion that education was for the common man—a part of his natural heritage, a necessary condition of his civic usefulness, an ingredient that could be safely mixed with the drudgery of manual toil and the simple round of homely pleasures—except indeed to some extent in Scotland, such a notion would have been everywhere dismissed as a dangerous paradox. It is little more than a hundred years since an eminent prelate of the Church of England declared that all that the people of a country had to do with its laws was to obey them. It was in the same spirit and from the same point of view that the mass of the population was expected to leave letters to their betters. The growth of enlightenment, a stimulated sense of social community and corporate duty, and, it must be added the advent of democracy have brought without violence and by general consent the most revolutionary of all the changes of our time—a national system of free and compulsory teaching. The celebrated sarcasm of Mr. Lowe that we must begin to 'educate our masters' has been translated into practice, and though there are still plenty of ragged edges and ugly gaps in the actual working of the machinery, the ideal at any rate, is universally accepted that no child shall start upon the work of life unfurnished with the keys of learning, and that in the case of every child whom nature has gifted with brains and ambition the barriers of fortune and circumstance shall no longer block its progress at any stage of the way which leads to the innermost courts of the palace of knowledge. This is not an appropriate time or place to discourse, as I might otherwise be tempted to do, on the lights and shadows of popular education. It will be more to the purpose if I ask your patience for a few desultory and discursive thoughts on some of the shortcomings and drawbacks which seem in these days to threaten the academic pursuit of the higher forms of knowledge.

SPECIALISM.

I would instance first the growing tendency of specialism, which has become a marked feature of University work both here and in England during the past 50 or 60 years. It is much more com-

mon than it used to be for a student to give exclusive, or almost exclusive devotion to one subject or group of subjects and to be content as regards the rest with the bare minimum of academic requirements. The change is, of course, largely due to the greater thoroughness with which each subject is taught and learnt; to the enormous extension in the area of the fields of research which are still called by the old names: classics, mathematics, science, philosophy; to the higher standard, both of information and of exactness, which has naturally and legitimately been set up. All this is to the good in so far as it tends to promote erudition and accuracy at the expense of that which is merely superficial and smart. But the advantage is purchased at an excessive price if it is gained by the sacrifice of width of range and catholicity of interest. Pedantry is on the whole more useful and less offensive than socialism, but a University which is content to perform the office of a factory of specialists is losing sight of some of its highest functions. Nobody but an impostor can in these days assume to take all knowledge for his province. Such an encyclopedic purpose as inspired Francis Bacon, even he, the most gifted of our race, if he could be reincarnated under modern conditions, would recognize to be beyond the dreams of intellectual ambition. But the man whom you turn out here as your finished product at the end of his University course ought to be in Bacon's own phrase, a 'full' man. Victor Hugo says somewhere in his grandiose and impressive way that genius is a promontory which stretches out into the infinite. We cannot lay down laws for genius. That incommunicable gift sets at nought both heredity and environment. But, genius apart, there is much to be said for the old University ideal of the 'all-round man—not the superficial smatterer who knows something about everything and much about nothing, but one who has not sacrificed to the pursuit of a single dominating interest his breadth of outlook, the zest and range of his intellectual curiosity, his eagerness to know and to assimilate the best that has been and is being thought and written and said about all the things that either contribute to the knowledge or enrich the life of man.

STYLE.

But if a certain width of range is essential to the reality of academic culture, it is equally true that in external form and expression it is, as ought to be marked by precision, aptitude, harmony—by the qualities, in a word, which combine to make up what we call style. In all artistic productions there are three factors—the

subject, the form in which it is presented, and the vehicle by which the presentation is effected. In each of the separate arts—painting, sculpture, architecture, music—the particular vehicle controls and limits, or ought to control and limit the choice of subject. But given appropriate subject and apt vehicle, and there is nothing in which the insight of genius is better tested than in the meeting of the two. It is the formative capacity of the artist which determines the value of the product. That sounds like a platitude when we are talking of the fine arts, but it is strange how careless of form even highly educated people show themselves in the commonplace, every day acts of speaking and writing. A vast deal of the slipshod and prolix stuff which we are compelled to read or to listen to is of course born of sheer idleness. When, as so often happens, a man takes an hour to say what might have been as well or better said in twenty minutes, spreads over twenty pages what could easily have been exhausted in ten. The offence, in a large majority of cases, is due not so much to vanity or to indifference to the feelings of others as to the inability or unwillingness to take pains. And the uncritical world, just as it is apt to mistake noise of utterance for firmness of character, has an almost invincible tendency to think that a writer or orator cannot be eloquent unless he is also diffuse. In my opinion it ought to be regarded as one of the serious functions of a University to inculcate the importance and to cultivate the practice of style. Remember that in the English language we have received, as part of our common inheritance, the richest and most flexible organ of expression among living tongues. I say nothing for the moment of poetry, which may be classed among the arts, but there is no department of the prose which we all have to speak and write every day of our lives for which our literature does not provide us with a wealth of models and examples. There are fashions in style as in other things which have their day, exhaust themselves, and cannot be revived. No one, for instance, would nowadays set himself deliberately to copy the manner of Archbishop Cranmer, the first great writer of English prose; or of Sir Thomas Browne, with his magnificent organ of many notes; or of Gibbon, who stands in solitary splendour at the head of our writers of history; or of De Quincey, with his curious and sometimes irritating medley, imaginative, critical, discursive, but a master who has rarely been surpassed in the manipulation of the English sentence. The classical reproductions may be useful as an exercise. It was resorted to, if I remember right, in his youth

by the most accomplished practitioner in the art of style that Scotland has produced in our time—Robert Louis Stevenson. But the man who wants to write or speak English will go on to the great authors whom I have just named again and again, not to echo their cadences or to mimic their mannerisms, not merely to enrich his own vocabulary, but to study the secret of their music; to learn how it is that with them language becomes the mirror of thought, to master step by step the processes by which these cunning artificers in words forge out of them phrases, sentences, paragraphs and give to each its proper place and function in the structure of an immortal work.

THE DOGMATIC TEMPER.

But, further, it is not enough that a University should teach its students to eschew narrowness in the range of their intellectual interests and staterliness in speech and writing. It should put them permanently on guard against the dogmatic temper. We cannot get on without dogma, which is nothing more than the precisely formulated expression of what we believe to be true. The term is sometimes used as though it were restricted to the domain of theology, but science and philosophy have their dogmas also; and if it be suggested that that which differentiates a dogma is that it is accepted in deference not to reason but to authority, the same may be said of not a few of the propositions which in every department both of speculation and of practical life form the basis of belief or conduct. But to give intellectual acceptance to a dogma or a series of dogmas is one thing; to carry on the operations of the intellect in a dogmatic spirit is quite another. There is a famous and primitive saying of Lessing's, that if the Almighty offered him the choice between the knowledge of all truth and the impulse to seek the truth, he would reverently select the second as a greater boon than the first. And this surely is the attitude which it should be the aim and end of education to make easy and natural. To be open-minded, to struggle against pre-conceptions and hold them in due subjection, to keep the avenues of the intelligence free and unblocked, to take pains that the scales of the judgment should be always even and fair, to welcome new truths when they have proved their title, despite the havoc they may make to old and cherished beliefs—these may sound like commonplace qualities well within every man's reach, but experience shows that in practice they are the rarest. The temper which I am endeavouring to describe is not in any sense one of intellectual detachment or indifference, nor has it

anything in common with that chronic paralysis of the judgment which makes some men incapable of choosing between the right and the wrong reason, or the better and the worse cause. It implies, on the contrary, an active and virile mental life, equipped against the fallacies of the market-place and the cave, animated by the will to believe and to act, but open always to the air of reason and light of truth.

A UNIVERSITY'S BEST GIFT.

One final counsel I will venture to offer you, I speak as an old University man who, in a crowded and somewhat contentious life has never wholly lost touch with the interests and ideals of Oxford days. If the short span which in fuller or lesser measure is allotted to us all is to be wisely spent one must not squander but husband and invest what never comes again and what here and now is offered to every one of you. The more strenuous your career, the more you will need to draw upon that unfailing reservoir. Sometimes amid the clash of public strife there may steal back into the memory the sombre lines of the greatest of Roman poets—

*'Di Jovis in tectis iram miserantur inanem
Amborum et tantos mort libus esse labores.'*

That is but a passing word, except in an ill-furnished mind. Keep always with you wherever your course may be the best and most enduring gift that a University can bestow—the company of great thoughts, the inspiration of great ideals, the example of great achievements, the consolation of great failures. So equipped, you can face without perturbation the buffets of circumstance, the caprice of fortune, the inscrutable vicissitudes of life. Nor can you do better than take as your motto the famous words which I read over the portals of this college when I came here to-day:—'They have said. What say they? Let them say.' (Loud and prolonged cheers.)

On the call of Professor John Marnock, seconded by Mr. F. Wishart, of the Students' Representative Council, Mr. Asquith was accorded a hearty vote of thanks for his address. In acknowledging it he asked that the students should have a holiday on the following day, which was at once granted by the Vice-Chancellor. It had been arranged that after the address the Rector should be drawn by the students in a carriage to the residence of the Principal, but before Mr. Asquith and the Principal emerged from the Mitchell Hall the carriage was practically smashed into fragments and a motor-car was used instead. Mr. Asquith after

lunching with the Principal, left Aberdeen in the afternoon.—*The Leader*: 16.11.10.

KINDERGARTEN AS A METHOD.*

GENTLEMEN,

You have heard of the golden maxim, "the child is the father of man." What a world of thought it conveys! It says that it is the child that develops into a man, it is in him that we see the realisation of all our lost hopes; it is he who has to fulfil the various duties of life that we have failed to carry out; and it is on him that the well-being of all nations depends. Such being the case, it devolves upon us to make him sensible of his responsibility and prepare him for the difficult task.

"There is nothing new under the sun," goes the popular notion; but the Law of Nature says that all bodies in the Universe are undergoing some change or other, always and at all times. Thus, with the progress of Science the popular belief is thrown out, old orders change and give place to new scientific or natural ones. Accordingly, the old methods of education also change and give place to realistic and natural ones.

"Education" says Spencer "is the drawing out of the latent powers of the mind, intellect, and body." A drawing out is in many cases considered as growth. So, in education also, a drawing out is the development of the various faculties. In developing the faculties, we must follow the same methods by which a plant or a tree is grown in order that the growing up may be more akin to Nature.

It was Froebel, a German educationist of the 19th century, who discovered that the system of education then current was unnatural. He observed that too much memorising and cramming deadened the budding intellect of the growing generations and that, "spare the rod and spoil the child" should not be the rule to act by. So he adapted from Nature a method of educating children. He said "man is made in the image of God and his destiny is to become like Him. Man is at once the child of Nature, the child of humanity and the child of God and the aim of education is to bring him, while he is a child, into harmonious relations with all the three."

He studied childhood very minutely and carefully and found out that the child received

* Paper read recently at the Teachers' Conference, Cranganore group, by K. R. Harihara Iyer, B.A.

his first impressions through the senses and so he came to the conclusion that the natural expressions of child life should be directed to its education. He considered the children as plants and flowers of a garden and determined to develop their powers in the same way as plants and flowers are left to grow themselves without any restraint, taking care only to manure and water them properly. Hence the name "Kindergarten" which means "Child's Garden."

What is Kindergarten:—A child's education, then, must suit his natural inclinations and activities. During the period of childhood, there is only one proper medium through which instructions can be given and that is 'play.' Froebel's inspiration lay in organizing play as a medium of education. So, Kindergarten is an 'Educative System of Play.'

The Froebelian System:—Froebel discovered that "the games of childhood are the heart-leaves of the future life and all the sources of good are in play." A child who takes a keen interest in play is sure to succeed when he grows into a man. Froebel saw that the child loved music and he introduced music in all his occupations and games. He noticed that the child was very inquisitive, that it was often curious to know that which was hidden from its sight; so, to satisfy this natural desire of the child, he introduced his *divided cube*. Again he saw that it loved to play in dirt and mud, moulding bread and other things of daily use, and he took up clay-modelling for an occupation. Then again he observed the child's great liking for bright colours, its natural inclination to drawing and mimicry and so he designed his coloured balls, gave drawing a high place in his system, and introduced the games of plants and animals. These and many other similar devices of Froebel are called his gifts and occupations.

Advantages:—Kindergarten affords ample scope for developing the intellectual, physical and moral faculties of children. On the intellectual side, the creative, constructive, and imaginative powers are developed. By the proper training of the senses, the child's powers of observation and perception are increased. The child is trained to reason within itself and to note the relation between cause and effect, whereby the originality of the child is augmented and it grows more and more self-reliant.

The various rhythmical and free movements in the occupations and games, such as the action-songs, dances and drill, give sufficient exercise

for the growth of the body and make the children lively and happy.

Very important traits of character are inculcated in children by the Kindergarten System of Education. The building up of one's character, as I should think, the end and aim of education. Childhood being the most impressionable period of life—soft to take like wax and hard to retain like adamant—the first lessons on the formation of character should be very carefully infused during child-life. Froebel's system of teaching has all the facilities for the successful achievement of this precious and noble purpose. Unity, unselfishness, fellowship, emulation, love, nobility, self-help, lessons of care, neatness, accuracy, order, love of work, kindness, truthfulness, obedience and what not, are inculcated by the harmonious blending of the occupations and the co-working of children.

When I give this dictionary of abstract nouns, Gentlemen, I am sure you are apt to imagine that I am going too far in exaggerating the advantages and you are apt to associate this statement of mine with the language of the advertisement describing the efficacy of some of the patent medicines. I need hardly tell you, though the language is much the same as that, there is no exaggeration in these advantages. Every educationist from Froebel downwards has testified to this and the method, though introduced by Froebel as early as 1840, is better appreciated now in all the countries far and wide, after a long interim of seventy years. The spirit of Froebel has been found out to be the only one which marks out a royal road to reach the goal.

Description of a Kindergarten:—Bate's Kindergarten Guide gives a vivid description of a European Kindergarten. It consists of a hall in the middle and a set of rooms on each side of the hall. One end of the hall is set apart for the school museum and the other end is occupied by a big gallery. The museum cupboard contains all sorts of curiosities presented by the pupils and visitors. On one side of the museum hall is the model room—a well-lighted and well-ventilated room whose painted walls are adorned with bright pictures of animals and plants. In one corner of the room is arranged a nice artificial garden; in another corner a landscape of hills and dales; in a third corner shelves containing toys of all kinds, specimens showing the different stages in the manufacture of cotton, wool, etc., and the clay-models, drawings and paintings of the children, present and past. In the fourth corner are kept some fish or frogs in aquariums or water tanks,

Above on the floating galleries, birds like canaries and animals like white rats are kept in cages for the children to pet and feed. In the middle of the room again, a desert with an oasis in the middle is represented by a bed of sand and toy-merchants and camels are also placed on the desert to show how caravans travel through a desert. Models of stables, barns, cow-pens are also arranged methodically. The remaining parts of the room are decorated with flower-pots containing various flowers and plants.

The Class Rooms:—Each room contains about forty small chairs and desk desks (similar to our newly-patterned Kindergarten desks), all of which are secured fast to the floor. The teacher's desk is placed in the middle. The class room is also made neat and pretty by pictures on the walls, and flower-pots on the window sills. The children look happy and cheerful when their surroundings are charming and attractive and they never grow naughty when they are cheerful.

When the school work is about to commence, all the students assemble in the gallery of the central hall and sing and pray with the teacher and perform certain drill movements for a short time. Then they are marched into their respective class rooms by the teachers in charge. They salute the teacher with a bright 'good morning' which the teacher returns by introducing a fine topic for a lively conversation. The conversation is gradually directed towards the subject then to deal with; and the teacher enters into it with earnestness and energy. This in brief is a European Kindergarten.

Kindergarten Work:—For the edification of children Froebel devised his seven gifts and occupations; but the system has since been developed into twenty gifts and numerous occupations. Each gift is selected with a very distinct aim. There is also a harmonious correlation between the gifts, the succeeding ones growing out of the preceding ones. Correlation is also aimed at between the occupations and games. Object lesson or Nature study is taken as the central theme and all the other lessons are made to correlate with it. For example, if the Nature lesson is on a farm yard, the object lesson is given on animals or objects found in the farm yard, the duck or hen is taken for drawing, a trough or a basket is made in paper-folding, a tool is modelled in clay, a duck pond is dug in sand play, a haystack or barn is laid with sticks and a dog, kennel and a farm gate are built with gift four.

See how much the students will be impressed and what happy associations there will be when the teacher recapitulates all these facts and shows

the harmonious blending of one part with the other.

Alas! what a difference we note in our lessons! The lessons we give are varied and totally unconnected with each other and what is the result? The children get tired and indifferent, the teacher gets exhausted and angry and his work ends in a waste of time and energy.

Gentlemen, I have now given you an inkling of the Froebelian method. I think a detailed description of the various gifts and occupations which Froebel designed and their aims would be out of place and tedious too, because any catalogue on Kindergarten materials, not to speak of the books on the subject, gives the same in bold and black types.

I shall next pass on to consider how far Froebelian methods are suitable to Indian students and more especially to our students (Cochinites). Miss Gillingham, a Kindergarten of Madras fame, has rightly remarked that there are many mistaken ideas about Kindergarten. She says that many are under the impression that Kindergarten consists solely of twenty gifts and occupations of Froebel, that the occupations are an end in themselves, that it is a very costly system to follow, as many of the articles have to be got down from Europe and so on. I quite agree with Miss Gillingham; for the very fact that many of the schools in the State have not as yet introduced the system, though the Departmental Circular was issued even as early as in April, shows clearly that those schools have not rightly understood the spirit of the system and are labouring under a delusion. That we can begin the work in right earnest with the materials within our reach will be more than testified to by the exhibits of our boys.

Let us now discuss how far the merits of the system are adaptable to our children. First of all, we must understand that the system is a natural one; secondly, while giving full credit to Froebel for his genius we must bear in mind that we are not to follow him to the very letter, but only the spirit. Froebel, you are told, studied child life and designed his gifts and occupations to suit the children he had to deal with, i.e., the German children. His materials from the point of view of a German and especially in a great manufacturing country like Germany are very cheap. On the other hand, they are very costly to us because we have to pay freight, duty, exchange, commission, brokerage, landing charges, etc., for all imported articles. But why do we think at all of importing this trash from Europe

when our mother-country supplies all these for a pittance? What we should do, therefore, is to study our children closely and keeping Froebelian aim in view, design materials and occupations to satisfy the natural desires and wants of our children. Elaborate and expensive occupations are unnecessary. The teachers concerned must use their own discretion in choosing what lessons and occupations would assist the children in satisfying their natural instinct. 'Elaborate designs in drawing, complicated work in paper folding or paper plaiting, finished models of clay, etc., have no educational value. The idea that these varied occupations are only a means to an end and are no end in themselves must be prominent in the mind of every teacher when he gives a lesson. It is unnatural and cruel to expect too much from children, but they must always be brought in contact with nature and made to observe and see for themselves.'

The Essentials of Kindergarten: (1) *A Museum.* I trust every one of you might have felt a small museum attached to a school to be a great desideratum for realistic and effective teaching. If your school can spare a single room, a small museum of the kind referred to may be opened with the limited means at your disposal. With the help of teachers, pupils and visitors, it may be developed slowly and steadily into an attractive and instructive one in the course of a couple of years. It is to give you a concrete idea of what the museum should be, and how the things should be arranged, that our Headmaster has been kind enough to hold this Educational Exhibition. You can realise for yourselves now at least the educational value of a museum attached to a school.

2. *A Garden:*—It is also desirable to have a garden attached to every school. A variety of plants and flowers useful for the purpose of Nature study can be grown in it. If there be space enough, to every child may be allotted a small plot of ground to cultivate. Where this is impossible a number of boys may be given a small area to work in. If this too is not practicable some flower-pots may be provided to the children in which to sow and cultivate. In some schools, for example, our own school, even this is not found to be practicable at this stage. To such schools also I may prescribe my own recipe by which children may be brought into direct contact with Nature. My proposal is that the children may be asked to select a small plot of ground in their own house-compound and sow some seed or other and watch and nurse the tender plants as they grow up. Every child

that does so may be made to keep a diary of his own in which he shall enter the changes he observes daily in the growth of the plant, the sort of nourishment he gives to the plants and the time spent on this occupation. During the teacher's home visit to the students he shall examine the pupil's gardens and give him some practical hints and suggestions in addition. By this method they are drawn closely to the beauties of Nature. They begin to observe for themselves, to love work, feel happy when they enjoy the fruits of their own labour, and above all they train themselves up to write narrative and descriptive compositions. I should like to suggest that a flower-show may also be held in the class room occasionally, at least, once a term. I am sure that such a thing, if put into practice, will give to the pupils an opportunity to examine the result of each other's work, whereby a spirit of emulation will also be created in their minds.

3. *Rearing of pet animals:*—Some pet animals such as the white rat, the white rabbit, the dog, the cat, the hen, the parrot, the dove, etc., can be reared at a very cheap cost. Children always love to pet these animals and by doing so they grow kind towards them. The feeding of these animals is regarded by Froebel as an important part of the daily work of children. In this connection, I should like to suggest that the children be asked to pet and feed the animals that they rear at home and keep a diary of the work, if the school cannot afford to keep these animals or cannot find accommodation to do so.

4. *Object Lesson and Nature Study:*—Every subject in Kindergarten is more or less an object lesson. So, there is no necessity to treat of these as separate subjects. Still the object lesson so called, being included in the timetable of every school lesson and being correlated with Nature Study, these are also taken as essentials. The aim of an object lesson is to impart to the pupils a knowledge of the common objects of our daily life. The children should be taught to define the objects around them and say a few words describing them. The form, size, description, etc. of the objects should be impressed by observation, measurement, clay-moulding, paper-folding, etc.

Nature Study involves Natural History and Botany. The animals reared, petted and fed by pupils at home or at school and those introduced in object lessons and stories create in them a love and interest in acquiring farther knowledge of these. The scheme already proposed by me in connection with the gardening and petting of animals, will, I hope, go a great way towards

reaching the goal. The detailed plan of work in Nature Study and object lessons is already issued by the Department and you have also had the pleasure of witnessing a very interesting model lesson given by our Headmaster. So, I think it is presumptuous to speak more on the subject.

5. *Drawing:*—Drawing plays an important part in the development of the child's faculties. Great stress is to be laid on the teaching of this subject, for it is an art useful for every kind of trade and profession. A builder requires a plan before he begins to work at his building; a tailor, a pattern of his work; a mechanic, a sketch of his apparatus; and a teacher, a diagram of an animal, a plant, &c. Are we not ashamed to seek the services of a drawing master or a draftsman to draw a plan for us? How often do we fight hard to make our artisans understand the pattern of the furniture we want them to make for us and how often do we waste our lungs and energy in explaining to our students the mechanism of a machine or the form of an object or animal that we come across in the course of our lessons? We never realise the effect of drawing when we forget that a single stroke saves a half hour's explanation. A teacher who talks much and draws little can never be half so successful as the one who talks little and draws much and it is a rule in Kindergarten that we should all bear in mind that the teacher should not talk much, but teach his pupils by gestures, drawings, &c. Drawing again satisfies the natural cravings of a child and gives him a means of giving expression to his thoughts when he finds that his vocabulary is very limited. The desire to draw is innate in children. Who has not observed a child drawing something or other when he is left to himself. Drawing is the *soul of Kindergarten* and as such, children should be trained in all kinds of Drawing, i.e., 1. Object drawing; 2. Story drawing; 3. Observation drawing; 4. Memory drawing; 5. Mental drawing; 6. Oral pictures; 7. Model drawing; 8. Free arm drawing; 9. Freehand drawing, and 10. Geometrical drawing.

Accuracy should not be aimed at in the first seven kinds, and the children should always be encouraged, however imperfect and atrocious looking the drawing might be. What is expected from a child depends more or less upon his age. The very first lessons in drawing should be on form and proportion. I wish you would refer to Miss Gillingham's book for

detailed explanation and information on the various kinds of drawing aforesaid.

6. *Clay-modelling and Sand-modelling:*—Clay-modelling is one of the most fascinating of all the Froebelian occupations and it is as essential a subject in a Kindergarten as drawing. Children have a peculiar inborn desire to dabble in mud and they are happiest when they play with mud or in sand. I am sure most of you have noticed children making cakes with mud, digging pigeon holes in sand, building houses or modelling small utensils, &c., with clay. It is after observing these activities of children that Froebel introduced clay-modelling in Kindergarten. The educational value of this consists in providing a natural means to satisfy the desire of the child to imitate, create, or transform and to develop their gifts in its very awakening. It must always be correlated with drawing. What is shown in plan in drawing is shown in relief in clay-modelling. Again only two dimensions are shown in drawing while the three dimensions, length, breadth and thickness are recognized in clay-modelling.

Here also there are various stages; plan and elevation, incision or cut relief, low relief, round relief or high relief, can all be practised by the students of the Kindergarten classes. As clay-modelling and drawing are interdependent I should like to propose that clay-modelling be introduced in the higher forms as well, at least up to the third form. One period a week even after school hours will be quite sufficient.

Clay-modelling costs nothing in our parts; for, fine clay is obtained from our fields; I have not found out any book that deals with the subject, that can be safely recommended for your guidance and therefore I have endeavoured to design a number of objects of our daily life that can be modelled with ease. You will see the sketches of the same in the Exhibition Hall. The various objects, you will carefully note, are developed out of the simple Geometrical forms, such as the sphere, cube, cylinder, prism, cone, and pyramid.

Sand-modelling is a very interesting and easy medium for the teaching of Geography, alphabets, drawing, &c. Think of the wise plan of our forefathers using sand for teaching alphabet! When the hand and the fingers had become steady they began to write on paper or on cadjan leaves and the result was that every one wrote a good hand. Now, however, children do not touch sand, teachers and guardians think that writing on sand is a crude and uncivilized

method and so they are made to use pen and paper even from the very beginning, i.e., they are taught in an unnatural way and what is the result? 90% of the school-going population write a very bad hand.

The Geographical definitions, the relief of a country, letters, plans and designs may be drawn on wet sand or may be cut out in bold relief. Some specimens are exhibited to give you an idea of that occupation.

7. *Story-telling and dramatisation.*—It is said that stories are the "spice of childhood" I am sure it has come within the experience of all that children always beg for a story and listen to it with eager delight. Children always love their grand-mothers and grand-fathers more, because they relate stories to please them. They forget their little troubles and pains when they hear a story. So story-telling should have a high place in Kindergarten. The advantages are many. First it increases their vocabulary. Secondly their sympathy is cultivated. Thirdly it strengthens the power of imagination, and lastly it teaches them many moral truths and very often helps to correct their conduct and behaviour. The story to be narrated should be very simple in nature and one that can be easily appreciated by children. The narration should be done in baby language giving it a dramatic and realistic touch by modulating the voice where necessary and by a free use of gestures to suit the words.

Story-telling should always be followed by dramatisation and story drawing. Children are born actors and imitators. How often have we all seen children playing 'father and mother' and other scenes of home life! Their keen sense of *make-believe* is gratified by dramatisation of stories and Kindergarten games.

Story drawing should follow dramatisation. By story drawing it is not expected that the students should draw a likeness of all the characters in the story. A graphic representation is what is required. A line would sometimes represent a man. The standing posture will then be shown by a vertical line and the lying down posture by a horizontal line. Dramatisation and story drawing will clearly show whether the story is grasped by the children rather than a tiresome repetition of it by the students. The other day when I asked the IVth Form students to demonstrate the Principle of Archimedes, I found them weak in expression. To satisfy myself whether they have understood the experiment, I asked them to draw

sketches to show the various stages in the experiment, the sketches themselves to supply all explanation, and there also I found them committing many a careless mistake, which gave me an opportunity to point out their errors, the effect of cramming and inattention in the classroom. From that day forward I have been observing that this kind of descriptive drawing is more effective than any kind of explanation. If in this way only the students are practised from the very beginning, they will be able to read the whole story from pictures and take notes of their lessons in a few sketches.

8. *Kindergarten Games.*—Every child loves to play by nature and this natural desire of the child can be satisfied only by some form of play. In introducing play in the School Programme we must see that the games are well organised and made a medium of some instruction. Singing is a very important factor in the games of this kind. Impersonation of Nature accompanied by music is also included under this head. I have selected a number of games that are suitable to our own children, because I find that the European games are rather out of the way of our own grown-up children and I have had also the pleasure of trying the effects of these games on our children on a former occasion. You will be pleased to find the list exhibited.

9. *Physical Exercise or Drill.*—This should also have a prominent place in the school timetable. It will be more interesting if the drill is accompanied by music. There is ample scope for musical drill, action songs, &c. in girls' schools; but in boys' schools also it may be done to a small extent if only the teachers will cast off their shyness. It is the complexities and high tones of our music that discourage our boys and teachers a good deal. Our aim here is not to sing like professional Bhagavats, but to create mirth and harmony in our children.

10. *Other occupations.*—Miss Gillingham considers the other occupations of Froebel as non-essentials in a Kindergarten; but I do not quite agree with her in thinking that these have no educational value. I am of opinion that some of these can be turned to useful purposes if we keep in mind the spirit of the Froebelian system. I shall take one of these, e.g., paper-folding and show how that can be turned to good account. Paper-folding is an interesting and easy medium for the teaching of Geometrical forms, proportion and fraction. Those of you who have gone through that little volume on Mental Arithmetic, I published a short while ago, will have noted how paper-

folding assists the teaching of half, one-fourth, one-sixth and other fractional numbers.

Fraying.—This is an occupation which, while satisfying the destructive tendency of a child, develops the creative and the constructive faculties and gives him a lot of amusement. You will see from the specimen exhibited to what useful purpose that tendency of the child may be directed. The other occupations that find a place in Kindergarten are seed-laying, stick-laying, perforating, weaving, &c.

11. *Correlation of Lessons.*—As I have already dwelt upon this at length in connection with Kindergarten, I shall not tire your patience by repetition.

12. The last and the greatest essential is a teacher 'who need not be young in age but in manners.' The teacher who wishes to be a successful Kindergarten must have a child's heart, a woman's heart, a mother's heart, all in one. He must be an entertaining companion and one who can lower himself to the level of children in word and deed. He should never put on a morose and stern face but must always be ready to smile, laugh or cry at the slightest provocation. He must freely mingle with the children in their games and chats and always be on the look-out for an opportunity to give some kind of interesting and valuable instruction. The teacher should not feel shy even to sing, though his voice is hoarse, or to jump, run and dance, or to show all sorts of gestures and faces, even though his friends are watching him. If he does so, he will set a very bad example to his pupils who will never grow bold and self-reliant. Let him only remember what Froebel's wife has said

"A superficial mind does not grasp it
A coarse mind makes fun of it,
A thoughtful mind alone tries to get at it."

He must never have recourse to rod, but must bring the naughty children to book by friendly advice and appeal to their good feeling. 'Slow to find faults and quick to give praise,' must be the rule to act by. The teacher must inculcate a feeling of respect and love, rather than awe, in their minds. He who can do this can be a child with the children, can create a healthy relation between the teacher and the taught, will realise that from the influence of the children he can gain more than what he gives to them. Need I say that it is their neat dress and appearance that inculcate with a good grace the same virtue in their pupils? To quote from Children's Rights "The ideal teacher of the little

children needs strength and delicacy. She needs a clear judgment, and ready sympathy, strength of will, keen insight and oversight, the buoyancy of hope, the serenity of faith and the tenderness of patience. The hope of the world lies in children."

Gentlemen, I have pointed out to you in detail the various facilities for the successful teaching of Kindergarten. But I fear I shall leave room for criticism if I do not at least mention the obstacles that stand in our way of doing so.

Want of sufficient accommodation, lack of suitable furniture and apparatus, the proportion of the teachers to the pupils, the abnormal strength of our classes and the consequent lack of individual attention, the scarcity of home influence, the starving habits of our children, and lastly, lack of appreciation by the department, of which we need have no more fear, are some of the many hindrances that retard the progress of our children and the activity of the teachers.

Gentlemen, I have over-taxed your patience by my lengthy paper; so, let me conclude this with an earnest prayer that God Almighty be pleased to bless our children with everything that is useful to make them really happy and noble.

FREE EDUCATION IN AHMEDABAD.

We are desirous to publish the following:—

Mr. Tricumlal Ranchodlal Desai, B.A., L.L.B., a native gentleman of this place and a practising Vakil of the High Court at Bombay, has started a fund to enable the introduction of free English primary education up to Matriculation standard among the boys of the Khadayata Bania caste. Mr. Tricumlal has contributed Rs. 2,000 to this fund. It is proposed to provide school-fees and books to all school-going boys and give scholarships as the fund increases. The fund is named after his deceased father Mr. Ranchodlal K. Desai, who was a first-class Sub-Judge in the Bombay Judicial Service and Deputy Registrar in the High Court at Bombay.

THE MADRAS STUDENTS' ADVISORY COMMITTEE.

Secretary's Report.

26th October 1909 to 20th October 1910.

PART I.—STATISTICAL ACCOUNT OF DEALINGS WITH INDIVIDUALS SEEKING INFORMATION AND ADVICE AS TO STUDY IN ENGLAND.

Applications have been received from, or on behalf of, about 210 persons during this the first year of the Committee's working. This number is approximately correct, but, owing to one or two small sources of inaccuracy, such as doubtful identity in the case of applications from two or more sources on behalf of the same individual, cannot be given as absolutely accurate. Of this number, ten were made in the first instance to Mr. Arnold and were forwarded by him to this Committee. Most of these ten were made in the first two or three months of the Committee's working.

In the latter end of January the first circulars of the Committee were issued and widely advertised, with the result that, whereas before that date only 18 or 20 persons had applied directly to this Committee for advice, nearly 200 applications have come in since.

Over 420 communications by letter, post-card or telegram have been received and not counting the issue of circulars and notices, about 475 have been despatched, 111 interviews have been held on one occasion in March 5 in a single morning.

Nearly all the applicants have been Hindus, but 15 were Mahomedans and about the same number Eurasians, and about half a dozen Native Christians. The record does not distinguish castes. No ladies have applied.

It appears from the books that 34 have actually gone to England, but this number cannot be taken as accurate. In the cases of two students who had actually booked their passages and were recorded as having gone, it was only heard some time afterwards that their voyages had been in one case postponed and in the other put off altogether. On the other hand, it is highly probable that a number have gone without giving any notice to the Committee of their departure. It may, perhaps, be estimated that 40 at least have gone.

Of the 34, of whose departure the Committee has had notice, the proposed pursuits are as follows:—

The Bar—13.

Universities—Oxford 3, Cambridge 2, London 5, Edinburgh 7, Manchester, Leeds and Liverpool 3, Birmingham 1.

I. O. S. Examinations—3 or 4.

Engineering—4.

Metallurgy—1.

Medicine—7.

Forestry—2.

Agriculture—1.

Veterinary Hygiene—1.

Textile Industry—1.

Two of the number are Mahomedans, three Eurasians, one a Native Christian, and the remaining 28 Hindus.

There have been one or two enquiries from parents whose sons are already in England; and through Mr. Arnold from Educational institutions in England about the character of students who had applied for admission.

PART II.—GENERAL PROGRESS.

To the Committee consisting originally of 14 members and a Secretary there have been added during the year as ex officio members the Residents in Mysore and at Hyderabad.

There was an informal meeting on the 1st of November 1909 and regular meetings have been held on the 14th of December 1909, the 3rd of March 1910 and the 20th October 1910.

The following circulars have been issued:—

No. I.—General; No. II.—Admission to Oxford and Cambridge; No. III.—Conditions as to Guardianship; No. IV.—Senior and Junior students at Oxford; No. V.—Certificates of Identity; No. VI.—and its Supplement, the new Bar Regulations; No. VII.—Hints on the journey to England; No. VIII.—The spelling of names.

A copy of the hand-book of Information for Indian students, published by the National Indian Association, has been sent to each member of the Committee.

Government has issued orders (G. O. No. 535, dated 5—9—10, Educational) with regard to the travelling expenses of members of the Committee and copies of the G. O. have been circulated to members.

The expenditure of the Committee and its supply of stationery and printing are provided for by G. O. No. 74, dated 12—2—10, Educational, G. O. No. 153, dated 23—3—10, Educational, and G. O. No. 345, Misc., dated 13—6—10, Educational.

The Advisory Committees of other Local Governments in India have been in correspondence with this Committee and there has been a regular interchange of copies of minutes, reports and circulars.

In sending particulars to Mr. Arnold about students who leave for England, it has been found convenient to adopt a regular printed form.

Mr. Arnold has sent out the advertisements of three Homes in London to which Indian students might go, and the attention of those who ask for information and advice on this subject is being drawn to these.

Other correspondence with Mr. Arnold has been chiefly with regard to individual cases, and where it has not, its result has been embodied in one of the circulars of the Committee or has appeared on the minutes of a meeting.

THE THIRD MEETING OF THE MADRAS STUDENTS' ADVISORY COMMITTEE WAS HELD AT THE SENATE HOUSE AT 5.30 P.M., ON 20-10-10.

Present:—The Vice-Chancellor of the University of Madras, *President*; the Acting Director of Public Instruction, Mr. P. T. Srinivasa Iyengar, Mr. F. S. Davies, Dr. A. C. Mitchell, the Rev. Dr. William Skinner and Mr. K. Ramuni Menon, *Members*; and the *Secretary*.

Read letter from the Rajah of Kollengode, regretting his inability to attend.

Read and recorded Secretary's Report of progress from the appointment of the Committee up to date.

Resolved, that with certain omissions the same be printed and circulated.

Resolved, that a circular be prepared on the subject of necessary outfit for the voyage to England, copies being given to such students as actually require them.

Resolved in regard to the conditions required of an Indian Senior Student at Oxford that the Syndicate of the Madras University be addressed with a view to having the definition of 'Honours' amended by the University of Oxford so as to include those who have taken honours in the Madras University.

Resolved, that the Educational Advisor, London, be requested to inform this Committee, as far as possible, of the arrival in England of students from this Presidency.

(Signed). J. P. WALLIS,
President.

(Signed). ARTHUR DAVIES,
Secretary.

OUR ENGLISH LETTER.

LIVERPOOL, November, 1910.

For two or three days there has been a rumour of Cabinet changes affecting India in particular. For once the fickle jade has told the truth: we suppose they all do, sometimes. Lord Morley has found the work too heavy for him, and now, when, from our point of view, there is a lull in the storm that perhaps is brewing, he has taken a post that is a sinecure and made way for Lord Crewe at the India Office. Undoubtedly this is a good appointment. Ever since Lord Crewe took office in 1906, his reputation has steadily grown. He has practically not made a mistake, and it is not because he has been loath to act. His conduct of business in the House of Lords against the overwhelming odds that a Liberal

Minister has always to face there has been most masterly. There has been nothing exceptionally striking in his policy as Colonial Secretary, and he may be trusted to do his work at the India Office with tact and thoroughness. He is not a man of the calibre of Lord Morley, but he is a politician of the best order. He is one of the members of the Veto Conference which held its nineteenth meeting recently, and is expected to close its deliberations next week. It is interesting to observe—and a fact that has important bearings on the political situation in India—that Lord Crewe is a close personal friend of the new Viceroy. Lord Morley retires with the good-will of all his fellow-countrymen. He has no rival to-day in his own field of literature, and we are looking for a rich harvest in these remaining years. There was an article on Disraeli from his pen in the *Times* one day last week. He is said to have received £200 for it, and the distinguished journalist, who gives the information, is of the opinion that he was not overpaid. We agree, but would suggest that he was well-paid.

The University of Berlin has recently celebrated its centenary. And the brain of Germany (instead of its brawn) has been the subject of many panegyrics. Instead of the triumphs of war and the sinews of her warriors we have been hearing of the intellectual achievements which are the glory of Berlin University. A fund has been instituted to raise half a million pounds with a view to scientific research. They can do these things in America and Germany (for the money will not only be asked for, it will be obtained); they can get money in Scotland without asking for it or even wanting it. But in England it is only the Chancellor of the Exchequer who will give any money to anybody, and he has to rob Peter to pay Paul. It is now certain, by the way, that next year will see the re-adjustment, long overdue, of the relations between the Exchequer and the Municipalities with regard to expenditure on Education. Then we shall no longer have the overcrowded classes that disgrace so many elementary schools to-day.

What the new regulations regarding school accommodations entail may be seen from the fact that the Lancashire County Council will have to incur an expenditure of £300,000 to comply with them. The spending of this sum will be spread over a number of years, but it is sufficiently large to be somewhat startling. The expenditure on bricks and mortar goes on apace. Is it worth while? Dr. Hillard, High Master of St. Paul's, says No. Fifty years ago the 153

boys of St. Paul's were taught in one room without equipment of any sort. The room was simply furnished with boys and desks, and masters and desks. And those boys are at the head of their professions to-day. From which it surely follows that ———. To this day the equipment of the public schools, so far as class-rooms go, is far behind that of the elementary schools. The public school-boy gets plenty of air out of school, so it is supposed to matter but little what kind he gets in school. But there is no special virtue in desks that cramp, and blackboards which won't take chalk, and an atmosphere which suggests to the weary school-boy the troubled sleep of those on whom the task-master's eye may fall at any moment. Perhaps the doctrine of the mean would help us here. The true course must lie between these two extremes. And what comes off buildings might be put into the pocket of the assistant-master to make that holiday on the continent a possibility, and bring even Greece within dreaming distance: even elementary teachers have aspirations.

Professor Adams has been lecturing on the 'Dullness of Schoolmasters.' At first sight we regretted that he did not show the delicacy of feeling which marked Mr. Birrell when he wrote on 'The Alleged Obscurity of Mr. Browning.' But we found on reading the lecture that Professor Adams was at no pains to rebut the charge. He admitted it, suggested ways of removing it, and ended up by showing that dullness was not only expected but required of the teacher. To them we leave him.

The cause of technical education does not lack enthusiastic supporters to-day. It is pursued with zeal in all our great industrial centres. Liverpool is a case in point. Liverpool is not by any means a pioneer or an outstanding example of enthusiasm in this matter. Her great rival, Manchester, possesses infinitely superior equipment: the technical schools there have no superiors and have rendered immense service to the industrial communities of which Manchester is the centre. So Liverpool may be taken as a fair instance of what is taking place all over the country.

It is only half a century since the first step was taken in Liverpool in the foundation of the Queen's College, which is the precursor of the Liverpool University. There classes were held in Mathematics, Chemistry, and Engineering *inter alia*. Then in 1861 the School of Science was established. Mr. Norman Tate, a distinguished member of a distinguished family, controlled and

directed this institution, where numbers received a highly efficient technical instruction. In 1877 a further step was taken. On the initiative of one of the Rathbones science classes were instituted in connection with the elementary schools under the wing of the School Board. This was in 1877. Then followed an amalgamation of these science classes with the School of Science, and they were both controlled by a Committee which later (in 1901) was merged in the Technical Instruction Committee of the City Council. This has meant that much larger funds have been put at their disposal. And in consequence we have seen six branch technical schools spring up in various parts of the city, and a Central Municipal Technical School has been built at the cost of £100,000. To-day at a nominal cost instruction can be obtained in almost any branch of technics. The prospectus for the present year shows a list of nearly sixty subjects. The modern youth can certainly not complain of lack of opportunity, for, if his tastes lie in the direction of arts rather than science, a boy of good ability and industry can readily obtain a scholarship from an elementary to a secondary school, from which he has a fair chance of a substantial scholarship to the local University, or, if he be of striking ability, to Oxford or Cambridge. The educational ladder is a simple matter of fact to-day. From year to year we can see boys steadily climbing it. Oxford itself is once again to be the home of "poor clerks."

The Universities have just entered upon another year's work, but term is only a few days' old. But there is some news reported from Cambridge. Christ's have made a good choice in selecting Mr. Shipley as Master. He will do well. Dr. Keynes follows Mr. Clark as Registrar: another good appointment. And all interested in University music are glad to see the M.A. degree conferred on Dr. Mann, whose cheery presence and heavy wit have endeared him to all.

Reviews and Notices.

NOTES ON CORRECT ENGLISH, BY MR. HENRY DODWELL, M.A. (CHRISTIAN LITERATURE SOCIETY FOR INDIA.) Re. 1-4-0.

Mr. Dodwell's book on *Correct English* must be found immensely useful by those who are engaged in the work of teaching English composition in Indian colleges. The value of the work is considerably heightened by the author's attempt to dwell on the peculiar weaknesses of the Indian

student when grappling with the difficult task of expressing himself in English. In clearness of arrangement and lucid exposition the book leaves nothing to be desired. In a series of chapters he has tried to draw pointed attention to various kinds of errors in composition.

It must however be admitted that the principle underlying the work is open to grave question. The enumeration of mistakes with a view to correction may lead to the students acquiring familiarity with mistakes they are not guilty of. In spite of the sanction accorded to this principle by the authors of the *King's English*, it is difficult to place absolute faith in its wisdom.

It is not edifying to see an exponent of 'good style' constantly venting his wrath at innocent school-boys engaged in the acquirement of a foreign language. 'Foolish,' 'absurd,' 'silly,' 'nonsense,' 'stupid' are the only expressions which come to the author's mind when he thinks of the Indian writing English. We might be allowed to draw his attention to the fact that the remarkable success achieved by the Indian in learning English is a phenomenon for which there is hardly a parallel in the history of the world. And after all most of the mistakes pointed out by Mr. Dodwell are not peculiar *Indianisms* as he thinks, but dreadful ironies which the schoolmaster in every country has to face. An English school-boy is as much liable as the Indian school-boy to argue from false analogy that 'scenery' might have a plural as many other words have—this does not appear characteristically Indian. Except in cases of actual translation from a vernacular idiom there is no room for such self-complacent criticism.

We should be failing in our duty if we did not draw attention to the curious lapses of the author's style into slipshod, colloquial and loose English. The author of *Correct English* must be above writing in a literary work a sentence of this type (seen on the first page itself): 'All these are *terribly bad*.' Nor do we see any merit in his saying 'cannot ever speak of' in preference to 'can never speak of.' The writer's promiscuous use of 'of course' might have been kept more under restraint. What has he to say to this—'This is clearly brought out in the common phrase 'to butcher any one in cold blood,' that is to kill *them* coldly and deliberately.' 'If you have read any Roman history you will know'.....is neither good English, nor good taste. 'Dates from some years back' is not very happy, if not actually wrong. We hope that such slips will be corrected in a future edition.

That the book deserves a warm welcome. The C. L. Society deserve to be heartily congratulated on the remarkable excellence of the get-up.

BOOK-KEEPING AND ACCOUNTS, BY M. WEBSTER JENKINSON, F.C.A.; EDWIN ARNOLD; LONGMANS, GREEN & Co., LONDON. PRICE 16s. net.

Another volume has been added to the list of works on Book-keeping, the author of which, Mr. M. W. Jenkinson, has been for several years Lecturer on Accounting to the Commercial Classes in Sheffield. The author has, therefore been able to realise the difficulties of students of the subject and has endeavoured to deal with it as exhaustively as possible. The book deals, however, mainly with the advanced portion of the subject and will be found useful only to those who already possess a knowledge of the elementary and the early stages of Book-keeping. In about 600 pages, many very useful and important portions of the subject have been dealt with in a lucid and readable manner. Income and Expenditure account, Double Account system, Depreciation, Reserve and Sinking Fund, Consignment and Joint Adventure, Departmental and Branch accounts, Stocks and Stores account, Cost accounts, Partnership and Companies' accounts, Reconstruction and Amalgamation of Companies, Bankruptcy accounts have all been adequately and explicitly dealt with. The question of the treatment of by-products in the case of certain manufactures has not been dwelt upon in the chapter dealing with Cost accounts. This is an important point, but most of the books on the subject pass over it. The general principles of law affecting some classes of accounts have been presented with clearness and are free from confusing details. On the whole, the subject has been made intelligible and interesting. The book will be of great use to students preparing for the higher grade examination of various bodies, teachers of the subject, and business-men. We are afraid, however, that the price, 16s. net, will tend to limit its sale among students to most of whom such an amount is a heavy expenditure for a single text-book. But, considering the size of the book, the get-up, and the limited scope for its use, it is not, perhaps, practicable to fix a lower price. A select and classified set of exercises on each chapter of the book at the end adds to its completeness and value.

THE INDIAN TEACHER'S GUIDE TO THE THEORY AND PRACTICE OF MENTAL, MORAL AND PHYSICAL EDUCATION, BY PERCIVAL WREN, M.A. LONGMANS, GREEN & CO. 3 Rs.

The book may be very usefully placed in the hands of students of Training Colleges and of teachers outside. The need to educate and bring out the best that is in boys and girls, to so train them as to make them useful members of society, is emphasised and the evil of cramming for examination purposes is denounced.

In such a comprehensive guide to the whole of the theory and the practice of education, the treatment of the several divisions under each head cannot but be of the bare outlines of the subject, dwelling on only the most important principles. The book is full of good sense and shows that the writer has been observant of the failings of the teachers here and elsewhere.

Those frightened by the enthusiasm of the expounders of the Direct Method will do well to read carefully the chapter on the teaching of English. A Bombay Educational officer, the author, naturally recommends Mr. Nelson Fraser's books, though the local Text-Book Committee wouldn't have anything to do with Mr. Fraser.

There is nothing novel or revolutionary about the book and it condenses the accepted learning on the subjects treated and presents it in an attractive form. The addition of the last chapters gives it an appearance of scrappiness but that is nothing compared with the usefulness of the anthology.

We recommend the book to teachers and to all interested in education.

NEW POETICAL READER FOR UPPER SECONDARY CLASSES [COMPILED AND ANNOTATED BY TWO GRADUATES OF THE MADRAS UNIVERSITY]. PUBLISHED BY T. KRISHNASWAMI AIYAR, HINDU EDUCATIONAL TRADING COMPANY, KUMBakonam. Price As. 12.

In these days of Text-book Committees and rigorous examination of the contents of books submitted to the Boards, he is a bold man who ventures to publish a book for the use of Upper Secondary classes and that on English literature with annotations by apparently Indian teachers of High Schools. We have carefully perused the contents of the book and can see nothing to object to in the matter of the selection. Most of the pieces are narratives told in simple rhymes. Indian students

are generally attracted by an ornate style and the compilers have carefully and we think, wisely declined to pander to such a taste. The Madras University has set a good example by its selections for the Matriculation Examination. The compilers have followed the example of their *Alma Mater* and should therefore succeed in winning popularity. A bolder type might have been used in the annotations which explain only what to many Indian students presents real difficulties. The typography of the text is good and we hope that when the book passes through a second edition which we are sure it will do, the lines will be numbered. We wish the compilers and the publisher success in their maiden endeavour to supply the reading-population with wholesome literature.

ARNOLD'S COMPOSITION LESSONS, ILLUSTRATED. LONDON. EDWARD ARNOLD. Books I to III cost each 2d; Books IV, V and VI each 3d.

The first three books of the series may be profitably used in the Primary School classes of our schools. Teachers of the 3rd and 4th Standards find considerable difficulty in using 'the Direct Method.' Book I, for example, is helpful to the 3rd Standard teacher in enabling his children to construct sentences out of familiar words for common objects. Book III gives specimens of sentence-building of a higher kind with the use of adjectives, adverbs and conjunctions. This may well be used in the 4th Standard by the teacher.

The second three books are fit for Forms I, II and III.

Book IV gives sentences illustrating the use of different parts of speech. Pupils are led to them in an easy and pleasant manner.

Book VI deals with analysis of sentences. The portions relating to punctuation and theory of essay-writing may be omitted in Form III.

The books are handy. The first three contain nearly 30 pages and the second three, nearly 60 each.

They may be heartily recommended to teachers for their proper use.

PRIZE DISTRIBUTION OF THE WARDLAW COLLEGE, BELLARY.

The distribution of prizes to the pupils of this institution came off on the evening of Friday, the 11th instant, in the spacious school hall. There was a large gathering present of the leading citizens of the place. The Collector, Mr. J. A. Cumming, presided, and the large number of choice prizes, which were much admired, were given away by Mrs. Cumming. After prayer by Rev. E. H. Lewis, the following interesting account of the work of the institution for the past two years was given by the Principal, Mr. J. P. Cotelingam.

There are very few public occasions, he said, on which those connected with an educational institution meet the parents and guardians of the pupils attending it. The prize distribution is one such occasion, and a short account of the work of the institution during the year is count of the work of the institution during the year is expected. Often-times there is not much to report. Work is the same almost from year to year. There are very few varying incidents. A few details regarding attendance, the state of the finances and the results of the pupils in the public examinations are those generally given.

THE NUMBER ON THE ROLLS

on the 21st March, 1910, was 313 as against 267 in March, 1909, and the average attendance was 272 in 1909-10 as against 249 in 1908-09. A large number have sought admission year after year but they could not all be admitted. Several have been refused admission, as they were not found fit on examination for the classes for which they produced certificates. In 1909 there were 154 that sought admission. Of these 51 were refused admission, and of the 118 that were admitted 14 were sent to classes lower than those for which they brought transfer certificates. Up-to-date this year 243 have been registered for admission. As many as 68 have been refused admission, and of the 180 admitted 29 joined lower classes.

FINANCES.

The fee income for the year ending March 1910 was Rs. 5,671 as against Rs. 5,370 for the previous year. Grants from Government went down from Rs. 3,460 to Rs. 2,250 this year. Receipts from subscriptions and endowments rose from Rs. 117 to Rs. 125. The expenditure on the working of the institution fell from Rs. 12,612 in 1910 to Rs. 11,031. The net cost to the London Missionary Society for the year 1909-10 was Rs. 2,969 against Rs. 3,245 the previous year. There were several vacancies on the staff during the year. Had these been filled up and the complete staff maintained the net cost would have been much higher.

SCHOLARSHIPS AND PRIZES.

The Beynon Scholarship is of the annual value of Rs. 52-8-0. From this amount two boys of the Sixth form were helped to pay their fees. Five Government scholarships were held in 1909 by the pupils of the institution. This year the institution has been awarded eight scholarships, 4 in the High School and 4 in the Lower Secondary classes.

The school has seven endowments for prizes. The Ranade Prize which was attached to the S.F.A. class has been transferred to the Sixth form. The Havelock Prize endowment, consisting of Rs. 300 invested in Government paper, will be raised to Rs. 450 at the end of this year, bringing the total value of the endowments to Rs. 1,700.

EXAMINATION SUCCESS.

Four students appeared for the Peter Cator Examination in 1909, and all the four passed. Last November eight appeared, and all the eight passed. Two students appeared last year for the Government examination in Drawing, one for the Elementary and one for the Intermediate grade, and both passed. Two students sent exhibits to the Nellore Educational Exhibition, and one was awarded a Certificate of Merit. For the Matriculation Examination of December 1908, a year when the number of failures in English was unusually high, 18 appeared and of these 9 were declared eligible to sit for a re-examination. In the second examination 8 passed. Last December, another year of abnormal failures, 12 students went up for the examination and of these 8 passed. All three are studying in Madras for the Intermediate examination.

THE SCHOOL LEAVING CERTIFICATE.

This year more than half the number studying in the Sixth form have elected to appear for the University examination, but hereafter it may not be so. Parents and guardians finding that the passing of the Matriculation examination is not a passport for entrance to the public service may not be inclined to send their children up for that examination. They will prefer the School Leaving Certificate Course for that reason. The Educational Department thinks a great deal of it. It is no doubt a big scheme for the improvement of Secondary education, but it is a cumbersome scheme. There are a number of practical difficulties in the successful working of that scheme. If it was not made a qualifying test for admission to the public service, and if the University examination had not at the same time been deprived of that privilege, a privilege which it had all these years, the scheme would have a powerful rival in the Matriculation Course. It is a great pity that after the reforms recently introduced into the curriculum the Matriculation course should be forced to die out. All things considered, it would have been good for education in South India, good for the University Examination and the School Leaving Certificate Course that both should qualify for entrance into Government service, and that all High Schools should have the option of selecting either of the two courses. As matters stand at present there will be very few schools that will be able to prepare pupils for the University examination, and that will be a calamity. In the new scheme a great deal of responsibility is thrown upon the Headmasters of High Schools, a step in the right direction, and it is hoped that the experiment will prove a success.

READING ROOM AND LIBRARY.

In the Reading Room 24 magazines and newspapers are made available for the masters and the High School students. The subscriptions from the masters amounted to Rs. 52-10-0. Last year the cost of maintaining the Reading Room was nearly three times that amount. The Library was added to and the number of volumes increased from 1,112 to 1,175.

THE THREE UNIONS

connected with the institution have been in existence for 15 years and more. All three—the Prayer Union, the Dialectic Union and the Athletic Union—have worked satisfactorily, and their membership has steadily increased. Every member pays a small subscription per term, and I am glad to be able to state that as the result of economic management the expenses connected with each of the Unions have been kept within the income. For

some time past a small sum was put by each year by the Dialectic Union for the purchase of lamps. Two good lamps were purchased last year and the sum of Rs. 100 was invested in Government paper. The interest from that endowment will be used for excursion purposes. Attached to the Athletic Union are three Cricket Clubs, a Badminton and a Tennis Club. The savings of the Union, amounting to Rs. 100, have likewise been set apart as an endowment for the encouragement of athletics. All the three Unions have for the present an endowment of Rs. 100 each. It is my earnest hope that in years to come these endowments will be considerably added to, so that the Unions may have a regular and steady income besides subscriptions from members for carrying on their work efficiently.

THE MASTERS.

In the work connected with the Unions and in regular teaching work I have been greatly helped by the masters. It is with much pleasure that I acknowledge with thankfulness the services rendered by the staff.

INSPECTION REPORT.

Mr. Champion inspected the School in November last, and the following are extracts from his Report:—

Teaching Staff.—It is much to be regretted that the 1st Assistant's place is still vacant. The Mathematics teaching has been divided among the available staff, but the work has necessarily suffered. The places of the 4th and the 11th Assistants, too, are vacant. The Principal must have experienced difficulty in organising the work of the school.

Reading Room and Library.—Useful and up-to-date books have been supplied.

Details of fee income.—There are no free or half-free scholars, and all pay the same rates including Christian boys belonging to the Mission. Well-to-do Mahomedan boys are made to pay full rates.

Public examinations.—Considering the general poor-ness of results, the school did fairly well. I am pleased to report that promotions are generally strictly made, and a genuine effort is made to keep boys in classes for which they are fit. Great care has been exercised in the observance of Proceedings of the D. P. I. as regards admission. As firm a control as possible is kept over the pupils as the Register of Corporal Punishments testifies. A reform that might be introduced into all schools is that the possession of a cigarette is punishable. The boys were neat, orderly and respectful.

The general impression of the Inspecting officer with respect to the efficiency of the institution is thus expressed:

"This is a well-organised school under the firm control of the Principal, the tone and discipline are excellent. It is a pity that it has been deprived of three teachers

for so long; the want of a Mathematics graduate is keenly felt, and the work of the school has been much handicapped during the year. It is to be hoped that the management will redouble its efforts to fill the vacant places on the staff."

THE CHAIRMAN'S SPEECH.

After the distribution of prizes, Mr. Cumming made the following speech:—

I heard a good deal about the Wardlaw College before I came to Bellary; and one of the first persons I met here was Mr. Cotelingam, the Principal of the College. I came from a District which has made great progress in matters educational. It has a first-grade College, a second-grade College, and a High School in almost every taluq of the District. On coming to Bellary I made enquiries of Mr. Cotelingam as to the state of things here; and I learnt with regret that the Wardlaw College was no longer a second-grade College.

Well, Gentlemen, we have all listened to Mr. Cotelingam's report of the work of the institution during the last two years. I was very much interested in one part of it: Boys are not accepted at their own valuation here, but they are fit for. They cannot assimilate knowledge. Many a boy that promises well at the beginning of his career turns out a failure later on, all because of this system of forcing.

Mr. Cotelingam dwelt at some length on the difficulties connected with the practical working of the School Final Scheme. I am not going to enter into a controversy with a veteran educationist like Mr. Cotelingam on this subject. We ourselves have some misgivings as to the School Final System, and the future only can reveal what it can and cannot do. One thing, however, is pretty clear; it leaves ample scope for the idiosyncrasies of Headmasters of High Schools. Mr. Cotelingam is so strict in his admissions, and let us hope he will be no less strict in awarding the School Leaving Certificates.

We have heard extracts from the Inspection Reports read out to us just now. I am very pleased to see that the reports speak so well of the institution and its work. That to me is everything by way of testing the efficiency of an institution. Boys do not go to school simply to learn books. They go there to train themselves for life's work later on. Discipline is most necessary now; respect towards others in later life. What I have seen of the conduct of the boys here to-day fully bears out the Inspector's remarks on the discipline of the institution.

I congratulate Mr. Cotelingam on the successful results that he has had so far, and I am sure he will continue to have similar results. (Cheers.)

After the distribution of bouquets Mr. Cotelingam thanked Mr. and Mrs. Cumming and the ladies and gentlemen present at the function.

Pathamadai High School XVth Anniversary.—A correspondent writes:—The XVth Anniversary celebration of the Young Men's Club, attached to the High School, Pathamadai, took place recently. The programme, as usual, ran for the whole day, with games, musical entertainments, athletic performances and tea parties. The public meeting of the day was held in the evening at 5-30 P.M., and was presided over by our popular and sympathetic Sub-Collector, A. McG. C. Tampoe, Esq., I.C.S. He was received by the Manager, the Headmaster and the Club Secretary at the school gate and was conducted to the gymnasium where a few feats of skill and strength were shown by the Gymnastic Instructor and two other students on the parallel and horizontal bars. He was then taken to the terrace, where he appreciated the beauty of the landscape scenery, and from there he went to the laboratory, where he spent a quarter of an hour. The meeting began at 6 P.M. and terminated at 8-15. In his introductory speech the President said, that owing to the pressure of his official work, he had not come prepared with anything interesting and said that he would reserve his few observations for the end. The Secretary read his annual report which said that the two branches of the Club—Literary and Athletic—were doing their work very satisfactorily, the former by conducting weekly meetings where debates and essays were carried on and the latter by the efficient management of the Foot-Ball Club. It also spoke of the object in view, i.e., to introduce Hockey in the Athletic Club. Then, Act IV, Scene III of Shakespeare's *Julius Caesar*, and a humorous dialogue from "Chandrahassa" together with some recitations were gone through. The President then remarked as follows:—He said, again, that as he was unprepared, he had nothing sapient or interesting to offer to the audience. He said that the performances were excellent, though he first thought that the staging of Act IV, Scene III of *Julius Caesar* was a bold attempt. He said he would encourage the introduction of Hockey but would suggest also Cricket, as better suited to the climate and the environments of Indian youths. He said very much in praise of the physical training of the youths in this school as being better than that of any other Indian school he had seen, and admired the gymnasium very much. He said that the subjects for essays and debates were well chosen and expressed his desire to hear a debate of the Club. As the Secretary has expressed his difficulty in having lectures often delivered under the auspices of the Club, as Pathamadai was an out-of-the-way place, he said he would even post cases to Pathamadai, if thereby he could get the Vakils who are graduates of the University to lecture to them. He congratulated the students and the school authorities for having successfully conducted the Club for 15 years. Thanking the Secretary for the honour he had done him by asking him to preside, he resumed his seat. The meeting then terminated with a hearty vote of thanks to the Chair and the distribution of flowers and *pan supari* to the audience.

In the night, the whole of "Chandrahassa" was staged from 9-15 P.M. to 2 A.M. The drama of the night was not attended by the President, owing to ill-health. The audience for the night was very large, in spite of the introduction of tickets on payment. The performance was observed to have been excellent by all. Especially, the parts played by *Dustabuddhi*, *Chandrahassa* and the humorous *Kharaka* deserve special praise.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—The privilege leave granted to Mr. M. Bava, Sub-Assistant Inspector of Schools, Central Mappila Range, is extended by one month.

Mr. M. Govindan Nair, Sub-Assistant Inspector of Schools, Cannanore Range, to act as Sub-Assistant Inspector of Schools, Palghat Range—to join on relief.

Miss A. M. C. Arnold, Inspectress of Girls' Schools, Central Circle, to be Inspectress of Girls' Schools, Southern Circle, with effect from 29th October, 1910.

Miss C. M. Lynch, Inspectress of Girls' Schools, Southern Circle, to be Inspectress of Girls' Schools, Central Circle. To join on return from leave.

Mr. S. Subrahmanya Aiyar, First Assistant, Teachers' College, Saidapet, is granted privilege leave on half salary for one month, with effect from the 18th instant.

The Director of Public Instruction is pleased to grant Mr. A. Venkanna Pantulu, Sub-Assistant Inspector of Schools, Cocanada Range, privilege leave for one month, with effect from the date of relief and to appoint Mr. P. Venkayya, Supervisor of Elementary Schools, Amalapur, and Acting Sub-Assistant Inspector of Schools, Amalapur Range, to act for him in the probationary class, during his absence on leave or until further orders—to join on relief.

The Director of Public Instruction is pleased to appoint Mr. V. Tarakabramham, sub. *pro. tem.* Supervisor of Elementary Schools, Cocanada, to act as Sub-Assistant Inspector of Schools, Chicacole Range, in the probationary class *vice* Mr. P. Appalarasayya Pantulu, on other duty or until further orders—to draw Rs. 55 per mensem.

Mr. M. Ramaswami Aiyangar, Assistant Inspector of Schools, Nellore district, and lately Acting Second Assistant, Teachers' College, Saidapet, to act as First Assistant of the same institution, with effect from the 20th instant, *vice* Mr. S. Subrahmanya Aiyar on leave or until further orders.

Miss C. M. Lynch, Inspectress of Girls' Schools, Southern Circle, has been granted an extension of leave on medical certificate for one month.

The privilege leave granted to Mr. H. G. Krishna Rau, Sub-Assistant Inspector of Schools, Gooty Range, is extended by two weeks.

Mr. K. Venkataramayya, Sub-Assistant Inspector of Schools, Gunnavaram Range is granted privilege leave for one month and fifteen days from the 7th November 1910 or from the date of relief thereafter, and Mr. V. Lakshminarasimham, Supervisor of Elementary Schools, Narasapur, is to act for him in the probationary class during his absence on leave or until further orders.

Mr. S. Lakshmana Aiyar, Fourth Assistant, Teachers' College, Saidapet, and Acting Sub-Assistant Inspector of Schools, Erode Range, is granted privilege leave for a month with effect from the date of relief, and Mr. M.A. Appaswami Aiyar, Supervisor of Elementary Schools, Erode, is to act for him in the probationary class in addition to his own duties during his absence on leave or until further orders.

The privilege leave granted to Mr. H. Perayya Sastri, Sub-Assistant Inspector of Schools, Guntur Range, is hereby cancelled.

The Chancellor of the University of Madras is pleased to nominate the following gentlemen to be Ordinary Fellows of the Madras University:—

Mr. E. W. Middlemast, M.A., Acting Principal, Presidency College, Madras.

Mr. H. S. Duncan, M.A., Deputy Director of Public Instruction, Madras.

Mr. M. Hunter, M.A., Principal, Rajahmundry College, Rajahmundry.

Mr. J. G. Tait, M.A., Principal, Central College, Bangalore.

Rev. Father F. Bertram, S.J., B.A., D.D., Rector of St. Joseph's College, Trichinopoly.

Poor Boys' Fund—We are glad to read in the report of the above fund for the half-year ending the 30th September 1910, that much useful work has been done. The provision is now limited to Hindu boys studying in the colleges of Madras, the scholarship for the Intermediate course being Rs. 7 per month and that for the B.A. course Rs. 10 per month. The student is also required to produce a certificate once in six months from the Principal of his college in which the scholarship-holder undergoes his training as to his progress in his studies. A Committee consisting of Prof. M. Rangachariar, Prof. K. B. Ramanatha Iyer, and Mr. V. S. Srinivasa Sastriar was constituted for the year 1910-1911 for the purpose of selecting students for the grant of scholarships. Advertisements in the local papers and colleges inviting applications for scholarships from the poor boys' fund were published in the months of April and August last; and in response thereto, 106 applications were received and after a careful consideration of all of them, 33 students were selected by the Committee, as deserving of help from the fund. Seven scholarships have been assigned to the Senior B.A. class students, 8 to the Junior B.A., 8 to the Senior Intermediate, and 10 to the Junior Intermediate. Of the students selected, 15 are studying in the Pachaiyappa's, 9 in the Christian, 7 in the Wesley, and 2 in the Presidency Colleges. During the period under review one discontinued his studies,

one gave up the scholarship from the fund in preference to another, and three ceased to be scholarship-holders, as it was found they were receiving help from other sources. The total number on the rolls on the 30th September 1910 who were drawing scholarships from the poor boys' fund was 28. The total amount collected up to date is Rs. 2,434, and this is deposited in the Indian Bank (Savings Bank Account). The balance on the 30th September 1910 was Rs. 1,271-9-7.

The Madras Christian College.—A correspondent writes:—The eleventh anniversary of the Natural History Society was celebrated in the New Biology Lecture Hall on Saturday, the 19th of November at 5 P.M. Among others, the following were present: Dr. W. Skinner, Dr. Mrs. and Miss J. R. Henderson, the Rev. W. Meston, Mr. O. Cundasawmi Chetty, Mr. P. Sawmi Chetty, B.A., and Mr. George Mathai, M.A. The hall was tastefully decorated. The traditional pride of the Society was kept up by the five charming artistic diagrams on the board drawn by the members themselves. Refreshments were served to the accompaniment of music. An interesting programme of songs and recitations was then gone through. Mr. G. R. Parasuraman delighted the audience with "Thought Reading." Mr. N. T. Thampi recited "Our Baby" with great effect. Mr. Solomon G. Manickam, the Secretary, read the annual report, which recorded the main lines of activity during the current year and the prominent part played by trips and excursions by land and sea.

Dr. J. R. Henderson, the President of the Society congratulated the members on their having had the privilege of assembling for the first time in the new spacious Biology Lecture Hall. He also exhorted the members, past and present, to begin collecting specimens in all seriousness and wished for the day when the College Museum would be considered the finest in India.

The Rev. Dr. Skinner, who presided on the occasion, in a short felicitous speech referred to the splendid work of Dr. Henderson during the past quarter of a century he has been connected with the College. With a hearty vote of thanks to all those present, the proceedings of the evening were brought to a close.

The Trichinopoly Teachers' Association.—A correspondent writes:—The Seventh Anniversary of the above Association was celebrated on Friday, the 4th instant, with Mr. V. R. Venkatarama Aiyar, B.A., L.T., Inspector of Schools, VI Circle, Tanjore, in the chair. In spite of the inclemency of the weather the meeting was well-attended and among those present were, the District Inspector of Schools, the local Sub-Assistant Inspector and the Head Masters of the local Roman Catholic Training and other Secondary Schools. The proceedings began with the National Anthem followed by the reading of the Annual Report. A lecture on "the Feelings

which one has of Training Schools after leaving it" was delivered by Mr. G. Sreenivasatatchar, B.A., L.T. He remarked that the teachers' profession was the noblest of professions though the sorriest of trades. In the course of his address the lecturer referred to the feeling of corporate life among the students during their course of training. The Chairman said that he was very glad to note the successful record of useful work done by the Association for the past seven years. He remarked that in the same way as the completion of the seventh year marked the awakening of a new spiritual life among the twice-born of our holy land, so also the Association has now been lawfully recognised by the constituted authorities of the Department. The members who are now going out as teachers should have as their model their enthusiastic Headmaster in trying to improve as far as it lay in their power their own schools. When they go out as teachers to the rural parts of the District their leading motto should be "the three C's," conscience, courage and courtesy, the three pillars on which the whole moral edifice stands. This should be followed by a systematic and regular course of instruction in the three R's. The meeting was brought to a close after the usual vote of thanks to the chair and to the other revered guests of the day.

The Erode Mahajana High School.—The Prize-distribution ceremony was celebrated in the school premises under the presidency of Mr. V. S. Srinivasa Sastriar, B.A., L.T., F.M.S., of the Servants of India Society. The Headmaster read the Report for the year 1909, and brought to the notice of the Mahajanas the imperative need there now existed under the present rules of providing further accommodation and appliances, and also finding funds for the institution.

The Chairman distributed the prizes to the successful students, and then delivered a very felicitous address to the students of which the following is a summary: After thanking the School Committee for having invited him to preside on the occasion, the Chairman said: "I do not propose to dwell elaborately upon education, but I must say something which would interest the predominant partner, i.e., the school boys. My remarks are in the first instance addressed to students so that they may be profited by them." He then proceeded to compare the past and present system of education imparted in schools and colleges. He then went on to say: "We subjected even the teachers and professors to rule and violent treatment. We used a certain kind of brick-bat in those days. There was a want of refinement in the students then, while in the present-day students a distinct improvement and refinement of manners is desirable. "As regards the teaching itself, the first change noticeable in the present day manner of teaching, is the endeavour to make the subject interesting. Then the teachers are trained how to present the subjects so as to captivate the students' understanding. The old

system had tended to develop the faculty of memory to the prejudice of the other faculties. At present a reaction has set in, and students have now begun to neglect the cultivation of memory. In all branches there is a distinct improvement in the quality of teaching. Experiments were practically unknown then. My own Science teacher had the Groves' Battery worked by a brother Science-master, and kept himself at a respectful distance, and at the same time warned us against approaching it. And after the experiment was over, the students and the teacher felt considerable ease and relief. At the present day the teaching of Science has been placed on a more satisfactory footing. Schools are compelled to equip themselves with a complete set of apparatus, and students are obliged to handle the objects, and to make the experiments themselves. In my days there were no Educational Rules, and students could of their own choice leave one school and join another, and the condition of affairs was growing from bad to worse. The Educational Rules were introduced in or about the year 1892, and these were designed to check the rise of what then was called adventurous schools, and also to check their growing deterioration. Mr. Grigg, the late Director of Public Instruction, introduced most salutary rules in regard to the recognition of schools, and made it imperative that only students from recognized schools were eligible for appearing for the Matriculation Examination. Though this was not a complete remedy the changes introduced had gone a great way to check the rise of adventurous schools. The sadness of the wreck of students in the Matriculation Examination in recent years is perhaps due to the enormous increase in the number of students, perhaps more than double the number that appeared a decade or long ago. This increase must have the inevitable result of bringing down efficiency and consequently that individual attention which was bestowed in former days could not be given now. Some limit must therefore be fixed to the number of admissions to the classes, and admissions for the sake of revenue ought to be discouraged. Another important feature of the present day education is that classes other than Brahmins, who were slow to participate in the benefits of English education, are increasing in numbers, and we now find all castes and creeds of people taking the same advantage so that education had become more or less democratic. In conclusion the lecturer made an earnest appeal to the students exhorting them to cultivate the sympathetic instincts of human nature, and to practise civic virtues and duties, and to be of use to their fellow countrymen in times of need and distress.

The Presidency College Union Society.—Under the auspices of the Madras Presidency College Union Society, a memorial lecture was delivered recently in the Principal's Lecture Room by Mr. A. Subramania Aiyar, Professor of Philosophy, on Professor William James, when Mr. P. R. Sundara Iyer, High Court Vakil, occupied the chair.

The proceedings commenced with a few introductory remarks from the chair.

The lecturer in the course of his discourse on the life of Professor William James said that as soon as he heard of the death of Professor James he proposed to the Hon. Mr. J. H. Stone, then Principal of the College, that he should grant the College a holiday, but he said that it was too small a tribute to be paid to the memory of such a great man and that the best thing he (the lecturer) should do was to deliver a memorial lecture regarding him and his works. And in response to that he was there that night. The lecturer then went on to say that the late Professor James by his vigour of thought, originality of thinking and firmness of zeal had profoundly influenced the thought of the age and had been able to command the admiration not only of the eminent men of his own continent but also of the leading thinkers of all the civilised countries of the world. The late Professor was born on 11th January 1842 and died scarcely a couple of months ago of heart disease. His father was a man of strong intellect and so they were free to say that he must have inherited from his father his powerful and incisive thinking which characterised his writings in later years and which marked him out as one of the greatest philosophers. Besides his peculiar religious predilections had made him somewhat unpopular to the more orthodox thinkers. But his charming personality was even greater than his writings. In early life he had scientific and medical training and became an M. D. in 1870. Soon after he was appointed to teach Anatomy and Physiology in the Harcourt University. Then he was transferred to the Psychology Chair and then to the Philosophy Chair, which he continued to hold until his retirement in 1907. In 1898 the late Professor James delivered the Ingersoll Lectures on the Human Immortality, and in 1902 he delivered the Gifford Lectures on religious experiences.

The lecturer then went into detail regarding the notable works published by him during his lifetime and concluded by saying that the late Professor James was an eminent thinker and his works deserved to be studied by all Indian students.

The Chairman, in bringing the proceedings to a close, said that as it was already somewhat late, and he would not inflict on them another speech but commend to them the works of the late Professor James, which all students ought to study and ponder over. With a few more remarks and with a vote of thanks, the meeting terminated.

Rajah's High School, Ettiyapuram.—The Coronation Hall of the Rajah's High School, Ettiyapuram, presented a lively appearance on Saturday, the 5th instant, owing to the celebration of the distribution of prizes to the successful candidates of the institution under the presidency of Mr. R. J. Grieve, M.A., Inspector of Schools, VII Circle. The sports finals in connection with the prize distribution were held at 7.30 A.M., under the patronage of the Rajah of Ettiyapuram and the

Hon'ble Mr. S. T. Shanmugam Pillai, Dewan. At 4.25 the Maharajah and the Dewan motored to the school and were received at the gate by the Headmaster, Mr. T. S. Nellaippa Sastri, B.A., L.T. The proceedings then commenced with a prayer in Tamil and English by the Headmaster. The Headmaster read the annual report and prizes were then distributed including those for the sports. The President then rose amidst deafening cheers and said that he was very much pleased with the proceedings of the evening and expressed his great satisfaction at the due provision made for both work and play. He hoped that the extension of the building and the hostel would be an accomplished fact before the next inspection and concluded with his best wishes for the prosperity of the school.

The Hon'ble Mr. S. T. Shanmugam Pillai, the Dewan and Manager, then said a few words thanking the Maharajah for his liberality.

The Bangalore Commercial High School.—At the annual distribution of certificates and prizes to the successful pupils of this school, on the 10th instant, His Highness the Yuvaraja spoke as follows:—Ladies and gentlemen: Mr. Lakshminarayana is to be complimented, I think, upon the interesting report which he has just read out to us. It is a very satisfactory record of progress of which he has reason to feel proud, for, I believe, the school owes everything to his energy and perseverance. It is, I understand, supplying a real want and is attracting every year a fairly good number of candidates. The results of the examinations reflect much credit on the staff, and a noteworthy feature of the school is that it affords facilities for the training of girls as well. I sincerely trust that the management will in course of time be able to realise some at least of the hopes which they cherish. I must now offer my congratulations to the different young persons who have received prizes and certificates this evening and wish them similar success in the outer world which they are about to enter. You need no assurance that it has been a real pleasure to me to preside on this occasion, and with these few remarks, I shall conclude thanking you most warmly for the cordial welcome which you have extended to me and wishing the school all prosperity.

Noble College, Masulipatam.—The Government have sanctioned a grant not exceeding one-third of the actual expenditure not exceeding Rs. 2,460 towards the cost of constructing an additional building for the Noble College, Masulipatam.

Grants to Colleges.—The Government have sanctioned as grants towards the purchase of furniture, books and scientific apparatus and appliances for the undermentioned colleges the amounts specified

against each of them, or one half of the actual cost of the articles purchased, whichever may be less:—The Madras Christian College, Rs. 4,586; Pachaiyappa's College, Madras, Rs. 3,200; The Noble College, Masulipatam, Rs. 1,386; St. Joseph's College, Trichinopoly, Rs. 814; The S. P. G. College, Trichinopoly, Rs. 560; The Maharaja's College, Vizianagram, Rs. 1,213; Mrs. A. V. N. College, Vizagapatam, Rs. 557; The C. M. S. College, Tinnevely, Rs. 850; The Hindu College, Tinnevely, Rs. 583; St. Aloysius' College, Mangalore, Rs. 742; Total Rs. 14,491.

BOMBAY.

Elementary Education in Bombay.—The annual distribution of prizes to the successful students of the schools, conducted by the Society for the Promotion of Education among the Masses, took place recently in the hall of the Framji Cowasji Institute, Bombay, the Hon'ble Mr. W. H. Sharp, Director of Public Instruction, presiding. The hall was wellfilled with ladies and gentlemen.

THE CHAIRMAN'S SPEECH.

Addressing the meeting the Chairman said:—The Society for the Promotion of Education among the Masses has a very attractive title; and I think that perhaps it was this circumstance which determined me readily to accept the kind invitation of the Committee to preside on this occasion. Coming down from Poona yesterday, I was looking at two or three old reports of the Society's work which the Secretary kindly sent to me, and I saw from one of them that six years ago one of my predecessors, Mr. Giles, took the chair at the annual prize distribution, and on that occasion the Society got a building grant of Rs. 3,331 out of him. I do not know if it is with any deep design of getting Rs. 3,331 out of the present Director of Public Instruction, that the Committee has invited him here to-day. There was one feature about the past reports of the Society which struck me as both novel and pleasing: there was no grumbling in them. The Committee acknowledge with thanks the help they have received; they explain the uses to which it has been put, they express the hope that people will continue to help them; but they do not grumble at the donors for not having given larger donations. When the grant-in-aid of one of their schools was raised from Rs. 70 to Rs. 340, the Committee expressed proper thankfulness, instead of grumbling, because it was not much larger. This perhaps is because they are in the jurisdiction of the Municipal Schools Committee; and if the people are rude to the Schools Committee the Committee probably cuts their grant off altogether. When a Government department is concerned, such as the one which I represent, we are expected to put up with all sorts of hard words and hard knocks. People invite me to give away their prizes, then stand up and abuse the department for not giving them larger grants; and expect me to listen to it

all with great satisfaction, and immediately to double their grants.

THE SOCIETY'S WORKS.

This Society at present conducts three schools. I am sorry that I am not personally acquainted with any of them. But I see from the last report that they were frequented by a thousand children during some part or other of last year, though the average daily attendance was only about three hundred. These figures do represent very much in proportion to the total juvenile population of this city; yet we must be thankful, for every attempt, however partial to deal with the overwhelming problem of popular education in this country. I am glad to see that these schools seem to reach the classes they are meant to reach; that they are not swamped by members of the "advanced classes" but are chiefly attended by backward children, and especially by the children of mill-hands. When one thinks how much of the wealth of Bombay comes from her mills, one cannot help feeling how little is done in return for the welfare, the housing, and the education of the mill-heads; and I am glad to see the names of the Mill-owners' Association and of individual mill-owners in the list of those who subscribe to the funds of this Society.

It is a problem with us not only how to get the children to school, but what to teach them when they are there. A large number of these wage-earning children can only afford to spend a short time at school, and it seems a pity that any part of that time should be expended on things that do not really matter very much. I am aware that there are many parents among the poor and backward classes who think that the children who go to school are made to waste their time over subjects that are of no use, and after all leave the school knowing neither how to read, nor how to write, nor how to keep accounts. These are the three things that really matter, I suppose, to the poor; and it seems to me that the more we can keep our curriculum down to these in the case of the very poor and backward, the more likely we are to attract pupils. I was very glad to see in one of the reports of this Society mention made of manual training in connection with one of its schools.

MANUAL TRAINING.

It has long seemed to me one of the great defects of our system of education all through, that so many boys are taught only to sit on benches and learn off books and scribble worthless notes, and are never taught to do anything with their eyes and hands. In some parts of the country, notably Gujarat, there seems to be a perfect prejudice on the part of High School boys against doing anything whatever with their hands. This seems to me a great pity. We cannot in this state of feeling, I suppose, force simple woodwork upon them, but I have long been anxious to see introduced into our High Schools right through the standards a simple course of very elementary science, such as measuring and weighing and using a few simple instru-

ments and pieces of apparatus. I would much rather see them doing this for themselves than learning out of a text-book about the procession of the equinoxes; and I am trying to get a course of the kind I have indicated laid down at present; but the great difficulty likely to come in my way is the procession of the equinoxes. I am told that every educated man ought to know about this. Well, I know nothing about it and so I suppose I am not an educated man; but I take comfort from the belief that 90 per cent. of the members of the University Senate don't know anything about it either. Well, I suppose that I shall get into trouble if I say anything here about the Matriculation, especially as this is the week sacred to that deity in the city of Bombay and her temple may be seen on the sea-face crowded with devotees. But what I wish to say most earnestly is that anybody who can persuade the boys of this country to stand up and do something for themselves, instead of eternally sitting down and learning off what somebody else has done,—anybody who can do that is a benefactor to the country. And I hope that the Society for the Promotion of Education among the Masses will stick as much as it can to the three R's and to manual training and will leave the more pretentious subjects of book-learning to those who can afford to spend time over them.

The Bombay University Buildings—Attitude of the Government.—Regarding the question of extending the Bombay University buildings, the Bombay Government were at first prepared to offer one lakh of rupees towards the cost of the examination halls mainly for Matriculation Examination, but as the Governor-in-Council is more inclined towards the abolition of the Matriculation Examination they now view the scheme in a different light. Besides public opinion is strongly against any further building on the site of the University Gardens. In view, however, of the discomfort entailed upon the students who have to be housed in temporary mandaps, the Government have in contemplation to provide, in connection with the Science Institute of Bombay, halls for examination purposes which will give accommodation ample for needs of the University. Additional accommodation would be at the disposal of the Senate when required for examinations. If the Senate accept this proposal Government will grant a lakh for the purpose. The Government also ask whether the funds that the Senate are prepared to devote to the examination halls to be erected in the University Garden—would also be given in view of advantages that University would enjoy.

ALLAHABAD.

Allahabad University Fellowships—His Honour the Chancellor of the Allahabad University has nominated the following gentlemen to be Ordinary Fellows under Section 10 of the Universities Act:—

Mr. H. C. Norman, M.A., Professor, Queen's College, Benares; Major H. Austen Smith, I.M.S., Civil Surgeon, Azra; Muhammad Abdur Rahim Khan Bahadur, Civil Assistant Surgeon, Lucknow; and Dr. Tej Bahadur Sapru, Advocate, High Court. The Rev. Dr. A. B. Ewing, who was balloted out under Section 12, Clause (m) of the Universities Act, has also been nominated a Fellow. Mr. J. H. Towle, M.A., who also ceased to be a Fellow under Section 12, Clause (m), has been elected a Fellow by the Faculty of Arts. The Hon. Pandit Madhan Mohan Malaviya and Dr. Satish Chandra Banerjee were likewise balloted out, and Mr. P. K. Dutt, M.A., (Cantab) Senior Professor of Physical Science, Central Hindu College, and Mr. Mackenzie of the Training College, have been elected to these vacancies. The outgoing Fellows were useful members of the Senate, and the cessation of their Fellowships is keenly felt both in and outside University circles.

PUNJAB.

Pay of Kahars in Government Schools.—The Director of Public Instruction, Punjab, has recently been considering the question of the pay of Kahars in Government Schools. The recent Government orders raising the pay of certain menial servants were held not to apply to Kahars (the greater number of whom have in the past been employed as kitchen attendants in the boarding houses), because amongst other reasons they received part of their pay in kind and were therefore on a different footing from other servants. This ruling however has adversely affected those Kahars who were employed as water-carriers in schools as distinct from kitchen servants in boarding houses and it is proposed that they should receive the benefit of the higher scale of pay when the next revision statement is prepared. The question is simplified by the fact that Kahars in boarding houses are no longer Government employees and there should apparently be no difficulty in carrying out the above proposal.

A Donation.—The Kour Sahib of Patiala has given a donation of Rs. 5000 to the Punjab University for founding a Gold Medal to be awarded to the best pass in the L.L.B. Examination.

Punjab University—Question of Examination date.—At a meeting of the Punjab University Senate the recommendations of the Syndicate, suggesting postponement of dates for Arts and Science Examination from March to May, was carried by a large majority, the colleges closing for the long vacation from 15th June to the end of September. The consideration of the question of the dates of Matriculation Examination was referred to the Head Masters' Association.

COCHIN.

The First Educational Exhibition in Cochin.—The Educational Exhibition was held in the Sirkar District High School, Trichur, and the opening ceremony was done by Mr. John Van-Someran the Pope, M.A., the Special Educational Officer of the State, on Thursday, the 10th instant, at 10.30 A.M. Amongst those that were present were many lady teachers and several gentlemen in other walks of life. The Headmaster, Mr. Ananta Krishna Aiyar, read an interesting address of welcome and requested the Special Educational Officer to open the Exhibition, beautifully arranged in one of the spacious halls of the school. Mr. Pope, accompanied by ladies and gentlemen present, opened the same.

After seeing the several things of Art done with great care and warm interest for the Exhibition by boys of the local High Schools, they re-assembled in the hall and Mr. Pope addressed them in felicitous terms.

He exhorted the teachers to discharge their duties honestly, to realise their responsibilities in their professions, equip themselves with sound study and acquaint themselves with modern methods of teaching. He deplored their condition of pay and has addressed the Durbar to ameliorate their condition. He added that a training school would be started in January next so that Matriculates might be trained here.

Mr. Pope was duly thanked for the great interest he has been taking in the education of the State and for his promised help towards bettering the condition of poorly-paid teachers, and the meeting was brought to a close with a hearty vote of thanks to ladies and gentlemen for their warm interest in matters educational.

THE CONFERENCE.

The Conference met at 1.30 P.M. in the hall and Mr. Aiyathurai Iyer, the Secretary, read an interesting report of the last Conference and the report was formally adopted. Then Mr. Stephen, Headmaster of C. M. S. High School, called upon Mr. Viswanatha Aiyar to read his essay on "Conversation." The essay was full of matter. Then a model lesson on conversation was given by the First Assistant of S. H. School, an experienced teacher. A very interesting and lively lesson was given by Mr. Narayanaswami Aiyar of the Training School on Kindergarten, story and action songs.

On the second day an interesting paper on Mathematics was read by Mr. Anantanarayana Iyer, B.A., who pointed out the educational value of the subject and methods of teaching the subject. Mr. Subramania Iyer read a thoughtful paper on Civics in the afternoon. An object lesson on 'Lucifer Matches' was ably conducted by a teacher of St. Thomas' High School.

On the third day an excellent paper on 'Moral Education in Schools' was read by Mr. Mayuranatha Iyer, B.A., L.T., where the essayist laid considerable

strength on the formation of character. That was followed by another paper on Drawing by Mr. Venkataraman Iyer, the Acting Headmaster of the Technical Institute recently started by the State. The gentleman, being an expert in his line, well pointed out the value of drawing and its immense use in an exhaustive manner. That was followed by kindergarten occupations such as paper-folding, stick laying, etc. The Drawing Master did his part well.

Then the President made a short speech in which he reiterated the importance of excellent character for teachers. The business part of the meeting was brought to a close with a vote of thanks to the President, and ladies and gentlemen that were present.

In the afternoon there was a Social Gathering with light refreshments, Mr. Harihara Iyer, B.A., L.T., the Headmaster of St. Thomas' High School and a few other teachers entertained the audience with their songs.

Lastly the Convener, the President of the Conference were duly thanked in happy terms for having brought the Conference and Exhibition to a successful termination. The teachers and students, past and present, were also thanked for their disinterested service to make the Exhibition successful. Hearty cheers were proposed to His Highness the Maharajah of Cochin for the deep and warm interest His Highness has been evincing in educational matters and they were responded to in the usual way by loud and deafening cheers.

Cochin State Scholarships.—Early in 1908, Mr. A. R. Banerji, M.A., I. C. S., the Dewan, drew up certain important proposals regarding the grant of State scholarships with the object of advancing the cause of education and developing the arts and industries of the State. It was then proposed to award a series of scholarships tenable both in India and abroad and to illustrate the wide and useful range of these scholarships, the holders technical or industrial scholarships, two of them were being students of the Ernakulam College who had passed the F. A. In awarding the scholarships, it was decided that preference would be given to the following subject:—Electrical engineering, mining, mineralogy, mechanical engineering, agriculture, training in economical industry, such as the tanning industry, rubber planting, manufacture of lemon grass oil, fish manure, wood pulp industry, and soft wood industries, such as the manufacture of matches, pencils, etc. There were also proposals for the award of scholarships to women and girls, obviously in view to promoting the cause of female education in the State. Since formulating his scheme two years ago, Mr. Banerji has done a great deal by way of giving effect to it. The most important scholarship awarded has been that of £200 per annum, since increased to £250, granted to Mr. K. Govinda Menon, B.A., D.D.R., Assistant Conservator of Forests, for training in Forestry at Oxford and in Germany.

Next in importance has been the technical scholarship awarded to Mr. K. Raghava Kurup for training in the tanning industry. Mr. Kurup is still undergoing training at Sembiam in various branches of the tanning industry, and at the end of his present course, he will be sent at State expense to Europe for a finishing course, subject to a certificate of fitness for the same from the Director of Industries, Madras. As regards scholarships awarded to ladies, we may mention that granted to Miss Cruickshank, who has already returned after a period of special training, and that awarded to Miss Reilly, who is now undergoing a period of one year's training at Cambridge. Over and above the scholarships abovementioned, the Cochin State has during the past two years taken commendable measures for adding to the efficiency of the administration by affording facilities for special training to several important and responsible officials. In some of the recent proceedings it has been resolved to grant several scholarships, to provide expert men for the various departments of the State, realising the necessity of providing in the Forest Department a staff of Assistants of superior training and qualifications, it has now been resolved to continue the Forest scholarship in Europe and to therefore award another scholarship of £200 for training at Oxford and in Germany, tenable from the 1st of Chingom 1087. It has further been decided to train two men of the permanent service in the Accountant-General's Office, Madras, in view to insuring a reserve of Assistants who could be depended upon at any time to take charge of the Account Department of the State. One technical scholarship, tenable for two years from 1087, is to be awarded for training in soft wood industries. A female medical scholarship for the Hospital Assistant's course will be awarded from 1st June next; and the next University scholarship without prejudice to the one already current will be given for study in Civil Engineering to a student who passes in the next F. A. Examination from the Ernakulam College in the first class.

Foreign Notes.

GREAT BRITAIN.

Learning in the Secondary Schools.—The report upon Scottish secondary education for 1910 discloses one of those mines of unconscious humour that do much to enrich the world.

'Disease,' wrote one candidate, 'is derived from 'dis,' 'apart,' and 'edo' 'I eat,' because you eat apart when you are ill.' Marlborough, according to another candidate, returned home from his campaigns 'with the laurels of victory on his brow, determined to wreck the first Reform Bill.' As this candidate insisted that the said campaigns were conducted in the thirteenth century, this means that the ancestor of the Home Secretary would have had to keep his determination and himself alive for some 600 years to effect his purpose. In

despair he seems to have bequeathed the task to the Duke of Wellington. Many millions of miles were placed, in the geography answers, between the Solway Firth and the mouth of Tyne; in other cases the distance, according to the scale employed, was only a few inches. In the filling-in of maps there were candidates who failed to distinguish between land and water. Mountains and deserts, we are told, were planted in the middle of the Mediterranean and Arabian Seas, and rivers were made to run across mountain chains. Durban, Maritzburg, Kimberley and Bloemfontein were all placed in the Transvaal, and one boy explained the position of Dundee by the ease with which it could receive 'jute from Jutland.' 'In the Highlands,' wrote a youthful moralist, 'distilling is the only industry which is carried to excess.' According to 'quite a number' of candidates it was 'Jeanie Deans and not Jenny Geddes' who flung the stool in St. Giles's, and scholars who answered the question re the Waverley novels frequently mis-spelled 'Waverley.' The 'great and deserved popularity of the "Golden Treasury" is according to the report attended with the drawback that it 'leaves scholars with the impression that English poetry came to a sudden end with Wordsworth.'

Few of those who attempted the question regarding ancient and modern Egypt seemed to realise that the Egypt of the Bible was identical with the Egypt known to them from Greek and Roman history. As for modern Egypt, the Egypt of the Suez Canal and the British occupation, that appeared to be regarded as 'a new country, first discovered by General Gordon.'

Late Professor Blackie's Library.—The remaining portion of the library of the late Professor John Stuart Blackie is to be sold in Edinburgh. It includes two 'inscribed' copies of Noel Paton's books, a copy of Clark's edition of Ossian, 1870, presented to the late owner by Lord Bute; a presentation copy of Milman's 'Horatius,' from First Humanity Class of Marischal College and University, 1852, with 'holograph signatures of subscribers on fly-leaf. Jebb's 'Translations into Greek and Latin Verse,' 1873, is accompanied by a holograph letter from the author, as is also Herbert Spencer's 'First Principles,' 1870. The first editions include the earliest issues of Scott's 'Lord of the Isles,' 'Rokeby,' and 'Marmion,' an imperfect copy of Shelley's 'Revolt of Islam,' Matthew Arnold's 'Morroe,' Mrs. Browning's 'Aurora Leigh,' William Morris's 'Love is Enough,' and Swinburne's 'Erechtheus.' The remaining portion in other respects varies from Leland's 'Hans Breitmann's Party,' and Douglas Jerrold's 'Mrs. Caudle's Lectures' to works in German philosophy.

Shakespeare or Bacon—A London evening paper which has opened its columns to correspondence on the Shakespeare-Bacon controversy, following on

the publication of Sir Edward Durning Lawrence's recent book in favour of Bacon, is being inundated with letters from people who evidently regard the settlement of this question as the most momentous issue of the day. Most of them are of course very serious people, indeed, but one correspondent with a sense of humour has intervened. He points out that all the sonneteers of the sixteenth century were either noblemen or gentlemen educated at the universities, with the doubtful exception of William Shakespeare, who was first a butcher and afterwards an actor. 'It is a singular fact,' he adds, 'that amongst a living sonneteers of the present we do not find a single butcher, although the list includes such writers as Mr. Andrew Lang, Professor Dowden, Mr. Edmund Gosse, Mr. Alfred Austin, Mr. Watts-Dunton, Mr. William Watson, Mr. Samuel Waddington, and Mr. W. S. Blunt.' Of course it is merely an assumption that the writer of this letter is indulging in satire. The character of some of the arguments made use of in this eternal controversy does not altogether preclude the possibility that he is quite serious. It is certainly curious that he carries joke, if it is a joke, to the extent of setting out a complete list of the sonneteers of the sixteenth century.

Burmese Students in England.—The annual meeting of the Burma Society, which has recently

been reconstituted on an extended basis, primarily for the benefit of young Burmans studying in this country, was held at the Indian centre, 21, Cromwell Road recently. Sir Frederic Fryer, the President, was in the chair.

The annual report, adopted on the motion of the Chairman, seconded by Sir Thirkell White, ex-Lieutenant-Governor of Burma, stated that the principle that a separate organization, independently of the Indian centre, was required had been supported by the Burma Government and accepted by the Secretary of State in Council. Fifty-two Burmans and fifty-nine Europeans now or in the past connected with Burma had joined the Society, and from firms and private individuals generous donations had been obtained.

The Chairman said they had not yet got a home of their own, because they were awaiting a reply from the Secretary of State for India to a letter asking for an annual subsidy. It was practically certain that the Secretary of State would give an annual grant, and the only point was what the amount would be. Burmans were proud of themselves as a nation, and they had no wish to be confused with the many different races and communities of the Indian Peninsula. He expressed a hope that a branch of the Society would be formed in Rangoon to co-operate with the parent body and give it financial assistance.

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thoroughness with which each subject is taught and learnt; to the enormous extension in the area of the fields of research which are still called by the old classics, mathematics, science, philosophy; to the higher standard both of information and exactness, which has naturally and legitimately been set up. All this is to the good in so far as it tends to promote erudition and accuracy at the expense of that which is merely superficial and smart. But the advantage is purchased at an excessive price if it is gained by the sacrifice of width of range and catholicity of interest. Pedantry is on the whole more useful and less offensive than sciolism, but a university which is content to perform the office of a factory of specialists is losing sight of some of its highest functions. No body but an impostor can in these days assume to take all knowledge for his province. Such an encyclopædic purpose as inspired Francis Bacon, even he, the most gifted of our race, if he could be reincarnated, under modern conditions, would recognize to be beyond the dreams of intellectual ambition. But the man whom you turn out here as your finished product at the end of his university course ought to be, in Bacon's own phrase, a "full" man. Victor Hugo says somewhere in his grandiose and impressive way that genius is a promontory which stretches out into the infinite. We cannot lay down laws for genius. That incommunicable gift sets at naught both heredity and environment. But, genius apart, there is much to be said for the old university ideal of the "all round" man—not the superficial smatterer who knows something about everything and much about nothing, but one who has not sacrificed to the pursuit of a single dominating interest his breadth of outlook, the zest and range of his

intellectual curiosity, his eagerness to know and assimilate the best that has been and is being thought and written and said about all the things that either contribute to the knowledge or enrich the life of man." Specialisation is undoubtedly necessary, but it ought to be based on a broad general culture. Early specialisation which characterises the courses of the Madras University is, we fear, not likely to produce very beneficial results.

We are glad to note that there is in Bombay a society for the promotion of education among the masses. This society conducts three schools, which were frequented by a thousand children during some part or other of last year. These schools are chiefly attended by backward children and especially by the children of mill-hands. The annual distribution of prizes to the successful students of these schools took place on the 17th instant with the Hon'ble Mr. W. H. Sharp, Director of Public Instruction, as president. Mr. Sharp delivered a very sympathetic address, in the course of which he deplored the absence of manual training in Indian schools. He said: "It has long seemed to me one of the great defects of our system of education all through, that so many boys are taught only to sit on benches and learn off books and scribble worthless notes, and are never taught to do anything with their eyes and hands. In some parts of the country, notably Gujarat, there seems to be a perfect prejudice on the part of high school boys against doing anything whatever with their hands. This seems to me a great pity. We cannot, in this state of feeling, I suppose, force simple wood-work upon them, but I have long been anxious to see introduced into our schools

right through the standards a simple course of very elementary science, such as measuring and weighing and using a few simple instruments and pieces of apparatus. I would much rather see them doing this for themselves than learning out of a text-book about the precession of the equinoxes; and I am trying to get a course of the kind I have indicated laid down at present; but the great difficulty likely to come in my way is the precession of the equinoxes. I am told that every educated man ought to know about this. Well, I know nothing about it and so I suppose I am not an educated man; but I take comfort from the belief that 90 per cent. of the members of the University Senate don't know anything about it either. Well, I suppose that I shall get into trouble if I say anything here about the Matriculation, especially as this is the week sacred to the deity in the city of Bombay and her temple may be seen on the sea-face crowded with devotees. But what I wish to say most earnestly is that anybody who can persuade the boys of this country to stand up and do something for themselves, instead of eternally sitting down and learning off what somebody else has done—anybody who can do that is a benefactor to the country." These are wise words, which we hope will be taken to heart by all those that are interested in the welfare of our country.

A Convocation of the Allahabad University for the conferring of degrees was held on the 12th instant under the presidency of the Hon. Mr. Justice Richards, Vice-Chancellor of the University. Of the candidates admitted to degrees there were nine for the M.A., four for the M.Sc., 153 for the B.A., 40 for the B.Sc., and 100 for the B.L.

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The usual address to the graduates was delivered by the Vice-Chancellor. Two points in the address deserve attention. The first of these refers to the matter of affiliation of colleges by the university. The University has no doubt to be firm in refusing affiliation where the provision for instruction is not entirely adequate in both apparatus and staff. But it is not just to judge a college's claim to affiliation by its existing equipment alone, when the Indian Universities Act distinctly lays down that a college, applying to the university for affiliation, shall satisfy the Syndicate that arrangements have been or will be made in conformity with the regulations for imparting instruction in a properly-equipped laboratory or museum in any branch of experimental science in which affiliation is sought. In justice to the various colleges a university ought to specify in its calendar what minimum equipment is needed for affiliation in any particular branch of experimental science. Except the University of Calcutta no other Indian University specifies the requirements in this direction. This is a defect which demands speedy correction. The other point in the address to which we may draw the attention of our readers is the reference to the need at the present time for the alumni of the university to interest themselves in dissuading misled youth from following a wrong path. "There is, so it has seemed to me," said Mr. Justice Richards, "too general a tendency to leave the direction of the lives of students to teachers and professors. Though the influence of the teacher's character is perhaps the most potent force in moulding that of a student, yet in colleges in which the residential system does not prevail it cannot be exerted to the full. There is therefore every need for parents, relations and older

men to keep a watchful eye upon the student community which in large cities is constantly exposed to dangerous outside influence and to warn those who appear to be wandering from the right path. They will listen to none more readily than to those who have passed through the same student life as themselves and know at first hand and can therefore sympathise with their difficulties. To the graduates of the university the duty of helping and guiding aright those who are following in their own foot-steps should be a sacred trust never to be laid aside." We are here in perfect accord with the Vice-Chancellor.

The sixty-eighth anniversary of Pachaiyappa's Charities was celebrated on the 26th instant with the Hon'ble Mr. Justice V. Krishnaswamy Iyer in the chair. In accordance with the new High Court Scheme the proceedings commenced with the reading of the Commemoration Address by Rao Bahadur M. Adinarayaniah, a member of the Board of Trustees. After giving an account of the development of Pachaiyappa's educational institutions from small beginnings to the present collegiate standard, Mr. Adinarayaniah made an appeal to the alumni of Pachaiyappa's institutions to render help in equipping the college for those branches of study for which there is no provision at present for want of funds. The chairman's defence of the educational policy inaugurated by Lord Macaulay was very sound. He said: "It appears to me that Lord Macaulay saw with the eye of a statesman into the future, that Lord Macaulay saw with the liberalism of heart, with that humanitarianism of mind which was not bounded by the limits of an island, with a feeling for the development of the human

race. He said that it was necessary if the vast masses of the people of this country, committed to the care of England by the hand of Providence, were to rise in the scale of nations, education should be brought home to them and education should begin at the top in order that after reaching the top it may spread from top to bottom and that it may vivify every part of the land with the results of what has been taught and discovered by the civilized nations of the world. Lord Macaulay saw that, if the superstition rampant in the land which prevented one man from recognising another as his neighbour, the superstition which tied all kinds of people throughout the country, hand and foot, so that they were not in a position to do what reason dictated to them, if that superstition was to die, if the customs which prevent the people from recognising the feeling in them that they are brethren and from doing their duty towards their fellow-men, were ever to be overthrown, it could not be by mass education given in the homes of the poorest, by mass education in elementary knowledge, but it could only be by instruction in the sciences of the West, in the philosophy of the West, by instruction in all those principles of right dealing and high morality which alone could elevate a nation that has for generations been sunk under the weight of a superstitious priestcraft." These are ideas on which we have frequently laid stress in our columns. The chairman endorsed the appeal made by Mr. Adinarayaniah. We agree with the chairman in thinking that there would be an adequate response both from the alumni and also the general public, if an appeal were made, for the feeling is abroad that Pachaiyappa's College is a national institution and that it deserves the

support of all who are interested in the welfare of the country. We are glad to announce that one of the members of the Board of Trustees, whose name we shall not at present give out, has resolved to give a donation of not less than Rs. 15,000 for the equipment of the new laboratories of the college.

It is notified that there will be an election of Madras University of Fellows on the 10th proximo by the Faculty of Arts as well as by the registered graduates. We have often pointed out that all deserving educationists in the Presidency should find a seat in the Senate of the University. No doubt the other professions have capable men who also deserve to be in the Senate. But educationists, such as the principals and

professors of colleges, have a greater claim by the very nature of the work they are doing to take part in the deliberations of the University. The Faculty of Arts would do well to elect some representative members of the educational profession. The European members of the profession are already adequately represented, but the representation of the Indian section is all too meagre. We find among the gentlemen who have offered themselves as candidates for election the names of the principals of two second-grade colleges, men who have long been devoting themselves to the work of education. We hope that the claims of these two gentlemen will receive due consideration from the members of the Faculty of Arts as well as from the registered graduates.

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B.A. Degree Examination, 1912.

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SOUTH INDIA TEACHERS' UNION.

The following is the full text of the presidential address delivered by Mr. K. B. Ramanatha Aiyar, M.A., B.L., L.T., at its Conference held on the 22nd December 1910:—

Members of the South India Teachers' Union and Friends:

As this is the first occasion (and the last) I have of doing it, allow me to thank the various Teachers' Associations that have done me the high honour of having elected me the Vice-President of the previous year, and hence the President of the present year. As years roll on, and as the South Indian Teachers' Union gets to be—what it ought to be—the Union of teachers of all grades engaged in the educational work of this Presidency, the honour of being the President of the Union will be highly prized and we may take it that men more distinguished and filling a grander position, than the present occupant, will not disdain to be the Presidents and that they will get duly chosen.

Just now it is a day of small beginnings and we have nothing like the strength or support which the Union ought to have, and which the Union has a right to expect from the large body of teachers engaged in imparting instruction in our Presidency.

According to the last Report of Public Instruction there are 33 Colleges with 263 professors and lecturers, 375 Secondary Schools with 4097 Secondary teachers (excluding pandits, 3820 teachers), 22,548 Elementary Schools, with 34,562 teachers engaged in them. From the above Report

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we also learn that there are 511 Teachers' Associations of all grades. Of these, as nearly as I can make out, 34 Associations seem to be of teachers engaged in secondary and collegiate work. 34 may be perhaps understating the number of such Associations, but they cannot be more than 50. 50 Teachers' Associations for those who work in High Schools and Colleges and 460 for the Elementary teachers do not certainly err on the side of excess. Instead of our counting these Associations in tens and hundreds we ought to be able to count them in hundreds and the total must reach a thousand. 300 Associations of Secondary teachers and 700 Associations for the Elementary teachers will be nearer meeting the needs of those engaged in school work. As the aims of these bodies are all to make the teachers improve their worth, instil into them a true professional spirit, and make of them a self-respecting class of people constantly engaged in the work of self-improvement with a view to better the nature of instruction they impart to their pupils, not the most jealous managers or departmental agencies will deprecate any advance in this direction. On the other hand we can count on their co-operation and it must be said that the existence of such a large body of Teachers' Associations especially of the Elementary grade is largely due to the inspiration and guidance of the Inspectors and the Assistant Inspectors of Schools.

Why then are the Teachers' Associations so few? And why do so many teachers of the higher and the lower grade stand aloof from the Associations near them? And why again are

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so few of the existing ones forming part of the South India Teachers' Union? What are the forces that make against our closely associating ourselves together in our work? The teachers of South India form a heterogeneous body made up of men employed in Government or quasi-Government institutions, in Mission and in private schools. Their pay, their prospects, their aims, their views, their outlook all vary. In race, in religion too, there are differences. Still in spite of these differences we may reasonably expect those engaged in the work of education to rise above the just-mentioned isolating influences. And in the better type of teachers there is as little consciousness of these differences as is possible in the circumstances. Hence the far from despicable measure of success that teachers have had in their associative work by way of educational conferences, exhibitions, etc. Still there is room for complaint that more teachers are not taking up associative work, are not contributing to the success of the Association, Guild, or Conference by active work of reading papers, discussing educational problems, or giving model lessons, etc. The apathy of the mass of teachers may be explained, first, in this way. With regard to those who are high up in the grade and whose pay and prospects are assured, they feel that they have nothing to learn from these Associations and as for showing the less fortunately placed the way to do good work they do not feel a call in that direction. As for those low down, the work they do and the crushing weight of the economic burden of supporting a family leave them little energy to do anything to better themselves or their profession. There is left the middle class of teachers upon whom falls the work of supporting the Associations and making them show some activity. Another explanation may be as follows: Those that are in Government service may suppose that they have nothing to gain and they may lose a great deal if their interest in larger fields of educational activity be put down to fussy impertinence or crankiness. The Missionary labourers

in educational work can spare but little time because their energies are taken up with propagandist activities of various kinds and they cannot be expected to evince the interest that the 'whole-timers' evince in the profession. As for the men in private schools and colleges, many, perhaps, think that all this activity about reformed methods of instruction and agitation to improve the position of the teacher is activity in the wrong direction, destined to be as fruitless as milking the bull; that the time may be more usefully spent in currying favour with the Managers or in doing some work that may enrich them. Hence the work of creating and maintaining Teachers' Associations may be left to fall on a limited class not engrossed in such pursuits.

Let me not be misunderstood. The history of the Madras Teachers' Guild and of other Associations of teachers here and elsewhere shows how Government educational officers and Missionary gentlemen have been doing their best to promote healthy activities among teachers by co-operating with them in the work of starting and maintaining such institutions. As for the men employed in private institutions, their share in such activities need not be detailed to you. Still there is a feeling among us all that there has not been exhibited that measure of co-operation that might have been legitimately expected, considering that the work is not to the selfish aggrandisement of any individual or any class of individuals.

Now for the relation of the South India Teachers' Union to the several Teachers' Associations. You may remember how the Union was started. Ever since 1895 when the Guild began its work, strenuous attempts have been made to associate with the Guild all engaged in educational work throughout the Presidency. And at the various annual Conferences, of all the teachers in Southern India, it was again and again found that there were very few outside Madras who came to attend the meetings. And the need was felt of creating an organisation really representative of the various

Teachers' Associations in the Presidency. I shall not weary you by detailing to you how the Union was started and how it has worked. What I shall touch upon is the prejudice that many gentlemen seem to cherish against the Union. One is of a financial kind. The Union levies a poll-tax on the members of the several associations. No tax-gatherer has been a favourite. We pay each 8 annas or 2 annas, but what we do get in return? Another is that the Union suggests to the managers perhaps a combination of the Trades Union kind and they do not relish the formation of any such Union. And there is the critical attitude the South India Teachers' Union assumes or may assume in matters of educational administration. The Department and those who think and feel that they are closely associated with the Department are naturally shy of identifying themselves with a body of critics *in esse* or *in posse* of Government. With regard to the financial burden you will seriously consider whether the work of the Union can be carried on properly without the additional cess. You will perhaps recall that each year the Conference was held under the auspices of the Guild and the burden weighed heavily on the finances of the Guild and on the energies of the Committee members of that body. This burden has been in theory taken off the Guild and as a matter of fact the strain of making arrangements for the annual Conference is much less than before. And if the Conference should be held in different parts of the Presidency—as in reason it ought to be—if the interest of the movement should spread, each Association would have to come in for an equal share of the worries of arranging the work of the Conference. With regard to the objection of the managers, we may assure them there is no reasonable fear of the South India Teachers' Union turning out to be a Trades Union. If there is any such danger, they have the remedy in their own hands—of a combination among themselves. As for the last, is keeping aloof the best way of stifling criticism? When criticism

is due to ignorance is it not the duty of the well-informed to remove such ignorance and the consequent criticism? And if criticism should be due to malice, the best way to put it down is to leaven the society with healthy elements and make truth bear down malice. And if the criticism should be sane and well-considered, would not Government feel thankful for it? And is not such criticism needed? Any way it would not do to leave the Association to be worked by a 'cave.' Every one who has the light in him and would not lead must have these words addressed to him:

We shall march prospering, not thro' his presence
Songs may inspirit us, not from his lyre;
Deeds will be done,—while he boasts his quiescence,
etc.

I need not tell you what work the Union has done. You have got the Annual Report in your hands and that tells you what much or what little has been done. One noteworthy thing in connection with the work of the year is the publication of the modest supplement to the "Educational Review," the *South India Teachers' Union Journal*. Every member of the Union must have got copies of the Journal as it appeared at intervals more or less regular and surely in that at least you have some equivalent for the extra annas you have paid for the Union. And if the Journal has not been able to present a fuller record of the activities of the various Associations whose was the fault? The Madras Teachers' Guild is a body whose shortcomings its members are alive to. Yet tested by the work as recorded in the Journal it easily comes first. And it is a matter of disappointment to us that there has not been more work done by the Associations of Teachers than we find record of in the *South India Teachers' Union Journal*.

Enough now of querulousness and complaining. We are yet, as I said, in the day of small beginnings and the teachers have not yet come to realise how much they will benefit themselves by working together, and what a powerful agency they will make themselves in shaping

the educational policy of the country. To expect any saviour outside ourselves, to feel disheartened because there is no adequate recognition of the work done, to stand back from what we know to be a good movement, because of the frown and ill-judged jealousy of influence and patronage, all this is unworthy of us to whom is entrusted the work of educating the future citizens of a great empire. And as I said the sympathies of the best men engaged in educational work are with us. Let us but show ourselves that we are earnest and that we do not grudge any efforts to better the position of teachers in all possible ways and we are sure to get the success that we deserve.

Since we last met the most memorable event of the year is the record failure of the Matriculation candidates. The Syndicate showed unusual considerateness towards the 'failed' candidates and recommended to the Senate that an additional number of candidates should be allowed to join the Intermediate courses in Colleges. The Senate resolved that these also should be recognised as Matriculates, equal in rank with the first batch of Matriculates. The standard of qualification recommended by the Syndicate to the Colleges was pretty much the standard recommended by the special committee that was appointed at the last Conference, for the candidates seeking admission to the Intermediate courses in Colleges. If I remember right the Madras members of the Committee met early and drew up the recommendation now placed before you with some slight alterations—even before the supplementary list of the candidates qualified for College instruction was before the public. It was an agreeable surprise to them that their recommendation was substantially the same as that of the Syndicate. No school need be afraid that the students sent up by it and fulfilling the requirements placed before you in the Report will be in a worse position than its Matriculates of the earlier days.

The subjects that have been brought most prominently forward in the year, leaving College work aside for the present are the working of the School Leaving Certificate Scheme and incidentally the syllabus of the School Final Course and the proper way of keeping the School Record, the imparting of moral and religious instruction in schools and colleges, the question of Government policy with regard to Secondary education, the relation of Elementary Schools to Secondary Schools, the education of the depressed classes and the decision of Government with regard to the Scheme of Provident Fund proposed by the present Acting Director. You will find that there are papers on all these subjects. It behoves the South India Teachers' Union as a body of earnest—if not expert—educationists, to come to a well-considered judgment on these subjects of such immediate importance. One pleasing feature with regard to the programme of work before the Conference is that of the six papers to be read, four are by members of the Union outside the city and one by a gentleman whose absence from us to-day we all regret and whose return to the Presidency to work among us we welcome. This fact I mention because it has been a matter of complaint that Madras figures so prominently and the rest of the Presidency is so little represented in the Conference. The Mofussil gentlemen may be assured that we here are not eager to take more than our legitimate share of responsibilities or privileges, whichever way you consider it, and all this attempt to make the South India Teachers' Union focus really the opinions of the teachers throughout the Presidency is a clear indication that we welcome light from all quarters.

That the new Leaving Certificate Scheme should occupy so much the minds of the teachers is no matter for surprise. The old Matriculation Examination, blood thirsty ogre as it proved at times, had become a well-known institution. Its freakishness had become a valuable asset to the shirkers—alike among the teachers and the taught.

Cramming at high pressure a few months before the Examination could go with letting the work slide the earlier part of the year and it might pay as well as thorough conscientious work spread evenly throughout the year. The candidate coming out successful in the Examination albeit through cramming was considered quite as good as one who had worked steadily throughout and thoroughly assimilated what he had learnt. According to certain religions which attach a great deal of importance to death-bed repentance, you can have your fling and yet go to heaven cheating the devil of his due, if you have the wit enough to make a timely repentance. The crammer for the Examination was like the penitent at death's-door. The Leaving Certificate Scheme insists on taking stock of work throughout the year. The outside Examination is to serve as a test of the work of the schools but undue importance will not be attached to the test and there is every reason to suppose that honest work will fare better in the new scheme. How the Record is to be kept has been discussed by the members of the local Association, the Madras Teachers' Guild. At the Conference we shall be able to learn how the record has been kept elsewhere. The freedom, the scope for initiative that the Scheme gives to the teachers, is evidently not appreciated and we have heard demands for cut and dry methods to work the course. The parents who may have been expected to welcome the change are complaining that their sons have to attend to everything including the drawing lesson, the gymnastic instruction and the Bible lesson, the idea being that some part of the course is put in to be neglected by the student.

The subject of the Government policy with regard to Secondary education has been discussed by educational magazines, referred to by the high-placed official on the prize distribution day, and has been engaging the attention of the members of the local legislature. The pros and cons for the Model High Schools you are all familiar with. The chief argument against the

contemplated change is that the money spent will have no adequate return in the way of efficient teaching. It is generally much bruit little fruit with Governmental agencies. The chief argument on the other side is that the agencies that have stepped in to carry on the work of Secondary education are not indigenous agencies, but foreign agencies and with these the education imparted is not an end in itself but a means to a further end they set a great store by, but which the bulk of the people don't welcome. My desire is certainly to have the work of education entrusted more largely to indigenous agencies. The chances of the growth of such agencies are greater when education is in the hands of foreign agencies insisting on religious instruction of a kind opposed to the wishes of the people. If Government should step in to do the work, there is the chance of a contented acquiescence with the arrangement as the gad-fly of disrelished religious instruction will be removed to a large extent. Another consequence will be that the bulk of the teaching profession will be Government servants and the repression of individuality in Government service here proceeds to extreme lengths. Most Government servants feel bound to hold their tongues even in cases where as citizens they may be expected to speak out what they think on various measures of Government. England presents a refreshing contrast. In the last number of the *Calcutta Review*, an 'uncovenanted' officer writes of the status of Indians in Government services which deserves to be carefully pondered over by Government and its employees. He points out how detrimental it is ultimately to the interests of Government to train its servants in such despotic traditions. My chief concern now is with regard to the narrowing effect that rigid ideas of the departmental etiquette produce in favourable cases where the material is pliable, and the violent reaction it may produce in refractory cases. What of the influence the teacher has to exercise on the students entrusted

to him? We want our youths to grow up neither flunkeys nor seditionists but manly, self-respecting youths willing to accord homage where homage is due and insisting on and getting the treatment due to the manhood in them. I may be old fashioned but I think that the favourable soil for the development of such virtues is not in Government offices. I should feel glad to be assured that I am wrong. I feel what I have said is an inadequate reference to a large topic and one capable of misinterpretation. But I have to pass on.

Those who have watched the doings of the Madras Teachers' Guild will have noticed that a start has been made to improve the teachers of the Elementary Schools. Thanks to the suggestion of the President of the Guild a duplication of machinery has been avoided and a scheme of lectures has been set afoot and it is hoped that the large body of Elementary teachers in the City of Madras will avail themselves of the opportunity to improve themselves. And thanks to the exertions of the Educational representative on the Corporation, the Elementary Schools are to be gradually taken up by the Corporation. This is what has been done in the City itself. The larger question of the relation of Elementary education to Secondary education will form one of the subjects of discussion by the members of the Conference. The importance of the subject will be recognised by all interested in educational progress.

I see that in the programme of work arranged for the Conference there is nothing laid down definitely related to University work. There are some matters which interest the members of the Union and which may have been brought forward for discussion. A Fellow of our University brought forward a motion to have the strength of the Syndicate increased to the Statutory maximum so as to allow of a fuller representation of various interests. With all respect to the influential members of the Syndicate who spoke against the motion, it cannot be said that

the cogency of reasoning was all on their side. There is the power of co-optation which the Syndicate has, which makes it virtually impossible for anybody outside a certain circle to get into that body. The effect of a certain Regulation recently passed, namely, that the Colleges need not restrict themselves to the maximum of 150 students in each class but that they may exceed the limit provided that there is a proportion between the staff employed and the number of students, is a matter deserving greater consideration than it has had. The Regulation may be so worked as to deplete certain colleges of their strength and fill others to overflowing. I may be exaggerating the possible evil effects of the change. Still I should think the matter worthy of discussion.

I will just refer to one topic which turns up in newspaper discussions—only to remark what our attitude must be with regard to the matter. It is the question of a *National College*. Whatever other people may say with regard to this matter, let us, teachers, have clear and definite ideas of what is meant by it. Whenever and wherever that elusive good is going to take a concrete shape, it can only be as a college where the Hindu and the Mussulman and the Christian can all study, not to mention those less numerically strong and making up the nation. Anything less inclusive can be called only a sectional college. It is an easy and delightful thing to grow enthusiastic over something distant and not easily realised and meanwhile neglect a poor starved college next door. We have at present Hindu, Christian and Mussulman Colleges. Have our people done all they might to support them by giving of their abundance? Let us face facts and let us not call things by grander names than they are entitled to.

When the cry around us is of a bubbling enthusiasm for the elevation of the Depressed Classes it would ill-become the Union not to deal with the question. There is accordingly a paper expressly bearing on it in the programme of work for the

next day and the Rev. Mr. Gardiner's paper to-night partly goes over the same ground. What irritates one very often in connection with the discussion of this question is the air of condescension that the advocates unconsciously assume towards those who have suffered from economic and racial disabilities. The position that the Pariah occupies is no worse and no better than the position that the Indian immigrant occupies in the European colonies. If a colonist theosophically inclined should account for the legislation enacted against the Indian by reference to the Karmic doctrine he would be as correct as the orthodox Pandit who explains the position of the Panchama here in a similar manner. My own view however is identical with the Pandits' but with this difference that the situation here and in South Africa is due to the Karma not of the Depressed Classes but of the oppressing classes. The truth is, they are the remnant of a disinherited race. The proper attitude for us all must be one of humility and repentance. "Brother I have sinned grievously against thee and let me do what I can to make up for past wrong-doing." What is wanted is that we must recognise them as human beings and not deny them the elementary rights of humanity. It is not a social reform meeting I am addressing and the larger question is only incidentally connected with the question of education of the backward classes.

Let me pass on to another burning topic of the day. It is the question of moral and religious education. In considering this question there are some obvious things not to be lost sight of. If it is agreed on all hands we must have this education in some form or other, and if it is to be tacked on to the existing system, it must be outside the present Curriculum of Studies and the staff of teachers must be outside the present staff of schools and colleges. For I believe that the studies pursued at present need all the time now devoted to them and the teachers have no leisure to spare for other work. Or you can reorganise the Curriculum and so correlate the studies as to

make them serve the ends of ethical instruction. You may be a whole-hearted believer of religion being the rock-bed of morality and insist on your particular religion being taught, the abstract theology no less than the legendary, mythical, or historical teaching that has got accepted as direct revelation. Or you may frankly give up the idea of teaching the different creeds leaving to the parents the work and confine yourself to ethical instruction of the kind favoured by ethical societies in England and America. The question bristles with difficulties. The more I think about it—the less confident I feel about any suggested course. The one tangible thing we can hold to is the personality of the teacher. Make sure of his being a worthy person who may exert a wholesome influence on the youths entrusted to his charge and you have done the best thing you can do for them. There is something to be said after all for the more conservative view which Mr. H. G. Wells thus expresses in his *Anticipations*: "The windy pretences of forming character, supplying moral training and so forth under which the educationist of to-day conceals the fact that he is incapable of his proper task of training, developing and equipping the mind will not be made by the teacher.....The teacher will teach and confine his moral training—beyond enforcing truth and discipline, to the exhibition of a capable person doing his duty as well as it can be done. He will know that his utmost province is only a part of the educational process, that equally important educational influences are the home and the world of thought about the pupil and himself."

In connection with moral education I referred just now to the personality of the teacher. We want the best men that we can possibly get for the profession. Unless the profession guarantees that they are not to end their days in penury, they are not likely to take to teaching as a profession. A fair living wage for the worker and some provision for old age—these are indispensable. The scheme of the Provident Fund for the

teachers here seemed at one time to be nearing realisation. But Government finds difficulties and prefers to help education in other ways. We wish to press on the attention of Government that the question must not be allowed to drop in that manner. We would call the attention of Government to the fact that the restrictions placed on the aided teachers' liberty of speech and action are practically the same as on the men in Government service, that the work they do is quite as important as the service done by Government officials and that they deserve therefore a treatment similar to that of the employees of Government as regards provision for old age.

I have confined myself to questions of immediate interest to us. I suppose few of us regret that Macaulay was here to give the turn to Indian educational progress that he did. This education has often been referred to as having *denationalised* us. It could not have done so, because we were not a nation; our nationality is yet in the making; our larger outlook and care for the elements of national well-being we owe to this decried system. Under the much regretted earlier system we may have grown up to be Pandits and Moulvies, and presented a more picturesque appearance to the sight-seer inclined to look on us as ethnological specimens. What this education has done is that it has de-Brahminised the Brahmin, de-Sudraised the Sudra, de-Sunniised the Sunni, de-Shiahised the Shiah, it has humanised us and liberalised us and among people on whom the education has had its best effect there is less thought about the small class or sect than about the whole people of the country. Again it is forgotten that Macaulay's mistake so far as it was a mistake, has been rectified. In the earlier stages we have courses of vernacular instruction and only later on English is taken up. A careful study of the Gazetteer will remove many misconceptions. In addressing the members of the profession it is needless to dwell on matters

you must be familiar with.

Last year addressing you from this chair, Rao Bahadur M. Rangacharya impressed on you the dignity of your calling and the seriousness of your responsibilities. Looking into the address carefully I was struck by the dignified eloquence and the high moral ideal animating the address. Any words of mine would but reproduce in a weak and jejune fashion what has been so impressively said. I will make only one remark. Men anxious about the physical progress of the race have been dwelling on the importance of the health and vigour of those that assume parental responsibilities. The teacher's privilege may be said to be even higher. He has to help to bring to birth the mind of the future generations. Must he not strive to keep himself intellectually and morally in as efficient a condition as possible that he might no way bring down the moral outfit of the generation that has to carry on the work of the world?

MATHEMATICS.

[Conducted by B. KRISHNAMACHARI, M.A.]

87. [M. BHIMASENA RAO.] I is the incentre of a triangle ABC. AI, BI and CI meet the sides BC, CA and AB in D, E and F. EF meets BC in D', FD meets CA in E' and DE meets AB in F'. Show that the semicircles on DD', EE' and FF' intersect on the line joining the circumcentre and the symmedian point of the triangle.

Solution by G. V. Telang.

Let the semicircles on DD' and FF' intersect at P and Q.

D and D' divide BC harmonically and
 $BD : DC = AB : AC$.

$\therefore$ the circle on DD' as diameter is the locus of points whose distances from B and C are as AB is to AC.

$\therefore PB : PC = QB : QC = AB : AC$ (1)

Similarly $PB : PA = QB : QA = CB : CA$ (2)

$\therefore PC : PA = QC : QA = BC : BA$.

$\therefore$ P and Q lie on the circle whose diameter is EE'. And since the circle ABC cuts the three

circles orthogonally, the points O, P, Q are collinear.

Again from (1) and (2) it will be seen that
 $BC \cdot PA = CA \cdot PB = AB \cdot PC$

and since the sides of the pedal triangle of P are proportional to $BC \cdot PA$, $CA \cdot PB$ and $AB \cdot PC$ the triangle is equilateral.

$\therefore \angle BPC = 60^\circ + A$; $\angle CPA = 60^\circ + B$,
 and $\angle APB = 60^\circ + C$.

Again because PA, PB and PC vary inversely as BC, CA and AB the perpendiculars from P on BC, CA and AB are as the sines of the angles BPC, CPA and APB.

$\therefore$ the trilinear co-ordinates of P are
 $\sin(60^\circ + A)$, $\sin(60^\circ + B)$ and $\sin(60^\circ + C)$.
 The equation of the line joining the circumcentre to the symmedian point of the triangle ABC is

$$a \sin(B-C) + b \sin(C-A) + c \sin(A-B) = 0$$

and as the co-ordinates of P satisfy this equation P also Q lies on DK.

115. [G. V. TELANG.] E, F, G and H are the centres of squares described on the sides AB, BC, CD and DA of a quadrilateral ABCD; show that EG is equal and perpendicular to FH.

Solution by M. R. Nadkarni.

(i) Let P, Q, R, S be the centres of the squares on AB, BC, CD, DA respectively and T the centre of the square on AC externally. Then by Q. 114, $PQ = BT$.

Draw BL perpendicular to CA and on BL produced draw the perpendicular TM.

Then $MT = OL$, and $LM = OT = CO$.

$$BT^2 = MT^2 + BM^2$$

$$= MT^2 + BL^2 + ML^2 + 2BL \cdot LM$$

$$= LO^2 + BL^2 + CO^2 + 2BL \cdot \frac{1}{2}CA$$

$$= BO^2 + CO^2 + 2\Delta ABC.$$

$$\therefore PQ^2 = BO^2 + CO^2 + 2\Delta ABC \text{ as } PQ = BT$$

$$\text{Similarly } RS^2 = DO^2 + CO^2 + 2\Delta OBC.$$

$$\text{Thus } PQ^2 + RS^2$$

$$= BO^2 + DO^2 + 2CO^2 + 2 \text{ quadr.}$$

$$= 2CO^2 + 2KD^2 + 2KO^2 + 2 \text{ quadr.}$$

$$(\text{if } K \text{ be mid. pt. of } BD)$$

$= QR^2 + PS^2$ in the same way.

$\therefore PQ^2 - QR^2 = PS^2 - RS^2$, i.e., perpendiculars from Q and S on PR form the straight line QS, i.e., QS and PR are at right angles.

This part of the question can also be proved by means of the theorem in Q. 177 below.

(ii) Join RD, RS, DS, PA, PS, AS.

Let $RS = k_1$, $\angle DSR = \phi$ and

$PS = k_2$, $\angle ASP = \theta$

Then $\angle RDS = B + 90^\circ$ obviously.

$\angle PAS = C + 90^\circ$.

If $AB = a$, $BC = b$, $CD = c$, $DA = d$, then

$$RD = \frac{c}{\sqrt{2}}, DS = \frac{d}{\sqrt{2}}, PA = \frac{a}{\sqrt{2}}.$$

$$\text{Now, } \frac{k_1}{\sin(D + 90^\circ)} = \frac{c}{\sin \phi}.$$

$$\therefore \sin \phi = \frac{c \cos D}{k_1 \sqrt{2}}.$$

$$\therefore \cos^2 \phi = \frac{2k_1^2 - c^2 \cos^2 D}{2k_1^2}.$$

$$\text{But } k_1^2 = \frac{c^2}{2} + \frac{d^2}{2} - 2 \frac{c}{\sqrt{2}} \cdot \frac{d}{\sqrt{2}} \cos D + 90^\circ$$

$$= \frac{c^2 + d^2 + 2cd \sin D}{2}.$$

$$\therefore \cos^2 \phi = \frac{c^2 + d^2 + 2cd \sin D - c^2 \cos^2 D}{2k_1^2}$$

$$= \left(\frac{c \sin D + d}{\sqrt{2}k_1} \right)^2.$$

$$\therefore \cos \phi = \frac{c \sin D + d}{k_1 \sqrt{2}}.$$

$$\text{Similarly } k_2^2 = \frac{a^2 + d^2 + 2ad \sin A}{2}$$

$$\text{and } \sin \theta = \frac{a \cos A}{k_2 \sqrt{2}}, \cos \theta = \frac{a \sin A + d}{k_2 \sqrt{2}}.$$

$$\text{Now, } RP^2 = k_1^2 + k_2^2 - 2k_1 k_2 \cos(90^\circ - \phi - \theta)$$

$$= k_1^2 + k_2^2 - 2k_1 k_2 (\sin \phi \cos \theta + \cos \phi \sin \theta)$$

$$= \frac{a^2 + c^2 + 2d^2 + 2ad \sin A + 2cd \sin D}{2}$$

$$- 2k_1 k_2 \left\{ \frac{c \cos D (a \sin A + d)}{2k_1 k_2} + \frac{a \cos A (c \sin D + d)}{2k_1 k_2} \right\}$$

$$= \frac{1}{2} \{ a^2 + c^2 + 2d^2 + 2ad \sin A + 2cd \sin D - 2ac \sin (A+D) - 2cd \cos D - 2ad \cos A \}$$

$$= \frac{1}{2} \{ a^2 + c^2 + 2d^2 + 4 \Delta ABD + 4 \Delta ACD - 4 \Delta CDN - (c^2 + d^2 - e^2) - (a^2 + d^2 - f^2) \}$$
 where N is the fourth corner of the parallelogram on BC and BA as adjacent sides, and e and f are the lengths of the diagonals AC, BD.

$$= \frac{1}{2} \{ e^2 + f^2 + 4 \Delta ACD + 4 (\Delta ABD - \Delta CDN) \}$$

$$= \frac{1}{2} \{ e^2 + f^2 + 4 \Delta ACD + 4 \Delta ABC \}$$
 by the well-known theorem that if ABCE be a parallelogram and O any pt. outside, then $\Delta DBC - \Delta OAD = \frac{1}{2}$ the area of the parallelogram.

$$= \frac{1}{2} \{ e^2 + f^2 + 4 \text{ quadr.} \}$$
 Similarly $SQ^2 = \{ e^2 + f^2 + 4 \text{ quadr.} \}$
 $\therefore RP^2 = SQ^2$ i.e., $RP = SQ$.

140. [G. R. KAYE.] In dealing with the equation $ax^2 - 1 = y^2$ Bháskara says: "If the multiplier (a) be not the sum of (two) squares, when unity is subtractive, the instance proposed is imperfect." If this is generally true, prove it.

Solution by N. S. Ramanatha Iyer.

In converting $\sqrt{13}$ into a continued fraction, we get

$$\begin{array}{r}
 3 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{\sqrt{13} + 3}}}}} \\
 1
 \end{array}$$

Observing the mode of formation of the successive fractions, we can infer that in converting $\sqrt{N}$ into a continued fraction: (i) the fractions equidistant from the first and last will have the same numerator; (ii) the last fraction will always have the denominator

+1; (iii) the fractions equidistant from the first and the last but one will have the same denominator.

Again if $\frac{a_1}{a_2}, \frac{b_1}{b_2}$ are successive convergents $a_1 b_2 - a_2 b_1$ is alternately equal to ± 1 .

$\therefore$ If there be an even number of fractions, the last convergent will give +1 as the difference, i.e., $M^2 - Nx^2 = +1$.

If the last convergent should give -1, there should be an odd number of fractions.

Our object is to solve

$$y^2 - Nx^2 = -1 \text{ or } y^2 = Nx^2 - 1.$$

$\therefore$ there should be an odd number of fractions. Suppose there are $2m + 1$ fractions, $m + 1^{\text{th}}$

fraction from the first = $\frac{\sqrt{N} + x_{m+1}}{d_{m+1}}$
 $m + 1^{\text{th}}$ from the last will have the same numerator and its denominator will be that of the m^{th}

$$\therefore m + 1^{\text{th}} \text{ from the last} = \frac{\sqrt{N} + x_{m+1}}{d_m}$$

But $m + 1^{\text{th}}$ from the first is the same as the $m + 1^{\text{th}}$ from the last.

$$\therefore d_{m+1} = d_m$$

It can be proved that $N = k_{m+1}^2 + d_{m+1}d_m$ always. Now $d_m = d_{m+1}$.

$$\therefore N = k_{m+1}^2 + d_{m+1}^2.$$

$\therefore N$ must be the sum of two squares.

If there is an odd number of fractions, N must be the sum of two squares.

Conversely, if N is not the sum of two squares, there cannot be an odd number of fractions.

If the number of fractions is not odd, the unity cannot be subtractive.

If N is not the sum of two squares when unity is subtractive, the sum proposed is imperfect.

N.B.—From this it does not follow that if N is the sum of two squares when unity

is subtractive the proposed sum is perfect.

E.g., when $n=4p'(q^2+1)$.

141. [G. V. TELANG.] Sum the following series to n terms:

- (a) 1, 1, 3, 5, 11, 21, 43, &c.
 (b) 1, 2, 5, 12, 29, 70, 169, &c.

Solutions by I. N. S. Ramanatha Iyer.
 II. A. B. Srinivasa Rao.

I. Let the successive terms be formed by multiplying the two previous terms by p and q respectively.

$$\begin{array}{l}
 p+q=3 \\
 p+3q=5 \quad \therefore 2q=2 \quad \therefore q=1 \\
 \quad \quad \quad p=2.
 \end{array}$$

$$\text{Let } T_n = ax_1^n + bx_2^n$$

$$T_{n+1} = ax_1^{n+1} + bx_2^{n+1}$$

$$\text{Then } T_{n+2} = ax_1^{n+2} + bx_2^{n+2} = ax_1^{n+1} + bx_2^{n+1} + bx_1^{n+1} + bx_2^{n+1}$$

$$\therefore 2 + x_1 = x_1^2; 2 + x_2 = x_2^2$$

$$\therefore x_1 \text{ and } x_2 \text{ are the roots of } 2 + x = x^2$$

$$x^2 - x - 2 = 0; (x-2)(x+1) = 0.$$

$$\therefore x_1 = 2; x_2 = -1.$$

$$\therefore T_n = a \times (2)^n + b(-1)^n$$

$$T_1 = 2a - b = 1$$

$$T_2 = 4a + b = 1.$$

$$\therefore a = \frac{1}{3}; b = -\frac{1}{3}.$$

$$\therefore T_n = \frac{1}{3} \{ 2^n - (-1)^n \}.$$

$$\therefore S_n = \frac{1}{3} \left\{ \frac{2^{n+1}-2}{2-1} - \frac{(-1)^{n+1}-(-1)}{-1-1} \right\}$$

$$\text{for } x + x^2 + \dots + x^n = \frac{x^{n+1}-x}{x-1}.$$

$$\therefore S_n = \frac{1}{3} \left\{ 2(2^n-1) + \frac{(-1)^{n+1}+1}{2} \right\}.$$

(b) Let the successive terms be formed by multiplying the two previous ones by p and q and adding the results:

$$p+2q=5$$

$$2p+5q=12$$

$$2p+4q=10 \quad \therefore q=2, p=1.$$

$$\text{Let } T_n = ax_1^n + bx_2^n$$

$$T_{n+1} = ax_1^{n+1} + bx_2^{n+1}$$

$$T_{n+2} = ax_1^{n+2} + bx_2^{n+2} = ax_1^{n+1} + bx_2^{n+1} + bx_1^{n+1} + bx_2^{n+1}$$

$$= ax_1^{n+2} + bx_2^{n+2}.$$

$$\therefore 1 + 2x_1 = x_1^2 \text{ and } 1 + 2x_2 = x_2^2.$$

$$\therefore x_1 \text{ and } x_2 \text{ are the roots of } x^2 - 2x = 1$$

$$(x-1)^2 = 2; x = 1 + \sqrt{2} \text{ or } 1 - \sqrt{2}$$

$$T_n = a(1 + \sqrt{2})^n + b(1 - \sqrt{2})^n.$$

$$\text{Let } T_0 \text{ and } T_1 \text{ be } 1, 2; a+b=1$$

$$a(1 + \sqrt{2}) + b(1 - \sqrt{2}) = 2.$$

$$a+b=1$$

$$a-b = \frac{1}{\sqrt{2}}; a = \frac{1 + \sqrt{2}}{2\sqrt{2}}.$$

$$b = \frac{\sqrt{2}-1}{2\sqrt{2}} = -\frac{(1-\sqrt{2})}{2\sqrt{2}}.$$

$$\therefore T_n = \frac{(1 + \sqrt{2})^{n+1}}{2\sqrt{2}} - \frac{(1 - \sqrt{2})^{n+1}}{2\sqrt{2}}.$$

As the first term is taken as T_0 , T_{n-1} here is T_n of the proposed series.

$$\therefore S_n = \frac{1}{2\sqrt{2}} \left\{ \frac{(1 + \sqrt{2})^{n+1} - (1 + \sqrt{2})}{1 + \sqrt{2} - 1} - \frac{(1 - \sqrt{2})^{n+1} - (1 - \sqrt{2})}{1 - \sqrt{2} - 1} \right\}$$

$$= \frac{1}{4} \left\{ \frac{(1 + \sqrt{2})[(1 + \sqrt{2})^n - 1]}{1 + \sqrt{2} - 1} - \frac{(1 - \sqrt{2})[(1 - \sqrt{2})^n - 1]}{1 - \sqrt{2} - 1} \right\}.$$

$$\text{II. (a) } t_n - t_{n-1} = 2t_{n-2}$$

$$t_{n-1} - t_{n-2} = 2t_{n-3}$$

$$t_3 - t_2 = 2t_1$$

$$\text{adding } t_n - t_2 = 2s_{n-2}$$

$$\text{or } t_{n+2} - t_2 = 2s_n.$$

$$\text{Again } 1 + x + 3x^2 + 5x^3 + 11x^4 + 21x^5 \dots$$

$$= \frac{1}{1-x-2x^2} = \frac{\frac{1}{3}}{1+x} + \frac{\frac{2}{3}}{1-2x}.$$

$$\therefore t_{n+2} = \frac{1}{3}(-1)^{n+1} + \frac{2}{3}(2)^{n+1}.$$

$$\therefore s_n = \frac{1}{3}t_{n+2} - \frac{1}{3}$$

$$= \frac{1}{3} \{ 2^{n+2} + (-1)^{n+1} - 3 \}.$$

$$(b) \text{ Here } t_3 - t_2 = t_2 + t_1$$

$$t_4 - t_3 = t_3 + t_2$$

$$\dots \dots \dots$$

$$t_{n+2} - t_{n+1} = t_{n+1} + t_n$$

$$\therefore t_{n+2} - t_2 = t_{n+1} + 2(t_n + t_{n-1} \dots + t_1) - t_1.$$

$$\therefore 2s_n = t_{n+2} - t_{n+1} - t_2 + t_1 \dots \quad (A)$$

$$\text{Again } 1 + 2x + 5x^2 + 12x^3 + 29x^4 \dots$$

$$= \frac{1}{1-2x-x^2} = \frac{1}{2-(1+x)^2}$$

$$= \frac{1}{2\sqrt{2}} \left\{ \frac{1}{\sqrt{2}-1-x} + \frac{1}{\sqrt{2}+1+x} \right\}$$

$$= \frac{1}{2\sqrt{2}(\sqrt{2}-1)} \left\{ \frac{1}{1-\frac{x}{\sqrt{2}-1}} \right\} \\ + \frac{1}{2\sqrt{2}(\sqrt{2}+1)} \left\{ \frac{1}{1+\frac{x}{\sqrt{2}+1}} \right\} \\ = \frac{1}{2\sqrt{2}(\sqrt{2}-1)} \left(1 - \frac{x}{\sqrt{2}-1} \right)^{-1} \\ + \frac{1}{2\sqrt{2}(\sqrt{2}+1)} \left\{ 1 + \frac{x}{\sqrt{2}+1} \right\}^{-1}$$

t_{n+2} and t_{n+1} are the co-efficients of x^{n+1} and x^n in the above. Substituting these in A we get the required sum.

142. (c) [G. V. TELANG.] Through a given point P draw a line PQR (points Q and R being on AB and AC respectively) so that PQ : PR = QB : RC.

Solution by M. R. Nadkarni.

Join BP and produce BP to meet AC in S. Bisect BS in H. Join AH, and produce it to cut BC in L. Through L draw KL parallel to BP, meeting AB, AC in K and R. Join RP and produce it to meet AB in Q. Then QPR is the required straight line.

Since BS is parallel to KR, and AH bisects BS, it also bisects KR when produced, i.e., KL = LR. $\therefore$ BK = RC (as can easily be shown by drawing KM parallel to BC).

Again, since PB is parallel to KR

$$\frac{QP}{PR} = \frac{BQ}{BK} = \frac{BQ}{RC}$$

QUESTIONS FOR SOLUTION.

177. [M. R. NADKARNI]. If $A_1B_1C_1D_1$ and $A_2B_2C_2D_2$ be two squares, the points in the two being taken in the same order and so that their areas are to our left, then $A_1A_2^2 + C_1C_2^2 = B_1B_2^2 + D_1D_2^2$, $A_1B_2^2 + C_1D_2^2 = B_1C_2^2 + D_1A_2^2$, etc.

178. [M. R. NADKARNI]. O is the centre of a circle and OP the perpendicular on a given straight line. PQ is a tangent to the circle. In PO a point P is taken such that PT = PQ. Show that the rectangle under the perpendi-

culars from the extremities of any chord through T (on the given straight line) is constant.

179. [M. R. NADKARNI]. Cut a rectangle of 16 ft. by 9 ft. into two parts so that when laid together in a particular way, they may form a complete square. What should the relation be between the sides of a rectangle in order that it may admit of being so cut up.

[The first part of this question as well as the solution thereto has already appeared in our columns. Vide the "Reviews" for June and September '08.]

180. [M. R. NADKARNI]. If in two given circles, there be cut in each segments containing equal angles and if the chords be divided in the same ratio in each case, the perpendiculars (in the same direction) erected at the points of division and terminated by the segments are in the ratio of the respective chords.

181. [G. V. TELANG.] If in Question 148 circles be described touching the circum-circle internally at A_1 and externally at A_2 and their radii be C_1 and C_2 then

$$\cos A_1 A A_2 = \frac{R}{\sqrt{R - C_1}(R + C_2)}$$

where R is the radius of the circum-circle.

182. [G. V. TELANG]. Show that the locus of a point P which is such that $PB^2 + PC^2 = n \cdot PA^2$ where A, B and C are given points is a circle and show that when $n = 2$ the circle becomes a line and that in this case the 3 lines with respect to A, B and C are concurrent.

If these 3 lines meet BC, CA and AB in A^1 , B^1 and C^1 respectively then the triangle $A^1B^1C^1$ is $\frac{1}{3}$ the triangle ABC and the condition for concurrency of the lines AA^1 , BB^1 and CC^1 is

$$3abc = \sqrt{(b^2 + c^2)c^2 + a^2(a^2 + b^2)}$$

a, b, c being the sides of the triangle ABC.

183. [G. V. TELANG.] Find the locus of the centre of a circle of given radius, one of whose chord of contact of tangents drawn from two given points always passes through a fixed point either in the line joining the two points or outside it.

184. [V. V. S.] Construct a triangle having given one of its angles and the perpendicular from the angular point to the opposite side, such that the squares on its sides together with the squares on the lines joining its orthocentre to the vertices may be thrice a given square. Find the maximum limit of the given perpendicular.

185. [V. V. S.] Construct a triangle having given the bisector of the vertical angle and the median through the vertex, in length and position (i.e., with their included angle).

[Will correspondents please write their communications legibly on one side of the paper only and use as few abbreviations as possible.]

SECONDARY SCHOOL LEAVING CERTIFICATE DETAILED SYLLABUS.

Branch I.—ALGEBRA AND GEOMETRY.

Algebra.

A. Symbolic expression of general results in Arithmetic, Algebraic laws and principles and their applications.

1. Generalised Arithmetic—symbols, letters and figures.

2. Interpretation of positive and negative quantities—graphical illustrations.

3. Definitions and explanation of signs.

4. Collecting like terms, numerical values and substitution.

5. Addition and Subtraction—algebraic sum and difference:

$$a + (b + c) = a + b + c; \quad a + (b - c) = a + b - c;$$

$$a - (b + c) = a - b - c; \quad a - (b - c) = a - b + c.$$

6. Removal and insertion of brackets:

$$a + (b - c) = a + b - c; \quad a - (b - c) = a - b + c.$$

7. Multiplication:

$$\text{Law of Signs } + a \times + b = + ab;$$

$$+ a \times - b = - ab;$$

$$- a \times + b = - ab;$$

$$- a \times - b = + ab.$$

Like signs produce + and unlike signs —.

$$\text{Law of Index } a^m \times a^n = a^{m+n}.$$

8. Division:

$$\text{Law of Signs } + ab \div + b = + a$$

$$+ ab \div - b = - a$$

$$- ab \div + b = - a$$

$$- ab \div - b = + a$$

Like signs produce + and unlike signs —.

$$\text{Law of Index } \frac{a^m}{a^n} = a^{m-n} \text{ when } m \text{ is greater}$$

than n or $\frac{1}{a^{n-m}}$ when m is less than n .

N.B.—Method of Detached Coefficients for Multiplication and Division.

9. The fundamental laws of Algebra:—

i. The law of Signs: Like signs give +, and unlike signs —.

ii. The law of Commutation: $a + b = b + a$; $a - b = -b + a$; $a \times b = b \times a$, $a \div b \div c = a \div c \div b$.

iii. The law of Association:

$$a + (b - c) = a + b - c$$

$$a - (b - c) = a - b + c.$$

iv. The law of Distribution:

$$(a + b)c = ac + bc$$

$$(a - b) \div c = a \div c - b \div c.$$

v. The law of Indices:

B. Factorisation of Simple Functions, and Identities.

1. Monomial factors.

2. Factors found by comparison with Standard Identities:—

$$(a + b)^2 = a^2 + 2ab + b^2.$$

$$(a - b)^2 = a^2 - 2ab + b^2.$$

$$(a + b)(a - b) = a^2 - b^2.$$

$$(a + b)^2 + (a - b)^2 = 2(a^2 + b^2).$$

$$(a + b)^2 - (a - b)^2 = 4ab.$$

$$(x + a)(x + b) = x^2 + (a + b)x + ab$$

$$\begin{aligned}
 (x-a)(x-b) &= x^2 - (a+b)x + ab. \\
 (a+b)^3 &= a^3 + b^3 + 3ab(a+b). \\
 (a-b)^3 &= a^3 - b^3 - 3ab(a-b). \\
 (a+b)(a^2-ab+b^2) &= a^3 + b^3. \\
 (a-b)(a^2+ab+b^2) &= a^3 - b^3. \\
 (x+a)(x+b)(x+c) &= x^3 + (a+b+c)x^2 \\
 &\quad + (ab+ac+bc)x + abc. \\
 (x-a)(x-b)(x-c) &= x^3 - (a+b+c)x^2 \\
 &\quad + (ab+ac+bc)x - abc. \\
 (a+b+c)^3 &= a^3 + b^3 + c^3 + 2ab+2ac+2bc \\
 &\quad + 3abc. \\
 (a+b+c)^3 &= a^3 + b^3 + c^3 + 3ab(a+b) \\
 &\quad + 3bc(b+c) + 3ca(c+a) + 6abc. \\
 (a+b+c)(a^2+b^2+c^2-ab-ac-bc) &= a^3 + b^3 + c^3 - 3abc. \\
 (a^2+ab+b^2)(a^2-ab+b^2) &= a^4 + a^2b^2 + b^4. \\
 (a+b)(b+c)(c+a) &= (a+b+c)(ab+ac+bc) - abc. \\
 (a+b+c)(a^2+b^2+c^2) &= a^3 + b^3 + c^3 + bc(b+c) \\
 &\quad + ca(c+a) + ab(a+b). \\
 (a^2 + \sqrt{2ab+b^2})(a^2 - \sqrt{2ab+b^2}) &= a^4 + b^4.
 \end{aligned}$$

3. Tests for $x+1$ or $x-1$ to be a factor:
If the algebraic sum of the coefficients of an expression in x be equal to zero, then it has a factor $x-1$.
If the sum of all the odd coefficients of an expression in terms of x be equal to the sum of all the even ones, then it has a factor $x+1$.

4. Homogeneous and Symmetrical expressions.

5. Factorisation by the Remainder Theorem.

6. Identities:

$$\begin{aligned}
 2b^2c^2 + 2c^2a^2 + 2a^2b^2 - a^4 - b^4 - c^4 &= (a+b+c)(a+b-c)(b+c-a)(c+a-b). \\
 a(b-c) + b(c-a) + c(a-b) &= 0. \\
 (b+c)(b-c) + (c+a)(c-a) + (a+b)(a-b) &= 0. \\
 (b-c)(b+c-a) + (c-a)(c+a-b) + (a-b)(a+b-c) &= 0. \\
 a^2(b-c) + b^2(c-a) + c^2(a-b) &= (a-b)(b-c)(a-c). \\
 bc(b-c) + ca(c-a) + ab(a-b) &= (a-b)(b-c)(a-c).
 \end{aligned}$$

$$\begin{aligned}
 a(b^2-c^2) + b(c^2-a^2) + c(a^2-b^2) &= (a-b)(b-c)(c-a). \\
 (a-b)^3 + (b-c)^3 + (c-a)^3 &= 3(a-b)(b-c)(c-a). \\
 a^2(b+c) + b^2(c+a) + c^2(a+b) + 2abc &= (a+b)(b+c)(c+a). \\
 bc(b+c) + ca(c+a) + ab(a+b) + 2abc &= (a+b)(b+c)(c+a). \\
 a(b+c)^2 + b(c+a)^2 + c(a+b)^2 - 4abc &= (a+b)(b+c)(c+a). \\
 (a+b+c)^3 - a^3 - b^3 - c^3 &= 3(a+b)(b+c)(c+a).
 \end{aligned}$$

7. Conditional identities:

i. If $a^3+b^3+c^3=3abc$, either $a+b+c=0$ or $a=b=c$.

ii. If $a+b+c=0$
 $(ab+ac+bc)^2 = a^2b^2 + b^2c^2 + c^2a^2$;
 or
 $a^2 - bc = b^2 - ca = c^2 - ab$;
 or
 $a^4 + b^4 + c^4 = 2(ab+ac+bc)^2$.

C. Highest Common Factor, Lowest Common Multiple and Fractions.

1. H.C.F. of monomial expressions.
2. H.C.F. by inspection of expressions and resolving them into factors.
3. Theory of Divisors:
 - i. If one quantity divides another, then it will divide any multiple of it.
 - ii. If one quantity divides two others, it will divide the sum or difference of any multiple of these two.
4. The long rule for finding the H.C.F.
5. H.C.F. of three or more quantities.
6. L.C.M.
7. L.C.M. by factorisation.
8. L.C.M. of A and B is equal to the product of A and B divided by their H.C.F.
9. On the theory of fractions and operations involving fractions:
 - i. $\frac{a}{b} = \frac{ma}{mb}$.
 - ii. $a \div c = a \times \frac{1}{c}$.
 - iii. $\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$.

$$\text{iv. } \frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}.$$

$$\text{v. } \frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}.$$

10. Fractions to lowest terms.
11. Multiplication and Division of Fractions.
12. Addition and Subtraction of Fractions.
13. Simplification of Fractions.
- D. Functional Notation, Degree, Homogeneity and Symmetry of Rational Integral Functions. The Remainder Theorem and its application.

1. Symbolical expression and the use of Formulæ:

$$\begin{aligned}
 A &= \frac{1}{2}bh, C = 2\pi r, A = \pi r^2, S = rt, V = \frac{1}{3}\pi r^2h, \\
 S &= \frac{n}{2} \{ 2a + (n-1)d \}, \\
 S &= \frac{n(n+1)(2n+1)}{6}.
 \end{aligned}$$

2. Advanced symbolical representation.
3. Elementary theory of integral functions. Integral functions in one variable.

4. Homogeneity. The fundamental laws:

i. When a homogeneous expression of the n th degree has each of the letters with reference to which it is homogeneous multiplied by m , the result is the same as if the expression were multiplied by m^n .

ii. The product of two homogeneous expressions of the m th and n th degree respectively is a homogeneous expression of the $(m+n)$ th degree.

iii. The quotient of two homogeneous expressions of the m th and the n th degree respectively is a homogeneous expression of the $(m-n)$ th degree.

5. The product of binomial factors:

$$\begin{aligned}
 (x+a)(x+b) &= x^2 + (a+b)x + ab. \\
 (x+a)(x+b)(x+c) &= x^3 + (a+b+c)x^2 \\
 &\quad + (ab+ac+bc)x + abc. \\
 (x+a)(x+b)(x+c)(x+d) &= x^4 + (a+b+c+d)x^3 \\
 &\quad + (ab+ac+ad+bc+bd+cd)x^2 + \\
 &\quad + (abc+abd+acd+bcd)x + abcd.
 \end{aligned}$$

The r th binomial coefficient of any order is the sum of the r th and $(r-1)$ th coefficient of the preceding order.

6. Symmetry. Absolute symmetry. The fundamental law of symmetry: The sum, difference, product, or quotient of two symmetrical expressions is a symmetrical expression—Cyclic symmetry.

7. The Division Transformation:

$$\frac{A}{D} \equiv Q + \frac{R}{D}.$$

8. Functional Notation.

9. The Remainder Theorem:

i. When a rational integral expression containing powers of x is divided by $x-p$, the remainder is obtained by the substitution of p for x in the expression.

ii. The remainder when an expression containing powers of x is divided by $qx-p$ is the same expression with p/q substituted for x .

iii. When a rational integral expression containing powers of x is divided by $x+p$, the remainder is obtained by the substitution of $-p$ for x in the expression.

iv. An expression containing powers of x is divisible by $x-p$ if the same expression with p substituted for x is equal to zero.

v. If a rational integral expression in x of the n th degree vanish for n different values of x , it can be resolved into n different factors of the first degree.

vi. An expression of the n th degree in x cannot vanish for more than n values of x unless the coefficient of every power of x is zero.

vii. The maximum number of linear factors in a rational integral expression in x of the n th degree is n .

10. Application of Remainder Theorem to factorisation. Divisibility of $x^n \pm y^n$ by $x \pm y$:

i. $x^n + y^n$ is divisible by $x+y$ only when n is odd.

ii. $x^n + y^n$ is not divisible by $x-y$.

iii. $x^n - y^n$ is always divisible by $x-y$.

iv. $x^n - y^n$ is divisible by $x+y$ only when n is even.

11. The principle of indeterminate coefficients:

i. If two expressions in x of the n th

degree are equal for more than n values of x , the co-efficients of like powers of x in the two expressions are equal.

ii. If two algebraic expressions of a finite number of terms are equal for all values of any letter involved in them, the co-efficient of like powers of this letter in the two expressions are equal.

E. *Linear equations in one, two and three variables and quadratic equations in one variable with the principles involved in their solution—Solution of problems by means of such equations.*

1. Simple equations in one unknown—Axioms of equations:

If $x = a$, $x + b = a + b$.

If $x = a$, $x - b = a - b$.

If $x = a$, $bx = ba$.

If $x = a$, $\frac{x}{b} = \frac{a}{b}$.

Any term can be transposed from one side of an equation to the other provided we change the sign.

2. Problems leading to simple equations.

3. Simultaneous equations of the first degree in two unknowns—Special methods of solving simultaneous equations: Substitution, comparison, undetermined multipliers, cross multiplication, and elimination.

4. Simultaneous equations in three unknowns—Equations involving the reciprocals of the unknowns.

5. Problems leading to simultaneous equations.

6. Fractional equations.

7. Quadratic equations and equations reducible to quadratics—Methods of Solution:

i. By factorisation

$$ax^2 + bx + c = a(x - \alpha)(x - \beta)$$

where $\alpha + \beta = -\frac{b}{a}$ and $\alpha\beta = \frac{c}{a}$.

ii. By completing the square

$$\left(x + \frac{b}{2a}\right)^2 = \left(\pm \frac{\sqrt{b^2 - 4ac}}{2a}\right)^2.$$

iii. By formula

$$ax^2 + bx + c = a \left(x - \frac{-b + \sqrt{b^2 - 4ac}}{2a} \right) \left(x - \frac{-b - \sqrt{b^2 - 4ac}}{2a} \right).$$

8. Problems leading to quadratic equations.

9. *Theory of quadratic equations:*

i. A quadratic equation in one unknown quantity has two and only two roots.

ii. Relation between the roots and co-efficients:

$$\text{Sum of the roots} = -\frac{b}{a} = -\frac{\text{co-efficient of } x}{\text{co-efficient of } x^2}.$$

$$\text{Product of the roots} = \frac{c}{a} = \frac{\text{absolute term}}{\text{co-efficient of } x^2}.$$

iii. To construct a quadratic whose roots are given.

iv. Discrimination of roots:

(a) when $b^2 - 4ac$ is zero, the roots are real and equal, each root being equal to $-\frac{b}{2a}$.

(b) when $b^2 - 4ac$ is positive, the roots are real, distinct and unequal:

i. when $b^2 - 4ac$ is a perfect square, the roots are rational and can be found exactly.

ii. when $b^2 - 4ac$ is not a perfect square, the roots are irrational.

(c) when $b^2 - 4ac$ is negative, the roots are imaginary.

10. Simultaneous equations of higher degree than the first:

i. Systems in which one equation is linear and the other quadratic.

ii. Systems the solution of which can be made to depend on the solution of such linear systems as $x + y = a$, $x - y = b$.

iii. Homogeneous systems.

11. Literal equations.

12. Equations in an irrational form.

13. Indeterminate equations.

F. *Involution, Evolution, The Theory of Indices, Surds, Ratio, Proportion, and Variation.*

1. Involution.

2. Evolution—Square root and Cube root:

i. By inspection.

ii. By the Arithmetical method.

iii. By the principle of indeterminate co-efficients.

3. Theory of Indices:

i. $a^m \times a^n = a^{m+n}$.

ii. $a^m \times a^n \times a^p \times \dots = a^{m+n+p+\dots}$.

iii. $\frac{a^m}{a^n} = a^{m-n}$ when m is greater than n .

or $\frac{1}{a^{n-m}}$ when m is less than n .

iv. $(a^m)^n = a^{mn} = (a^n)^m$.

v. $(ab)^m = a^m b^m$.

vi. $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$.

vii. $a^0 = 1$.

viii. $a^{-n} = \frac{1}{a^n}$.

4. Surds.

5. Ratio:

i. A ratio of equality is unaltered, a ratio of greater inequality is diminished, and a ratio of less inequality is increased by adding the same quantity to both its terms.

ii. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \dots$

each of these ratios $= \left(\frac{pa^n + qc^n + \dots}{pb^n + qd^n + \dots} \right)^{1/n}$ where $p, q, \dots, n$ are any quantities whatever.

iii. If $\frac{a_1}{b_1}, \frac{a_2}{b_2}, \frac{a_3}{b_3}, \dots, \frac{a_n}{b_n}$ be unequal fractions of which the denominators are all of the same sign, then the fraction $\frac{a_1 + a_2 + a_3 + \dots + a_n}{b_1 + b_2 + b_3 + \dots + b_n}$ lies in magnitude between the greatest and least of them.

iv. Rule of cross multiplication:

If $a_1x + b_1y + c_1z = 0$, $a_2x + b_2y + c_2z = 0$, then

$$\frac{x}{b_1c_2 - b_2c_1} = \frac{y}{c_1a_2 - c_2a_1} = \frac{z}{a_1b_2 - a_2b_1}.$$

6. Proportion:

(a) If $a : b = c : d$, then

i. $ad = bc$.

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ii. $a : c = b : d$ (alternando).

iii. $b : a = d : c$ (invertando).

iv. $a + b : b = c + d : d$ (componendo).

v. $a - b : b = c - d : d$ (dividendo).

vi. $a + b : a - b = c + d : c - d$ (componendo and dividendo.)

(b) If $ad = bc$, then $a : b = c : d$.

7. Variation.

G. *Graphs of simple algebraic functions and their applications to the solution of equations and problems.*

1. Use of squared paper.

2. The co-ordinates of a point.

Origin (0, 0); any point on the x -axis ($x, 0$); any point on the y -axis ($0, y$); the distance of any point (x, y) from the origin $= \sqrt{x^2 + y^2}$.

3. The straight line graph:

i. Write the equation in the form

$$y = mx + c.$$

ii. Tabulate the values of x and y .

iii. Choose a convenient unit.

iv. Plot these points on squared paper.

4. Graphical solution of linear equations. Draw the graphs of the equations to the same scale and read off the co-ordinates of their point of intersection.

N.B.—Simple equations in one unknown. Find the abscissa of the point of intersection of the graphs of the functions which form the equation.

5. To find the equation of a straight line graph:

i. The equation of the x -axis is $y = 0$.

ii. The equation of the y -axis is $x = 0$.

iii. The equation of a line parallel to the x -axis is $y = a$.

iv. The equation of a line parallel to the y -axis is $x = b$.

v. The equation of the bisectors of the angles between the axes are $y = x$ and $y = -x$.

6. Application of graphs. Statistical and conversion graphs—graphical problems.

7. The graphs of $y = x^2$, $y = x^3$, etc., and their application. Square root and cube root. Graphical and geometrical methods.

8. Graph of the quadratic function—Maximum and Minimum values of quadratic functions—Turning points—The graphic solution of quadratic equations.

9. Graphs (circles). Graphic solution of simultaneous quadratic equations.

10. Graphical solution of indeterminate equations.

H. The Progressions.

1. To find the n^{th} term of an A.P.

$$t_n = a + (n-1)d.$$

2. To find the sum of n terms of an A.P.

$$s_n = \frac{n}{2} \{ 2a + (n-1)d \}.$$

3. To find the A.M. between a and b .

$$x = \frac{a+b}{2}.$$

4. To insert n A.M.s between a and b .

$$a + \frac{b-a}{n-1}, a + \frac{2(b-a)}{n-1}, \dots, \frac{a+n(b-a)}{n-1}.$$

5. To prove that in an A.P. of an odd number of terms the middle term is the A.M. between the first and last terms of the series.

6. To find the n^{th} term of a G.P.

$$t_n = ar^{n-1}.$$

7. To find the sum of n terms of a G.P.

$$s_n = \frac{a(1-r^n)}{1-r}.$$

8. To find the G.M. between a and b .

$$x = \sqrt{ab}.$$

9. To insert n G. Ms. between a and b .

$$a \left(\frac{b}{a} \right)^{1/n+1}, a \left(\frac{b}{a} \right)^{2/n+1}, \dots, a(b/a)^{n/n+1}.$$

10. To prove that in a G.P. of an odd number of terms the middle term is the G.M. of the first and last terms of the series.

11. Infinite Geometric series.

12. To find the H.M. between a and b

$$x = \frac{2ab}{a+b}.$$

13. The G.M. between any two quantities is the G.M. between their A.M and H. M.

14. Summation of the powers of the natural numbers:

i. Sum of the first n integers

$$= \frac{n(n+1)}{2}.$$

ii. Sum of the squares of the first n integers

$$= \frac{n(n+1)(2n+1)}{6}.$$

iii. Sum of the cubes of the first n integers

$$= \left\{ \frac{n(n+1)}{2} \right\}^2.$$

P. S. RANGANATHA AIYAR.

(To be continued).

HOW TO CO-ORDINATE COMPOSITION IN A SCHOOL.

THE words "co-ordination" and "correlation" are now used as frequently as possible in every institution by teachers, superintendents and inspectors of schools. The importance of the functions denoted by them is denied by no-body. But, it is the working out of details that is really difficult and gives room for varying opinions; when once there is a general agreement with regard to the principle, the details do not affect too far to be of use when notes are compared. Sometimes, those points that seemed to have the greatest value come to be viewed as less important and those that were regarded as of the least import begin to be taken as more important, when the results of different workers under varying conditions are compared by those who have bestowed their labour on the subject with patience and en-

thusiasm. It is with the idea the following details will help other labourers in the field to compare them with what they have themselves verified in their own experience that they are now placed before them. The writer of a well-known "Manual of Teaching" says in his preface that, if anybody reads it and says it is what he absolutely agrees to, he does not relish it. He desires that his methods might receive sufficient consideration and that the careful reader might yet differ in some points after thinking about the subject. It is only the exercise of individuality that is the spice in intellectual operations as in all others human. It does not matter to what it may lead, so long as people are painstaking and earnest in advancing a good cause. Let difference of opinion bring about variety of action based on diversity of taste; let variety be the spice of life that it is said to be.

2. Some hold that translation is the *panacea* for all existing evils and defects in English Composition, others, that the use of direct method of teaching with the foreign language as the medium without any admixture of the vernacular is the only possible way of removing the mischief wrought by the conservative faith in translation. But, it is seen in actual work that a fair combination of both is necessary. It is true that, if the pupils are to improve in English Composition, oral and written, matters should be pretty nearly on the lines adopted by those whose mother-tongue is English; but, though translation is not of the extreme service to which those who go too far in it lay claim, there is a minimum amount of it which is helpful at every stage until the pupils' command of the foreign language is sufficiently good to avoid it. This is true because those who are fresh

learners find it much easier to have the familiar language used a little than to have the foreign alone.

3. The real foundation for composition must be laid in the primary school. It must be developed in the lower and upper secondary forms. To begin with, the safest course is to attend to the second standard. Here the children are (*a*) taught to sing a song on some object whose properties they are supposed to have learned. But, if they are questioned on the meaning of what was sung, it is found they fail. They do not connect, the meaning of the song with the properties of the object. They are carried away by the musical cadence at the cost of understanding. Therefore, let there be questioning in such a manner as to show the links of connection; when the true import is impressed, they take greater pleasure in the musical way of repetition. (*b*) Some short stories are related to them and they are told to repeat them as a whole. But, if a question is put on any particular point, all sorts of absurd answers are forthcoming. So, the teacher should put one question after the other, until the whole is finished. Then let the teacher tell the pupils to put questions amongst themselves on the lines already pointed out. They require help to adopt this method. When analysis has thus been grounded in, let a few pupils give out a synthesis of the different parts and state the whole story. This unconsciously makes them feel the use of analysis and synthesis.

4. It need not be said that the vernacular is the language used as the medium of instruction in this and the two higher standards, the third and the fourth. In the third standard, let the same method be followed orally. But, here must be added a little element of writing short sentences, in

the description of an object placed before them. In the fourth standard, let the outlines of a story or a description be written on the black-board; let the pupils be told to finish only a half of them one day and the remainder on another; care should be taken to see that they confine themselves each time to the particular points mentioned.

5. Here one stage of improvement is practicable. Some objects may be placed before them and known properties elicited, unknown ones may be taught with proofs and points of fresh observation in the home, the street or the market to which they may be led. A little amount of reasoning may be usefully employed. Thus the pupils can be led from an oral arrangement of the parts into the construction of a paragraph, the arrangement of known matter under a few definite heads at a given time with a little reasoning and observation of the hitherto unfamiliar properties.

6. In the first form, all that the pupils know of a given subject may be elicited. Each point may be reduced to writing on the black-board. After all they can say is over, the teacher may add his own and explain them. He may himself arrange them into paragraphs and help them to understand why he does so. Of course, the pupils write on the points in a connected form.

7. In the second form, the order and arrangement of the paragraphs may be left to the children themselves after a good deal of eliciting and leading on the lines of the first form. Here may be added a new element. The teacher may show how to begin with a suitable introduction and to end with a summary of the main points treated.

8. On the basis of this work, he may in the third form help them in the first half of

the year to follow the directions and leave them in the second half of the year to do it themselves. It must be understood that in these three forms also, it is vernacular composition that has been spoken of.

9. To a worker fresh in the field, these details are uninteresting and tedious. They do not create any interest. Even to the teacher of a single class or form, the natural link in the chain is not known; only one who has exercised careful supervision of work in the primary classes and the lower secondary forms can appreciate the value of gradation and enjoy the sight of children slowly developing under it.

10. A great deal of patience has to be exercised in hearing all that the children have to say. Even the absurd points that they mention must be listened to in a spirit of love and the mistakes pointed out in one of encouragement for learning what is correct. They must never have occasion to think that the teacher means to ridicule them or even to leave their fellows to laugh at them for any nonsense by way of discouragement.

11. Having so far dealt with Vernacular Composition, the question of English Composition may be taken up. The method is on the same lines as those already indicated. In the third and fourth standards it is more or less oral. As teachers know or are led to follow the direct method, no details need be entered into. In the first form, they may write short sentences. At first they must relate to the subject-matter of their text. If any familiar object is treated of, the words that have to be used must have been already either taught in the teacher's own sentences or in those contained in the reader.

12. In the second form, they may do the same thing with less help. They may

not only have the regular reader but also some extra book of an interesting character. Take *Æsop's Fables* for example. The contents of any single fable may be first given in the vernacular. The whole of a fable may be read for the first time in English. Then they have a rough idea of the whole. In the second reading let the meanings of such portions be given as are not understood. In the third reading, they understand the whole with the connection between the parts. The object must be to enable them to construct sentences of their own by helping them to have a command of words suited to their standard of learning without giving them much trouble in technical points of grammar.

13. In the third form, the same policy may be pursued. They may read the prescribed text-books and a non-detailed book like the *Evenings at Home* may be introduced. Such lessons as are suitable may be chosen for rapid reading of the whole. At this stage, the composition may be based not only on the subject-matter of the prose portion but also on that of the small number of lines of poetry they are expected to read in class and be taught by the teacher. Short questions may be put on the same point treated of in different parts. The teacher may help the pupils to put them in a connected form. For example, let us take a lesson on "rain" in poetry. Its uses to cattle, to fields, to men, to houses and to streets are mentioned in different parts. Let the teacher help them to arrange. Their mistakes should be corrected and then specimens of simple paragraphs embodying the ideas may be given by the teacher. An instance of a work of this kind was placed before an Inspector of Schools. He was much pleased with the

amount of labour bestowed on the task, his long experience having led him to appreciate it. It is not enough that a teacher should be satisfied with his own work. He must be aware of the existence of others capable of judging the results of his work and of the necessity for convincing them of his earnestness and industry.

14. In the fourth form, a little more difficult lesson in English prose or poetry may be taken. Say, it is the poem "*Lady Clare*" by *Tennyson*. The heads of paragraphs may be given by the teacher himself. As English poetry is not much appreciated or understood by our boys, it is necessary to let them know to what particulars they should give their attention. Generalisations are admitted by every body; but the practical worker puts the question, can you give a specific instance by way of illustration? He is quite right in so doing. He is entitled to it. It is only then he is convinced of the practicability. We shall have for "*Lady Clare*" the following heads of paragraphs:—

- i. The love between Lord Ronald and Clare.
- ii. The nurse's revelation of the secret.
- iii. Its effect on Clare.
- iv. Her meeting Ronald to give out the secret and to test his faith.

The pupil sees on board the headings of the 1st paragraph. He is lost in wonder as to what he should write down. But, after teaching the meaning of the whole piece, put the following questions:—

- (a) Why did Lord Ronald love Lady Clare?
 - (b) What was he used to bring her during visits?
 - (c) What did this lead to with regard to marriage?
- Similarly three or four questions may be given on the other three points and answers elicited. The actual ones are not detailed here for the sake of avoiding the

necessity to take up too much space and of letting the upper secondary teachers do it for themselves, as they are themselves capable of multiplying instances. The subject will occupy two lessons of an hour each in class. Then the children may bring it written for correction by the teacher in their presence. It is this slow and deliberate way of working that impresses itself on their minds. This was actually done in a form and two senior assistants of intelligence and experience were shown the same. With an open mind, they expressed their conviction that it was really interesting to the pupils and that, if only trouble is taken, others may do the same with profit to themselves and to the children under their care. Here again, the appreciation of work and respect for it by others than the worker himself is an important consideration to show him that he is guarded in his ways and guided by sober deliberation.

15. In the fifth form, a subject for English Composition is given. Then the teacher may elicit the amount of information which they are able to give. They do not give them arranged. Let the teacher add new facts and reasons. Then let there be an arrangement of paragraphs with the details mentioned categorically below. Here, let the teacher show how the opening paragraph should begin with an indication of the main points that will be treated of in detail and end with a recapitulation that will connect the essence of the details in the body with the important points hinted at the outset.

16. In the sixth form, they may be given outlines to be filled up. They may be told to write on the above lines under guidance at the beginning of the year and left to themselves gradually till they can do it occasionally; debates may be held in class, and the pros and cons of a subject argued by the pupils

This sharpens their readiness of resource under guidance. Given a subject treated of at length in a book, they may be helped to make a topical arrangement by bringing together different facts mentioned in different pages. When the number of topics is, say four or five, four or five sub-committees of pupils may be formed. General guidance for the whole class having been given, particular attention must be paid to each sub-committee, so that its members may co-operate with one another. The work of each sub-committee must be corrected and revised by the teacher. Then when the whole is read in class, all the pupils show an amount of elation of spirits that is really more than reward in the shape of money or promotion or increase of salary. The glow in the pupils' faces leads to a mental rejoicing at the result of work done in such a manner as to facilitate children's individual development. Pupils who underwent later on their college course have informed the writer of the usefulness of the method that they came to appreciate better; principals and professors of colleges have said that the pupils were able to follow the lectures in English with ease.

17. It must be emphasised that the method of composition becomes valuable in proportion to the amount of information available for arrangement and exposition. This information has to be gathered from hearing what others say, reading what authors have written and, what is more important, from observing carefully what takes place in the world to be recorded accurately and usefully. The higher the stage of development, the greater is the power of making delicate shades of distinction that is the test of a subtle understanding. Nothing is so important as the exercise of originality

within the humble limits of each individual. A knowledge of current facts and the world as we find it must vivify not only English but Vernacular Composition.

18. Correlation of subjects in Composition is not taken up here. If the methods already mentioned are followed, it depends on the amount of general knowledge in other subjects than English and when that is ready to hand, the command of language backed up by practice in composition enables us to write properly, in such a manner as to express thoughts and facts with some degree of satisfaction to the busy world though it may not be possible to give any of the finishing strokes that a standard author is capable of or to imitate the grace and dignity of a classic writer.

C. R. SRINIVASA RANGACHARY.

SOME REFORMS IN THE EDUCATIONAL SYSTEM OF BOMBAY.

Since the Hon'ble Mr. Sharp assumed the reins of the Directorship, the Educational Department appears to have entered upon a new era of progress. It was inevitable that he should have had, in many respects, to follow the lines already laid down but there is evidence to show that under him the Department is striking out into new paths. It is not only in University education that far-reaching changes are being effected but even in the matter of Secondary education markedly long strides are contemplated. It is notorious that the High School courses have, till now, been shaped to suit the dominating exigencies of the Matriculation or rather the whims of the examiners at the Matriculation. There are signs now that all this will be changed. As the Matriculation is the terminus

of course of Secondary education, everything has had to be adapted to the uncertain and ever-changing requirements of that examination. The instruction imparted in Secondary Schools, from beginning to end, pointed to that top rung of the ladder, which was however in the hands of the University and out of the control of the Educational Department. The proposal to abolish the Matriculation as a University examination, which was initiated and strenuously supported by Government, has fallen through in the Senate. In spite of this rebuff, for it was nothing less, the reforming instincts of Government seem to have lost none of their zest, and the Government Resolution on the annual report of the Director of Public Instruction for 1909-10, states that the Governor-in-Council "has under active consideration measures designed to relieve the courses from the dominance of the Matriculation examination, to revise the Curricula generally, to provide suitable text-books and to improve the prospects of the assistant-masters." The operation of these measures, it is hoped, will remove some of the patent defects of the existing system of Secondary education. I shall not enter into a detailed discussion of these measures just at present.

The opening sentence of the Resolution pithily sums up the progress made by the Educational Department during the year under report, viz., "there was a marked expansion in all branches of educational work during the year." I shall not quote figures illustrating the marked expansion, such as those of pupils under instruction, the increased expenditure incurred and the various percentages. It is worth while, however, to notice some salient facts. The G. R. reiterates remarks made last year as to the deplorable paucity of students going in for degrees in

Science and the greater measure of success attained by aspirants for the Science degrees in comparison with candidates for degrees in Arts. In the matter of the progress in female education in India, the Bombay Presidency probably comes off easy first. The number of girl-undergraduates is fast increasing and is causing the great inconveniences which mixed education is calculated to give rise to in India. Opinions may differ on the merits of the system of co-education in colleges. But at any rate the present conditions are, in no way, congenial to the persistence, on a large scale, in that system. Whatever may be said of other centres of education, go-ahead Bombay is certainly ripe, as the Principal, Elphinstone College observes, for the creation of a women's college, managed by a staff of Oxford or Cambridge women-graduates. The public spirit and generosity of Bombay have become proverbial and if a definite scheme is put forward, it is sure to be enthusiastically taken up and made successful. Such a separate college for women will stimulate the cause of the higher education of women. There are a number of other notable points in the report of the Director of Public Instruction, a consideration of which I must postpone to a future occasion.

The recently issued Government Notification in connection with the School Final Examination gives detailed syllabuses of studies and the conditions under which the examination will be held. The S. F. has been one of the most unpopular of public examinations and has failed to attract candidates of any high calibre. Notwithstanding all the efforts that have been made to make it popular, the Matriculation still continues to maintain its hold on the minds of the student world. It is the common experience of the Headmasters of High Schools that the S. F.

class is the resort only of the never-do-wells. Intelligent students generally fight shy of it though many in the Matric. class go in for the S. F. as a secondary object. Boys who find Sanskrit or Geometry too stiff or do not care to study the subjects, boys who fail in them in the Fourth and Fifth forms want to be put into the S. F. class. The consequence of this is that the class comes to contain the very essence of incapacity and dullness and the results are the poorest imaginable. By their recent Notification Government have brought that examination on to a level with the Matriculation. Apparently what they could not do with what at present constitutes the College entrance, they have tried to do with the examination which they fully control. The new course includes Algebra and Geometry, English History and a Second Language, subjects which were so long absent from the S. F. curriculum. Then again, the taking up of optional subjects has been made optional. I do not know why such option has been given at all. Who will care to take up subjects for his examination which it is left to his choice to take up or not? It is one thing to leave the candidate's option between sets of subjects and another to give option wholesale. The syllabus of History and Geography is judiciously selected and ought to make the study of those subjects intelligent and profitable. The option given to answer questions either in English or the Vernacular is a distinct step in the path of progress. The deadweight of a foreign tongue will no longer cramp the understanding of boys and both the teachers and the taught will find the change convenient and beneficial. I am told that this reform is to be extended to the High Schools too and the concession of the option of the medium of instruction is going to be made to the higher standards of Secondary education. It is

significant that this reform is accompanied by a measure to ensure a sound and intelligent study of the English language. There will be two papers instead of one, and text-books will be prescribed from time to time. This is a step in the right direction and the changes in the S. F. examination course only foreshadow the reforms that are contemplated in the curricula of the High Schools. It is difficult to prophesy whether, with all these changes notified in connection with the S. F., that examination will be, in any way, as popular as her sister. At any rate the two have been brought into a line. Government may now legitimately and reasonably ask the University to recognize the S. F. as a College entrance but that body may not grant the recognition to an examination which it does not control. The S. F. certificate will give an advantage to the holder over a Matriculate so far as Government service is concerned. By a Government Circular issued sometime back, the Matric. aspirant to State service has been deprived of the prospects of getting into Government employ. It may be said that the S. F. examination has been rendered more difficult by the new changes. It may be so to some extent. But there will unquestionably be a gain in efficiency to Government as it will get better State servants. From a purely educational point of view also, the recent Notification must be welcomed as embodying a beneficial step in the proper direction.

The question of the Examination Halls appears to be fast proceeding on the way to a satisfactory solution. I need not here enter into the controversy which has raged, for some time past, on this topic. The latest phrase of the question is the proposal of Government to utilise the generous donation of

Sir Cowasji Jehangir to incorporate the halls into the Science Institute which is now to rise near the Elphinstone College. This proposal will obviate the difficulty in connection with the building of the examination halls in the University gardens. It is however doubtful whether the University will be willing to contribute its share to the expense of the halls to be provided in the Science Institute when the Government have backed out of the promise of co-operating with the University in building the halls in the gardens. The site for the Science Institute has been finally settled. It was objected to on the ground of there being no scope for the inevitable expansion of the Institute on the limited space available on the site. The Elphinstone College would also be deprived of its playground. But the Government has now removed this latter cause of complaint by allowing the use of a part of the Oval to the College Gymkhana for its sports. The Science Institute, when it is complete, is calculated to be an ornament to this beautiful city. What is more important than mere beauty is its immense usefulness as giving stimulus to scientific education, provision for which is so inadequate in this country. Encouragement to and provision for scientific study on a large scale, which will thus result, mark a landmark in the history of higher education in this Presidency and no small part of the credit of the advent of this new era belongs to our popular Governor, Sir George Clarke.

A PROFESSOR.

SCHOOL RECORDS IN RELATION TO THE SCHOOL FINAL SCHEME.

THE School Final Scheme now in force in all the High Schools of this Presidency, is causing much anxiety as regards its working. There will, therefore, be a great relief if a steady and continuous record of the progress of the pupils be kept in accordance with the School Leaving Certificate Scheme. As regards the best system of estimating the individual merits of pupils, various suggestions have been made, which have been subjected to diverse criticisms. And I hereunder venture to set forth my views on the various systems propounded and to explain the one adopted in Pachaiyappa's High School at Chidambaram.

It has been contended that only one alone of the following systems, namely, the *viva voce* examination, short written examination, surprise examination and periodical examination will be insufficient to enable us to form a correct estimate of the fitness of pupils and that the opinion of the teacher should be taken only in rare cases. Hence it is suggested that a judicious combination of all the systems proposed will be much better than any one of them singly. But it seems to me that even this four-fold examination system has several defects and cannot, therefore, be well adopted in its entirety. For, can so many examinations on the whole in the several subjects for every class, be satisfactorily conducted every month? Should all the different examinations be conducted together, the poor teacher would be worried by pressure of work. For, he has to value the answer-papers and to correct the exercise note-books. This work will take at least a quarter of an hour for each paper or note-book. Thus, in addition

to the work of teaching (22 out of 30 periods of school-work each of 55' duration), the teacher has to devote at least three hours to correction and valuation. Can he endure this heavy strain without detriment to his health? However conscientious he may be, he will find it impossible to do full justice to his teaching work. Like the over-worked clerk of the Taluk Office, he cannot but let his work fall into arrears. As a consequence he would not feel interested in his work; and to do one's duty well one has to work with heart and soul. His pay is too low to be commensurate with the increased work and the growing responsibility. Besides, he will not have sufficient time to finish the portions prescribed. Yet another objection to this four-fold examination system is that it engenders a spirit of speculation in the minds of pupils, for, the boys would study only the portions likely to be examined upon, leaving the rest untouched, and they will be much tempted to air their little knowledge under a cloud of words, to conceal their ignorance, which tendency should be strongly discountenanced. Further under this system a lot of undigested matter is stuffed into the heads of the pupils. What is more,—this system would tend in a subtle way, to create disharmony in the school atmosphere and would surely take away from the poor ill-paid teachers all energy and enthusiasm in the school-work. Hence arises the necessity of minimising the number of examinations that should be conducted in a school in order to ascertain the individual merits of boys. Then alone will they die of some use in finding out the mental capacities of pupils. How these examinations can be so judiciously combined as not to undermine the health of both teachers and pupils or throw too heavy

a work on the Headmaster and his assistants, will be seen from an examination of the system described below, and now tried at Pachaiyappa's High School, Chidambaram, a system which, in the humble opinion of the writer, goes a great way towards forming a correct estimate of the physical, mental, and moral development of pupils. And now for the system :—

Mental Culture—Camp System.—Each section of every form is divided at the beginning of every month into two equal parties or camps called A and B, every pupil in the A camp having a rival in the B camp picked out by the teacher whose duty it is to see that each camp contains a fair proportion of good and bad pupils. The teacher then puts one of his carefully prepared questions to a boy, say, in the A camp, and when he gives his answer, his rival in the B camp is at once up with his corrections; and thus it becomes possible to test the daily preparation of two pupils at one and the same time. This *viva voce* questioning is conducted daily for 15 minutes in every period of 55' duration; and so the teacher experiences no difficulty in examining daily the assimilated knowledge of five pupils in a camp (that is, ten pupils in all) by putting at least one question to each pupil, there being no restriction as to the number of such questions. And the teacher enters daily in his note-book the results of this *viva voce* questioning. Thus the whole class can be satisfactorily examined at least once a week in the several subjects of the School Final Curriculum. This camp-system, I find, creates in the boys an interest in the subject, which is the mainspring of attention, not to say anything of the spirit of emulation engendered in their minds.

In order to form a correct estimate of the

boys' progress in the several subjects during a particular week, the teacher should not only rely upon the results of the daily *viva voce* examinations but also take note of the following :—

- (1) Handwriting.
- (2) The way in which rough note-books are kept.
- (3) Map-drawing and other exercises.
- (4) Practical work in Science.

Physical Culture.—While every encouragement is given to the cultivation of the mental faculties, the development of the body is not neglected under this system. With a view to improving the physique of the boys, they are required to attend the usual gymnastic exercises once a week and also to take part at least for two days in a week in any one of the following games, namely, Foot-ball, Badminton, Cricket, Round-race, etc. At present two days' attendance at the play-ground in the week is made more or less compulsory for the High School forms. Out of a maximum of 50 marks a week 25 marks are assigned to gymnastics and 25 marks to regular attendance at the play-ground; and the absence of boys is noted by the class-teacher in his note-book and marks are deducted for the same according to certain specified rules.

Moral Culture.—Now a word as regards the moral culture in vogue in this institution. It is well-known that the cultivation of good habits is a great aid in forming a good character and therefore particular care is taken to cultivate in boys such good habits and qualities as obedience, courtesy, etc. The following directions will guide the teachers in forming a correct impression of the character and conduct of pupils. Moral character is classified as follows :—

(1) Conduct towards self—orderliness, industry, cleanliness and temperance.

(2) Conduct towards superiors—obedience, veracity, honesty, and courtesy.

(3) Conduct towards equals—good temper, unselfishness, etc.

(4) Attendance—regularity and punctuality.

Every act of misbehaviour on the part of a boy or any other irregularity is noted by the teacher in his note-book and marks are deducted for it out of a maximum of 25 marks per week, set apart for the several sub-divisions that come under the head of "Moral character." Every class-teacher is required to consult his fellow teachers before awarding final marks for moral conduct and character. By the way, I may add that any gross moral delinquency is reported to the Headmaster for severe chastisement. Thus at Pachaiyappa's High School, Chidambaram, teachers are required to give marks not only for mental culture, such as proficiency in English, Mathematics, etc., as detailed above, but also for physical development as well as moral culture. I find that the system of awarding marks in this manner goes a great way towards promoting the tone and discipline of the institution and towards improving the physique of the boys.

Weekly Reports.—The responsible teacher submits to the school-clerk on the last working day of every week, a weekly report not only on the physical and moral culture of the boys but also on the progress made by them in the various subjects (English, etc.) based upon the several entries made in his note-book against each boy. These weekly reports are duly incorporated in a Register kept in the custody of the school-clerk. On the first working day of the week, the Headmaster

goes round the classes with the Register for pointing out the defects of the pupils and rectifying their conduct by fining or otherwise punishing them.

These reports will also point out to the parents the real positions of their sons in the school and thus secure their hearty co-operation in the up-bringing of the pupils. And these reports are also of great help to the Headmaster in filling up the several columns in the School Leaving Certificate and in understanding easily the proficiency or aptitude of a boy in a particular subject. They further give a clear idea of the substantial work done by the teachers.

Besides the careful maintenance of the weekly progress register showing at once the weak and strong points of pupils at a single glance, weekly examinations are conducted on the last working day of the week—which take up 50' or 55'—on the following subjects mentioned in groups A and C:—

- (1) English.
- (2) Vernacular Composition and Translation.
- (3) Elementary Mathematics.
- (4) Optional Subjects.

Due notice is given to pupils at the beginning of every month by posting the weekly examination scheme on the notice-board. Thus in the course of four weeks a thorough written examination is held to test the knowledge and efficiency of the pupils. The Headmaster takes care to see that no paper is unnecessarily too severe and that no cram is encouraged.

In addition to the weekly examinations, two exercises are set and corrected once a month in each of the following:—(1) Vernacular Composition; (2) Vernacular Translation; (3) English Composition. One of the

exercises in No. 3. is on the books prescribed for either the detailed or non-detailed study and the other on general topics. At Pachaiyappa's High School, Chidambaram, the subjects for Vernacular Composition are so chosen as to illustrate, as far as possible, what is called "the correlation of studies." The teacher is required to select such subjects as—

- (1) The sea, tides, and currents.
- (2) The influence of physical features of India on her history.
- (3) The Rajput Feudalism *versus* the Norman Feudalism.
- (4) The progress of India under the British Rule.
- (5) Electricity in the service of man.
- (6) The barometer and its uses.
- (7) The thermometer and its uses.
- (8) An historical narrative of the "Battle of Agincourt."
- (9) The story of Sir Walter and his famous chase.

(10) The story of Conn-eda.

In these exercises great attention is paid to hand-writing and spelling and to simplicity and directness of expression. The marks assigned to these exercises together with the results of weekly examinations are entered in the Register kept with the school-clerk.

So, the system, as tried in my institution, consists of weekly reports (based upon the results of daily *viva voce* examinations), weekly examinations and correction of two exercises a month on the important subjects. From the several entries for a month a monthly average is obtained for the several subjects in the School Final Scheme, and is entered in a register called the monthly average register which affords sufficient data for filling up the School Leaving Certificate book. Thus an entry for each subject for each boy is secured every month.

For the sake of convenience, I give the following data from which the monthly average is obtained:—

Name.	Subject.	Mental Culture.				Weekly examn.	Exercise.	Monthly average.	Remarks.
		First week.	Second week.	Third week.	Fourth week.				
Subrahmanyam ...	English	10 25	8 25	9 25	12 25	45 100	51 100	48 10	V. fair.
	History	8 25	9 25	12 25	12 25	"	"	41 100	Fair.
Krishnaswami ...								80 100	Satisfactory.
		20 25	15 25	20 25	25 25	"	"		
Krishnaswami ...								50 100	Fair.
		25 50	12½ 50	12½ 50	50 50	"	"		

From the monthly averages and the results of the term examinations, one can easily work out the 'term averages.' While this system stimulates the individual activities of

the pupils in the progress of their studies, it also secures exactness and precision in the expression of their answers, and that, without subjecting either the teacher or the pupil

to unnecessary or too much strain. It is humbly hoped that the simplicity and comprehensiveness of the method of working out the School Final Scheme detailed above, and now followed in Pachaiyappa's High School, Chidambaram, will result in the increased efficiency of both the teacher and the taught.

A. GOVINDARAJA MUDALIAR.

THE EDUCATION COURT AT THE UNITED PROVINCES EXHIBITION.

(BY A VISITOR)

THE Education Court at the United Provinces Exhibition is one of the best arranged and the most important. It has the support of the Government and neither time nor money have been stinted in making it as perfect and representative as possible. It occupies a central position in the Exhibition grounds, and visitors cannot fail to be attracted by it. It was one of the first courts to be finished and it has an excellent little guide-book of its own while the official handbook of the Exhibition gives it also a lengthy notice.

The way in which the exhibits are arranged is curious, things sent from schools in England being placed beside the work of Indian children. The Board of Education, London, the Manchester Education Committee, the School-board of Glasgow, the Northampton County Council, the Ladies' High School, Cheltenham, the Christian Brothers, Cork, and many other educational institutions in the United Kingdom have sent exhibits, and exhibits have also been drawn from all parts of British India. The result is a most useful and instructive collection of the work done by boys and girls to-day in Government schools, both in England and in India.

The visitor enters first a central hall which is divided into two sections, the first being allotted to primary education and the second to the education of girls. In the first section the Object Lesson has the principal place, and we are shewn the models used while giving it. Object-lessons have been sent from the Normal School, Agra, and the Training College, Poona, and these are placed beside similar lessons sent by the Board of Education, London. Teachers have to decide which lessons educate the hand and the eye of the pupil best. An interesting exhibit sent from England is a story suited to children of six years, the characters being cut out in white paper and pasted on a black background. This forms a frieze on the school-wall and delights young children because the objects and figures are so clearly seen. Pupils are encouraged to represent such stories in this way themselves and the idea which is said to be new to India, is one worth copying in primary schools. Drawing, Brush-work, Writing, Arithmetic, Kindergarten and hand-work are shewn, and the exhibits from the Bombay Parsee Orphanage are particularly good. Side by side with Kindergarten work done in Indian schools, we see similar work from schools in England, and teachers will perceive that the work of the Indian children does not differ much from that of children in England and contrasts very favourably with the English exhibits.

In the second section we notice on a large screen more than one hundred photographs displaying the work done by Indian girls, and on tables we see specimens of work in all grades of female education, from the Kindergarten to the Training College. Nature Study has only of late years been introduced into schools for girls in India, but the exhibits

in this direction show that the study is likely to become a favourite one with pupils. The specimens of brush-work are excellent. Nearly half of the space is devoted to needle-work, the Indian and the English work being shewn side by side, and we see that the Indian girls excel in fancy work and the English girls in plain sewing. The work done by Indian girls in Convents and Missionary schools is exhibited in the Ladies' Court, and we find there that the pupils taught in such places can do not only plain needle-work but also beautiful lace and embroidery. Note-books prove that in geography and writing, and more especially in arithmetic, Indian girls can hold their own with Indian boys of their own age. Altogether the exhibits of Indian girls are very encouraging to their teachers, more especially when the early age at which they leave school is taken into consideration. So far as primary education goes, the Indian girl appears to be the equal of the Indian boy as regards intelligence, and we cannot help being convinced while examining the exhibits sent from schools for girls in all parts of India that if the education of Indian girls could be prolonged, they would do great things.

The second hall is divided into three sections, the first being devoted to exhibits of manual instruction in wood and clay. Here a series of plates from the Jubilee High School, Lucknow, showing the Governors-Generals of India attracts attention by reason of its excellent workmanship. The exhibits of Indian boys in this direction are contrasted with things sent by the Northampton County Council, England. The best Indian wood-work models come from the Goethal's Memorial School, Kurseong, and these are contrasted with similar exhibits from Owen's

College, Islington, London, and the Sloyd Training School, Boston, America.

The second section is devoted to Nature Study and School Gardens, and in these directions English boys seem to be ahead of Indian boys, probably on account of the climate here, it being difficult to do much in these ways in India during the hot weather. In the third section Indian boys show some first-class brush-work, and are especially proficient in geometrical drawing, design, and drawing from models. Raised maps made by Indian teachers and copied by their pupils are worth noticing, and above all things a collection of home-made apparatus to equip a laboratory in an economical way calls for attention and praise, some of the things so cheaply made being extremely ingenious.

The section devoted to University Education gives almost all its space to plans, photographs and apparatus. The new buildings of the Allahabad University are shown by plans, and these comprise plans of the Main Building, the Law College and the Library Buildings, which are now being erected at great cost from voluntary subscriptions supplemented by a grant made by the local Government. The Muir Central College, Allahabad, shows photographs, note-books in Science, Physical and Chemical apparatus and a series of museum specimens from the Biological Laboratory illustrating methods of preparation and mounting and some typical examples of Indian fauna. Photos show Agra College and its hostels for students. The University of Leeds, which has many Indian students, shows by prospectuses the numerous activities of a modern English University. The Universities of Oxford and Cambridge send an account of their University Extension Lectures; and the

most interesting exhibit comes from the Pusa Agricultural Research Institute, and comprises a complete series of coloured illustrations of insect-life, the life-history of the insect being shown in each case. While looking at these things, we cannot help thinking how much the Pusa exhibits would help the museums of schools in India if they could be made available for such places, and wishing that the persons who manage schools knew more about the work being done by the Imperial Entomologist at this interesting and useful institution.

In the Industrial Section all the exhibits have been made by boys, and we see rugs, mats, sets of lessons in joinery and wood-carving, inlaid articles, chairs, school-desks, boots and shoes. From the Malda Weaving School comes silk cloth; from the Dacca School of Engineering, metal-work; from the Technical School at Brindaban, pottery, tiles, rugs and wood-work. Other Indian schools exhibit similar things; and the Stanley Technical Trade Schools, London, send lathe and stand, roof trusses, drawings, photographs, apparatus for illustrating the principles of mechanics, and specimens of metal-work.

In an *annexe* to this Court we find boys from the Industrial School, Lucknow, engaged in work, making patterns for castings, joints, etc., and busy at the wood-work bench. A furnace has been built in the *annexe* and a lathe has been erected, and visitors can watch the boys and listen to the instruction they receive from their teachers. Commercial and Agricultural Colleges have sent exhibits, and the Reid Christian College occupies a good deal of space with an extensive exhibit of advanced commercial

instruction in all branches. The Agricultural College, Cawnpore, has sent photographs, and various English Agricultural Colleges show exhibits. In this court a great deal of work is shown by photographs, indeed each day photography seems to play an increasing part in school-work, and before long we shall probably see it made a part of a boy's training in Government schools as it is in so many private schools at present. Reformatory Schools and Schools for Defectives have sent exhibits, and the Industrial School for Christian Blind, Rajpur, shows books neatly bound, munj-matting, knitted articles, and newer frames. Commercial exhibits are shown in a room filled with books for schools, maps, globes, diagrams, instruments, lanterns, and furniture of all sorts for class-rooms. Every large publishing firm that issues school books has sent its newest things, so teachers can see what is being used in the way of books and other things for schools in England as well as in India.

The School of Art, Bombay and Lahore, shows a great variety of artistic work, including carving, and pottery, brass-work and teak-wood carvings. The most striking exhibit in this Section is a pair of wrought-iron gates decorated with panels of beaten brass.

A section is devoted to the education formerly given in India, and here the exhibits show by manuscripts, photographs and instruments, the methods of education used in schools before the Government of India and the English Missionaries organised Indian education on Western lines. Among the ancient books we find translations in Persian from the original Sanskrit by *Abul Fazl* and *Faizi*, the well-known poets and Ministers of the Emperor Akbar, also the "*Babar-nama*" or autobiography of Babar which

contains many pictures painted by famous painters in Akbar's service. This Section does not appear to have been arranged as carefully as the rest of the Education Court, and possibly, owing to gaps in the history of the things exhibited, it was found difficult to classify the things and give their dates.

The Engineering College at Roorkee, the premier Engineering College in India, has a small but extremely interesting and important Court, not far from the Education Court, and in it we see electro-plating being taught, the latest improvements in telephones, printing processes, first-rate photographs and many other things. In this place are specimens of bronze and white glass prepared under the direction of an Indian gentleman, who was sent to Europe to study glass-making by the Government of the United Provinces and who is now trying to revive an almost-dead Indian industry.

And various Technical Schools have sent exhibits, some coming from places in British India and others from Gwalior and other Native States. The exhibits from the Victoria Technical Institute and Memorial Hall, Madras, are among the best. This last mentioned place has a stall in the Fine and Applied Arts Court, and many people from all parts of India go to see it.

THE TEACHING OF GEOGRAPHY— SOME SUGGESTIONS TO IMPROVE IT.

These suggestions for the improvement of Geography teaching were made in connection with the University Lectures on the Teaching of Geography, by Mr. K. A. Viraraghavachariar, B.A. of Pachaiyappa's College.

It is proposed to publish in subsequent issues a series of articles on Geography Teaching with these recommendations as the basis.

XVI

Time to be devoted to Geography Teaching.

In the interest of Geography teaching it is desirable that at least four periods of 30' in the primary classes, three periods of 45' in Forms I, II and III and two periods of one hour each in the Forms IV, V and VI should be devoted to Geography teaching.

Geography Teachers.

The teaching of Geography should be entrusted only to those teachers who have made a special study of the subject or have otherwise qualified themselves for it. As teachers who have made a special study of the subject are not many in number at present, Managers and Headmasters of Schools should afford every facility to teachers in their institution to specialize in the subject.

As far as practicable Geography teaching of all the Upper Secondary forms should be entrusted only to one teacher.

It is also desirable that teachers of Geography should not be entrusted with the teaching of more than two subjects of the school curricula (as History in addition to Geography or Science in addition to it). To secure efficiency in the teaching of the subject, the teacher should have the requisite time for the preparation of the lesson, the drawing of special maps and geographical charts, etc.

In the Lower Secondary forms it is desirable that all class-work should be done by one teacher. But the Geography teacher of the highest form in the school and the Headmaster should exercise general supervision on the teaching of the subject in the lower forms. Such supervision will take the form of (1) giving instructions (a) for the preparation of general and detail syllabuses, (b) for the choice of text-books and of illustrations, (c) for the drawing of teachers' special maps and the construction of relief models, (2) giving occasionally model lessons in the lowest forms, and (3) setting or revision of Examination Papers.

Geography Syllabus.

It is desirable that each class should have a separate syllabus for Geography, prepared at the commencement of each year (or term). The syllabus should be progressive and to some extent 'concentric' in character. Geography might be advantageously commenced in the second standard with what is '*psychologically nearest*' to the child, i.e., the telling of stories of the people and animals, fairs and festivals of India and of foreign lands. The stories should be illustrated with as many good pictures as possible. In the third standard

the Geography of what is 'physically nearest' to the child should be taught. The syllabus of these classes should be so arranged as to admit of 'slow development of the teaching of Geography out of Nature Study.' As the foundation of geographical knowledge has to be laid in the lower classes, it is recommended that the utmost help should be rendered by the teachers in the higher forms to the teachers in the Primary Department in the drawing up of the scheme of studies and of practically working it out.

It is further desirable that the present system of teaching Geography by political divisions should be abandoned. Natural regions (for example, the Delta tracts, the plateaus, the mountainous regions) should be made the unit of Geography study from the lower classes upwards, as this plan admits of better scientific treatment.

Mr. Herbertson's division of the world into its natural regions might for the present be adopted with advantage. (*Vide* Herbertson's *Senior Oxford Geography*)

In the lower classes and in the Lower Secondary forms, the aim of the syllabus should be not to give many facts but to drive home again and again geographical principles from different points of view.

Correlation of Geography with other subjects.

It is also desirable that Geography study should be correlated with the study of other subjects throughout the school course. The teachers of a school teaching different subjects might occasionally meet to discuss the question of how the subjects they teach are related to one another.

(*e.g.*, Elementary Science can be given mainly a Geographical aim as far as Form III. If the class teacher is the teacher of both these subjects, then this aim can be more easily realized, *i.e.*, by applying elementary notions of air, water, vapour, etc., to Physical Geography.)

In the higher forms much history can be explained by Geography especially Political Geography and campaigns. Literature, especially descriptive Literature, can be explained similarly by Geography.

Outline of lessons to be maintained by the Teacher.

It is essential that the Geography teacher should keep with him brief notes of the lessons given to the class. Such notes should consist of a clear analysis of the portion studied, books consulted by the teacher, extracts from the books to be read to the class, reference to new books or magazine-

articles published on the subject, the practical work to be done and suggestive questions. It is also essential that records of boys' daily class work in Geography as well as voluntary work in Map-drawing should be maintained.

Geography books in the Library.

It is desirable that the School Library should contain a fair proportion of books on Geography. From time to time the Library should be improved by addition of the most up-to-date books on the science of Geography. Books of travel and Geographical novels should find a place in the Library.

Teachers' Reference Library.

Each school should make provision for a Teachers' Reference Library. It should contain books on the teaching of Geography, all good Text-books on Geography, books of authority on the subject (*i.e.*, Mill's *International Geography*, Mackinder's *Regional Series of Geography*, etc.) Educational and Geographical Magazines (*The School World*, *The Practical Teacher*, *The Geographical Teacher*, *The Geographical Journal*, etc.).

Aids and Appliances.

The teacher will find himself helpless if he is not placed in possession of as many as possible of the following appliances:—

- (1) Relief model of India.
- (2) Maps of the Continents, of India and of the British Isles, coloured not politically but physically (*i.e.*, maps tinted according to elevation).
- (3) A large size globe physically coloured (if not a relief globe).
- (4) Map-building sheets of the Continents and of India and crayons of different colours.
- (5) Hand diagram map sheets, Physical (Philips' or Johnston's).
- (6) As many sets of pictures as funds permit.

N.B.—It is recommended that in the purchase of Geographical pictures, stereographs, magic lantern slides, groups of schools might form circles and exchange the views and slides.

Teachers might also avail themselves of the facilities afforded by the Educational Department. The Director of Public Instruction has collected a series of excellent pictures of Geographical interest. They have been arranged and catalogued and are available for use by schools. The Inspectors of Schools lend magic lantern slides to such schools as may apply for them.

Teachers' Special Maps and Models.

Teachers in the lower classes and forms should be encouraged—

(1) to construct relief models and draw contour lines;

(2) to draw a large scale plan (*e.g.*, 10 in. = 1 mile) of the village or town in which the school-house is situated;

(3) to construct of brick and cement in a convenient place in the school compound (a) the large scale plan mentioned above, (b) a relief model of the Madras Presidency, (c) a relief model of India. The vertical and the horizontal scale in each case should be noted. Teachers in the forms of Secondary Schools should be encouraged to draw special maps to illustrate the relief of the country, river basins, isothermal lines for January and July, direction of winds, seasonal rainfall, and to draw diagrams representing vegetation; and to draw diagrams representing graphically the figures connected with rainfall, production, growth of industry and commerce.

N.B.—It will be necessary to make list of maps graduated according to the nature of the matter to be introduced, the difficulty of treatment and the number of details to be dealt with.

Care should also be taken to avoid the danger of this sort of work becoming purely mechanical.

Maps in L'Estrange's *Geography*, Oxford *Geography*, Lyde's *School Text-book of Geography*, Snape's *Geographical Diagrams*, The *Atlas of World's Commerce*, etc., might be developed for class use. World maps showing the natural regions, climatic zones, vegetation zones, etc., are very useful for the teaching of the subject in the lower forms. With a Headmaster willing to supply the necessary materials, the Geography teachers of the School with the help of the Drawing Master and boys skilled in drawing can, in a short time, draw these maps.

School Museums.

It is desirable that each school should have a Museum attached to it. Pupils should be encouraged to collect specimens of different kinds of soils and of rocks, agricultural, forest and mineral products, specimens to illustrate the various stages in the manufacture of raw materials, specimens of stamps, coins, etc. Special prizes might be awarded each year to such of the students as make the best collection. Such specimens as the pupils cannot have access to, Headmasters are requested to purchase or otherwise obtain. In default of real

objects, coloured pictures of them at least might be supplied.

Map Drawing.

It should be made compulsory that pupils should bring with them to the class-room a good Atlas. The Atlas should contain some physical maps, *i.e.*, Maps tinted according to elevation.

Map-drawing should, as far as possible, be done under the supervision of the teacher in the class-room itself and should be connected with the progress of the lesson from time to time. Pupils should always have with them in their Geography class their Map-drawing books and crayons or pencils of different colours. Pupils may complete at home the maps they were started to draw in the class-room.

Practical Work.

Practical work in connection with Geography shall for the present consist in the—

(a) *Lower forms* in (1) construction of relief models, (2) studying the weather charts, if not preparing them, (3) striking averages with reference to temperature, rainfall, etc.

(b) *Higher forms* in (1) drawing Maps to illustrate the different geographical features, and (2) in graphic representation of figures.

School Excursions.

It is desirable that children in the lower classes and forms should occasionally be taken out of the school-hours under the guidance of two or three of the most capable of Geography teachers for the purpose of studying the Geographical features in the neighbourhood of the school. During these excursions children should be helped to observe for themselves as much as possible. The lessons in Geography for two or three periods subsequent to the excursion should be devoted to the construction of sketch maps and models of what the children observed and to the explanations of such maps and models.

Educational Exhibitions.

Teachers and pupils in the various schools should be encouraged to send as many exhibits as possible from their schools to the various educational exhibitions that form such a pleasing feature of educational activity everywhere. The exhibits should consist not only of what is done specially for the exhibitions but also the daily work of the school.

Reviews and Notices.

AN INTRODUCTION TO BIOLOGY, BY R. E. LLOYD, M. B., D.Sc. (LOND.), I.M.S., PROFESSOR OF BIOLOGY (*pro tem*) IN THE MEDICAL COLLEGE OF BENGAL. Pp. xviii + 298. ILLUSTRATED. LONDON: LONGMANS, GREEN & CO., 1910. Price Rs. 4.

As pointed out in the Preface the book is confined to a study of the common Invertebrates of Bengal and to such of them as could be easily 'had in sufficient quantities for classes which may number as many as one hundred and fifty students.' The book is divided into eleven chapters with an introduction. In the Introduction the Author gives a series of practical instructions to students as to how to study the Morphology of animals in the Laboratory by observing and dissecting them and by making use of the hypodermic syringe to inject coloured fluids into the bloodless blood-vessels and colourless sacs of animals, and also how to study the Histology of animals by staining transparent tissues and organisms. The right method of using the microscope is also given therein. The first seven chapters of the Text are devoted to a study of the various Phyla of the Invertebrate portion of the Animal Kingdom. In each chapter the characteristic structural peculiarities of each Phylum is stated first, and then a description of one or more types of animals belonging to that Phylum. In the Chapter on the Protozoa special attention has been paid to the pathogenic Sporozoa, many of which live as parasites within the bodies of multicellular animals, and many which pass the major portion of their life-history within a single cell of their hosts whereby causing many maladies to them, especially the malaria and the *Kala Azar* in the case of the human host. Spongilla is taken as the type of the Porifera and the fresh water Hydra of the Coelenterata. The common Earthworm, the Tapeworm, and the Round worm of the cockroach are taken as types of the several Phyla of 'Vermin.' The Prawn and the Scorpion illustrate the typical structure of the Crustacea and the Arachnida respectively. Our domestic cockroach, and mosquito are examples of the Insecta. The mosquito (*Anopheles rossii*) has been dealt with in detail, in addition to the anatomy of the adults, both male and female, and that of the larva, pupa and imago. Special attention has been paid to the study of the midgut, salivary glands and mouth parts of anopheles, those regions of its body that are used in fostering and transmitting the malarial germs to man. The last four chapters of the book deal

with some of the important problems of Biology. In the chapter on the Unity and Diversity of Living things, the nature of protoplasm the ground substance of all living things, its structure and properties, its response to external stimuli and the division of cells or units of protoplasm are all clearly stated. In the next chapter the Author has brought forward evidences afforded by a study of the fossils of animals, their Morphology and Embryology to show that Evolution has really taken place, and has further described therein the part played by Natural Selection, Isolation, Segregation and Aggregation of animals to bring about Evolution in general, and by the inherited and acquired characters of several common animals adapting them to change of surroundings to bring about the Evolution of particular species. In the last two chapters the Author gives us a clear idea of what Variation and Heredity are, the forces that are at work, and the laws governing them, at the same time illustrating them with a number of good examples.

The work will be found indispensable to those students who wish to graduate in Medicine, especially to those who have had no previous anatomical knowledge. The clear and simple way in which the Author treats the subject is sure to inspire all with interest for further study of the subject. The practical directions to the students for their guidance during the several dissections and observations through the microscope make the work an admirable Laboratory Hand-book. The types of animals described in the work being almost the same as those that are to be had at Madras, the book is well-suited to the requirements of the Medical students here, and some of the chapters (on the earthworm, tank-mussel, scorpion and the cockroach) may with advantage be read by the students of Zoology of this University.

PHYSIOGRAPHIC INTRODUCTION TO GEOGRAPHY, BY A. J. HERBERTSON, M.A., PH.D. CLARENDON PRESS, OXFORD. 1s. 6d.

The name of this distinguished Professor of Geography in the University of Oxford is a sufficient guarantee of scholarship which is in evidence throughout the volume before us. The book forms one of the series of Oxford Geographies issued under the general editorship of the author himself and is an admirable introduction to scientific ideas in the subject. According to the learned professor, Geography is the science of distribution and in this physiographic introduction we have a succinct summary of the character and distribu-

tion of the different geographical phenomena on the face of the earth. Land and water; vertical relief; land forms; action of flowing water, ice and wind; climatic regions; plant and animal regions; distribution of man and his occupations are among the subjects dwelt with, in language at once clear and forcible, though somewhat stiff in places. The book contains all the features of a good text-book. In common with the rest of the series, it contains no pictures, still there are so many as 63 very useful maps and diagrams to illustrate special features of Geography. We strongly recommend the study of this book to all concerned with the teaching of Geography in High Schools.

PHILIP'S MODEL GEOGRAPHY—OUTLINES OF GEOGRAPHY; THE BRITISH ISLES; EUROPE; AFRICA; ASIA; AMERICA; AUSTRALASIA AND THE BRITISH EMPIRE. GEORGE PHILIP & SON. 5d. each volume.

Messrs. George Philip & Son have a high reputation for Geographical publications but we are afraid that these "Model" Geographies do not add to their reputation. The books claim to be "an attractive series on modern lines"; but as we read through the books we are reminded of the old "Manual of Geography." The series no doubt are well illustrated and contain fairly good relief maps, and maps in black and white; Geographical phenomena here and there are also explained in simple and picturesque language and emphasis is also laid on cause and effect in Geography. But unfortunately the books bear the stamp of an examination guide. They are overcrowded with names and overloaded with dreary categories of facts more or less useless. Again such reflections as that the *Bengali Babus* belong "to the clerkly class, who often achieve successful results in the public and professional examinations" and "that they are of semi-educated class," "glib of tongue but cowards at heart" are thoroughly out of place in books intended for children. Books by such distinguished professors as Mr. Lyde, Dr. Herbertson and Mr. Mackinder are very popular with Indian teachers and pupils and the chances are remote of Model Geographies ever being adopted as text-books in our schools.

HISTORY OF ENGLAND FROM 55 B.C. TO 1910 A.D., BY ALEX-TOMORY, M.A. MACMILLAN & CO. LTD. Re. 1 8 as.

This book is intended for Indian school-boys in provinces other than Bengal, for the Calcutta University has "boycotted" History of England, so far as the Entrance Examination is concerned. We fail to note in the book any of the special features which a good English History written specially for Indian boys might contain. We looked in vain in the book for suggestion and guidance on such subjects as comparison between Britain under Rome, and India under Britain; Norman feudalism and Rajput feudalism and Buddhist and English monastic systems. As in text-books written for English and Colonial pupils, prominence is given to the Black Hole outrage "which has never been forgotten by the English," the Indian Mutiny and the Cawnpore Episode "which has burned into the minds of English men" and the Queen's Proclamation "which seems to contain the Queen's own sympathetic message to the people of India." There is no evidence in the book that the talented author has understood and appreciated the special difficulties of Indian students in following intelligently the story of England's growth and development. Indian teachers of the present day generally prefer the charming little books of such distinguished historians as Prof. Gardiner and Prof. Tout and no text-book on English History has any chance of success unless it has in it all the good features of those books coupled with the presentment of facts in such manner as best appeals to Indian children.

A FIRST BOOK OF PHYSICAL GEOGRAPHY, BY W. MACLEAN CAREY, M. A., B. SC. MACMILLAN & CO. LTD. 1s. 6d.

Teachers of Geography especially in the lower forms of our Secondary Schools will find this volume extremely useful. The author's aim evidently is to give the children an intelligent grasp of the principles that underlie and control the physical conditions of a geographical region. Elementary facts relating to land-forms, climates, vegetation and their effect on the distribution of man and his manner of life are explained in language that is sure to stimulate the intelligence and appeal to the imagination of pupils and arouse an interest in the subject that "will prove lifelong." Eight of the sixteen chapters of the book are devoted to meteorological subjects since observations of weather are of fundamental im-

portance in the study of climate and form a valuable training in the methods of science. Each chapter opens with a few typical and practical exercises and the author intends that the pupils should work them before they read the text as that alone would enable them to think for themselves. The plan of the book is admirable and the treatment, simple without any overloading of details. Pupils who work through this book would gain a good grounding for further study in Geography. The book is profusely illustrated.

MEMORY MAP-DRAWING, BY EFFIE M. ANDERSON,
A. C. P. C. L. SOCIETY.

We do not think much of the book. We are surprised that the C. L. Society should have at all published the book in this age of rapid improvement in the methods of Geographical teaching. The methods advocated in the book are thoroughly obsolete. In our schools, boys are learning to draw to scale exceedingly good maps representing the relief of a region tinting them according to elevation, January and July isotherms, pressure, rainfall, vegetation, etc. This book says nothing of such maps. Boys are told that the size of a map must be 8" by 6", the border round the maps should never be omitted, the names of all physical features should be inserted and that the names should be printed and not written. The "complete" map of India printed in page 19 is a very curious one. The Eastern Ghats are represented as if they are as continuous a chain as the Western Ghats. The two Ghats do not meet at the Nilgiris but abruptly terminate 100 miles apart. The Godavary and the Kistna run over the Eastern Ghats.

THE CHILDREN'S SHAKESPEARE—MACBETH, THE
TEMPEST AND THE MIDSUMMER NIGHT'S DREAM.
MACMILLAN & CO., LTD. 4d. each.

We reviewed on a former occasion three other numbers in this Series—*As You Like It*, *King Lear* and the *Merchant of Venice*. They are an excellent combination of serious Shakespearean study with pictures and story-telling. It is difficult to exaggerate the value of such an early introduction of young minds to the master-pieces of a great master. The selected scenes from the plays are linked together by narrative extracts from Lamb's *Tales of Shakespeare*. They are excellent hand-books, eminently suited for class-use as they possess besides, a glossary of difficult words,

exercises for composition, questions, biographical notes and high class illustrations.

HISTORICAL ATLAS OF INDIA, BY CHARLES JOPPEN,
S. J. MESSRS. LONGMANS, GREEN & CO.,
LONDON. Price Rs. 1-8-0.

One of the most valuable aids to accurate historical study is an atlas to illustrate the vicissitudes of empire. Even advanced students of History very often find it difficult to fix the limits of empires and kingdoms they read of. Mr. Charles Joppen's work supplies this want for Indian History. He has in this hand-book brought together a large number of maps to illustrate the changes of dominion in Indian History. The maps are arranged in chronological order and as one turns these pages, the events of Indian History rush through one's mind. It may sound an exaggeration, but the coloured maps bring the past before us in all its vividness. We heartily recommend the Atlas for wide use in our High Schools and Colleges.

HEROES OF INDIAN HISTORY, BY J. C. ALLEN.
LONGMANS, GREEN & CO. Price 12 As.

Indian History has suffered by its treatment at the hands of foreigners, but Mr. Allen's book is a remarkable specimen of what sympathy and intimate touch with the people can do for an appreciation of alien history. Mr. Allen has a genuine appreciation of the heroes whom he celebrates and the narration is vivid and appealing to young minds. A moral background pervades the volume and the author has striven to teach right principles of virtue and conduct in his interesting account of heroes. This aspect of the volume is brought out in the Preface where the author says: 'In this little book Indian boys will read of the brave deeds of the heroes of India and they, perhaps, will picture themselves dealing hard blows in the cause of right.....So let us read of our heroes and learn from their example to follow the cause of right, to despise that which is mean and cruel, and to admire all that is generous and noble.'

We must not omit a reference to the original drawings and paintings reproduced in this excellent volume. We have very great pleasure in recommending it for wide use in the Secondary Schools of our Presidency.

WORD AND PHRASE EXPOSITOR TO LAMB'S ADVENTURES OF ULYSSES, BY MR. R. S. KRISHNASAWMI AIYAR, B.A. Rs. 1.

This is a valuable adjunct to class-work, aiding the student in acquiring a mastery over English phrases and idioms. Free from the monotony and dullness of notes, and enlivened by a large number of illustrations, the book must be eminently useful to the students for whom it is intended. With proper guidance and discreet use, the book must be of immense instruction to students.

THE TRIUMPH OF CHASTITY AND THE LILY AND THE ROSE, BY C. S. MADHAVACHARI. PRINTED AT THE SCOTTISH BRANCH PRESS, NEGAPATAM. 1910.

Percy's "Reliques" first brought together a large quantity of popular English Verse to the notice of the reading public, the taste for which has since been increasing as evidenced by the publication in modern days of Ballads, ancient and modern, in a respectably-sized volume. To tell a story in ordinary prose is no ordinary feat. All know that to tell it in attractive verse is an accomplishment possessed by very few. Our admiration of the author Mr. Madhavachariar has been increased by the fact that in a foreign language, he has eminently succeeded in narrating one of the noblest episodes of Indian Epics, the story of *Anasuya*. *Anasuya* in Sanskrit means one without envy. One cannot but envy the ease, the directness and simplicity of diction at the command of Mr. Madhavachariar. Indian gods have been notorious for their jealousy of earthly greatness as the Greek gods and goddesses were and the utter failure of Brahma, Vishnu and Siva to tempt the human will against divine or supernatural influences. Goldsmith's *Hermit* is of perennial interest and we never supposed it possible for an Indian to produce a poem of the like sort. It is with feelings of great pleasure we congratulate Mr. Madhavachariar on his poetic faculty and we hope that for the edification of his countrymen he will, as lecture permits him, produce more poems. The typography here and there requires correction and we are sure it will be all right in a second edition.

We have received some specimen pages of a Tamil translation of Scott's *Talisman* by Mr. C. R. Srinivasa Iyengar of Srirangam High School. We hope we will have the pleasure of reviewing the whole work shortly.

Indian Educational Notes.

MADRAS.

Departmental Notifications.—Mrs. Mary A. Srinivasa, Third Assistant Inspectress, Kistna-Guntur Girls' Range, to act as First Assistant Inspectress without change of station *vice* Miss Patterson on other duty or until further orders. To have effect from the 5th November 1910, the date on which Mrs. Srinivasa ceased to act as Inspectress of Girls' Schools.

The Hon'ble Mr. A. Chatterton, B.Sc., to be Superintendent of Industrial Education, with effect from 1st January 1911.

Colonel H. St. Clair Carruthers, I.M.S., has resigned his Ordinary Fellowship of the Madras University.

Mr. E. A. Seaton, B.A. (Oxon) has resigned his Ordinary Fellowship of the Madras University.

Mr. U. Raghavendra Rau, Assistant Inspector of Schools, South Canara District, is placed in charge of the office of the Inspector of Schools, Eighth Circle, in addition to his own duties during the absence of Mr. P. P. Braithwaite on leave or until further orders.

Mr. P. P. Braithwaite, Inspector of Schools, Eighth Circle, has privilege leave for five weeks from the 3rd January, 1911.

Mr. Saïyid Husain Bilgrami, C.S.I., is appointed to be an Ordinary Fellow of the Madras University.

Mr. M. R. Rajagopala Aiyangar, M.A., L.T., is to be Sub-Assistant Inspector of Schools, Cuddapah Range, in the probationary class but to act as an Assistant of the Mangalore College in the last grade of the Subordinate Educational Service, Collegiate branch, with retrospective effect from the 18th July 1910.

The Acting Director is pleased to grant Mr. M. D. Jacobs, Sub-Assistant Inspector of Schools, Tirupattur Range, privilege leave on full pay for three months, with effect from the 11th September, 1910 and to appoint Mr. C. S. Vijendra Rau, Supervisor of Elementary Schools, Krishnagiri, to act for him in the probationary class during his absence on leave or until further orders.

The Acting Director is pleased to order the following transfers of Assistant Inspectors of Schools:—

Mr. B. C. Ramaswami Aiyar, Assistant Inspector of Schools, Kistna District, acting in the Tinnevely District, to act in the Trichinopoly District *vice* Mr. H. W. Callaghan on other duty or until further orders—to join after handing over charge to the Sub-Assistant Inspector of Schools, Tinnevely Range.

Mr. M. Ramaswami Aiyangar, Assistant Inspector of Schools, Nellore District, acting in the Trichinopoly District, to act in the Tinnevely District, *vice* Mr. T. J. Venkatachala Aiyar on leave or until further orders—to join on relief.

The promotions of the following Sub-Assistant Inspectors of Schools have been sanctioned:—

Mr. S. Swaminatha Aiyar, from Class II to Class

I, acting from the 6th June 1910 vice Mr. T. Krishna Rao temporarily promoted.

Mr. C. M. Srinivasachari, from Class II to Class I, acting from the 23rd July 1910, vice Mr. H. Swami Rao, temporarily promoted.

Mr. B. Kameswara Rao, from Class III to Class II, acting from the 16th June to the 13th September, 1910, vice Mr. S. Swaminatha Aiyar and to Class II, sub-pro tem, from 14th September 1910, vice Mr. S. Venkatasubba Aiyar in Foreign Service.

Mr. K. Duraiswami Aiyar, from Class III to Class II, acting from the 14th September 1910, vice Mr. S. Swaminatha Aiyar.

Mr. A. S. Nageswara Sastri, from Class III to Class II, acting from the 23rd July 1910, vice Mr. C. M. Srinivasachari.

Mr. A. Kadirkutti, from Class IV to Class III, acting from 16th June to 13th September, 1910, vice Mr. B. Kameswara Rao and from 14th September 1910, vice Mr. K. Duraiswami Aiyar.

Mr. A. Rama Rao, from the Probationary Class and Class IV sub-pro tem to Class III acting from 23rd July to 13th September 1910, vice Mr. A. S. Nageswara Sastri and to Class III, sub-pro tem from 14th September 1910, vice Mr. B. Kameswara Rao.

Mr. V. S. Vasudeva Sastri, from Class IV to Class III, acting from 14th September 1910, vice Mr. A. S. Nageswara Aiyar.

Mr. S. Kameswara Rao, from the Probationary Class to Class IV, acting from 1st March to 22nd July 1910, vice Mr. M. Bava temporarily promoted and to Class IV, sub-pro tem, from 23rd July 1910, vice Mr. S. G. Daniel.

Mr. M. Govindan Nayar, from the Probationary Class to Class IV, acting from 1st March 1910, vice Mr. K. S. Appaswami Aiyar temporarily promoted.

Mr. T. M. Satagopachari, from the Probationary Class to Class IV, acting from 16th June 1910, vice Mr. A. Kadirkutti.

Mr. P. Raghavendra Rao, from the Probationary Class to Class IV, acting from 23rd July 1910, vice Mr. M. Bava.

The following Sub-Assistant Inspectors of Schools of the Probationary Class are promoted to the Fourth Class with retrospective effect from the 1st March 1910 and they will rank in the latter class as shown below:—

Mr. V. Buchiramayya, Mr. L. Venkatasubba Aiyar, and Mr. T. Nagabushanam (already acting in Class IV), Messrs. C. V. Subramanyam, T. Hanumantha Rao, P. Parthasaradhi Nayakar, T. Venkatesa Aiyar, N. Swaminatha Aiyar, I. C. Abraham, T. Achuta Rao, K. Venkataramanayya, V. Narayanamurthi, S. Swetaranya Sastri, A. R. Gopala Aiyar and G. V. Subba Rao.

The Madras Educational Rules—The *Fort St. George Gazette* contains the following Notification:—
The following amendments will be made in rules 105 (ii) and 115 of the Madras Educational Rules (6th edition):—

For the existing rule 105 (ii) substitute the following:—

“Secondary Training Schools, institutions in which the following classes of persons are trained:—
(1) persons who have passed the Matriculation Examination, the European High School Examination, the late Upper Secondary Examination, the late Higher Examination for Women, or other corresponding test accepted by the Director and (2) persons holding such Secondary School Leaving Certificates signed by the Secretary to the Board for the award of such Certificates, as are accepted by the officers responsible for the selection of students for training in these institutions.”

Insert the following as an additional paragraph at the end of existing rule 115:—

“Secondary School Leaving Certificates presented by applicants for admission into a training school shall be carefully scrutinized by the officer responsible for the selection of students and preference given in order of merit to (1) those which show ‘sufficient knowledge in two of the optional subjects specified in Group C other than shorthand and typewriting’ and whose holders are consequently eligible for Government service and (2) those which do not show two such optional subjects.”

Elementary Free Night Schools in Masulipatam.
A correspondent writes:—It is gratifying to report that there are four Elementary Free Night Schools at Masulipatam for the benefit of the backward classes. These schools largely depend on the munificence of the townsmen at large. Over 150 boys have been studying in these schools, one of them being for Panchamas. A large number of scavengers and cobblers are found neatly dressed and deeply interested in their studies. They are all bright and cheerful and though it is not yet four months since the school has been opened, the students have made substantial progress in their studies. Mr. Lakshminarayana, an educated Brahmin gentleman, who is at the head of the school, deserves our warmest sympathy and support in this unique experiment which has proved itself to be more than a success. Another disinterested and energetic worker in the field is Mr. V. Ramjee Rao, Secretary of the “Sree Vidyanivedika Deenajana Samrak Shaka Sangham” which manages a Secondary School for girls and two night schools for the working classes. The Sangham is deeply indebted to the Maharajah of Baroda who graciously sent a liberal donation of Rs. 2,000 to the Girls’ School named after Her Highness and to the Zamindar of Pittapur who contributed the other day Rs. 200.

A Social Gathering in honour of Mr. S. Vaidyanatha Aiyar, Calicut.—The students of the Government School of Commerce, Calicut, held a very successful Social Gathering on the evening of the 17th instant, in honour of the title of “Rao Sahib” conferred on their beloved Headmaster, Mr. S. Vaidyanatha Aiyar. Many prominent citizens of Calicut were present on the occasion. The audience were at first entertained with

vocal music and fiddle by some experts, and then there was an exquisite performance on the *vina* by a musician from Hyderabad. The guests and the students then adjourned to the open lawn where about 300 seats, with tables in front, were arranged in a circle and refreshments were served. Mr. C. Krishnan, B.A., B.L., High Court Vakil, and Municipal Chairman, who was asked to preside on the occasion, spoke about the great popularity and esteem in which Mr. Vaidyanatha Aiyar is held among the public for his qualities of head and heart and his many-sided activities.

Teachers’ College Day, Saidapet.—The Teachers’ College Day was celebrated recently in the College with great éclat when Mrs. Dean delivered an interesting lecture on Kindergarten Method of Teaching, in the course of which she said:—“The Kindergarten method was the right method of teaching children. They should teach children according to their nature. They should examine their natural instincts and characteristics. On the results of those examinations they should draw out their plan of action. She did not mean that they should pander to the children’s likes and dislikes but they should teach according to their general instincts. The development of a child was similar to the development of the human race. Man in pre-historic days had no books, papers, pencils, etc., but he wrote on sand. The principle of giving the child manual work was that the education of the mind must be through the education of the senses. The development of the brain must be gradual. No child under 6 or 7 years should be allowed to read from a book. The child should have its lessons through the medium of play. That was the whole idea of the Kindergarten method. Kindergarten teaching was not a subject in itself; but it was only the means to an end. Reading, writing or arithmetic should be taught through Kindergarten. Most of the books on Kindergarten were written by Englishmen, Germans or Americans. Teachers should grasp the underlying principles and not try to follow blindly everything given in those books. They should take into account the characteristics of the children and their environments. Teaching and play should be kept together as closely as possible. If that was done children would never dislike school. Children learnt many things outside school, because they learnt them there practically. In giving object lessons, teachers should train children to observe and think for themselves. By such training, children would be able to observe and reason for themselves in course of time. No lesson should be given for more than 20 minutes. Children must have plenty of movement. Sometimes teachers were fearfully stern and would never smile. The expression on the teachers’ faces was always reflected upon the faces of the children. If the teacher’s face was long, the pupils’ faces were also long. Story lessons should form a precious part of the time-table. Children should be taught to feed animals; for that would make them less selfish and less thoughtless.”

Prize distribution at the Zamorin’s College.—The distribution of prizes to the students of the Zamorin’s College came off recently under the presidency of Mr. F. B. Evans, I.C.S. There was a large gathering of ladies and gentlemen—European and Indian. The proceedings began with a prayer by the Senior Sanskrit Pandit. This was followed by the reading of the Annual Report by the Acting Principal. There was a recitation in English by a senior student. The President then distributed the prizes which were many and valuable. This was followed by a short lecture in English by Mr. V. Kesava Menon, B.A., a retired educationist, wherein he emphasised the necessity of imparting religious and moral education in schools and of giving the liberal education to girls as is done to boys. The President then concluded the proceedings with a short speech in the course of which he thanked the Board of Management for the honour done him by asking him to preside at this interesting function. He congratulated the prize winners on their success, and at the same time, he had some consoling words for the unsuccessful candidates. He was glad a new “local habitation” was to be provided for the College Hostel. With a vote of thanks to the President proposed by Mr. P. A. Krishna Menon, on behalf of the Board of Management, the teaching staff and the students, and three cheers to the King-Emperor and H.H. the Zamorin, the interesting function was brought to a close.

Secondary School Leaving Certificates: Public Examination.—The following Notification appears in the *Fort St. George Gazette*:—

1. As notified already, the ensuing Public Examination in connection with the Secondary School-Leaving Certificates will be held on Monday, the 27th March 1911, and succeeding days.

2. A Time-table for the examination will be published in the *Fort St. George Gazette* in February next.

3. A supply of application forms will be sent to headmasters.

4. The Vernacular language through the medium of which the paper in Sanskrit or in Arabic will be answered in the case of pupils bringing up either of these language, should invariably be specified against “Group C” in column 7 of the application thus: Sanskrit (Tamil) or Arabic (Urdu) whatever the Vernacular may be.

5. In the case of mofussil schools the prescribed fee must be paid into a Government Treasury, and in the case of schools in Madras into the Bank of Madras. No fees will be received in the Commissioner’s Office.

The fees should be collected by the headmaster and sent in a *lump* sum to the Treasury or to the Bank together with a fee receipt form (filled in) and two lists of the pupils, one of which will be retained at the Treasury or at the Bank, and the other signed and returned to the headmaster along with the fee receipt. This latter list together with the

fee receipt should then be forwarded to the undersigned with the applications of the pupils.

Copies of forms for fee receipt and list will be sent to headmasters. The list of pupils referred to herein is the one mentioned at page 4 under the heading "Presentation for the Public Examination" in the Circular Proceedings of the Director of Public Instruction, dated the 27th May 1910, C. No. 3570-10.

6. The fee paid will, in no case whatsoever, be refunded, nor will it be reserved for a subsequent examination. Neither will any excess fee that may have been inadvertently paid be returned.

7. A statement furnishing particulars as to (1) total number of pupils, (2) total number of them for each subject, etc., made out on the form supplied for the purpose, should be sent along with the applications.

The applications of all the pupils should be forwarded together by the headmaster, direct to the Secretary to the Commissioner for Government examinations, post paid (preferably registered), superscribed and addressed so that they may reach the office not later than the 20th December after which date no applications will be received.

Provident Fund for Teachers.—The following is the Government Order, dated 18th July, 1910, issued in the Educational Department, on the subject of a Provident Fund for Teachers:—

At the Madras Educational Conference, which was held in December, 1906, a Resolution was adopted urging on Government the necessity of appointing an Educational officer to formulate, in consultation with representative educationists, a definite scheme for the establishment of a Provident Fund for Teachers employed in schools under private management. In their Order No. 396, Educational, dated 21st May 1908, the Government expressed themselves in sympathy with the aim of the Conference, and deputed the Hon'ble Mr. J. H. Stone, Principal of the Presidency College, Madras, to formulate a scheme for the establishment of a Provident Fund for teachers.

2. The scheme drawn up by Mr. Stone provides for the establishment of a single general Provident Fund for the benefit of all qualified or certificated teachers in recognized schools under private management. Mr. Stone suggests that the Government of Madras through the Educational Department should be the recipient and manager of the Fund, which should be designated "the Government Provident Fund for Certificated Teachers," and that the contributions to the Fund should be compulsory in some cases and voluntary in others.

3. The Government have given their most careful consideration to these proposals and although they are strongly impressed with the desirability of improving, if possible, the position of teachers and of rendering the profession more attractive, they cannot help observing that the introduction

of a Provident Fund for Teachers in schools under private management is beset with great practical difficulties. Assistance given to a Provident Fund for teachers in schools under private management would inevitably lead to a demand for similar assistance to funds for those teachers in schools under public management, who do not now belong to any Provident Fund and are not eligible for pensionary privileges, that is to say, all teachers employed in Municipal schools and such of those in Local Fund employ who draw less than Rs. 10 and who are not now admitted to the benefits of Provident Funds. But if a scheme were to be established for the benefit of all teachers in schools under private and public management alike, the total number to be provided for would be raised from 13,600, as estimated by Mr. Stone in paragraph 21 of his report, to about 23,000 and the contribution to be paid by Government would not only be correspondingly raised *ad initio* but would, in the near future, be subject to a considerable and continuing increase as schools multiplied and certificated teachers became more numerous. It is, however, not possible with the materials furnished in the report to gauge, with any degree of accuracy, the extent to which the establishment of a Provident Fund would prove a burden on the Provincial revenues. There is, in the majority of cases, no information as to what salaries are actually paid to teachers in schools under private management and it would be impossible to arrange for the recoveries of the contributions from the teachers by deductions from their salaries. The only method of enforcing contributions, advocated by Mr. Stone, is to refuse recognition to managers of schools where the teachers failed to contribute. This would affect the managers and not the teachers, and it is not clear how managers could compel their teachers to contribute. It does not therefore appear that the Fund could be worked without further legislation. Moreover, in the absence of legislation, there would be perpetual difficulty in getting all the schools to join the Fund.

4. It is also observed that there is nothing in the scheme to safeguard the interests of the teachers from malversation on the part of managers or mismanagement of the accounts of contributions received.

5. Further, the establishment of a scheme such as that proposed by Mr. Stone would necessitate the employment of specially trained clerks in the offices of the Assistant and Sub-Assistant Inspectors of Schools, an audit by the Accountant-General and the maintenance of service registers for all subscribers, numbering, approximately, a thousand in each district.

6. The Governor-in-Council is, therefore, convinced that the establishment of a Provident Fund of the kind proposed would not only involve a large addition to the existing establishment of the Inspecting officers but would also entail a great expenditure of public money which could be better

employed in promoting educational work by increasing the grants to aided schools, by establishing more training schools and by paying higher salaries so as to attract better qualified teachers in Government schools. The whole scheme appears to the Governor-in-Council to be premature at the present time. The schools under private management in the Presidency are so very loosely managed, the schoolmasters so little under control and so the independent of the school managers that the scheme, if introduced, would almost certainly break down from unpunctuality in payment and irregularities in bringing to account the contribution from subscribers. The Governor-in-Council has, therefore, reluctantly come to the conclusion that the advantages which might be anticipated from starting a Provident Fund for teachers employed in schools under private management would not be in any way commensurate with the trouble and expense involved and that the proposal must therefore be dropped.

Prize distribution at the Hindu Secondary School, Srivaikuntam.—The celebration of the annual prize-giving of the above school took place on the 30th ultimo, under the distinguished presidency of Mr. Ashe, I.C.S., District Collector of Tinnevely. The most interesting portion of the proceedings was the admirable performance by the boys of the famous *Trial Scene* in Shakespeare's *Merchant of Venice*. Next came the Secretary and Manager, Mr. S. Gopala Iyer, with his interesting report in which he dwelt on the past and present condition of the school and on the necessity of raising the present incomplete Secondary School to a complete Secondary School, which has certainly been a long-felt desideratum and which may ere long become an accomplished fact with greater funds and with better co-operation. Then followed the distribution of prizes by the President, whose choice fell upon a smart lad of the President, whose choice fell upon a smart lad of 12 for an "elocution prize," as he played his part then gave a short and interesting speech, in which he referred in glowing terms to the grandeur of the site and building and the efficiency of management of the school, to the urgent need of raising the present well-equipped but incomplete Secondary School to that of a complete one and to the feasibility of realising the same by a systematised co-operative action on the part of the local gentry and wound up by offering a few words of wise counsel to the boys of the school, as to how they ought to behave within and beyond their school rooms. The proceedings terminated with a vote of thanks to the President.

CALCUTTA.

Industrial Scholarships.—The Association for the Advancement of Scientific and Industrial Education has resolved to award two scholarships of Rs. 100 each, two of Rs. 75 each, four of Rs. 60

each, and 8 of Rs. 25 each for industrial education in foreign countries next year. It has also resolved to grant passages to and from of 30 more boys. One of the scholars should be a Behari, one a Mahomedan, one an Orissa boy, one an Assamese and one an Indian Christian.

A Women Graduates' Union.—Invitations were sent out by Mrs. Molesworth Macpherson to all graduate women students resident in Calcutta to attend a meeting at 8, Russell Street, for the purpose of considering the present conditions existing among Indian and European girl students in Calcutta. A large number of graduates representing the various higher secondary schools of the city, as well as former graduates and ladies interested in education, attended in response to this invitation. Miss Sorabji presided and introduced Mrs. Shone and Miss Raymond, who gave brief addresses on the subject of the Conference. Mrs. B. R. Barber read a paper on the possibilities of meeting some of the educational needs of women in Calcutta; and proposed that the meeting should organise a Graduates' Union of the Young Women's Christian Association. The proposition was seconded by Sister Mary Victoria, of the Diocesan Collegiate School. After some discussion it was decided that another meeting should be held early in January, when more definite plans will be discussed. Apart from purely educational matters, the conditions of industrial and professional work amongst women in Calcutta will also be considered, and the possibility of assisting girl students in the choice of a profession will be amongst the subjects of discussion.

BOMBAY.

The Bombay Science Institute.—It has been decided by the Government of Bombay that the Science Institute for which large donations have been generously given by Sir Jacob Sassoon, Bart., Sir Cowasji Jehangir, Bart., and Sir Currimbhoy Ebrahim, Bart., should be built on the plot of ground known as the Secretariat plot which has hitherto been utilized as a playground for the Elphinstone College, but over which the College has no permanent rights. As at present planned the new structure will not occupy the whole ground and space may possibly be available for such games as tennis, etc., which do not require large areas. The students, however, should have a play-field suitable for all games including cricket and hockey, and the Governor-in-Council has decided to assign free of rent to the students of the college a plot on the Oval measuring 11,750 square yards as a playground on certain conditions. The plot assigned for the use of the Elphinstone College adjoins the plot at the southern end now used for foot-ball and hockey which will still be available to the public for these games.

The Training of Teachers in Bombay.—The following resolution of the Bombay Government has been published:—

With reference to Government Resolution No. 1439, dated 6th August 1910, the following letter should be addressed to the President, Municipal Corporation, Bombay:—

'With reference to the correspondence ending with my letter No. 1440, dated 6th August, 1910, I am directed again to address you on the question of training teachers for Municipal Primary Schools in Bombay.

2. The question has been carefully reconsidered and it has been found that departmental arrangements can be made which will provide a considerable amount of accommodation at the training colleges for primary school teachers at Ahmedabad and Poona. Government have, therefore, decided that if the Corporation are willing to accept the proposals set out, this accommodation should be utilized for teachers from the Bombay Municipal Primary Schools sent for training.

3. In the training colleges for men at Ahmedabad and Poona the course is of three years, but for masters to be employed in the Municipal schools in Bombay a two years' course will suffice. It will be possible to admit ten Municipal students annually at each of these colleges so that there would, at any time after the first year, be 20 men under training at each college. At the training colleges for women at Poona and Ahmedabad the course extends over four and three years, respectively. Five women can be admitted yearly to each, so that there would be, as a maximum, 20 women at the Poona and 15 at the Ahmedabad College. Thus at all these institutions there would be under training on behalf of the Municipal Corporation a maximum number of 75 students, and when the scheme is in full operation, the output, apart from casualties, failures and the like, would be 20 male and 10 female trained teachers yearly.

4. It appears that at present the Corporation pay stipends to their students studying at the Government training colleges at the same rates as the Local Boards, but there is a general demand that the latter should be raised in view of the high cost of living. At the Poona Training College for men the present stipends are of the value of Rs. 7, 7½ and 8, and it has been proposed to raise them to Rs. 9, 9½ and 10. At the Ahmedabad Training College for men the present rates are Rs. 7, 7 and 8, and it has been proposed to raise these to Rs. 8, 8 and 9. At the college for women the present rates are Rs. 6, 7, 8 and 9, and it has been proposed to raise them to Rs. 7, 7, 8 and 9. Government have not yet considered these proposals, and the above explanation must not be taken to commit them to the enhanced rates. It is for the Corporation to settle the rate of stipends to be paid to their students, but assuming for the sake of calculation that Rs. 9 would be the average value, the maximum cost to the Corporation would be Rs. (75 × 9 × 12) 8,100 per annum, and in return the Corporation would

have at their disposal 30 trained teachers every year. Under the scheme for the establishment of a training college in Bombay the Corporation's liability amounts to Rs. 11,971.*

5. If the Corporation decide to take advantage of the offer explained above, further consideration of the question of establishing a separate training college becomes unnecessary. I am to request that Government may be informed whether the Corporation agree to the above proposals, and, if so, how many stipends up to 75 they are willing to pay every year and at what rate.

* This would be reduced to Rs. 9,571 when the rent charge is eliminated on the housing of the institution in one of the Municipal Primary School buildings.

PUNJAB.

Industrial Education in the Punjab.—An association for promoting the industrial education of Hindu youths of the Punjab has been started by which qualified students will be sent to Europe, America, Japan, or other foreign countries for the purposes of proper and efficient training and education. Ordinarily such students will receive Rs. 120 a month in Europe and America and Rs. 60 in Japan as a scholarship, in addition to the railway fare and passage money. Mr. Duni Chund, Barrister-at-Law is the Honorary General Secretary to the Association and an appeal to Hindus to enlist themselves as members of the Association by payment of a small sum of one rupee per year is being circulated.

Free Primary Education in the Punjab.—An official publication has been issued by the Punjab Government relating to the abolition of fees in primary schools. From it we learn that the male population of the Punjab amounts to 10,942,705, of whom it is estimated that 1,648,406 are of school-going age; and the majority of these would, if education were general, be attending vernacular primary schools. The actual number in attendance is only 159,640, or less than 10 per cent. of the total. The number of villages is 32,663, and the village schools number 3,261 (3,151 primary and 143 middle), i.e., one village in ten has a school. Assuming that in order to make education accessible, at least one village in four should have a school, the number of new schools to be provided would be 4,905, of which not less than 100 would be middle vernacular schools and 4,805 primary. The upkeep of 4,805 primary schools at Rs. 20 per lakh of rupees and that of 100 middle schools at Rs. 120 per month, or Rs. 1,440 per annum, to 1½ lakhs. The total amount to be expended on the upkeep of new schools would, therefore, be 13 lakhs, while the initial expenditure on buildings, and furniture at Rs. 500 per school would require 25 lakhs more.

The Punjab Agricultural College.—The Punjab Agricultural College which has been at work for fifteen months, was opened recently at Lyallpur by the Lieutenant-Governor of the Punjab. Sir Louis Dane referred to his interest in the progress of the college and in the advancement of scientific agriculture in the Punjab. His Honour also made an important announcement that the peasant colonists would be allowed to acquire by purchase proprietary rights in their holdings. This class of colonists had from the first been recruited on the understanding that they would remain in the condition of tenancy and would be denied the status of a proprietor. They also signed conditions binding themselves to those terms. The Colonies Committee, which had investigated into the conditions of several colonies in 1907-8, had reported in favour of conversion of tenancies into proprietary holdings, but it was generally thought that a high price would be demanded for proprietary rights. Sir Louis Dane, however, announced that the Government had decided to allow the Colonist tenants to become proprietors on payment of a purchase fee of Rs. 12-8-0 per acre. This rate is generously low as the land is of an average value of from Rs. 150 to Rs. 200 per acre. The announcement naturally caused great gratification. The concession will apply to some million and half acres. Well may, therefore, the Chenab colonists count the 14th December as a red-letter day, for the tenants are said to have been willing to pay the Rs. 50 per acre. It is true that industry of the tenants has brought that colony to its present prosperity, but Rs. 50 per acre has been paid at auction sales for the land in an uncultivated condition. Sir Louis Dane further said that in reference to the views of the Judges of the Chief Court and of other officers it has been decided to preclude the colony from the operation of the pre-emption law. His Honour, in conclusion, hoped that the colony would remain a great and glorious example of co-operation between the people and the Government.

Education in the Punjab Report of the Director of Public Instruction.—The Director of Public Instruction, in the course of his report on education, says:—It is quality rather than quantity that matters, and here it is to be feared there are few signs of progress owing to want of funds for buildings and teachers.

The Lieutenant-Governor observes, in reviewing:—At a time when the inadequacy of funds available for educational demands has thus been accentuated it was hardly opportune to come forward with a proposal to extinguish existing sources of educational income. The scheme of abolishing fees in primary schools, observes His Honour, must have been conceived in misapprehension of the true needs of the situation in India. Mr. Godley, Director of Public Instruction, calculates that about a crore per annum would have to

be raised to give effect to universal free primary education in the Punjab. It is unlikely that in this province so large a sum could be raised by additional taxes without causing severe hardship and creating serious discontent. Fees are already remitted, observes His Honour, in the case of agriculturalists.

TRAVANCORE.

Education in Travancore.—In the latest Travancore Government *Gazette* the Administration Report of the Director of Public Instruction is reviewed at some length. The most important work has been the drawing up of the Education Code and its introduction. It is stated that during the nine months the Code has been in operation much improvement has been effected in all stages of instruction. The Government remark: "The objects of the Code are to define clearly the position which each school occupies in the system of public instruction, by prescribing rules of its admission to, and the conditions of its continuance in, that system, to improve the efficiency of the management of schools by regulating the powers of the Managers, to bring teachers under better control by licensing them, to limit the undesirable freedom of pupils by preventing their unnecessary migration from school to school and by insisting on more effective discipline, to render education more easily accessible by removing the restrictions on the admission into the public schools of pupils who are non-caste Hindus, and to make education more popular by abolishing the fees in the lower classes of the Elementary Schools. The Code is designed to minimise several admitted evils, some of a serious character, and to strengthen education generally." The school leaving certificate scheme has been adopted in the State much on the same lines as in Madras. The total number of schools rose during the year from 3,448 to 3,705 and their strength from 2,06,017 to 2,17,668. What is particularly noticeable is the accession to strength in the number of Government Schools showing that in future the Travancore Durbar's policy is to take up more and more control over educational institutions. The Sirkar Schools rose both in number and in strength by 29 and 10,430 respectively, while in the case of private Aided Schools and private Unaided Schools there was a fall in number in one case and fall in strength in the other. The Government say that the policy of reducing the volume of educational work, not under Departmental control or supervision, should be persisted in. The same sentiment appears in another part of the report where they say that the expansion of secondary education should be made hereafter departmentally. This policy of the Government and its desire to increase the efficiency of instruction in schools has had already the effect of closing a number of private schools. The Secondary Schools diminished in number by 10 and in strength by 4,840. The Durbar say that this fall in number was due to

"several weak schools not able to conform to the improved conditions required by the Educational Code disappearing from the field and that it was certainly good that such schools should be closed." Taking the school-going population as 15 per cent. of the total population 71.1 per cent. of the male population and 26.7 of the female population of school-going age were under instruction during the year under report as against 67.8 per cent. and 24.4 respectively in the previous year. There was a perceptible improvement in the matter of Elementary Education as a result both of reorganisation of Elementary Schools and the abolition of fees in the lower grade Elementary Schools. All these schools which had previously taught up to Class VIII were under the new scheme classed as "Elementary" and divided into two grades, that is the Lower and the Higher. The total number of Elementary Schools rose from 3,321 to 3,594 and their strength from 1,86,423 to 2,03,228. The higher grade Elementary Schools also rose both in number and strength by 128 and 30,337 respectively. The lower grade Elementary Schools rose in number from 45 but fell in strength by 13,582. The Elementary School Leaving Certificate Scheme has been introduced and the attendance in the highest class of the Elementary Schools, that is Class VII has consequently increased, though this is confined to Sircar Schools and not to private Aided Schools. About this the Government remark: "The only remedy, according to the Director, lies in taking over those schools under the direct control of Government. The Director should, of course, not take that step until the Manager is given in each case reasonable time to improve his school." We are glad to learn that the scheme for the establishment of Normal Schools for elementary teachers which has already been sanctioned is likely to place in the hands of the Department a large and sufficient number of trained teachers. About the development of Elementary Schools the Government remark: "In their review for 1904 M. E. Government observed that the development of the Elementary Schools should receive early consideration at the hands of the Department. The Director states that the Education Code has rendered it possible to show increased activity in several directions. The abolition of fees in the Lower Grade Elementary Schools has stimulated interest in education among classes of the population who had not hitherto availed themselves freely of its benefits; the removal of the restrictions on admission into schools has heightened that interest; the increased efficiency of inspection has had beneficial effects; and systematic action is being taken for bettering the accommodation and equipment of Elementary Schools generally." It would appear that there was substantial improvement in female education, the Girls' Schools having risen in number and strength by 27 and 5,262 respectively. Besides this there were 36,855 girls attending the schools for boys. This works out at an increase of 2.3 per cent. of the female population of school-

going age. This improvement is due to the opening of additional schools under Departmental control and also to the appointment of Inspectresses. The Government state that the present state of female education in the State is one of healthy growth and bright promise for the future, but they say much remains to be done, the chief difficulty experienced being the matter of obtaining qualified women teachers.

INDIA (GENERAL).

Government of India Technical Scholarships.—The Government of India have decided to award, during the year 1911, one scholarship to each province provided that the Local Government or Administration concerned has a suitable candidate to nominate. It may however, happen that owing to the dearth of eligible candidates in certain provinces, two or more scholarships may on occasion be available for allotment to other provinces. If, therefore, a Local Government is in a position to recommend confidently more than one candidate, such recommendations may be submitted to the Government of India. In such cases the candidates need not necessarily be selected for the same industry.

As regards the next year, it has been decided that one candidate will, if possible, be recommended for a scholarship in connection with mechanical and electrical engineering. If a second scholarship is allotted to Bengal, a second candidate may be recommended in the same subject. The selection will depend largely on the character of the applications received.

Indian students in England: a warning.—The Government of Bombay have addressed the following letter to Provincial Advisory Committee for Indian Students:—

I am directed to address you on the subject of the necessity of spreading as widely as possible a knowledge of the difficulties which Indian students often experience in the United Kingdom, if they are not provided with sufficient funds.

Of the young Indians who go every year to England the great majority have acquired some measure of education before their arrival, and the object of their visit is to complete their studies. The greater number go to qualify themselves for a call to the Bar, because a call to the English Bar enables them to get admittance to the legal profession in India upon easier terms than they could in this country. Others are attracted by the facilities for higher education which are offered by the Universities of Great Britain, and a small but increasing number go to study the industries and technical processes of manufacture of Western Europe. It has been found on inquiry that among these young men there are some who go with no very clearly defined aim, in the hope that amid the riches and manifold activities of Europe they may

FOR NOTES.

GREAT BRITAIN.

somehow or other find means to support themselves in that country, and they calculate that familiarity with Europe will enable them to find something to do in their own country upon their return. It seems probable that the hope for material advantages to be gained from visiting Europe will attract Indians there in increasing numbers.

In addition to this stimulus, an organisation has recently been established in this country with the object of facilitating visits to England. It is called the Calcutta Scientific Industrial Association, and it provides Indian students with passages to England; but it does not appear that the Association undertakes responsibility for their maintenance there, and in certain cases passages appear to have been found for students who had no definite means of support assured to them from any source. It is necessary to point out that there is practically no chance of these young men being able to provide for themselves by their own exertions. Some of them are driven to pitiable straits in their efforts to make a living, and it is reported that one of them, an educated man (an undergraduate), acted as a showman to a tea company and stood in front of the doors as an advertisement, and that out of 13 or 14 known cases only three succeeded in getting employment or some sort of income in England.

It is true that a majority of the Indian student population in England are supported by regular remittances from their parents or guardians, but even among them the cases of destitution occasionally arise; the death or sickness of the breadwinner, an unexpected law-suit or the failure of the monsoon, whereby tenants are unable to pay their usual rents, any one of these mishaps may prevent the family from forwarding the monthly or quarterly remittance, and when this disaster occurs in the Indian student, with few acquaintances in England and slender credit, is brought to the verge of destitution. Such cases are not infrequent.

With the view of giving a warning of the danger which Indian students run of getting stranded in England if not supplied with sufficient funds, I am to suggest to the Committee that endeavours may be made to give as wide publicity as possible, among those interested, to the difficulties which Indian students are apt to experience if they are not provided with sufficient funds, and that all possible steps may be taken to diffuse a correct idea of the conditions under which Indian students live in England. With the object of supplying the Committee with concrete examples by which to enforce their advice, information relating to actual instances of distress will be furnished to them as they occur, but it must be understood that the Committee are not expected to deal with the particular cases thus brought to their notice. Cases of destitution would have to be dealt with by other means.

The London Matriculation Examination.—Amongst the many degrees now obtainable at the Indian Universities there are none that in practical purposes rank higher than those of London, Oxford and Cambridge may confer more social status, but as a guarantee of sound knowledge and ability a London degree cannot be beaten. Before a pass degree in any branch of knowledge can be obtained three examinations must be passed. The first of these—Matriculation—is common to every branch, and must be negotiated by every student. The minimum age limit is sixteen years, but there is no maximum. It is not uncommon, therefore, to see in the examination hall men who have left their school-days far behind but who, for various reasons, have decided to resume their studies. Many men and women, too enter upon a course of study at the beginning of the winter and sit for the Matriculation Examinations in June. Examinations are held in London and various provincial centres in January, June, and September, and the fee payable is £2 if examined in London, and from £1 to £22 extra if at a local centre. After the Matric comes the 'Intermediate' and then the 'Final.'

The Matriculation subjects are comparatively simple. It is necessary to pass in English and Elementary Mathematics. One of the following must also be taken:—(1) Latin; (2) Mechanics; (3) Heat, Light, and Sound; (4) Chemistry; (5) Botany and two from a list containing nineteen subjects usually taught in schools. If Latin is not taken, a language must be one of the two selected subjects. The syllabus, therefore, is a broad one, and an intending candidate should not only bear in mind his own knowledge of each subject, but also the use it will be in any future examination. For example, a student wishing to take a Science degree would select either French or German and the sciences in which he is strongest. It would be useless taking, say, History, although it might be a strong subject. English is one of the most important branches, and tends to increase in severity. Great attention is given to English authors, and to do very well a candidate must be fairly widely read. At the June examination twelve Shakespearean characters were named of which six had to be identified and the play named, and the action of three described. Grammar also plays a fairly conspicuous part in the paper, and a précis and an essay are also required. About eight subjects are usually given as a choice for an essay, and at the last examination the subjects were certainly stiff, the only consolation being that there were the same for all. The Elementary Mathematics paper is a thorough one, generally requiring some good thinking and some long calculations. Two papers of three hours each are set, and special attention should be given to approximations and contracted methods, areas, and volumes, but a careful

study of previous papers is French and German Mathematics paper. In them into English are set, papers, passages for translation into the language; and easy pieces for questions on grammar, but they are there are also questions on grammar, but they are limited to science and elementary syntax. A science car should always endeavour to take Chemistry at Matriculation, as at the Intermediate and final it will be almost a necessity.

Johnson's English: Sir James Murray on its inadequacy now.—Some idea of the magnitude of the work thrust upon a man who undertakes to edit a dictionary was given to an audience recently by Sir James Murray, the editor of the Oxford Dictionary, who, after stating that he had had to write to the Director of Kew Gardens about an exotic plant, to a Roman Catholic priest on a point of divinity, to a Newcastle boat-builder regarding a keel, to a sporting newspaper, to some one about a bloater, and to many other people on a hundred and one subjects, aptly remarked that a lexicographer who desired to be accurate had to be a universal inquirer.

In 1877, he said, he had the offer from an English and American firm of publishers to edit an English Dictionary, and forthwith there began to pour in upon him different materials from all quarters. A multitude of accumulated quotations, numbering millions, and weighing tons, was sent to him. He was confronted with the problem where he was to place these tons of matter. Eventually he had an iron room erected in his garden. In it were pigeon-holes, each of which held 6,000 quotations, and visitors were astonished to learn that the room contained in all 5,000,000 quotations. Whether posterity would want a dictionary in 100 volumes he did not know, but the materials were ready. It would be easier to make a dictionary in 100 volumes than one in ten. If a man started reading one quotation a minute during an eight-hour day, he would take 30 years to finish the 5,000,000.

It was characteristic of the time when Dr. Johnson produced his dictionary that they thought the English language had attained perfection, "but," said Sir James, compare any article in any 'monthly' with Dr. Johnson's dictionary, and strike out every word and sense that the latter does not contain, and the page would be almost as black as if it had gone through the hands of the Russian censor.

The Thackeray Centenary.—The Thackeray Centenary is to be celebrated in England by an exhibition to be held in July at the Charterhouse by the permission of the Master. Mr. Lewis Melville writes to the *Times* on behalf of the Titmarsh Club asking contributions to the exhibition. "We have already received," he says, "many assurances of valuable support from collectors abroad and at Home, and we shall gladly welcome further offers of interesting contributions to the exhibition. These contributions may include personal relics as well as items of literary and artistic interest connected with the great novelist. The utmost care will be taken of every object entrusted to the committee during the whole course of the exhibition, which, it is proposed, should not last longer than about a fortnight. We desire to make our project public at this early date in order that collectors in distant countries may have the opportunity of communicating with us."

Greek retained as a compulsory subject in the University of Oxford.—The decision of the Congregation of the University of Oxford to retain Greek as a compulsory subject in responsions will excite the usual chorus of approval and disapproval. On the one hand, we have those who contend that Greek grammar is a valuable mental gymnastic and that a boy derives considerable benefit from its study even if he merely reaches the responsions standard. On the other hand, the opponents of Greek hold that it is a shocking waste of a boy's time to teach him the elements of a language which he will never master sufficiently to be able to appreciate its literature. Mr. A. C. Benson, as readers of his charming essays are aware, is never weary of enlarging upon the injury to teachers and boys which the fruitless study of the bones of a language inflicts. Probably, if it were certain that when Greek ceased to be compulsory a fair number of boys would take up the subject its upholders would be less stubborn. But they strongly suspect that when Greek ceases to be necessary, it will cease to be in demand. There is a pardonable reluctance to allow Greek to sink into the position of Hebrew, which is studied only by those who have a professional need of the language, but, apart from this laudable motive, the consideration of vested interests doubtless weighs with the Congregation, for those who have qualified as Classical Masters must be reluctant to have the results of their labours thrown away.

The Educational Review.

The third annual Conference of the South India Teachers' Union was held in the large hall of the Hindu High School, Triplicane, on the 22nd, 23rd and 24th instants. More than a hundred teachers from the various parts of the presidency attended the Conference. The proceedings commenced with an address of welcome to the members of the Union by the Rev. W. Meston, one of the Vice-Presidents of the Madras Teachers' Guild. The presidential address was delivered by Mr. K. B. Ramanathan, the President of the Union for this year. The address contained a survey of the various questions that are at present occupying the attention of educationalists. He deplored the apathy and inability of the members of the teaching profession in general in uniting to improve their status. The Rev. A. F. Gardiner, Principal of the S. P. G. College, Trichinopoly, delivered an eloquent speech on Free Night Schools for the labouring classes. In the absence of compulsory primary education the next best thing to put education within the reach of the depressed classes was, in Mr. Gardiner's opinion, to establish free night schools throughout the length and breadth of the land. Mr. Gardiner would prefer illiteracy to a purely secular education. This is merely giving a dog a bad name and hanging it. We fear that it is almost impossible for the overworked day-school teacher to give any of his time to work in these free night schools. Philanthropists must find the money for this good cause and employ paid-teachers separately for this work.

A paper on Moral Education in Schools was read by the Rev. J. S. M. Hooper. The multipli-

cation of students in schools, each again having its own multiplied schools, has made the teacher's task heavier. Mr. Hooper proposes to increase the burdensomeness of this task by adding a regular course of moral instruction. The business of education is "to cultivate deep-seated and effective habits of discriminating tested beliefs from mere assertions, guesses and opinions, to develop a lively, sincere, and open-minded preference for conclusions that are properly grounded, and to ingrain into the individuals working habits, methods of inquiry and reasoning appropriate to the various problems that present themselves." Such attitudes can only be created by a suitable environment and not by mere book-learning. Mr. Hooper appears to have a special partiality for boarding schools, but we would draw his attention to what Mr. Oscar Browning said a short time ago to the Parents' National Education Union. He said that the public schools, so far from being the nurseries of English character, were exactly the reverse; he thought they were very bad, were getting worse every year and were entirely past remedy; he therefore wanted that home education should be adopted to the fullest extent. We have always urged that the home is the proper nursery for instilling a moral temperament. We see no connection between religion and morality, their sources being different.

Mr. P. N. Panchapagesa Aiyar read a paper on the Education of the Depressed Classes. However important and pressing may be the question of elevating the depressed classes by education or otherwise, its discussion does not seem to be appropriate to a conference of teachers. No doubt teachers are also members of the general

body politique and as such, matters, but themselves in all human matters, but the work of a conference of teachers is not likely to result in much benefit, if its scope is not somewhat limited. The paper on Government Model Schools, which was submitted to the Conference by Mr. V. S. Srinivasa Sastri of the Servants of India Society, was full of facts and figures and the treatment of the question was such as to carry conviction. We have no objection to the Government taking under its direct control the several Municipal and Local Board schools and equipping them suitably, but we must at the same time impress on the Government the need for such liberal grants to aided schools as would enable them to rise to the level of efficiency contemplated by the Government in their so-called model schools. Mr. Parameswara Aiyar in his paper on School Records gave an account of the method followed in keeping these records in the school of which he is the headmaster. Mr. Vaithyanatha Aiyar read a paper on a Provident Fund for Teachers, in which he rightly criticised the recent order of the Government on the scheme for such a fund prepared by Mr. J. H. Stoue, who was specially deputed by the Government for the purpose. In order that any provident fund for teachers might work well and take into account the transfer of any teacher from one educational institution to another it is absolutely necessary that the fund should be managed by the Government. We regard the establishment of such a fund as a purely administrative measure, but if the Government should feel that new legislation would be necessary for it to undertake any such work it ought not be difficult for the representative of the Madras University in

the Legislative Council to introduce a bill with respect to this matter.

The Conference closed with the passing of certain resolutions bearing on some of the subjects discussed at its various sittings. On the whole the Conference was a success and we hope such conferences will tend to create an *esprit de corps* among teachers. We fear that there is in some quarters a lurking fear that the South India Teachers' Union might become a power, if it should be properly supported. We think that the Madras Teachers' Guild should make strenuous efforts to give the South India Teachers' Union that representative character which was contemplated for it by its founder, Mr. Theobald of Coimbatore. We ardently hope for the day when the South India Teachers' Union would become as powerful in this presidency as the National Union of Teachers is in England.

Among the progressive Native States of India Baroda stands pre-eminently the foremost.

The enlightened Maharajah of Baroda is always intent on improving his State in all possible directions. In a recent speech delivered at Bombay His Highness the Gaekwar of Baroda, referring to the Baroda State Series of publications, observed that he was aware of their shortcomings and that they could have been presented to the public in better form, both in matter as well as presentation. His Highness hoped that future publications would be more satisfactory. His Highness stated that he had brought from America a specialist in books, who was well-versed in the organization of libraries. With his help His Highness hoped to do some good work in the

State. His Highness also hoped that not only his own subjects but outsiders too in India would profit by the help and advice of the American specialist. His Highness has been trying for some time past to establish good libraries, free as well as otherwise, for the benefit of his subjects and he has brought this specialist from America with a view to organise them properly, so that not only Baroda might be benefited, but that also people in Bombay and other places in India might be stimulated to similar activity. His Highness said that he did not and could not depend upon his own efforts to ensure success of his schemes. Success depended more upon the substantial interest shown by the people themselves, upon the readiness to respond and the power of assimilation they showed. After all Government could only give the facilities. It lay with the people to assimilate. One could give water to a horse, but could not make it drink. Speaking of the spread of education, His Highness stated that he had set apart a sum of money for education to be spent independently of this Educational Department. His Highness means to initiate activity outside the official department by forming a special fund to aid such individuals and bodies as would make the spread of education in his State their life work. The control of this fund is not to be with the Educational Department but with a separate body. All this serves as an index of what an enlightened autocrat may do for his country.

The annual Convocation of the Punjab University was held on the 23rd instant at Lahore. Degrees were conferred upon eighteen Masters of Arts, one hundred

and sixty-three Bachelors of Arts, eight Bachelors of Oriental Learning, five Masters of Science, six Bachelors of Science, four Bachelors of Medicine and sixty-six Bachelors of Laws. The honorary degree of Doctor of Oriental Learning was conferred on Mr. Hafiz Nazir Ahmed, a well-known Urdu writer and Persian scholar of Delhi. The address to the graduates was delivered by the Rev. D. Ewing, the Vice-Chancellor of the University. After dealing with the various learned professions and Government service and their merits, the Vice-Chancellor expressed the hope that graduates will more and more find themselves attracted towards and impelled to enter upon lives that will have to directly deal with the development of the resources of the province, with the distribution of its products and with the work of manufacture. "There is here," he said, "for a man who would serve his fellows a position of splendid opportunity." If young men are to follow the suggestion of Rev. Ewing, their attention must be called early in their college course to various fields of service in modern India and to the most liberal and thorough ways in which they can fit themselves for such service.

The members of the teaching profession cannot afford to ignore the Indian National Congress which is holding its twenty-fifth session at Allahabad. The National Congress has been called the child of the British rule in India. As it is the product of the spread of higher education in India inaugurated by Lord Macaulay, we ought to characterise the National Congress as the child of liberal education, an educa-

tion which men of the stamp of Mr. Valentine Chirol look upon with suspicion. The aim of the teacher is to elevate the generation under his care and befit it for self-reliant honourable work. There is no reason why the teacher should fight shy of the political regeneration of his country. It is by the teacher that any country is ultimately regenerated in all directions. One of the foremost men in the Indian National Congress at the present day is one who spent a score of years in purely educational work. It may not be possible for all teachers to become Gokhales, but the example of the Hon'ble Mr. Gokhale should serve as a source of inspiration to every right-minded Indian teacher. The National Congress has at all its sittings ever since its inception laid stress upon the need for mass education and technical education. In his welcome address to the delegates to this year's Congress the Chairman pointed out that among urgent matters needing the attention of Lord Crewe and Lord Hardinge the first and foremost was the extension of education, both general and technical, throughout the land. England's greatest boon to India is, as the President of the National Congress remarked, the higher education of the West, whose magic touch has awakened to new life the ancient activities of the Indian intellect. The new born spirit of self-reliance, of which the Indian National Congress is an index, is essentially the work of the teacher, and if India is at any time to have self-government, that can only be the result of a more strenuous effort of the teacher. Every one turns to the school for the regeneration of one's country and on the school and the teacher will depend also the political salvation of one's country. Sir William Wedderburn said: "She (India)

possesses all the material for self-government; an ancient civilization; reverence for authority; an industrious and law-abiding population; abundant intelligence among the ruling classes. But she lacks training and organization." Who can furnish this, if not the teacher? In the present formative period of the history of our country, the guidance of the teacher is pre-eminently necessary.

Teachers in the secondary schools of England seem to be in the same boat as the teachers of secondary schools in South India. Almost all the secondary school organisations in England are discussing superannuation. A writer in an English educational periodical presents the case as follows: "The ultimate aim of governing-bodies, headmasters, and masters are all the same, and the same as that of the nation, the parents, and the individual: it is efficiency in education. To procure this the most important part is the teacher; and in order to secure as teachers the men and women best fitted for their work, the teaching profession must be recognised as such, and its members must be suitably rewarded. It can never become—indeed, it is perhaps not desirable that it should become—a lucrative profession; but at least its members must be assured that they are not to end their days in penury. What, then, is required is a pension scheme; it must be such that schoolmasters can migrate from school to school, from town to town, from authority to authority without prejudicing their pension rights; it should be equally applicable to all efficient schools; it should be compulsory in the case of all schools aided by public money, whether from the Treasury, the rates or endowment; no

school should be recognised as efficient, the governors or proprietors of which do not adopt it, it should be guaranteed by Government; it should, in short, be a national scheme." It is for such a scheme as this that the Madras Teachers' Guild and the South India Teachers' Union have been working without success. The cause for which these two bodies have been fighting is a righteous one, and we hope they will continue to work strenuously till they achieve success.

In a very interesting and instructive address delivered to the Birmingham Teachers' Association, Dr. Alexander Findlay, Lecturer in Physical Chemistry, University of Birmingham, points out some of the drawbacks in the teaching of experimental science in schools. He points out that owing to the desire of science-teachers to promote experimental work in the laboratory there is a great danger of restricting the power of observation of the scholars within two narrow limits. "Through overestimating the value of weighing and measuring and quantitative experimental work, there seems to be a danger of underestimating the value of qualitative observational work. Experimental work in the laboratory is more suited to the later years of school life; but in the earlier years, say from nine to ten or twelve years of age, much can be done to encourage observation on the part of the scholar; and the natural inquisitiveness also of the child makes it not too difficult to impart to it useful information in science. Much, of course, will remain unintelligible to the young pupil, much will remain mysterious; but that I do not regard as any great evil." The remarks made by Dr. Findlay on the heuristic method of teach-

ing science deserve the careful attention of our teachers. "Personally," says the lecturer, "I do not for a moment doubt the value of the heuristic method provided—the proviso is an important one—the teacher is very capable, energetic and sympathetic. There can be no doubt that the heuristic method makes enormously greater demands on the teacher; not, perhaps, so much on his knowledge of facts as on his general intelligence and the breadth of his outlook, his mental alertness and his sympathy with his subject and his pupils. It is not every teacher who can guide successfully a pupil according to the heuristic method and in the hands of many teachers the heuristic method may not only be no better but may even be worse than the old text-book method. But let us assume that we have a teacher, in any case, of average ability—and I do not think we have any reason to ask for more—I should like to ask those who are actively engaged in teaching science in schools to tell me whether they are entirely convinced that in giving up the old method and adopting entirely the heuristic method we are not passing from one extreme to another. Indeed it seems to me that this is the great danger in all progressive teaching—a danger, of course, not to be paralysed by, but certainly to be on one's guard against." The special value of the heuristic method is that it keeps the scholar in contact with facts, which form the basis of all scientific advance and that it can strengthen under proper guidance the reasoning powers of the scholar. Dr. Findlay therefore advocates the predominance of the heuristic method in the earlier stages, but in the later stages of study, when the minds of the pupils have become maturer he would introduce text-books more and more. "Progress by the heuristic method becomes too

slow for the interested pupil, and he remains ignorant of many things which are really worth knowing."

The curse of all teaching is examinations; nothing is more deadening than the getting up of subjects for a public examination. If the teaching of any subject is to infuse with any vitality, the teacher must be encouraged to develop his individuality, and that is possible only when he is permitted to develop his methods of teaching according to his own ideals and to suit the particular conditions of the school. To work in accordance with a syllabus prepared by an external authority and in utter disregard of local

conditions and necessities is one of the surest means of killing the vitality in the teaching. All these principles seem to be conceded by those who have been responsible for organising a school final examination. But we think they have not been wise in making an external authority conduct the examination. The right course would be to conduct examinations separately for each school according to the syllabus drawn up by the teachers and approved by the Board appointed for the purpose. The school leaving certificates should be awarded on the results of examinations so conducted coupled with the marks awarded by the teachers themselves in the course of the work of teaching.

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[DEC. 1910.]

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Supplement to "The Educational Review."**THE SOUTH INDIA TEACHERS' UNION.**

Vol. I.]

JANUARY 1910.

[No. 1.]

[All contributions, &c., should be addressed to General Secretary, S. I. T. U., Wesley College, Madras S.W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S. I. T. U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

PROSPECTUS.

THE SOUTH INDIA TEACHERS' UNION having now been established on a formal basis, the Executive Board have arranged to issue monthly reports of the progress and activities of the various branches affiliated to it. The Board desires to augment such reports by publication of other interesting matter of educational importance, such as notes of lessons, syllabuses on various subjects, hints on teaching generally, lectures delivered at meetings of affiliated associations, &c. It lies with the members of the Union to make the journal interesting by suggestions and contributions, and it is earnestly requested that they would co-operate with the Executive Board for this purpose. The journal is at present issued as a supplement of the "Madras Educational Review," through the courtesy of the Publishers, Messrs. Srinivasa Varadachari and Co., who have generously undertaken to print *gratis* and supply the Union with sufficient copies for distribution; and the Executive Board sincerely thanks them for their help. Should the journal become popular and secure the literary and financial help of the members of the Union, it is the hope of the Executive Board that it should be published independently and take a recognised place as the established organ of the Union.

The present number contains the report of the recent Educational Conference held at Trichinopoly. The opening speech of the Rev. Mr. Gardiner, and the address of the President, Rao Bahadur M. Rangacharya, are herein published. It is intended to publish the more important of the papers read at the Conference in future numbers of this journal.

THE SECOND EDUCATIONAL CONFERENCE, DECEMBER, 1909.

The Second Educational Conference of the South India Teachers' Union was held at Trichinopoly on the 21st and 22nd December 1909, and was attended in all by about 200 persons. Illness and other unavoidable causes kept away some whose presence had been looked for; but the meetings were fairly representative of our College and High

School education. The rules, drawn up to secure fairness of debate and to prevent hasty resolutions worked easily. All who wished to take part in the discussions were able to do so, and every opportunity was given for the expression of various opinions. The papers read were all suggestive, and some of them of the utmost importance. They opened out great questions which require more detailed consideration than was possible in the Conference. They are the

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prelude of fuller discussions which must ensue, on the various subjects dealt with.

With the exception of two the resolutions printed below, were all passed without a dissentient voice. One or two others which had been discussed by the Executive Board were not brought forward, as it was thought that they might not receive the strong support of the Conference. Thus the majority of resolutions to which the Conference has officially committed itself are supported by the most cautious educationists present and may be regarded as voicing the mind of the educational community of South India.

On the value of such an expression of opinion it is needless to insist. Even more valuable were other results of the Conference. The promotion of a sense of brotherly comradeship, the smoothing away of prejudices, the widening of views, the renewal of old friendships, the formation of new acquaintances, the revival of high aims, these are some of the fruits which those that met have gathered from the recent Conference. If the enthusiasm shown is any criterion, the Conference was most successful. It was inevitable that some of the arrangements should be imperfect, but the Union may rely next year upon such assistance from those who have attended this Conference, as would go far to prevent such imperfection in future. There were misgivings expressed lest the discussion should be empty and the Conference hasty in judgment. These dangers have been avoided as far as possible. Resolutions 1 (b) and 4 (a) were warmly discussed and were passed only by a majority. Considering the strength and importance of the members who opposed them, it would have been better if the resolutions had been dropped for the present and reserved for more mature consideration. The passing of resolutions is not an essential element; to ventilate a subject is often better than to attempt to form a decision upon it. It must however be mentioned that the two resolutions were carried by an overwhelming majority of votes as calculated by the rules of the Union.

WELCOME ADDRESS

[By the Rev. A. F. Gardiner, M.A., Principal of the S.P.G. College, and President of the Trichinopoly Teachers' Association.]

LADIES AND GENTLEMEN,

The problem of education was never and nowhere more engrossing than it is in India to-day. It is a matter for gratification that it is occupy-

ing the minds of some of the best men of the day who are making history by their efforts. Every new scheme though covering only a few sheets of foolscap represents a vast amount of careful deliberation and forethought on the part of experts; yet hardly a scheme is launched without evoking a storm of hostile criticism. That such criticism only hampers education is clear. It irritates the authorities and spreads discontent among the rank and file of practical educationists. The natural result is that the propounders of the scheme are led to distrust the discrimination and intelligence of their critics, and the critics in their turn are bent upon disseminating distrust of the authors. Such conditions can but clog the wheels of educational reform. We feel confident that the South India Teachers' Union will effectually put a stop to this by giving every scheme the consideration due to those fine intellects that framed it. For the aim of the Union, as it appears to us, is to arrive at an understanding of the principles that underlie each scheme, of the significance of the scheme itself, and of the best methods of carrying it into successful action. In cases of doubt, investigation and not interference, in cases of difficulty, co-operation and not criticism, seem to be the policy of the Union—a policy, which will give self-respect to its members, and win respect for itself in the eyes of others. But after all, no schemes are perfect; intention may not always be made clear, result may not always be consistent with purpose. Very often a scheme on paper is one thing, in practice quite another. However the discovery of flaws is not a proof of the subordinate's superiority. Nothing is easier than destructive criticism, nothing more difficult than a constructive policy. As we understand the main work of the Union to be constructive, such a policy can only be maintained by intelligence, sympathy, experience, and co-operation, and those are the qualities which the Union claims to place at the disposal of the profession and this is what will give our friendly criticism weight. In this way, we feel confident that the Union will in time establish its claim to be heard, and prove itself of use, for the wisest of men are most ready to seek and accept advice and assistance if it be of the right kind and given in the right spirit. There is a homely proverb that the proof of the pudding is in the eating. And those who make the pudding know it. If the South India Teachers' Union as a representative and responsible body discovers that the educational pudding given it disagrees with it, a remedy will doubtless be forthcoming. But it is useless, as is often the case with unrepresentative bodies and irresponsible individuals to disagree

with the mere appearance of a pudding. Some of the most dainty dishes have a far from agreeable appearance. New tests, new qualifications, new equipment, are fortunately no longer matters of opinion or open to criticism, but in the hands of those who fail to appreciate their value they are liable to become mechanical toys and artificial conventions. It is a pleasure to belong to a body whose aim is to remove ignorance of the right use of equipment and method. The South India Teachers' Union is peculiarly qualified for this work, as it consists of specialists in council, ready to give and take help.

We are also glad that it is suggested to subdivide the Union into different branches of specialisation. In this work we here believe that the Union's greatest usefulness lies, and we hope to see it developed and are prepared to support it to the best of our ability.

We also feel that the time is ripe for the formation of a representative body of the educational profession. It cannot be denied that at present there is a widespread feeling of dissatisfaction with the results of higher education in India. Optimists—and I am one—see in the Indian student of to-day an Ariel, a spirit of freedom and intelligence to be controlled by the beneficent power of education as Ariel was drawn under the gracious influence of Prospero, by reverence and gratitude, to greater usefulness. But others—and they are the majority, (pessimists usually are)—see rather in the average educated Indian a Caliban, developing animal instincts and materialistic aims, receiving an education which only teaches him to retort

You taught me language, and my profit on't

Is, I know how to curse.

Such hostile critics of our work, were they to adopt my simile, would remind us too that Caliban (was only too glad to get rid of the royal party and to be king again in his own land, which he was unfitted to rule). But at present there is a deficiency of spiritual, moral and intellectual ideals. It is easy for a union of teachers to deplore this lack of high ideals in a youthful student who looks upon his education as a few years of intellectual torture at a school or college, the necessary preliminary to an after-life of comparative affluence, when he can cast aside the weight of "culture." There is however, another side to this picture. If the student has so low an opinion of the lessons he is taught, he is sure to have a still lower opinion of those who teach

them. If once the student regards the staff of a school or college as a well-adjusted cramming machine, we can hardly be surprised if the man-in-the-street despises us too. There is one final test which an on-looker will apply. It is, how does the teacher view his own professions? Is it only a contrivance through which a certain modicum of brain power will produce a certain return in cash? We are all conscious, and I say it without fear of contradiction in so experienced a company, that the cash return for our intellectual equipment is ridiculously disproportionate to our deserts. (Laughter). But surely this is as it should be. Some, it is true, desert education for more remunerative posts, and others would if they could. (Laughter). But does this reflect the feelings of us all? If the profession is underpaid, as it is; if other more lucrative professions are open, as they are; if personal gain is the aim of a teacher, as we hope it is not; then that service of the country which requires the best intellectual product of the age will be manned by 'lame ducks.' But it would be an unpardonable insult to the most cherished traditions of this country, a betrayal of the inherited instincts of my own Church and people, if I were to suggest a divorce between the life of a teacher and a life of self-sacrifice. The true teacher's salary is the gratitude of the taught and the uplifting of the nation. (Cheers). Such principles as these—which I suppose all of us accept—make the administrative work of the Union one of great delicacy, if we are to avoid creating the fatal impression that it is a money-making machine. We feel confident that if any individual teacher joins the Union from an unworthy motive, he will soon be given to understand that his resignation would be more acceptable than his membership. There is a story of a company of touring minstrels who went about England inviting the patronage of the philanthropic and announcing that the proceeds of their concerts were given to charity. One day they were pressed for an account of the charity that profited, and at last they explained that they themselves were very poor and were in fact the objects of their own charity. (Laughter). That concert troupe came to a timely end. (Renewed laughter). However we do heartily welcome the provisions proposed with a view to protect teachers from unfair treatment at the hands of unscrupulous managers, and we also welcome the proposals of teaching the improvident thrift, of creating a provident fund for the unfortunate, of paving the way to a happy period of retirement after a rigorous life of activity.

PRESIDENTIAL ADDRESS

[By Rao Bahadur M. Rangacharya, President of the South India Teachers' Union.]

LADIES AND GENTLEMEN,

It cannot be unknown to some of you here that I owe the honour of presiding over this Conference to the inability of Mr. J. H. Stone, the distinguished Principal of the Presidency College at Madras, to occupy the presidential chair as it was hoped he would. Although I value highly the honour which the Executive Board of the South India Teachers' Union has conferred on me in asking me to become their President, still I cannot hide from you that I regret very much Mr. Stone's inability to preside over this Conference. My regret is due not only to the personal reason that a new responsibility has been thrown on me in consequence, but also to the consideration that we have lost the guidance of his mature views on educational matters—views, which, as all of us know, are of great value in virtue of his broad sympathy and high capacity and long and varied experience. His presiding over the deliberations of the Union on an occasion like this would have proved a source of undoubted strength and honour to the Union.

As already pointed out by the Rev. Mr. Gardiner, the object of the Union is of a twofold character. One of its objects may be said to be the improvement of the equipment of the teacher for his professional work, and the other is to make his profession itself more respected than it is at present, either in the market or in society. It is true that the noble traditions associated with the calling of the teacher in India and elsewhere should prevent all those that adopt that calling from bestowing their thoughts too largely or too seriously on its market-value and monetary worth. There can indeed be no doubt that, more than any one else, the teacher has to realise hour after hour in his daily life that man does not live by bread alone. Nevertheless, even he cannot get on without his due share of the daily bread. I heard it quite recently remarked to me that, notwithstanding the high nobility and the great usefulness of his profession, the remuneration given to the teacher is not in very many cases even half as large as what is given to the common police constable in the street. In the case of those teachers who occupy the lowest ranks in the profession, this statement may be made out to be almost literally true. Even if we take all the ranks of the profession into consideration, it cannot be denied that the remuneration of the teacher is hardly proportionate to the usefulness

and the dignity of the profession. When teachers see with their own eyes that other professions than their own yield to educated and intelligent workers notably liberal remunerations, the tendency becomes irresistible for them to compare themselves with the members of the more paying professions and to cast longing glances on their highly tempting emoluments. I have often tried to think out the reason why the remunerativeness of professions is not generally in strict keeping with their essential usefulness and moral value. As a rule those professions, in which it becomes possible for men to inflict immediate injury on others, are more dreaded and naturally therefore more honoured and rewarded, than the professions in which power for direct and immediate harm is lacking. Similarly professions, which are calculated to offer relief from immediate danger and loss, are also seen to be esteemed highly and rewarded liberally. This is due to a defect in the ordinary constitution of the human mind—a defect which is responsible for the notorious nearness of ordinary human vision in all matters. Therefore, if the profession of the teacher is not as paying as it ought to be according to us, the blame of it in fact belongs to common human psychology. I have mentioned this mainly with the view to point out that it does no good to the teacher to cast longing glances on the tempting incomes of other walks of life than his own. The teacher's want of satisfaction with his own lot is certain to make him unhappy, but it cannot correct the tendencies of common human nature so as to bring about a condition of affairs in which the material reward of his profession will be in strict proportion to its moral utility and greatness. Still, the teacher need not despair; for, in union, there is strength.

From this I should not be understood to have said in any manner that the teacher's profession is an impotent one—either for good or for evil. Which parent of school-going children does not know that a bad teacher is an unfailing source of harm to homes and to society? Even the State recognises the possibility of the danger to society and civilisation, which may arise out of the unrestrained license of bad teachers to do their bad work. The positive potency of the teacher to do good is perhaps not so well recognised as his negative potency to do harm. He is therefore much more hustled and criticised than he is either honoured or rewarded; and yet the teacher, the good side of whose work has thus to remain unnoticed and unhonoured, is very largely responsible for the instilling of sound ideas into

the impressionable and responsive minds of the young. Indeed, who among us does not know the power of ideas in guiding the course of history and in fashioning the mould of civilisation? Indeed the power which the teacher wields is a tremendous one. It may well be compared to the power which is possessed by the silent electrical current flowing through a minute copper wire. Ordinarily the very existence of such a current may remain unnoticed. But let it be made to go round and round a piece of soft iron; and the result is that the soft iron becomes at once powerfully magnetised. All students of modern science know very well the mightily momentous character of this electro-magnetic phenomenon as they call it. It is actually seen to be potent enough to move mountains, and to shatter them to pieces if you like. The power of the silent current of thoughts and ideas which the teacher inculcates day by day in his lessons is in no way weaker or less momentous. When the current of thoughts and ideas sent out by the teacher twines itself round and round the impressionable and unhardened heart of youth—that heart becomes, as we all know, most wonderfully magnetised, and acquires enthusiasms which are known to be the most prominent propelling forces in the evolution of history and the advancement of civilisation. Indeed no great movement in history has succeeded without the force of popular enthusiasm to aid its success; and as those, in whose power lies largely the creation and propagation of wholesome enthusiasms, the schoolmasters of a country form an influential factor in helping on its progress and settling the line as well as the goal of its advancement. Surely it is in this light that the worthiness of the teacher's profession is to be judged, and the value of his work to be examined and estimated. The mental and moral atmosphere, wherein all the living materials of human history have to live and move, is largely the product of his cultured labour, so much so that we may well say that the making or the marring of history lies very markedly in his hands. We have every reason to be proud of the mighty moral power which our profession has put into our hands. But we cannot afford to forget the great responsibility which the very possession of this great power imposes upon us. And can we discharge this responsibility well without helpful combination and harmonious co-operation among ourselves? If in union there is strength, there is surely wisdom in the multitude of counsel.

To take counsel of each other and to co-operate in harmony with each other have now become

more than ever imperatively necessary on the part of our school-masters at the present stage of our educational progress in South India. The School Leaving Certificate Scheme, to the discussion of which we are going to devote a special session in the course of this Conference, has made the teacher an arbiter of the destinies of all school-going youth, power being placed in his hands not only as before to mould their character and to fit them for life, but also to bestow upon them justly weighed certificates to serve them as valuable passports in life. Carelessness or injustice on the part of teachers may under the circumstances lead to the deterioration of the standard of education; and it may also cause the blasting of many promising careers. The members of the teaching profession have thus had their responsibility greatly enhanced; and they have to show themselves to be fully worthy of the trust that has thus been reposed in them. In the discharge of this enhanced responsibility of theirs, they have to be fair to the cause of culture, and should do nothing which is calculated to diminish the majestic altitude of the great altar of learning. Their capacity for fairness is certain to be severely tried in various ways; for they have to be fair to the boys and the young men undergoing discipline and receiving tuition in their hands, fair to their parents and guardians, fair to fellow-teachers and fellow-institutions, and fair also to the much maligned managers of schools. Leniency in their administration of schools will give rise to laxity in discipline and to the lowering of the standard of education. Rigour, on the other hand, may tend to retard the natural and easy progress of the boys, and thus add unnecessarily to the anxiety and the pecuniary burden to be borne by parents and guardians. We have known it both as boys and as teachers how the reputation of a school or college for leniency makes it easily popular among those who wish to seek admission into it; and it is very clear that such popularity can be won only at the risk of efficiency and of unfairness to fellow institutions. Rigour, however, may improve efficiency; but too much of it is certain to tell unfavourably upon the popularity of any educational institution. And there is indeed such a thing as caring too much for efficiency. The unpopularity so acquired reduces the fee-income of the institution as a matter of course, and this may well drive its managers frequently enough to despair. Thus even errors of judgment on the part of responsible teachers are fraught with serious and far-reaching consequences. If, under these new conditions, the teachers have to discharge all the items of their

responsibility fully and fairly, they must have a common platform to meet upon, so that they may talk over and amicably adjust all their differences in opinion and in policy. The South India Teachers' Union may well give the needed common platform; and it is our duty to see that it grows in strength and in usefulness from year to year.

Modern events in the history of the Government of India have also tended to make the responsibility of the profession of teaching heavier and decidedly more serious. I refer to the recent reforms relating to our Legislative Councils, which have given a new meaning to the citizenship of the Indian Empire. Hitherto, the obligation of the citizen to be peaceful and law-abiding was the one thing of importance which his training had to take note of and lay emphasis upon, so that his thoughts may generally run in harmony with those of the Government in all matters concerning the welfare and progress of his country. But now, for the first time in the history of British India, the Indian citizen is given the privilege of co-operating with the Government in more than one important matter of administration. It appears to me that this privilege will go on growing and expanding; and I have no doubt that you all recognise that the responsibility of teaching the young the duties of citizenship increases proportionately to the extension of its privileges. The school-master has now to learn what new and wholesome ideas relating to the altered conditions of citizenship he has to implant in young minds; and he has to make sure that the political ideal, which has his support and which he directly or indirectly holds aloft, is practically sane in every way and peacefully progressive. These problems, arising out of this new attitude of the State towards its citizens, are certain to force themselves sooner or later on the attention of all earnest school-masters; and I believe it is good that they endeavour to take time by the forelock. They must make it clear to every one, whose mind they are in a position to influence, that every person who lives in a civilised society owes loyalty to the family in which he is born, to the society to which he belongs, to the State by which he is governed, and to the country of which he is a citizen. All the fundamental ideas bearing upon the duty of obedience and loyalty must be brought home to the young in all the various ways in which it is possible for the earnest and enthusiastic teacher to do so. If only teachers bear well in mind this great factor required in all sound methods relating to the

education of the young, and do their very best to see that they themselves as teachers in no way shirk their responsibility in urging the duty of obedience and loyalty, I have no doubt whatsoever that the fear entertained by some people regarding the results of modern education in India—to which the Rev. Mr. Gardiner gave expression in the strikingly poetic language of Shakespeare—will very soon have no legs at all to stand upon. The idea that modern education has produced undesirable results in India will then disappear quite quickly. It is perhaps because teachers of youth in India have in the past knowingly or unknowingly neglected to impart lessons inculcating reverence for authority and proclaiming the duty of love and loyalty and obedience, that it has become possible for unfavourable critics of Indian education to belittle its value and to find flaws in its moral purpose. I feel that here I am perhaps treading upon delicate ground. Nevertheless, I have no hesitation in saying that you will all heartily agree with me, if I declare that the first duty of the teacher is to spread light—to spread that light which is markedly unassociated with heat. It is light which enables us to see things as they are, to see them in their proper bearing, proportion and perspective. In the presence of the light which exhibits the truth, neither material nor moral misunderstandings are possible; and even if they sometimes unhappily arise, they are soon forced to become things of the past, fit to be wholly forgotten. This light of truth is ultimately the same as that to which Cardinal Newman addressed his famous prayer—"Lead, kindly Light, lead Thou me on": and the guidance given by such light can never lead any one astray, nor ever give rise to sin or sorrow or unhappiness.

Indeed with the guidance of such light, what peace and prosperity, what progress in civilisation and well-being, may not the profession of the teacher achieve in the history of humanity! The thought of these high and noble possibilities before labouring from day to day, howsoever poor may be the recognition and the recompense which the busy world bestows upon us. In the course of a conversation which I had a few days ago with His Highness the Raja of Cochin, who is himself an enlightened Sanskrit scholar with very great love of learning, His Highness told me that, if he had now the option to choose a profession for himself, he would choose the profession of the teacher, and that to him the joy, which the teacher feels on observing the responsive blossoming of

the unopened mental flower-bud of the pupil, was more than even the enviable privileges of royalty. In support of his opinion, His Highness quoted a beautiful Sanskrit stanza, which, I regret, I cannot quote now. I am certain, His Highness did not mean merely to compliment me by giving an exaggerated value to my own profession, because I too have in a small measure, according to my fitness and capacity, felt the joy which the response of the mind and heart of the pupils to the mind and heart of the master so spontaneously evokes. The profession of the teacher is indeed one of the oldest in the history of man, and has been enshrined in it some of the noblest traditions of humanity. It is full of illustrious examples of unselfish service, and is destined to endure to the very end of human history, inasmuch as it has scope for operation even when there remains a single man or woman who has to be taught. Mankind can never afford to lose the service of the teacher, for the garden of humanity has always to be watered with the aid of the perennial stream of inspiration and enlightenment which flows out from his profession as its main fountain-head. Therefore as the years roll on, his responsibility is certain to grow in weight and in magnitude; and with its growth in weight and in magnitude his power to bear that responsibility well has also to grow. Otherwise ordered life and civilisation are apt to become exposed to serious danger. With this certainty in his mind that his profession is in fact the most humanising of all human professions, the teacher has ever to go on seeking and spreading light as well as love, and producing by means of his well-directed labour good and useful men and women in society fit to engage themselves in the ever noble service of God and man, and also making them at the same time patriotic and loyal citizens worthy to uphold the majesty of the State as a powerful instrument of human civilisation: and in all this he should never fail to look for his reward in the uplifting of the nation and of humanity—that uplifting which is due to the training which he bestows and the character which he imprints upon the youth of the land generation after generation. May he always prove equal to his mighty task!

RESOLUTIONS.

At the close of the Conference, the following resolutions were passed:—

(1) (a) This Conference feels thankful to Government for the interest they have shown and for the steps they have already taken in regard to the establishment of a Provident Fund for teachers

and respectfully urges that the matter should be speedily brought to a successful issue. (b) In this connection the Conference requests permission to point out to Government the desirability of levying a small provident fund fee of not more than one anna in the Rupee of the school fees paid by the pupils in schools, and suggests that the managers of schools be made responsible to remit duly to Government the amount so collected at the end of each quarter, along with the contributions which the teachers themselves may be called upon to make month after month. [1st part passed *nem con*, 2nd part passed by a majority.]

(2) In regard to the School Leaving Certificate Scheme—

(i) the Conference is of opinion that—

(a) The "Elementary Science" in Group A should be transferred to Group B. [Carried *nem con*.]

(b) Translation from Sanskrit or any other classical language into a vernacular should be made an alternative for Vernacular Composition and Translation in Group A. [Carried *nem con*.]

(ii) The Conference resolves that a committee consisting of the Rev. A. F. Gardiner, the Rev. Father Bertram, Messrs. K. B. Ramanadha Iyer, S. Vasudevachariar and A. Panchapakesa Iyer, be appointed to consider and suggest such recommendations as may seem necessary for the guidance of Principals of Colleges in the matter of admission to their colleges of pupils who seek admission with a School Leaving Certificate, and that the recommendations drafted by this committee be circulated to the affiliated associations of the Union and be placed with the opinions of the associations before the Executive Board of the Union for adoption and submission to the Syndicate of the Madras University in due form. [Carried *nem con*.]

(3) The Conference resolves that the Secretaries of the different sections of the Madras Teachers' Guild be requested to place themselves in communication with other associations affiliated to the Union with a view to have their work carried on similar lines. [Carried *nem con*.]

(4) The Conference resolves—

(a) That the Conference requests the Government of Madras that a grant of 75 per cent. of the net cost be sanctioned in aid of High Schools and Colleges. [Carried by a majority.]

(b) That Municipalities and Local Boards be required by Government to set apart not less than 15 per cent. of their total revenue for elementary education. [Carried *nem con*.]

SOCIAL GATHERING.

With the adoption of the annual report and the passing of these resolutions, the formal meetings of the Conference ended.

M.R.Ry. K. B. Ramanatha Iyer, on behalf of the guests, then proposed a vote of thanks to the Trichinopoly Teachers' Association, at whose kind invitation, the Conference was held and also to the gentlemen who read papers, and to the publishers who contributed to the success of the Conference by their exhibitions.

The Rev. A. F. Gardiner, on behalf of the Trichinopoly Teachers' Association, thanked Mr. Ramanatha Iyer for his kind words, and said that a great deal of the credit of the success was due to Rao Bahadur M. Rangacharya, M.A., in whom the Conference found a most efficient chairman.

The Rev. A. F. Gardiner gave an "At Home" to the Conference. After an adjournment for light refreshments, a very pleasing programme of music was gone through. It included

Pianoforte: Mrs. McCauly Hayes.

Soloists: Mrs. Stokes, Rev. C. M. C. Bone, Rev. W. H. M. Lonsdale.

Recitation: Mr. Pakkiam Raj.

With a vote of thanks to the ladies and gentlemen for their contributing so much to the pleasure of that hour, the Conference broke up at 7 P.M.

ANNOUNCEMENTS.

I. RULES.

The following alterations in the Rules of the Union were made on the suggestion of the Executive Board:—

(1) RULE 7. "The official year of the Union shall be from November 1st to October 31st."

(2) RULE 3 (b). "A Vice-President who shall be a member of the Union and who shall be annually elected by ballot, by the members of the Union, before the 1st of October of the previous year. The Vice-President of any year shall be the President of the following year."

(3) RULE 3 (c). "A Secretary who shall be a

member of the Union and who shall be annually elected by ballot, by the members of the Union, before the 1st of October of the previous year."

(4) RULE 3 (d). "A Council of one member for each circle into which South India is for the time being divided for the purposes of the Union. The local associations in each case will elect by ballot, before the 1st of October of the previous year, one of their Union members to represent their circle in the Executive Board."

(5) RULE 10. "The Executive Board shall meet at least once in a year and oftener if occasion demands it."

II. TEACHERS' REGISTRY.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Re. 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

III. CAPITATION FEE FOR 1909-10.

The capitation fee has been fixed at eight annas for teachers in Colleges and Secondary Schools, and at two annas for Elementary teachers.

IV. ELECTION OF OFFICE-BEARERS FOR 1910-11.

The affiliated associations are requested to nominate two members, one for the office of Vice-President and the other for the office of Secretary. It will be a convenience if the nominations reach the Secretary before the end of March next.

THE SOUTH INDIA TEACHERS' UNION.

Vol. I.]

FEBRUARY 1910.

[No. 2.]

[All contributions, &c., should be addressed to the General Secretary, S.I.T.U., Wesley College, Madras S. W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

A PROVIDENT FUND FOR TEACHERS.*

By M.R.Ry. T. S. VENKATARAMANA AIYAR AVERGAL,
B.A., L.T., Coimbatore College.

The subject of a Provident Fund for Teachers being at this moment the question of questions with the profession, you will agree with me, I trust, that the S. I. T. U. has done well to give it the first place at this Conference; and you will hope with me that it may continue to occupy the first place at all our future deliberations, until it is solved in some way that may be favourable to our wishes. We have worked at it for several years, but for all practical purposes, we seem to stand pretty much as we were; and this is surely not as it should be. Since, however, all experience shows that repeated knocking is not without its effect, it becomes the chief part of the duty we owe ourselves to still keep on knocking, until we gain admission at last to the privileges we seek.

With this object, I propose now to briefly take stock of the efforts made and the results obtained by previous workers in this matter, and to put forward a definite suggestion or two for immediate action. The earliest efforts made in this behalf were, as you all know, the resolutions which the Educational Conference of the Madras Teachers' Guild was in the habit of passing and submitting, year after year, for the consideration of the Department. Each December, our brethren met, made a solemn "declaration of faith" that a Provident Fund was necessary for our very existence, and passed it on, along with other things, to the Director of Public Instruction, andstopped there. Nothing, of course, came of it, as, indeed, nothing could come of mere pious resolutions.

However, the promulgation of the Rules and the Grant-in-aid Code of 1905, which marked the beginning of a new era of educational zeal and efficiency, set some of us a-thinking on this point, and on new lines. It appeared to many of us

that, as the Government had seen fit to exercise a more rigorous control over aided institutions, it was nothing but fair that this increased control should be accompanied with a more liberal aid, so as to secure that greater efficiency which was, we know, the first object the Government had in view. While the work which those who have the good luck to enter Government service are called upon to do is exactly the same as that which is done in educational institutions outside the Department, it was felt unreasonable that one class of labourers alone should be specially favoured, and be admitted to the enjoyment of privileges denied to their less fortunate brethren. Naturally, every one began to ask, "Have we not done the State some service, and do not they know it?"

With these ideas in the air, the question was brought forward at the District Educational Conference of Coimbatore in July 1906, under the presidency of Mr. T. T. Logan. It was seen that the passing of pious resolutions could not help us much; but that something more practical had to be done. Accordingly, at the suggestion of Mr. Logan, a Sub-Committee was appointed to formulate a scheme and submit it to the Director of Public Instruction through the Inspector of Schools, which accordingly was done. Crude and necessarily imperfect as this scheme was, its object was rather to suggest the lines on which something more suitable might be attempted, and also to indicate that the establishment of a Provident Fund was within the range of practical politics.

It was a fortunate coincidence that Mr. T. T. Logan who, as Inspector, had supported our scheme, happened to be acting Director of Public Instruction also, when these suggestions came up for the consideration of the Department. To him, as well as to the Honourable Dr. Bourne, our thanks are due for the warm interest they have shown in pushing this matter forward.

Meanwhile, at the Madras Educational Conference in December following, we were likewise assured by His Excellency, the Governor, of the sympathy of Government towards any definite

* A paper read at the Educational Conference held at Trichinopoly on the 21st of December, 1909.

schemes that might be sent up. Mr. W. M. Theobald, Chairman of the Sub-Committee above-mentioned, who had taken a keen interest in this question and given us the benefit of his English experience, also spoke at this Conference, showing how individual institutions like the Madras Teachers' Guild, however representative and influential, could not take the initiative in a concern such as this, seeing that stronger bodies like the National Union of Teachers in England, and the London School Board had failed in their attempts to start a similar scheme in England. It was his conviction that without the strong support of Government, any scheme, however well-devised, was doomed to failure. He also argued that as teachers working in the interests of the State, we were all public servants helping in the noble cause of spread of education, and therefore, equally with those employed in the Department, we were entitled to share in some of those advantages which a liberal Government placed within the reach of its servants; that we had been too long left out in the cold; but that we had had to thank ourselves in the main for being so neglected.

The sympathy of Government was shown not long after by the deputation of Mr. J. H. Stone as a special officer to investigate and report on the subject, and to submit definite schemes for the consideration of Government. Mr. Stone travelled and gave himself the benefit of numerous conferences with the persons directly concerned, and drew up three alternative proposals, suggestive, as it were, of the points of view of the Government, the teacher, and the manager. At the first annual Conference of the S.I.T.U. which met in December last, Mr. Stone opened a discussion on this subject under the chairmanship of the Rev. James Cooling.

His first proposal was that the Fund should be managed by Government, and its benefits should lie within the reach of all teachers in recognised schools not directly under the management of Government. According to this scheme, compliance with the rules of the Fund was to be a condition of recognition of a school, and subscriptions to the Fund a condition of employment of a teacher in a recognised school. An obvious advantage of this scheme is its universality; and under it, teachers would not lose any of its benefits by transfers from one school to another. But Mr. Stone thought that it was not likely that Government would undertake the management of a Fund for the whole body of teachers in the Presidency.

His second proposal was that the establishment of Provident Funds should be left to the initiative of managers, and that Government

should only provide rules for them, and aid such Funds either by direct money grant, or indirectly by admitting managers' contributions towards the Funds as expenditure in calculating the aid admissible. But this scheme, in his opinion, was confronted with the difficulty that it did not provide for possible transfers of teachers. It is also open to the objection that Government supervision of such Funds may not be sufficiently effective. It may be argued that the Funds established at a few missionary institutions such as the Madras Christian College, are, without doubt, examples of generous enterprise, prompted by individual forethought and statesmanship, and that they answer the purpose exceedingly well. But, under the present circumstances of South India, it is not difficult to see that, even if such private funds be multiplied by State encouragement, they are not, in a majority of cases, likely to be free from several limitations and disabilities as regards their usefulness. For, the scheme postulates the giving to managers full control over their Funds, which would not always, perhaps, be the best possible arrangement to adopt, as there is some reason to fear that they may be marred by the defects of those in charge of them. No Provident Fund can possibly inspire any confidence in those who subscribe to it, if the working of it is left entirely to the caprice of an individual or his own sense of what is right and proper, however well-intentioned he may be.

The third proposal, which was a sort of compromise between the two, was to limit the scope of the proposed Fund to institutions under private management, and to establish it for groups of schools rather than for individual institutions. According to this scheme, schools were to be divided into two classes; viz, aided mission schools and aided non-mission schools. As regards the former, the missionary societies, it was thought, would have Provident Funds for their own teachers; and therefore, as regards the latter, it was proposed that, for purposes of these funds, the non-mission aided schools should be grouped into areas of two or three districts, with Inspectors of Schools as Presidents of Committees, formed in each of these groups, for their management. But an obvious objection to this scheme is that there would be a multiplicity of Funds, all varying in their character and rules, not to speak of a possible inadequacy of provision in several cases.

Since these proposals were discussed at this Conference, a whole year has passed; but no man knows how much longer it may take for us to find our long cherished wishes realised in some shape. For various reasons, the solution of this question has now become, and is daily becoming

more imperative than ever; and in order to help the Government to solve it speedily, we should once more approach them with definite ideas. We have, therefore, to consider which of the three proposals of Mr. Stone is most beneficial to us, and press its adoption on the attention of Government. I have had the advantage of consulting with three or four senior brethren in service, to whose opinion all of us must attach great weight. They are unanimous on one point, that the Fund must be started and maintained by Government; and, I take it, we are all of the same opinion.

But why Government should hesitate to undertake the management of an Educational Fund is not easy to see. As a matter of fact, they do manage a great many other Funds, for instance, their own recently-created Provident Fund for public servants, postal insurances, and the like; and it would not add greatly to their burden of responsibilities, if they undertake the management of one more Fund. So far as one can see, the only difficulty seems to be the creation of an additional establishment for its working, for which provision will have to be made in the budget. I submit that whatever additional amount may be required for this purpose is as legitimate a charge on the provincial educational allotment as any other. And, remembering that the question of a Provident Fund for teachers is, in reality life or death to the profession outside the Department, and that the Department can ill-afford to do without it or see it reduced to a chronic state of impaired efficiency, it is not too much for us to ask Government to make up their mind to undertake it, *whatever the cost*.

On another point also, I believe, we are equally unanimous, viz., the duty of private managements in this behalf. It seems to be evident from Mr. Stone's tentative scheme that manager's contribution to the Provident Fund may be *optional*. Can it be so? Gentlemen, it is clear that if Government generously agree to come forward with contributions to the Fund, I submit the least that the manager can do is to co-operate with them and pay his share of it. As a matter of fact, the Christian College management and a few others like it have long been generous enough in this respect; and the teachers working in such institutions have had their future fairly well cared for. These bodies, I have little doubt, would be glad to avail themselves of the additional advantages that their co-operation herein with Government is certain to bring to their employees. So, it only remains for others to go and do likewise; and it is high time that those who may not be willing to help or co-operate in this good work should be made to do so;—and it is not hard for the Department

to bring some gentle pressure wherever necessary, to bear upon them: As educationists, you are aware that force or moral suasion or by whatever other name you call it, has its own place in education, although it ought to be entirely secondary; and it is my humble opinion that, in the interests of sound education, Government may be justified in using it, especially when moral obligation is not found to be a sufficient incentive for action. At any rate, for the satisfactory working of any scheme of Provident Fund, it is neither equitable nor just to let the manager treat the question of his contribution to the Fund as one of his 'optional subjects.' There is, of course, the danger that what is given with one hand may be taken away with the other; but we are sure that we can help ourselves when that danger stares us in the face. If as I trust, we are agreed on the question of Government management, the third alternative of Mr. Stone need not be considered at all, though the Madras Teachers' Guild has approved of it. With due deference, however, to those responsible for this approval, I venture to think, on a fair and full consideration of the subject as a whole, that any scheme which does not imply support and management by the State, and compulsion by the Department of the manager's contribution towards it, is bound to fail sooner or later, as it did in England.

Let us, therefore, be content to gain from the experience of our brethren elsewhere, and not waste our time in making experiments on our own account.

In conclusion, I beg to place these facts and suggestions before you:—

That all our endeavours in the past to induce the authorities to start and maintain a Provident Fund having advanced the cause but little, we have still to re-affirm and emphasize the need for its establishment at an early date.

That there should be a single Fund for the whole body of teachers in the Presidency, and that one should be under Government management and control.

That so long as a teacher is employed in any recognised school within the Presidency, he should have the utmost freedom of movement, without forfeiting any of the benefits of the Fund.

That the manager's contribution to the Fund ought to be made compulsory, in justification of the aid and support rendered to it by Government.

That though the establishment of such a Fund would mean the creation of a special staff for its working, the State is in duty bound to incur the expenditure on this head, in addition to giving a

large measure of financial aid towards it. For, we have it on the authority of Professor H. R. James, Principal, Presidency College, Calcutta, that "the aims and methods of higher education in this country have been sufficiently right, and the results sufficiently good, to justify its continuance." And, therefore, to attract the best men available to the service of education, and to induce them to remain in that service ought to be—and we take it, it is—one of the chief objects of Government in its efforts to place education in this country on a better footing; if so, can there be a more likely way of attaining this object than by improving the material condition of teachers and insuring them against want and suffering in their old age, when after long years of labour they are disqualified for further work?

TEACHING OF DRAWING AND PHYSICAL TRAINING.

The introduction of a clause in the School Final Scheme making the teaching of Drawing and Physical Training compulsory in all schools will be hailed with delight by all who take an interest in the progress of education. It has been a matter of much regret that for so long no provision of this kind has been made for these subjects in our school system. Other countries have been much ahead of us in this respect. At the same time it is a very gratifying sign of the times to see the attention that is now being bestowed upon this most important branch of education by our leading educationists, and there is no doubt that before long the subjects will receive the amount of attention which they really deserve.

Drawing.

Drawing, as a class subject, may be looked at from several points of view; but it is especially valuable in teaching and training such useful qualities as order, neatness, observation and judgment. Regarded in this light, it is necessary that the method of teaching should be such as will be conducive to these results, as well as rousing the child's interest and enjoyment. With this object in view, a syllabus, extending over six years, is given below, which may be useful to teachers who are inexperienced in the teaching of the subject, and it is hoped that it may help them over a few of the difficulties encountered in the teaching of it to very young children. Some hints are also added, which may be followed with great profit.

Some general hints.—It is important that the lesson should begin punctually. The teacher should therefore prepare beforehand all materials

likely to be wanted. For example, a well-sharpened pencil is essential to make a good drawing, and it takes a considerable time to sharpen thirty or forty pencils. Never let the scholars sharpen pencils during a drawing lesson.

In telling the children what to do, be sure that they understand the meaning of the words used. A simple thing well-understood is more valuable than a more advanced thing only half-heard or comprehended. Explain the meaning of any word that seems at all difficult to a child. Let all statements be exact and clear.

The children should be told to sit upright, and should be shown how to hold their pencils, i.e., about two inches from the point. This must be constantly watched and attended to by the teacher, or the children will acquire bad habits of working.

The children should not be allowed to turn their books round when drawing, otherwise they will not gain practice in drawing lines in various directions. The books should always be kept in the same position on the desk.

For blackboard exercises in free-arm drawing, the children should be told to stand upright in front of the board so that it can be easily reached with the arms extended. They should draw with both hands, first with the left, and then with the right, and then with both hands at once. They should take it in turns to do the blackboard drawing, five or more at a time, according to the accommodation afforded by the class-room, for about five or ten minutes at a time, during the lesson, the first one commencing when the pencils are given out. A special room set apart for drawing lessons, with the wall space converted into blackboard will be a very good thing; the cost of making it is only a few rupees per 100 sq. feet and the space so converted answers our purpose much better than an ordinary blackboard.

Syllabus.

First Year Course—This course may include explanations of terms in general use, the teaching of the use of pencil, rubber and ruler, by the drawing of simple patterns, and preliminary drawings leading up to the drawing of simple common objects. Explanations of such terms as curved lines, straight lines, square, angle, right-angle, triangle and circle should be given during the year.

[Two things must be watched at the stage when the use of the ruler is taught:—

(a) That the pupils learn to carefully rule a line between any two given dots, exactly terminating in those dots.

(b) That they learn to count correctly a specified number of inches on the ruler, and to

rule a line exactly according to directions as to length.

If a *set-square* is introduced at this stage, the children will begin to make acquaintance with a remarkably useful little instrument. The 45° square is the best to use at first.

Free-hand drawing of bold curves may with advantage be here introduced.

Insist from the outset on absolute cleanliness of hands].

Second Year Course—Free-hand drawing of regular forms and curved figures: from the flat. Simple Geometrical figures, with rulers.

[No work containing small details should be given to pupils in this standard. Boldness and symmetry are to be aimed at, and to this end, large fine figures, filling an entire sheet, should alone command attention. During the early stages, the copy should be drawn on the blackboard.

One word about the india-rubber:—Insist on its being kept on the desk. It gets dirty in the warm hand.

With reference to Geometrical figures, these figures are generally given to be slightly enlarged from copies on cards. Set squares and rulers are indispensable.]

Third Year Course—Freehand from the flat. Simple scales and drawing to scale.

[The freehand drawing in this standard consists of rather more advanced work in intricate curves and symmetrical drawings. The copies set should be so constructed that the various parts into which each drawing may be divided, can be easily compared by measurement with some main line in the drawing. Always insist on the pupil ascertaining the *direction* and *destination* of any proposed line. When a line travels behind a body, in the copy, to reappear on one side, always recommend that it be sketched as if that body were transparent.

The materials that may be necessary for scale drawing are:—A ruler divided to give inches and twelfths of an inch, compasses with a pencil leg, an H pencil, a rubber, a T square and set squares. Three subjects come under the head of scale-drawing:—

i. To draw and take dimensions from a scale of feet and inches.

ii. To draw a plan or other figure on squared paper from a sketch having dimensions marked in it.

iii. To enlarge or reduce plane figures to scale.

In order to use a T square, a drawing board should also be provided. No directions are necessary, except that the paper must be pinned firmly on the board. Drawing on squared paper will, of course, come in here; the counting of

squares may be troublesome. Let them be counted by corners, not centres.]

Fourth Year Course—Freehand drawing from the flat. Drawing to be enlarged or reduced from the example. Drawing from simple rectangular and circular models, and easy common objects. Geometry.

[It is still the best method to use the blackboard freely in the earlier stages of this standard. Here we look for greater care, better finish, and absolute cleanliness. The copies should not be much more difficult than for the third year course, as the enlarging and reducing processes add materially to the former requirements.

In the subject of model-drawing, it is necessary to give the pupils an idea of some of the principles of perspective. It must be always remembered that (1) all vertical lines in the models will be represented on the paper by lines, perpendicular to its lower edge, (2) the further away a line is removed from the observer, the smaller it appears, (3) the nearer a horizontal plane approaches the eye-level, the narrower it seems to become, and (4) parallel lines, when running from the observer, seem to approach each other, and all lines parallel to the same line run towards the same point. In drawing from circular models, the chief difficulty lies in the correct representation of the circle itself, from various points of view.

The syllabus in Geometrical drawing should be:—

To divide a given line into a given number of equal parts, by trial with the dividers, and by construction.

To draw lines parallel and perpendicular to given lines, by means of set squares and by construction.

To construct an equilateral triangle on a given side.

To construct a square on a given side.

To construct an angle equal to a given angle.

To bisect a given angle.

To construct a triangle having its sides, or its sides and angles given.

In all these examples, the pupils should be encouraged to work both by construction and by the help of set square and ruler, when perpendicular or parallel lines are required. No india-rubber should be allowed. The least inexactness should be treated as a grievous error.]

Fifth Year Course—Freehand drawing from the flat. The difficulty should be increased by making larger drawings than in the fourth year course. Drawing from models of regular forms and easy common objects. Plans and elevations of plane figures and rectangular solids in simple positions, with sections.

[In the freehand drawing, the forms selected should present more freedom than in the lower standards; flowers being excellent subjects at this stage. The aptest pupils may be provided with a scrap of excellent drawing paper and a well-chosen copy. Let them take home an excellently finished specimen of their work. Such drawings hung in the class-room, serve to increase the interest taken both by parents and scholars in the subject.]

Regarding model-drawing, it is necessary that certain objects should be secured and kept at the school for practice at this stage; such as jugs of different sizes, cup, saucer, spoon, wine-glass, tumbler, flower-pot, full-bound books, large and small, &c. The children must fully understand that they have to draw things as they see them, not as they really are. The blackboard may be freely used in order to illustrate general principles, but it cannot serve to give a proper idea of the appearance of the models, inasmuch as no two boys can see them in just the same way. It is a good thing to group the models, so that not more than one object is entirely seen.

With reference to solid Geometry, it is full of interest. The teacher should provide himself with models of the solids to be represented. These models had better be in sections, fitted together by means of pegs. The boys should be provided with good paper and hard pencils for this class of drawing. The teacher should, at first, place in position the planes and small models, then work out line by line with the boys, using a large black board and instruments corresponding to those of the boys, but on a large scale. Every lesson should be carefully prepared and studied by the teacher beforehand. If practicable, the teacher should have a set of sectional models, with which to actually demonstrate the problems; failing these, a handful of putty or a few large potatoes and a sharp knife, will be found to render valuable illustrations in the matter of sections.]

Sixth Year Course:—Freehand drawing from the flat. Geometrical drawing, (alternative with "light and shade.") Plans and elevations of rectangular and circular solids, with sections. Drawing any common objects and casts of ornament in light and shade.

[Here pupils must practise freely enlargements or reductions. They must be required to produce drawings of the highest degree of finish. Such figures as are found in Dyce's Drawing book and Poynter's examples may be studied with advantage.]

The subject of Geometrical drawing in this stage is made alternative with drawing common objects in light and shade. It is a somewhat hard mat-

ter to master the technical difficulties in light and shade drawing. But it is recommended that the teacher, should, if possible, take a course of lessons in this subject at the nearest School of Art. For those who may not be favourably fixed as to such advantages, geometrical drawing is suggested as an alternative. The syllabus may consist of construction of similar triangles on a given base, describing circles to pass through given points or to touch given lines, drawing tangents to two circles, construction of regular polygons, together with their inscribed and circumscribed circles, using plain scales.]

In conclusion, it may be said, that "drawing well-taught, is the treat of the week to both scholars and teacher; it cannot be forced upon children, all powers must be bent upon proper education by abundance of aid on the one, and close imitation on the other part. Provide good examples and few. Let the same work be gone over often until the pupils begin to draw from memory. Let the general motto be—

'Here a little, and there a little,' and excellent results will reward all concerned, without any appearance of laborious addition to an already over-crowded curriculum."

[Books that may be consulted:—

- (1) Ambidextrous and Freearm Blackboard Drawing and Design—F. F. Lydon.
- (2) The Practical Handbook of Drawing—H. C. Wilcocks.]

Physical Training.

In a large number of schools, men that have had no proper training in the teaching of physical exercises have been entrusted with the work, without any supervision whatever by a specialist. The consequence naturally follows—the children, instead of receiving benefit, suffer. Even at schools where trained men are employed, they are allowed to be slack, owing to various reasons which had better be not mentioned here. I have often seen classes conducted in a manner little short of disgraceful, to say nothing of the harm that was being done. Now that the Department has emphasised the importance of the subject, it is hoped that this state of things will soon disappear. Class-masters who are often asked to be present with their classes during the periods of physical training, should realise fully their responsibility and evince greater interest than has been common hitherto. They should also bear in mind that they are not expected to allow their pupils during ordinary school-hours to sit and stand as they please. If the truth were known, half of the children of the present day who suffer from curvature of the spine and other deformities have contracted them in the school-

room, partly owing to the defective formation of the old desks and seats (which in nearly all the best schools now have been replaced by those made more on hygienic principles), but very greatly to the non-attention of the teachers, many of whom allow the children to sit in the most injurious positions.

The teaching of physical exercises should not be looked upon as an addition to school-work, but as part and parcel of it. When the exercises have been learnt correctly, whenever possible, those which are suitable should be accompanied by music. There should be a separate place for these exercises. In summer time by far the best place is in the playground; it takes a little longer time to march the pupils to the playground and back, but the extra benefit derived makes it worth all the trouble. In winter time and at other times when it is impossible to take the exercise out-doors, arrangements should be made for a special shed well-lighted and ventilated. It is not an uncommon thing in almost all schools during monsoon times that the classes are, for want of a shed of this kind, often taken in other lessons during the gymnasium period. Sometimes some weeks pass on in this manner, without any physical exercise at all. This is a most deplorable state of things and should first be remedied.

With the exception of some very good schools, I can say without fear of being contradicted that there is no definite scheme of work arranged for the whole year suited for the different standards. Exercises are taken at random, so that in a class consisting of 40 pupils, a few who have an aptitude for it get benefited in spite of the instructor, while the others are forced with disastrous results. As in every other work a well-defined syllabus is necessary here also, if there should be any real good; and the work should be rendered varied and attractive. The Teachers' Manual of Physical Exercises by F. J. Harvey outlines a scheme for a course of six years. The book is made more acceptable to teachers than most other books in the field by profuse illustrations, so that all the positions may be readily understood. As no better syllabus than what is found in this book can be drawn up, and as the scheme has been followed with great success in some schools that I have seen, teachers that are earnest about their work and heads of schools who want to have something systematic done in the subject are referred to it. Several tables of exercises are arranged for each standard, making the work interesting, by introducing a great variety of movement. To add additional variety, a table of dumb-bell and short-wand exercises, based on the free movements arranged for each standard is also given.

OBJECT TEACHING IN ELEMENTARY SCIENCE.

The object of elementary lessons in Science is two-fold: to train the observing powers and to give information. The former should be especially emphasised in the lower grades, and the two made about equally important in the higher grades.

In order to carry this out, it will be necessary to talk with the children about the objects around them in such a way as to draw out their own powers of perception and thought. The objects should be the real things themselves; if that is impossible, models should be used, or correctly coloured pictures. They should be in very large quantities to be inspected and handled by each child. In some cases it is necessary that they should be taken to pieces, dissolved, or burnt in order to make their properties evident.

The teacher should studiously avoid the use of technical terms the meaning of which is unknown to the children. In no grade should special emphasis be laid upon technical terms and classifications. If classifications are taught at all, they should be the result of observation and comparison on the part of the pupils. Aimless and irrelevant conversations should be avoided. The pupils should be encouraged to give free expression to what they see.

The following scheme is prepared for Forms 1, 2 and 3, and is suggested as a guide in the preparation of more systematic courses. It will be seen that objects have been selected from (1) Domestic group, (2) Animal group, and (3) Plant group. For a systematic and thorough treatment, at least four half-hours in the week should be devoted to it. But under the peculiar circumstances in which we are placed, two periods a week, of 45 minutes each may be considered sufficient. The lessons should be made as synthetic as possible, and should be carefully graduated, the earlier ones preparing the ground for the later ones. The reading book will, also, suggest object lessons out of the ordinary course.

Form 1.

(a) *Lessons from Common Objects*.—Soluble substances, such as sugar, rock-salt. The children should be made to examine and compare these substances. It may also be shown, by means of the evaporating dish, how sugar can be recovered from the water which holds it in solution, and how table-salt is prepared from sea-water and from brine springs. It may be explained why we cannot see bodies in solution and why raw starch makes water milky-looking. Soda, alum, and camphor (in spirits of wine) may next be

taken, with the use of soda for cleaning purposes and the making of soap from fats and soda.

Plastic substances next—(1) Clay, its chief physical properties; changes produced by baking. Uses for modelling and for making bricks, tiles, drain-pipes, pottery, &c. (2) Putty, made of crushed chalk and linseed oil; its uses to be illustrated. (3) Guttapercha; comparison of properties when cold and when warmed in hot water; articles made of guttapercha.

(b) *Lessons from plants*—Parts of a plant: roots, stems, branches, buds, leaves, flowers, fruits, seeds. Uses of these treated in the simplest possible way. Comparison of leaves; the general shape, the margin, the colour, the veins, &c.

(c) *Lessons from animals*.—The cat, the dog, the sheep, the pig.

Form 2.

(a) *Lessons from Common Objects*.—Porous substances: sponge, charcoal, blotting-paper, flannel. Their physical properties and uses. Filters; uses to be illustrated; the earth a filter; clear water from springs:

Elastic substances: india-rubber, cork, sponge; their chief physical properties and uses. The different kinds of elasticity to be illustrated by a comparison of these substances.

Adhesive substances: glue, gum, sealing-wax, mortar, cement, plaster of Paris; special uses of these bodies, to be illustrated by experiment in each case. It may be shown how sealing wax and plaster of Paris may be used for making casts.

Water: its special properties; ice and steam. Uses of water. Spring-water, rain-water, sea-water.

(b) *Lessons from plants*.—Starch: its preparation, corn-flour, sago, arrow-root; use in laundry, for stiffening calico and for making gum for postage stamps and envelopes.

Sugar: its preparation, properties and uses; sugar in fruits.

Wheat: description of the growth of the plant. The stalk, the leaves, the ear of corn. Wheaten-flour the best for making bread.

Rice: its cultivation and uses; compare with wheat.

(c) *Lessons from animals*.—The cow, the horse, the rabbit, the monkey, the mole.

Form 3.

(a) *Lessons from Common Objects*.—Some substances which burn: coal. Its properties and uses. Coal-gas: its properties and manufacture. Fire-damp. Balloons. How they rise.

Liquids: mercury, alcohol, paraffin oil. Uses. Danger in the use of paraffin oil; how to avoid it.

Gases: Air; occupies space, has weight, presses equally in all directions. Air-pump. Magdeburg hemispheres. Carbonic acid gas; how made. Animals exhale it, plants inhale it. It can be poured, it extinguishes a flame.

Metals: iron, copper, lead, tin, zinc, gold, silver.

(b) *Lessons from plants*.—Parts of a plant; parts of a flower, seeds and seedlings, plant-fibres.

(c) *Lessons from animals*.—A bird, a reptile, frog, a fish, an insect, a spider.

[Books to be consulted:—

(1) Murche's Object Lessons.

(2) Salmon's " " "]

ANNOUNCEMENTS.

I. TEACHERS' REGISTRY.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Re. 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

II. CAPITATION FEE FOR 1909-10.

The capitation fee has been fixed at eight annas for teachers in Colleges and Secondary Schools, and at two annas for Elementary teachers.

III. ELECTION OF OFFICE-BEARERS FOR 1910-11.

The affiliated associations are requested to nominate two members, one for the office of Vice-President and the other for the office of Secretary. It will be a convenience if the nominations reach the Secretary before the end of March next.

A REPORT ON THE WORK OF THE SEVERAL SECTIONS OF THE MADRAS TEACHERS' GUILD FOR THE YEAR 1909.

In the 'Memorandum,' issued last year on the formation of Teachers' Associations throughout the Presidency, it was pointed out that all Associations should have two sides, one purely pedagogic, for the improvement of methods of teaching, educational appliances, &c., and another administrative for improving the pay, status and prospects of the teacher. It was also proposed that in order to realize the first object the plan suggested at the Conference of 1907 might be adopted, viz., that teachers devoted to particular subjects should form themselves into sections and organize lectures, lessons, libraries, &c. As it is desirable for the annual conferences to take stock of the work done throughout the year in the Presidency in matters pedagogic as well as administrative, we, the Secretaries of the Madras Teachers' Guild, have great pleasure in placing before the Conference a résumé of the work done in its several sections so that, at the sectional meetings we are to have now, this report may form a basis for discussion of the various problems that may have been raised therein.

THE MATHEMATICS—SCIENCE SECTION.

This section was formed in the first term of this year with Mr. P. V. Seshu Aiyar as the Secretary and there are about 40 members on its rolls. The first meeting of the section was held on the 24th March 1909 to consider the programme of work for the year and it was agreed the following subjects were to be taken up for discussion in the year.

1. The need for one recognised order in the treatment of Geometrical truths to be opened by A. S. Kasturi Ranga Aiyar.

2. A detailed syllabus of Science for the three higher forms of our High Schools so as to cover the University syllabus, by S. Krishnamachariar.

3. A syllabus of Experimental Geometry for the lower forms and of Practical Geometry for the higher forms of our High Schools, by A. Thiruvengatatha Aiyangar.

4. Laboratory work in Science to be done by our High School students, by T. R. Sarangapani Aiyangar.

5. Approximations and contracted methods, by M. S. Dandayudhapany Aiyar.

6. A syllabus of Science for the lower forms, by A. Panchapakesa Aiyar.

7. Oral teaching and mental work in Elementary Mathematics, by S. Rajagopalachariar.

8. Correlation of the several subjects of Mathematics, by C. K. Krishna Aiyangar.

9. The use and study of Graphs in Elementary Mathematics and Science, by V. Venkata Subbiah.

10. Correlation of Mathematics with Science, by T. P. S. Nagarathnam Pillai.

11. The present defects and bad habits of High School students as regards Mathematics and the means to remedy them, by P. V. Seshu Aiyar.

12. The practicability of making of Science apparatus locally.

Of these only eight were actually taken up during the year and the following is a brief summary of the papers and the discussions thereon.

1. The need for one recognised sequence in Geometry.

The paper pre-supposed that students would have gone through a course in experimental and practical geometry before beginning a theoretical course; and the following points were urged in favour of one particular sequence. (1) It makes theoretical geometry strictly logical and very definite. (2) The numbering of propositions which facilitates references, &c., will be possible only if there be one recognised order. (3) It is a remedy to the troubles which the students going from one school to another would be subjected to, if there be no definite order recognised. (4) At public examinations embracing all the schools of the Presidency, want of one definite sequence will cause great confusion and will be prejudicial to the candidates.

The following are some of the objections raised against having one recognised sequence.

(1) It will make the study of Geometry mechanical and will not stimulate originality in the pupils.

(2) It does not allow any freedom to the teacher to develop the subject in his own way.

(3) Numerical references are not now correctly given by the students and references could be given by enunciating portions of propositions and therefore no numbering is necessary.

2. The syllabus of science for the higher forms.

The lecturer said that in drawing up the syllabus we should take into consideration the intellectual capacities of the pupils, the historical order of development of the subject, the psychological and lastly the logical order of development; and a syllabus was framed by him accordingly. The syllabus is not given here for fear of taking up too much space. The chairman in his concluding remarks said, that in teaching science we should always start with something real and occurring in every day life and this would rouse the curiosity of the students, keep them attentive and the students would go with the impression that they have learnt something very useful. It was then pointed out that a little of magnetism, electricity and light might be done in the IV form and that certain items which occur in the syllabus might be excluded, viz., laws of motion, gravitation, &c., &c.

3. A syllabus of Experimental Geometry for the three lower forms—

The syllabus is not given here for the reasons stated in the previous paragraph. At the end of the meeting, a committee was formed to prepare a detailed syllabus on the lines of the suggestions thrown out at the meeting.

4. The laboratory work to be done by the students of our High Schools.

There was a warm discussion and the main questions raised were (1) whether any laboratory work should be done at all by the students; (2) if so, whether the students of a class should all be given one and the same exercise at a time or different exercises; (3) whether the experiments should precede any tuition on the principles involved or come after such tuition; (4) whether, considering the cost and difficulty of fitting up a laboratory, it is not desirable to confine ourselves to a few experiments in each portion; (5) whether some apparatus could not be made locally at a cheap rate; (6) whether the leisure allowed to a science teacher is adequate to meet the demands of such laboratory work. There were speakers both for and against most of these points raised and in conclusion it was decided that we should do well to think about these questions, test our opinions and meet again after the

experience of a year to discuss the very same subject.

5. Approximations and contracted methods.

The opener pointed out that every measurement occurring in life is an approximation and that fact must be clearly brought home to the pupils. He gave many instances of approximations used in daily life and afterwards explained a method of contracted multiplication by writing the digits of the multiplier in the reverse order. Other speakers followed and the following points were dwelt upon (1) Examples of approximations in integers and the meaning of significant figures to be given first; (2) from the very beginning boys to be taught to multiply beginning with the highest digit of the multiplier; (3) methods of teaching how to fix the position of the decimal point in multiplication and division; (4) frequent mistakes in dealing with approximations and results in Text-books; hence the need of a thorough study of the subject and care in working problems.

6. A syllabus of science for the lower forms.

The lecturer remarked, that the ancients did not neglect the subject of object lessons in the pial schools and that the subject of geography and hygiene were taught by means of object lessons. He observed that in teaching science in the lower forms the foreign language through which it is now taught is a great obstacle and advocated that it should be taught through the medium of the vernaculars. He said that real knowledge must be imparted by appealing to nature and though some such attempt is supposed to be made by way of kindergarten, he said he was not at all satisfied with the present system of the kindergarten and object lessons which are now made mechanical and uninteresting. He advocated that science teaching by means of object lessons must be entrusted to specialists and the primary schools in one locality may be put together if necessary for the purpose. He was of opinion that object lessons must be given by taking to the class different objects belonging to all groups of knowledge viz., botany, zoology, physics, astronomy, &c., &c.

7. Oral teaching and mental work in Elementary Mathematics.

The opener remarked that by 'oral teaching' is not meant that the teacher should lecture to the students and the latter are simply to be listening but that easy and pointed oral questions should be largely employed in impressing the fundamental principles of a subject and in enabling the students to analyse and understand any problem that may be set. Though the use-

fulness of oral questioning is granted by all the teachers, of late they are not using that instrument as freely as they ought to.

Mental work in Elementary Mathematics was largely given to the students in the old days but now such work was rarely given so much so that even to do a simple question in arithmetic boys now required a slate and a pencil. Mental work cultivates the power of attention and concentration and stimulates ready resourcefulness in a student. Further, ability to work simple questions mentally will stand the future in good stead when he enters life. It is a notorious fact that the Chetty trained under our ancient system is able to calculate the interest on a certain sum for a given period mentally in a very short time, while the modern educated man is not able to do the operation in the same time even with the help of paper and pencil.

It was remarked by a subsequent speaker that this gradual dropping of mental work was due to the text-books not containing such questions and it was suggested that mental questions to be given to the students might be inserted in text-books. Of course there was a difference of opinion on the point. It was also remarked that in the primary stages mental questions should not be largely given as they would be a strain on the students.

8. The correlation of the several subjects of Elementary Mathematics.

The lecturer remarked that in passing from concrete quantities to pure numbers there is a certain amount of abstraction and to pass from particular number to the general number (say a), it is only one more step in the process of abstraction and hence that algebra may be introduced in connection with arithmetic much earlier than in the IV Form where it is now generally begun. Further, in solving questions in arithmetic as in partition and proportional parts we are even now employing algebraical methods without that name, e.g., when we say $A's = 2B's$, &c., and he advocated the use of regular algebra in such problems. Again beginners easily understand a plan and a map and the idea of a scale and he observed that geometrical diagrams may be employed with advantage as illustrations in teaching the principles about fractions. Again geometrical figures and squared paper may be freely used in square and cubic measure and graphs, a free use of which is advocated nowadays in Elementary Mathematics, graphs being nothing but geometrical representation of analytical conditions and results. Incidentally he also remarked that x, y, z ,

a, b, c need not be the only letters used in algebra and but that we may often, with advantage, use other letters as well, e.g., V for volume, A for area, v for velocity, g for gravity, &c.

One of the speakers remarked that arithmetic and algebra should also be freely used in geometry and instances where that may be profitably done were also given, viz., Euclid, I. 47, books II. and III. 14, III. 35-36, &c. &c.

Another speaker gave a note of warning to the advocates of correlation: he said that arithmetic had its own peculiar useful and instructive methods which should not be allowed to be replaced in our enthusiasm for correlation, by algebraical methods.

HISTORY—GEOGRAPHY SECTION.

The following subjects were dealt with by the Section.

I. Subject.

The teaching of special periods in history for the Matriculation of 1909.

The following questions were raised:—

(1) Is it desirable or necessary that the pupils should be taught more details in the History of (a) the Tudor period and (b) the British period?

(2) Is it necessary to teach in the class the history of the pre-Tudor and the pre-British period?

(3) Is it enough if in teaching the special periods, the University syllabus is followed?

(4) What books can be recommended for reference (a) for teachers and (b) for pupils?

With reference to question (1) the lecturer said the periods were prescribed solely with the view to lighten the burden laid on the pupils and not to make the pupils study greater details. The quality of teaching should be improved and the leading facts of history of the special period should be presented to the pupils in a better way than was possible in the previous years. Teachers ought to read occasionally extracts from original sources of history or from biographies of great historical personages and do similar things to impart better instruction.

With reference to question (2) the lecturer pointed out that it was essential, in a very general way to revise the history of the periods previous to those prescribed for special study. The first two months or six weeks might be devoted to the study of the pre-Tudor and pre-British periods. A syllabus of lessons on these periods was prepared for discussion.

With reference to question (3) it was pointed out that the University syllabus especially in English history needed amplification but that under no circumstances should the syllabus be so enlarged as to include the teaching of greater details. A syllabus amplified to meet the requirements of the University examination was prepared for discussion. A list of books of reference for teachers and pupils was prepared.

II. Subject

"Some defects in the present system of teaching history in our Secondary Schools."

The lecturer began by referring to the value of history as a subject of school curriculum and said that bad teaching was responsible for its unpopularity in the schools. The managers of schools and sometimes even Headmasters have to be taught to appreciate the importance of the subject. In the organisation of the time-table, no proper hours were given for the subject. The subject should be taught when the pupils are fresh. It was also essential that the work of History-teacher should not be too heavy. It was false economy to overwork any teacher. Time and opportunity should be given to a teacher to specialise in the teaching of his subject.

Speaking of the qualifications of the History-teacher, the lecturer pointed out that in France, Germany and other countries teachers of history were taught history for two or three years in addition to the methods of teaching. Wide reading of the latest and most authoritative books and publications on the subject would alone qualify one to be a successful history teacher. Love of pictures and capacity to make a judicious selection of them and to interpret them were also among the qualifications of a teacher. It was also desirable that the teacher must be an optimist and not a cynic. Love of truth is a necessary condition of good history-teaching. The teacher must place the facts in a graphic way before the child and leave it to him to draw his own inferences. Good imagination, capacity to narrate stories are also among the essential qualifications.

Speaking of the methods of teaching, he pointed out the difference between text-book instruction and oral instruction and said that a combination of text-book method supplemented by oral teaching would best serve the purposes of our schools.

While speaking of the subject of syllabus the difference between the concentric system and the periodic system was referred to. He showed how a concentric syllabus might be worked. Inciden-

tally the topical method was also explained. The lecturer concluded by pointing out how the system of conducting school examinations and specially the system of marking might be improved.

III. 'The teaching of Indian Geography in the Lower Secondary Forms.'

The first question raised for consideration was 'what is to be the medium of instruction?' While supporting the contention that non-language subject should be taught through the medium of the Vernacular, he referred to the objection of several teachers that the pupils' knowledge of English was deteriorating owing to History and Geography not being taught through the medium of English. He said that in recent years English composition was very much neglected owing to a variety of reasons and if both for oral and written composition, historical and geographical subjects were set, the lot of the children would be infinitely better than it was now.

The second point considered was whether in teaching the subject, the pupils should follow any text-book. At present there is no good text-book in the Vernaculars on Indian Geography. Oral teaching had its own advantages, but the impression left on the pupils' mind was vague and indefinite; so the pupils should constantly construct models and draw maps in the class-room itself. The essayist pointed out the nature of the models that could be constructed and maps drawn in the lowest forms.

By setting exercises on the study of the weather charts, rainfall tables and maps, by graphic representation of figures, re the products, the industries, and commerce of India, a good deal of interesting facts, of Indian Geography could be successfully taught.

Concerning the lines on which the Indian Geography syllabus should be prepared, it was pointed out that the teacher should be free to prepare his syllabus according to his own capacity and those of his pupils. Uniformity should not be insisted upon. He was personally in favour of a concentric syllabus for the I and II Forms and general revision with the help of some such book as Morrison's Junior Indian Geography in the III Form. He pointed out that the teaching ought to begin with the revision of the Presidency Geography. Natural divisions and not Political divisions should be the basis of study. Comparison with the conditions prevalent

in the home area is a powerful means to impart sound geographical knowledge.

Holdich's India, Vols. I and III of the Imperial Gazetteer, Blandford's India, The Chapter on India in Chisholm's Geography of India, Burma and Ceylon; The Chapter on India in Baker's British Empire (Blackie & Sons) should be constantly consulted in the preparation of the syllabus.

REPORT OF THE ENGLISH SECTION FOR 1909.

The English Section of the Guild was formed in May, 1908. The scheme for its working was determined by the report of a committee drawn up mainly by Mr. Mayhew. 16 members joined the Section at the outset. Mr. S. Gnana-muthu of the Christian College was appointed Secretary to the Section. The special subscription for membership in this Section was 6 as. per term till recently and in November, 1909, it was reduced to 4 as. per term.

During the year 1909, there were 8 meetings of the Section, of which two were held during the first term and six during the second term. The second term closes in March and the work of the Section for the official year of the Guild will be over only in March.

At these meetings, the following subjects were taken up:—

(1) How to treat 'Text-books' prescribed for non-detailed study to Matriculation boys. [A Discussion].

(2) How to distribute the Grammar Syllabus (as sketched out in the instructions to Assistant Examiners, issued by the University) over the Upper Forms of the High School. (By Mr. S. Vasudevachariar).

(3) How to deal with the Text-books for non-detailed study, with special reference to the 'Little Duke.' (By Mr. P. Subrahmanya Aiyar).

(4) A Magic Lantern Exhibition on 'Rome.' (By the Rev. W. Meston.)

(5) A Model Lesson on the Direct Method of Teaching English to the First Form (consisting of Muhammadan boys). (By Mr. G. V. Gnana-muthu, of Harris High School).

(6) A Model Lesson on Conversation to boys of the First Form. (By Mr. T. R. Ramanatha Aiyar).

(7) Model Lessons on Picture Conversation for the IV Standard and the Direct Method for the

III Standard. (At Govindappa Naick Middle School).

(8) A Lecture on Phonetics. (By Mr. K. B. Ramanatha Aiyar).

It will be seen from the programme set forth above that the work to which the Section addresses itself is such as will interest all teachers interested in English teaching. The experience of the last year has shown that the Section has a mission of its own and with greater interest and co-operation on the part of teachers may well become an eminently useful institution.

First Term. The first meeting was held on the 2nd March, 1909, when the subject of how to deal with the non-detailed portions of the Matriculation examination was fully discussed and the programme for the first session was drawn up.

In the second meeting held at the Wesley College on the 27th April, 1909, Mr. Vasudeva Chariar detailed out an elaborate and comprehensive syllabus in English Grammar for the IV, V and VI Forms. He proposed the following adjustment of the syllabus:—

(1) Etymology for Form IV.

(2) Syntax and the more irregular inflexions in Form V.

(3) Elliptical and hard points, such as the use of 'should and would,' the subjunctive mood, for Form VI.

The syllabus was being actually worked in the Wesley College, Royapetta. The lecturer said at least two hours should be devoted to the teaching of formal Grammar in each of the higher forms. He laid special emphasis on Analysis and was for giving it a prominent place in the Grammar syllabus. In the discussion that followed, the following points were raised:—(1) Mr. Gnana-muthu thought that 2 hours a week was too much for formal grammar; (2) Mr. Narayana Aiyangar was of opinion that grammar lessons should go hand in hand with language lessons; (3) Mr. Subrahmanya Aiyar thought that analysis did not require the special and separate treatment claimed for it by the lecturer.

Second Session. The third meeting was held at Pachaiyappa's College on the 29th July when Mr. P. Subrahmanya Aiyar delivered a carefully prepared address on 'The Little Duke,' a portion for the non-detailed study. He insisted that some provision should be made in the time-table for guiding students in the study of

texts for non-detailed study and observed that the study could be helped:—

(1) By Charts carefully prepared by the masters and exhibited in the class—

(a) Calling the attention of pupils to the study of the main incidents and episodes in the story;

(b) giving an account of the characters as they are evolved in the course of study.

(2) By what may be termed 'Laboratory work'—by providing boys with a well-equipped consulting room with books for reference and study.

(3) By means of Society work, i.e., by inter-scholastic debates.

(4) By graduated exercises in composition, reproducing all points of note and value in the books set for non-detailed study.

The fourth meeting was a largely attended one (over 60 members were present), held at the New Buildings of the Christian College on the 24th of September. The Rev. W. Meaton delivered a very interesting lecture on Rome with the aid of a Magic Lantern. He showed the members the various places of historic interest and inspiration in Rome and the views presented by the lecturer gave those present a very vivid idea of the Forum that echoed to the periods of Cicero, the scenes that witnessed the triumphs of the Caesar and many other scenes rich with the memories of the past.

The next three meetings were those in which Model Lessons were conducted. The model lessons were very popular and more work in this direction especially for the Higher Forms is clearly a need. The first Model Lesson was given by Mr. G. V. Gnanamuthu of Harris High School. His lesson was 'Half the Profit' and was with Muhammadan boys of the First Form, whose mother-tongue the Headmaster did not know. The whole lesson had therefore to be conducted through the medium of English. The following devices employed by the teacher deserve mention:—

(1) The eliciting of the meaning of words by means of illustrations was excellent.

(2) Leading the boys from words, known to words, unknown and difficult, was cleverly managed.

(3) Questioning boys in English sometimes proved difficult and did not yield satisfactory results and involved great expenditure of time.

From point 3, the inference was irresistible that a judicious and seasonable use of the ver-

nacular would not come amiss even in lessons on the Direct Method and would not impair one's loyalty to the Direct Method. One of the striking features in connection with the visit of the Section to the school was this: the members went round the school, saw classes at work, studied the syllabus. A graduate Assistant gives an hour or two a week to teaching Conversation in the lower standards.

The lesson on the whole beautifully exemplified the efficiency of the Direct Method.

On the 13th November, Mr. T. R. Ramanatha Aiyar conducted a Conversation with the First Form boys in his school on "The Various Conveyances in the City of Madras." The points to notice about the lesson are as follows:—

(1) The drawings illustrative of the tram-car, motor-car, bicycle, etc. on the board were done all by the boys, with the aid of the class-master.

(2) Some correct sentences were elicited from the boys, and they were ordered to take them down in their Exercise-books.

(3) Several members of the Guild present took part in the lesson and emphasised their respective points.

The third Model Lesson was on the 20th of November. It was given under the able direction of Mr. Ramanujachariar, Headmaster of the Govindappa Naick School. The Headmaster is an enthusiastic believer in the Direct Method and a warm advocate of it. On this occasion more than 30 teachers were present. Two lessons were conducted: one Conversation Lesson to Standard II, directly based on objects presented to the class; another Picture Lesson to Standard IV, direct from a Picture, representing 2 girls, a tree, fruit and a cat.

The following points in the lessons deserve prominent notice:—

Insistence on children answering in complete sentences was a prominent feature of the teacher's method.

The first lesson was with children who had not studied the alphabet, and yet they were able to answer questions in good English with the help of objects in front of them. The refreshing feature about the lesson was the master has intense faith in his method and the children responded to his zeal with enthusiasm. One of the boys took up the lesson and took his class through a vigorous drill in questioning and made the lesson very lively.

In the next lessons: (1) The exercises in sen-

tence-building. (2) The synthesis of simple sentences. (3) The correct use of prepositions, were all beautifully managed.

The eighth meeting was on the 8th of December and held at the Wesley College. Mr. K. B. Ramanatha Aiyar delivered a very interesting lecture on Phonetic Spelling: Vowels and Consonants.

Mr. Ramanatha Aiyar in the course of his address remarked that the importance of correct pronunciation could not be overrated and that although no one person or dictionary could be accepted as the standard, we should accept some standard lest we should become eccentric in our pronunciation. Then he illustrated his subject by numerous examples written on the board and pointed out how phoneticians arrived at 72 vowel sounds of which he took up for explanation only 36 sounds. He skilfully carried the audience with him, though the subject was a technical one and made the members realise the need of the study of Phonetics.

A BUSINESS SIDE FOR THE MADRAS TEACHERS' GUILD.*

My thanks are due to the Secretaries of the Guild for the opportunity they have given me to meet you all to-day and convey to you a message from such of your brethren as are interested in the welfare and progress of the institution. But at the same time I cannot overcome the idea that I find myself called upon to perform a function which wiser heads can attempt with greater success than myself. Though many of you are my friends and colleagues, still it is more than significant that this is the first time I meet you as the members of the Guild whose noble mission is to promote an *esprit-de-corps* amongst its members and to draw more and more within its widening range the pedagogues of this part of the country. The proposed formation of Teachers' Associations in the various parts of the Presidency and the organisation of the South India Teachers' Union are fraught with infinite possibilities and fill the bosoms of many of us with hope for the future. It is also gratifying to see that the institution of a Provident Fund for Teachers which has been exercising your minds since the time of the late Rev. Mr. Kellett is now nearer the goal of realisation than ever.

Thus as the noble aims of the Guild are realised one after another, it is bound in the long run to contribute to the advancement of the teaching

* An Address by Mr. T. S. Subramaniya Aiyar, M.A., L.T.

fraternity as a whole. But no institution can gather much vitality and realise its aims however laudable which does not sooner or later make its resources permanent in their character. Any one who peruses the successive reports of the Guild cannot but be impressed with the poverty of its material resources. Not a year passes without a plaintive comment on its slender resources. So in your solicitude for mere ideals and principles it is not meet that the most profitable and legitimate lines of activity should be ignored by those interested in the onward progress of this very useful institution.

It may be that those who have been wholeheartedly working in the cause of the Guild attribute the poverty of its resources to the deplorable lack of enthusiasm and to the absence of co-operation on the part of those who have thought fit to stand aloof from this organisation. If so, I must myself plead guilty to the charge. But the sight of numerous kindred souls about me makes me rather curious to know if the Guild is after all pursuing any lines of useful work in which all teachers whatever their grade, capacity or temperament can effectively co-operate. Even my discussions with my friends on this point have not dispelled this doubt from my mind. On the other hand there seems to be a remarkable consensus of opinion regarding the scope and method of work that ought to characterise this institution.

So in consultation with many teachers occupying responsible positions in many schools of this Presidency, I now approach you with a scheme of work calculated to improve the material status and the popularity of the Guild in no small measure. As indicated by me already I am now conveying to you a message from those who, though outside your society, have its welfare at heart quite as much as yourself and I shall leave it to you to judge of its merits and demerits.

It seems clear to you as it is to me that so long as the Guild does not rise above the level of a mere debating society for teachers it may not succeed in interesting all the members of the profession from the Elementary schoolmaster to the dons of our colleges and much less in ensuring their effective co-operation. In these days of specialisation and water-tight compartments in the scheme of education, we can name hardly a dozen subjects that can interest all teachers alike. Nor can we conceive of any other tie or common pursuit that can bind them together. You seem to have realised the difficulty yourself and succeeded in dividing the Guild into various sections for the consideration and dis-

discussion of different topics. But this division into sections and sub-sections is least calculated to promote the primary aim of the institution, namely the ensuring of a healthy *esprit-de-corps* among its members. Unless the teachers are made to realise that they have something to gain by joining it, that they have much to lose by leaving it and that they have a stake in the concern, there is, I am afraid, no prospect of their hearty co-operation with the few that are so solicitous of its progress and welfare. Now I am quite conscious that it is neither edifying to you nor pleasant to me that I should sound a discordant note and mar the mirth of the evening by dwelling too much upon the work which still lies before you without giving you credit for your past achievements. But it is the success that has attended your efforts in the past that prompts me to indicate a new line of activity for ensuring the mutual help and advancement of teachers as a whole.

It was just a year ago that some teachers in Madras felt the necessity of an educational society not so much for the discussion of educational topics as for the carrying on of such business or work as may be helpful to the teachers and their profession as a whole. At one time or other many of us have felt very badly the need of a common organ for the profession, a press for educational publications, an indigenous workshop for the manufacture of school appliances and apparatus and a common place of resort for the members of our calling. You cannot deny that these are the most effective means of bringing about a healthy *esprit-de-corps* among teachers as a class. There are many who even assert that these are better calculated to promote sympathy, good understanding, self-respect and business habits than mere academical discussions on the principles and methods of teaching. So the few to whom the idea suggested itself were not slow to formulate a scheme for the formation of an institution with a purely business basis and to submit the proposal for consideration before a meeting of teachers from the various parts of the Presidency during the last Xmas season. It may interest you to know that this meeting was presided over by your enlightened Secretary, Mr. K. B. Ramanatha Aiyar. The general tenor of the discussions at the meeting pointed to the necessity and the possibility of such an institution in our midst. At the same meeting some of us were authorised to formulate a workable scheme and issue circulars to the teachers in the various parts of the Presidency. The enthusiasm for the cause did not evaporate

soon after the event. The scheme was thought out and a shape was given to it by those who were authorised by the Xmas meeting to do so.

But at this stage a doubt arose in the minds of some of us whether we were after all wise in trying to organise a new institution to advance the common interests of teachers without building upon the existing organisations such as yours. It was therefore thought desirable to approach you with the scheme and to gauge your attitude before giving further publicity to it. The idea of discovering to you legitimate and profitable lines of activity is infinitely more pleasing to me than the setting up of an institution in rivalry to yours and I am convinced that it is your duty and your interest to give every consideration to the proposal that will be presently explained to you.

Briefly put, the scheme is this. Our idea is to organise a society composed of teachers in this Presidency for carrying on all business connected with education and to apply the profits thereof to the advancement of the interests of teachers as a class. The membership of the society is to be open only to those who are actually engaged in the work of education and also to those who having retired from the work of education have not taken up any other profession. The objects of the society shall be—

(1) the establishment of an institute where all educational appliances, books, maps, scientific apparatus, etc., are to be stocked for exhibition and sale to members and others as well.

(2) The establishment of a printing press for printing examination papers, school forms and registers, books and school magazines for its members and others as well.

(3) The formation of a manufactory or workshop for making school furniture and scientific apparatus of a simple character.

(4) The starting of a journal or journals of a purely educational character in the interests of schools and teachers.

(5) And the holding of periodical conferences of those interested in education for discussing educational questions and for the carrying on of such other work as may be conducive to the fulfilment of the above objects as the establishment of a library, a museum, a loan collection of lantern slides, projection apparatus and such other educational appliances as funds permit.

When these objects are being narrated, some of you, I am afraid, might have almost begun to doubt if I am now in the region of possibilities

or dreams. Though there can be no two opinions regarding the utility of the objects referred to above, the possibility and method of attaining them are points that require some explanation. Our idea is not to coax a Rajah or a Zamindar into subsidising the concern with a munificent gift and much less to send the hat round for the collection of doles. Nor shall we come out with a blatant prospectus printed in three colours to tap the public. The society is to be conducted on pure business lines and reared on three fundamental principles. The first principle is that all the capital shall come from the members alone on the mere guarantee of an interest fixed by the management. Secondly, that the members shall have no claim individually for any share in the profits except the guaranteed interest and that all the net profits shall be applied to the attainment of the above-mentioned objects. Thirdly, that all transactions shall be for cash paid and a bonus be given on purchases also. If you bear in mind these three fundamental principles, you can easily understand how the necessary capital can be raised and applied. It has been suggested that the capital of the concern shall be composed of contributions from those interested in education, loans raised temporarily from members and profits of all the business done by the society. Perhaps some one may at once ask me if sufficient capital can be raised from these sources. I may tell you, gentlemen, that those who have the scheme in view have no faith in large capitals and in institutions suddenly called into existence with all the external trappings of longstanding concerns. Successful institutions have to grow step by step from small beginnings and we have also to grow equal to them. So we cannot hope to realise all the objects referred to by me in a remarkably short period. It may be at the beginning we are able to collect only a small sum from the few teachers who are enthusiastic enough to join the cause. We may at once start a book-depot with the sum available. As the concern becomes more and more prosperous it is bound to gather more popularity and enhance the funds available for the realisation of the other objects in view. So what I attempt to make out is that it is not capital that is wanted so badly amongst us as organisation and combination for the furtherance of our joint interests, whether social or professional.

To put the case in a concrete form, let us suppose that we succeed in securing the co-operation of 50 teachers in this city and that each teacher is prepared to become a member and advance a loan of Rs. 20 at $4\frac{1}{2}$ per cent. interest

to the society. Then the capital of the concern comes to Rs. 1000. With this amount a book-stall in modest dimensions may well be started in the city and any one who has an insight into the book-trade can say if the operations at the end of the year will not result in the formation of a corpus for the society after making a liberal deduction for the establishment and the guaranteed interest to the members. The success of the central depot will lead to the establishment of branch depôts and we can think of the printing press when these are able to enhance the corpus fairly well. We cannot lose sight of the educational magazines when we have the printing press and there may also come a time when we shall make bold to start the factory for educational appliances. So without making heavy demands upon the slender resources of teachers, a thriving business can be set on foot and its growing profits applied to the betterment of teachers as a class. On one point at least you and I cannot disagree i.e., in the painful realisation that the teacher is a man of limited and small means. So he ought to pursue the same methods by which men of limited means all the world over have successfully bettered themselves morally and materially. If teachers are not able to help themselves by putting their resources together, however slender they may be, I cannot bring myself to think that their salvation can be wrought by any external agency howsoever philanthropic it may be. As it is found that the teacher will not help himself and as he prefaces almost every oration of his with the hackneyed statement that his is the sorriest of trades, it has become now rather a fashion with people richly placed in life to pity the schoolmaster and to make a show of solving the mysterious problem of his eternal poverty, which is bound to continue as far from solution as ever. So it may be safely said that no scheme of emancipation in which the teacher himself does not put his shoulder to the wheel can do any permanent good to him.

If I have dwelt upon this point at some length, it is merely to show the moral and material advantages that are bound to flow from the development of a business side to the Guild. Nothing need be foreign to your province which is calculated to improve the class of teachers as a whole. But some may cavil at the very idea of a business side to your concern. In our midst unfortunately, there are not many who look with favour upon business. On the other hand many may even go the length of saying that the immaculate character of the noblest of all professions is likely to be sullied by the common-

place vulgarities of the shop and the market. It must be said that all these objections are the outcome of looking at the whole question from a wrong perspective. First of all there is no trade or pursuit inherently and fundamentally dishonourable in the world and I have no hesitation in saying that honest trade is a very honourable pursuit and at least better than a profession, however noble it may be, devoid of enthusiasm or ambition. Secondly, is it not a fact patent to you all that the teacher is to a large extent responsible for the exploitation of the society by the printer, the publisher, the book-seller, the journalist, the stationer and several others? If it is perfectly legitimate that decent fortunes can be made by such exploitation, is it improper or immoral for teachers as a class to intercept a portion of the profits that it may be applied to the betterment of their calling and to set a noble example for their brethren by doing honest trade only in those wares that are indispensable for the pursuit of their profession? Moreover is it not the duty of us all to bring into existence a journal for provoking and focussing educational thought in this part of the country—a journal owned and conducted by teachers themselves? Is it not an awful but eloquent comment on our lethargy and want of zeal for our calling that the only educational monthlies in this part of the country are those conducted by book-sellers—of course in their own interest? The articles are contributed by teachers in most cases gratuitously, the advertisements pay and get paid, the popularity of the book-seller is established at the expense of his customers, and it is the teacher again that has to purchase his journal. Thus though you see the hand of the teacher in every line of the journal, still every pie of it goes into the coffers of the book-sellers. Moreover in the very nature of things, can such journals have a policy of their own or any traditions that can be perpetuated? Perhaps you may think that I am hypercritical. But I solicit a reply as to how far such journals can be of service to our profession. I am behind no one in this hall in my appreciation of the business instincts of the book-sellers that conduct them. But may I not at the same time entertain a doubt as to how far we are wise in relegating to them the work and the responsibility that ought to be ours? Lastly is it not high time that we should wean ourselves from our ancient prejudice against useful business, joint enterprise and honest trade? We have only to look about us and see how individuals and nations have become great and useful. It is not the controversy of free will and necessity that has made for their greatness. Nor

is it the theory of transubstantiation or the Bagavad Gita. It is business conducted on our enlightened principles. So I hope that it is the development of a business side to the Guild alone that can improve its resources and place it on a stable and useful basis.

I should like to communicate to you one other point in the scheme, without taking up more of your time with these common place arguments. According to the scheme one-fourth of the profits is to be distributed as bonus to purchasers rateably on the purchase and the remainder is to be added to the corpus of the institution. So the members are to get nothing but the bare interest on their loans to the society. If they gain anything, they gain only collectively and not individually. This commendable feature distinguishes it from joint stock concerns and removes the odium attaching to capitalist organisations. In this aspect the business that is contemplated falls into line with the general trend of modern collectivist ideals. In the scheme, moreover, the purchaser enters into partnership with the institution for the profits. Lastly, the scrupulous adhesion to the cash payment system is bound to reduce the risks of trade to a minimum.

Thus I have indicated to you the general principles on which a business side to the Guild can be developed without detriment to its other aspects of activity. This is not the time or the place to expatiate upon the details of management or control. If you exercise your minds over the general principles and come to a settlement with regard to the form of initiation, then it may not be difficult to work out the other details. This evening I have merely endeavoured to impress upon you that in the interest of the Guild and of the teaching profession you cannot afford to ignore the development of a business so congenial and at the same time so profitable. Without sinews of war no steady progress can be ensured. If there has been any lack of progress in the operations of the Guild or the enthusiasm of its members or non-members it is solely due to the precarious character of its resources. Although it is now 15 years since the inception of the Guild, you have not even dreamt of the housing problem, i.e., of providing a habitation for the Guild. It is not very edifying to be told that your library and reading-room, if any, have been migrating from place to place owing to causes which are too apparent to need any comment. Moreover is it conducive to the self-respect of your members to be asked to make periodical pilgrimages to various temples of

learning in this city of distances to run the risk of being looked upon and treated as strangers by the sentinel at the gates? These are all grim realities that are bound to face you at every stage and that are likely to impede your progress in all directions. No institution can be said to be organic or permanent which has to depend solely upon donations, subscriptions and doles. If it is not organic it cannot have any vitality of its own. But if you by design or accident direct the enthusiasm of your members into a line of activity in which they clearly see the gain to the profession, you will succeed in galvanising the society into a new life altogether. Whatever appears impossible now will become easy of attainment under the new conditions.

So in the hope that some form of congenial business carried on collectively will enable you to face these problems with a stout and hopeful heart and do for the society what it has done for every other concern, the promulgators of the scheme permitted me to disclose it to you and ascertain your views thereon. I am sure it will commend itself to you. If it does not, the failure should be attributed not to the inherent unworthiness of the scheme but to my bad advocacy thereof. Some of us honestly are of opinion that the scheme is not a mere fad, and that it is worthy of the most earnest consideration at your hands. For it is clear as day-light that your further progress depends entirely upon the development of your material resources. This is not ensured by the time-honoured method of begging. So if you but make an experiment and see if you can profit by the scheme chalked out, you will save the society from the fate that has befallen most other societies started in our midst. Significantly enough most of our societies are of the same mould. They are generally started with a flourish of trumpets with the usual paraphernalia of Presidents, Vice-Presidents, Joint Secretaries, Honorary Members and sub-sections out of all proportion to the number of members. The one invariable method of financing is to send the hat round for doles and subscriptions. The sum thus laboriously collected is hardly enough to maintain a peon, to supply the pen and ink to the Secretary and to print the annual report. Still the year cannot see its end without the tamash of an annual meeting or a social gathering for which the time-honoured method is resorted to once again by the indefati-

gable Secretary. So the buoyancy and the glee of the operators at the social function is not the outcome of inflated funds, but the result of a happy unconsciousness thereof. Moreover in these societies there is absolutely no spirit of real hearty co-operation and even the sorry task of mendicancy falls upon the Secretary exclusively. This is the life history of almost all our institutions too well-known to you and I do not wish to dwell more upon this topic lest I should lay myself open to the charge of cynicism.

But if you abandon the old rut and try to chalk out a new line, you are bound to place the society on a more stable and honourable footing. So by developing the business-side, mendicancy becomes a thing of the past and your business methods are bound to commend themselves to teachers and induce them of their own accord to invest their small funds in the concern. Gradually by building up a congenial trade not only in this city but also in the mofussil, you can bring into existence a capital that can be applied to the realisation of all the objects that the Guild has in view, without making any demand from its members for the common benefits thus afforded. The business-side has immense possibilities before it and I only request the Guild not to ignore it completely. It is the inception that is most difficult. When once the business is set on foot, it will not be in your power to arrest its onward progress. So I look forward to a time when the funds of the society carefully secured and discreetly applied will provide you with a habitation of your own under whose roof you can meet, discuss and disport. I look forward to a time when you will no longer be satisfied with a juvenile library of complimentary volumes so graciously presented by enterprising firms, but will succeed in stocking high class volumes on the principles and methods of teaching and on literature generally for the edification of the members. I look forward to a time when your educational monthly will become a source of inspiration to all the toilers in our line, and your press will supply the market with the most acceptable publications for the student and the teacher. It is no idle dream that these will enable you to think of other and more useful channels of activity and that your success therein will be the strongest tie that will bind the whole community together and inaugurate a millennium for the Guild.

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THE FINDINGS OF THE MATRICULATION FAILURE COMMITTEE.*

The report is a very interesting and instructive paper. Its chief characteristics are, besides straightforwardness and thoroughness, mercilessness towards the shortcomings of everyone and everything connected with the examination, and sympathy, though restrained in expression yet sincere, for the disappointed candidate and teacher. The report seemed to me beyond criticism. I was mistaken. In one of the Madras dailies, received here in Trichy this morning, there is a column of adverse criticism. I will not give it any attention; I take it to be only one more instance of the epidemic itch for fault-finding which afflicts the writers and speakers of the day. The findings of the Committee embodied in this report have had a very salutary effect in opening minds to the evils of the system under which the Matriculation Examination was held, and in securing all votes for the School-leaving Certificate.

The remarks I am about to make, will probably be of little use, for the Matriculation examination which has just been held, is practically the last. Besides, you have, I am sure, studied this report yourselves, and formed your own opinions and drawn your own inferences. However, as my name is on the programme, I must proceed.

The most important sections in the report are, I think, the sections under the heading, "Character of the papers set," 55 and 56, page 15. They are important not so much for what they say, as for what they imply. They say:—(1) "It is very doubtful whether the papers set in recent years make a larger demand on the knowledge of the candidates than did those of twenty years ago.

* An address delivered by the Rev. Father H. J. Quinn, S.J., at the Educational Conference held in December last, at Trichinopoly. He spoke from brief incomplete notes on various important points raised in the report. The following fairly represents the drift of thought on one of them which he considered to be the most important.

They may be, and they probably are, a severer test of real ability and of intelligent teaching." (2) "It has been brought out in the inquiry that the examiners though insisting in the science papers on a considerable degree of accuracy of thought and statement are satisfied with much simpler answers than the teachers and candidates seem to have expected." These statements imply that boys are capable of showing ability and the result of intelligent teaching by means of answers accurate in thought and accurate in expression. Now, after much thinking,—and I admit of course that the quantity has nothing to do with the quality of the thinking;—after as careful thinking as I am capable of, my conclusion is that this implied supposition would be by itself, without the other causes enumerated in the report, a quite sufficient cause for the failure of the Matriculation examination. Accuracy of thought and expression is the final result of education; it is the sign that education had been completed and that the mind has been sufficiently trained for independent acquisition of knowledge and independent thinking. It should not be made at any intermediate stage of the educational course, the criterion of ability or of intelligent teaching.

A few of Mr. Black's general remarks on boys and their work will illustrate my point. "All boys are more or less inaccurate, because they are boys; boyishness of mind means inaccuracy. Boys cannot deliver a message, or execute an order, or relate an occurrence without a blunder. They do not rouse up their attention, and reflect: they do not like the trouble of it: they cannot look at anything steadily; and when they attempt to write off, they go into a rigmarole of words,"..... Three-fourths of this rigmarole are gropings after the thought and its expression, the remaining one-fourth an inaccurate expression of the thought,..... "A really clever youth, especially as his mind opens, is impatient of this defect of mind, even though, as being a youth, he is partially under its influence..... He will often show at disadvantage, and seem ignorant and stupid from seeing more,

and having a clearer perception of things than another has.....A thoughtful youth may deliver himself clumsily, he may set down a little, but depend upon it, his half-sentences will be worth more than the folio sheet of another boy, and an experienced examiner will see it."

This is all very true; any one who has had experience in the school-room will endorse it. I am inclined to go further. I have a very positive dislike for the phenomenal boy of fifteen or sixteen who can round off a short, terse, accurate answer even on the subject he knows best. Such answers are signs of arrested development. I suppose most school masters have observed that the precocious youth in the lower forms, is not generally the first in the higher forms; he usually makes a poor show in the College. The old sayings are still true:—"a man at sixteen will be a child at sixty," and "boys never learn anything who understand everything too soon"

I have said, I think, enough for my conclusion to be clear.

I admit that, given the ever-growing numbers of the candidates for examination, and the necessity of calling in the help of assistant examiners and of securing some degree of uniformity in valuing papers, some standard or principle for awarding mark must be determined. Accuracy of thought and expression is about the best. It has only one defect. It supposes we are dealing with men, not with boys; or with boys whose education is in its last stage, not with boys whose education has just reached an intermediate stage. Let accuracy of thought and expression be by all means the constant aim of the teacher; his work should be to exercise his pupils in accurately thinking out and expressing the little that they know, rather than to communicate knowledge. But then, the examiner's work should be to discover in the clumsy, inaccurate, blundering half-answers, which are all he has a right to expect from a boy; always excepted the precocious youth of fifteen and the boy judiciously crammed with answers to expected questions; what indications there may be of knowledge, and especially of incipient power to reflect and to fix attention. He will often give good marks for answers that scarcely touch the question. One of the hardest things for a boy is to look steadily at a question, and to take it in. Any word strikes him and off he goes with it, heedless of the rest and of its bearing in the question. Fifty per cent. of well-trained boys make this blunder in some question or other in every paper; they cannot help it, because they are boys. Many an answer is wrong, not because the boy does not

know the right answer, but because he is so pre-occupied with the answer that he has no time to stop and think about the question. If in the ramblings which he calls an answer, he shows knowledge and aptitude for consecutive thinking, it would be cruel to refuse him marks; it would be to punish him for being a boy. It is one thing to value the paper, another to examine the boy who wrote it. The paper is worthless; of course it is; it is a boy's paper. The experienced examiner, however, will be able to see behind the half-sentence or in the rigmarole of words whether there is, or is not, knowledge and talent.

Of course, it might be objected that accuracy should be secured in the school, and should appear in the examination answer-books. I can only answer that this is not my view. My view is that a boy who shows "a considerable degree of accuracy of thought and expression," whether in his science paper, or any other paper, should be declared either incapable of further development, or else exempted from producing an attendance certificate at his degree examination; he is quite ready for independent study; his training is over; all a professor could do for him would be to share his knowledge with him. I have not met any undergraduate who had been trained to this degree of accuracy in the school department; the students I have known have all been very much in need of further training in accuracy of thought and expression.

Again, it might be urged that accuracy was insisted on only by the examiners in sciences, whereas I have supposed all examiners to require it. I do yearly think that all the examiners have required it. We have been told that the papers may be, and probably are, a severer test of ability and of intelligent teaching. Such a test would, I think, reveal either the accuracy of the knowledge communicated, or developing aptitudes for, or formed habits of, attention and consecutive thinking. I grant at once that owing to the neglect of our lower forms, of which I shall speak just now, some 50% above of our high-school boys have been hopelessly ruined. I grant also that there are defects in our teachers and in our teaching which accounts for, say, 15% of the failures. But having granted so much, I think that of those who appear for examination from 30 to 40% ought to pass, and that a good number deserve to be placed in the first class. A certain number of our schools are as efficient as trained teachers, generous expense, and devotedness can make them; the schools are not generally in fault. Inefficient valuation of

REPORTS OF AFFILIATED ASSOCIATIONS.

THE MADRAS TEACHERS' GUILD.

"HOW THE SCHOOL-LEAVING CERTIFICATE SCHEME IS BEING WORKED IN MADRAS."

At an extremely interesting and well-attended meeting of the Guild held on Friday, the 25th February, at the Pachaiyappa's College, there was a very lively discussion on the above-subject. Over 70 members of the Guild were present. Among the visitors were Father Vandenberg, Miss Linwood, Miss Platell, Miss Paul and a few others. The Headmasters of nearly all the High Schools in Madras were present.

School-work how assessed.—The Rev. William Meston of the Christian College opened the subject and made highly suggestive and valuable remarks. He said that at the Teachers' meetings in the College they considered the various ways in which the value of school-work should be assessed. They proposed to keep a regular record of the questioning done in the class and assign values to individual answers; care was taken however to see that each boy in the class had his turn and the same number of turns as his class-fellows. The map-drawing work and practical science work were also similarly valued and the progress of pupils ascertained and recorded fortnight by fortnight. At the end of the month, the whole school-work was to be represented in a percentage.

How correlated with examinations.—He took up the question of correlating this kind of work with actual terminal examinations and observed that these would become far less oppressive in the future: that class-work would count for two-thirds, and examination work, only a third. He mentioned that in School-leaving Certificate, the average obtained by the class for the term would find mention. He explained that under the new scheme, the whole school work should count and not merely detached or spasmodic strokes of work. He pointed out that we are now at the parting of the ways and that the IV and VI Forms would be rather severely affected and that any changes made should come in gradually and not abruptly.

Specialisation at what stage.—He was of opinion that the foundation for V and VI Form works should be laid in the IV and that therefore no difference should be made between boy and boy in the IV Form. All boys there did the subjects

the papers is undoubtedly one of the causes of the failure, not only owing to the large number of candidates, but also, and I think especially, owing to the wrongly applied principle of accuracy in thought and expression. We teachers classify our candidates into first class and second class boys, but we can never tell who will pass and who will fail in the public examination, and the examination results place almost all those who pass on the "verge of failure." Whatever be the principle or standard for awarding marks, it fails to distinguish talent from mediocrity. If it is accuracy in thought and expression, as I believe the report suggests, we have no reason for surprise, for the best talented boy is capable of inaccuracies as gross as the least talented. As regards accuracy they are fairly matched; the one will miss the point of the question as infallibly as the other.

Very many, I know, insist that a good knowledge of English is necessary for successful work in the College department. It is very true that success in the College depends very largely on language and that our undergraduates are very deficient. The report very wisely recommends that high schools should be advised to make the acquisition of English their main object. I contend, however, that a boy's paper may, in spite of its containing very huge boyish blunders, confused and misapplied idioms, mixed, incomplete or incongruous metaphors, improperly used words together with very much rambling away from the subject, bear evidence of a large stock of words and facility to use them, of fairly correct grammar, of some power to think out a subject and to connect sentences into a fairly consecutive exposition of a complex thought; and I contend also that these qualities more than redeem any number of boyish blunders and inaccuracies. My whole contention is against the tendency, which the report admits, and the results of the examination prove to exist, namely, to exact a considerable degree of accuracy from boys.

It might, finally, be urged that perhaps I have overstated the case. I will not be troubled by the charge of over statement, if I have made it plain that while accuracy of thought and expression should be the aim of the teacher's work, the examiner should not expect it in answers written by boys, and that he should in spite of its absence be able to award marks to the deserving and to distinguish between talent and mediocrity.

in Group A and B with Geometry, Algebra and English History as well. The ground in the two histories should be covered in this class, but all the matter should be put in a graphic and biographical manner. The various courses should be self-contained at this stage.

In Form 5—

Grouping how effected.—Group I, (i.e.) Advanced Mathematics and Physics—is intended to fit pupils for Groups I or II of the Intermediate Course.

Group II, (i.e.) History and Physics and Chemistry to qualify for Groups II or III of the Intermediate; while Group III, History of England and Book-keeping or Precise-writing would fit a pupil for a commercial career.

In the VI Form, one section works at Advanced Mathematics and another at English History; no commercial subjects have been taken up in the VI Form this year. All boys took up Physics and Chemistry as under Group C but that is a purely tentative arrangement.

The teachers felt a sense of relief under the new course of studies and the boys evince a keen interest in the work under these new conditions.

Mr. V. Venkatasubbayya of the Pachaiyappa's was the next speaker. He pointed out that the Matriculation Examination of Madras stood condemned when put by the side of the entrance examination of other Indian Universities where 60 % of the boys came out successful and that it had a serious limitation inasmuch as it did not lead up to Government service. The School-leaving Certificate had a double advantage and was therefore found to be popular. He said that in his College they paid special attention to composition and that special tutors have been appointed for the IV and V Forms to improve and facilitate composition work. Vernacular composition was divided between graduate assistants and the pundits; the former supplying matter and method and the latter regulating style and language. In translation, they did vernaculars into English and gave two periods to it. The Syllabus for Elementary Mathematics has been framed so as to take in:—Arithmetic, Practical Geometry, Results of Mensuration, Elementary Notions of Sine, Cosine, Logarithms, Solid Bodies and Sections. (The syllabus is published on another page.) Their Chemistry course is the same as the University one; only the Physics course has been considerably lightened, special regard being paid to experiments. Four periods are given to Elementary Mathematics and five periods to optional

subjects. Drawing and Gymnastics get two periods each. No provision has been made for commercial subjects. He said that they started differentiation even at the IV Form for the reason that uniformity and continuity of work throughout the upper Forms will be secured.

Mr. Panchapakesa Iyer of the Mylapore High School said he took his ideas about the School Final from Mr. Meston and that he was trying to adjust himself to the new conditions. He announced that his Sanskrit boys showed a special aptitude for vernacular composition work.

Mr. S. Vasudevachariar said their school-work was based on the model of the Christian College. He was of opinion that a course in Elementary Mathematics necessarily involved a course in Geometry and Algebra also. He wanted the scope of Elementary Science to be defined, whether it included Elements of Botany, Zoology, etc. He remarked that, to specialise in Vernacular Composition, students should be put through a regular course in Vernacular literature as well.

Mr. Manicka Chettiar said that he gave four periods to Vernacular Composition, two of which he set apart for reading Vernacular Prose and Poetry and two for writing formal composition and the correction thereof.

Mr. T. A. Swaminatha Iyer of the Hindu High School, Triplicane, said that his school was still at the Matriculation examinations. He observed that those who were found unfit for the Matriculation Examination would be sent up for the School Final.

Mr. P. Subramanya Iyer of the C. S. M. College said that he was for not specialising in the IV Form, as there provision must be made for an all-round culture and liberal education. He said that Syllabuses should as far as possible be evolved by each school, each according to its special taste and opportunity and capacity, that such a thing is possible of achievement in the sections of the Guild. He said that in his institution they started no differentiation in the IV Form. He said that the School-leaving Certificate scheme rightly gave prominence to the study of Indian History and exhorted Indian History teachers to give it a larger place in school-life and school-work.

Mr. K. A. Viraraghavachariar asserted that the School-Leaving Certificate had for its keynote liberty to the school-master and wanted school-masters to realise it and deserve it as much as possible. He spoke of the relative value

of the record of school-work (75%) and examination work (25%). He wanted to know if under the School-leaving Certificate, Tudor period could be taught in the VI Form.

Mr. P. V. Seshu Iyer said that his Section had taken up the framing of a Syllabus for Elementary Mathematics.

Mr. P. Lakshminarasu, the Chairman of the evening, said that a common Syllabus should be issued by the School-leaving Certificate Board to secure uniformity of work and examination. He pointed out that the School-leaving Certificate was merely one of the many schemes that gained favour for the time, only to be supplanted by other schemes in the process of time. He marvelled to note that educational experiments in this Presidency very often changed with the personnel of educational officers.

With the usual vote of thanks to the Chairman the meeting was brought to a close.

GEORGETOWN, }
21-3-1910 }

P. SUBRAHMANYAM,
Joint Secretary,
M. T. G.

(2) HISTORY-GEOGRAPHY SECTION.

A meeting of the section was held on Monday, the 14th March 1910, at 5-30 p.m. Mr. T. R. Ramanadha Iyer was voted to the chair. Mr. K. A. Veeraraghavachariar of Pachaiyappa's College opened the discussion on "The Teaching of the Special portion in Indian History." The first question the lecturer raised was "whether the teaching of the special portion was necessary and desirable." He said that the teaching of Indian History ought to begin in the Fourth Standard, with the narration of stories, connected with local history to start with. He explained the nature of the stories to be narrated and the sources of information. From local history, the teacher ought to proceed to stories connected with historical places and personages of Southern India. He advocated the teaching of history in the form of stories even in the 1st Form. In the Second and Third Forms, elementary facts connected with the whole of Indian History might be taught either on concentric lines if that were possible; or the British India in the Second Form, and pre-British India in the Third Form. In the Fourth and Fifth Forms, similarly, the whole history of the country might be taught. He advocated that the work in the Sixth Form should be confined to the teaching of the special portion. He pointed out that under the School Final System

teachers were at liberty to teach whatsoever they pleased in the Sixth Form provided they do honest work and satisfy the School Final Board and the Inspecting officers, that their teaching was based on rational lines. Yet he said that he would advocate the teaching of special period in the highest form in the school and pointed out the many advantages of the system. He next dwelt on the method of teaching the special period and protested strongly against the tendency to give too many details when teaching the special portion. He said it was the deliberate opinion of a number of educationalists that it was not at all the intention of the University when prescribing the special portion that the pupils should be troubled with many details. He pointed out the danger of such teaching in the Sixth Form. All that was intended was that the system of teaching should be bettered. He explained how that could be done—by making the pupils draw more maps, by reading extracts from original sources and by reading standard work on the subject, by resorting to better illustrations, etc. He next read out a detailed Syllabus prepared for the teaching of the History of Ancient India, and invited discussion upon it. Mr. M. R. Subba Rao of the Hindu High School, Triplicane, raised the question whether teachers in schools, which were preparing pupils for the Matriculation examination would be acting wisely, when they do not teach details. He further raised the question whether it would do well to teach the subject through the medium of vernacular in the Lower Secondary Forms. Mr. T. R. Ramanadha Iyer strongly declared himself in favour of using vernaculars as the medium of instruction in the lower classes. Mr. Sathiamurthi, Assistant Professor of History, Madras Christian College, pleaded for better methods of teaching and pointed out what all was possible in the teaching of the History of Ancient India.

The Chairman in bringing the meeting to a close said that he agreed with most of what the lecturer said and requested all teachers to teach Indian History on lines better than is now done. He requested the lecturer to print the Syllabus he read out at the meeting, giving a complete list of books from which teachers might obtain the necessary information for teaching the various chapters. The meeting passed a resolution that the Syllabus with the list of books, etc., should be printed and circulated among the members of the section.

K. A. VEERARAGHAVACHARIAR,
Secretary,
GEORGETOWN, }
24-3-1910. } History and Geography Section,
M. T. G.

(3) THE MATHEMATICS-SCIENCE SECTION.

A meeting of the Section was held in the Wesley College, Royapettah, on the 23rd of February, 1910, with the Rev. C. Pollard in the chair.

At the meeting, the subscription for the Section was reduced from 6 as. a term to 4 as. a term.

A paper was then read by Mr. P. V. Seshu Aiyar, pointing out the main defects in the school students as regards Mathematics and suggesting remedies for the same. The following is an abstract of the paper:—

1. *Defect.* The students are careless in taking down questions from the question paper; further, they begin to scribble something in their papers even before understanding the meaning of a question.

Remedy. Warning in class and severity in dealing with such carelessness in class examinations. Also oral questioning on the parts of a question so as to bring out its meaning and to elicit the method of working it.

2. *Defect.* No rough estimate of the answer to be expected is formed so as to check the answer arrived at; and no verification of the answers or revision of work is attempted.

Remedy. Insistence upon the students forming such estimate to every question proposed in class and on the checking of the results; and on revision of work. Also allotting marks for such work in class examinations.

3. *Defect.* Incapacity to do simple operations mentally or to conceive a geometrical figure before the mind's eye.

Remedy. Giving mental work largely in class and occasionally getting propositions proved without putting the figure and the steps on the black-board.

4. *Defect.* Many mechanical and arithmetical mistakes are made in working questions.

Remedy. Giving much of drilling exercises in class and giving no marks in class examinations for solutions involving such mistakes, though the method be right.

5. *Defect.* Want of a correct understanding of the logic of the several steps in a proposition and the interrelation of propositions.

Remedy. Pointed oral questioning in class on the parts of a proposition and often tracing back propositions to the very first principles of the subject.

6. *Defect.* Incapacity to solve riders and consequent dread of them.

Remedy. By judicious questioning students should be led to solve riders without their ever-knowing that they are solving riders and at the end the riders they have solved should be shown in their text-books.

7. *Defect.* Want of a free use of symbols and Algebraic notation.

Remedy. Use of the same by class teacher and encouragement of such use in class examination.

Other speakers followed dwelling on the same points and emphasising most of the above defects and remedies, and one of them pointed out the omission from the paper of one other defect which is very common, viz., students, though they understand questions and arrive at correct results, are not able to state clearly what they have done and how they have arrived at the result.

The Chairman in his concluding remarks emphasised all the defects and specially the first two and gave out as his conviction that teachers are not giving enough drilling work in the classes for fear that such work may not be quite pleasant to the boys. He remarked that in life, they do not always get only what is pleasant to them and such patient and sustained effort in connection with Mathematics would be a good training in itself.

Afterwards there was an informal talk among the teachers as to the scope of 'Elementary Mathematics' prescribed in Group A of the School-leaving Certificate scheme; and in the end it was resolved to appoint a Committee consisting of the Rev. C. Pollard, Messrs. T. A. Swaminatha Aiyar, M. S. Dandayudhan Aiyar, S. Rajagopalachariar, and P. V. Seshu Aiyar as convener, to draw up a tentative syllabus to be placed before the Section for it to take suitable action on it.

Another meeting of the Section was held in the Mahajana Sabha Hall on the 11th March, '10 with Mr. V. Venkatasubbiah of the Pachaiyappah's College in the chair, at which the Committee appointed to draft a syllabus of 'Elementary Mathematics' in Group A of the School-leaving Certificate scheme presented the syllabus for discussion.

The main question raised was whether or not a student going through the compulsory course of 'Elementary Mathematics' and taking up 'Physics' and 'Chemistry' for optional subjects for the School-leaving Certificate would be admitted to Group II of the Intermediate. If that should be the case, then it was contended that the Syllabus

should include quadratic equations and a little of Trigonometry and formal Geometry. This proposed inclusion was objected to on the ground that it would make the Syllabus too heavy and it was suggested that the little of Trigonometry and quadratic equations that might be required for Group II of the Intermediate might well be taught in the colleges themselves.

Then the inclusion of Logarithms in the Syllabus was opposed on the ground that it would make the students lazy in respect of arithmetical operations and indifferent as regards accuracy of their results (accuracy being one of the chief aims in teaching Arithmetic). The Syllabus as approved is appended.

Finally it was proposed that the Syllabus be forwarded to the School-Leaving Certificate Board as an indication of what the Mathematics teachers in Madras consider should be the scope of 'Elementary Mathematics' in Group A, and to the Mathematics teachers throughout the Presidency inviting their criticisms on it.

SYLLABUS RECOMMENDED BY THE MATHEMATICS-SCIENCE SECTION OF THE MADRAS TEACHERS' GUILD.

The scope of "Elementary Mathematics" prescribed in Group A of the School-leaving Certificate Scheme.

The four rules (and the simpler principles involved, e.g. the commutative, associative and distributive laws).

The use of symbols and signs and the symbolic representation of arithmetical truths.

The measurement of lengths and the use of mathematical instruments.

Compound quantities—including Indian and English coins, weights and measures and the Metric System—and the four rules, conversion and reduction as applied to them.

Fractions, decimal and vulgar, and their reduction and conversion, (with the simpler principles involved in their theory).

Tests of divisibility, factors, G.C.M. and L.C.M. of arithmetical quantities.

Practice, invoices, ratio and proportion, rule of three—simple and compound, graphical illustrations.

Simple algebraical formulae, viz.,

$$a^2 - b^2 = (a - b)(a + b),$$

$$(a + b)^2 = a^2 + 2ab + b^2,$$

$$(a + b)^2 + (a - b)^2 = 2(a^2 + b^2) \text{ and their}$$

graphical representations. The expansion of

$$(x + a)(x + b) \text{ and } (x + a)(x + c)(x + c).$$

Measurement of angles with protractors. Division of lines in given ratios and construction of angles, triangles and quadrilaterals from given data.

Linear algebraic equations in one and two variables (with the principles involved in their solution) and problems leading thereto.

Approximations, errors and contracted methods. Averages, percentages, interest—simple and compound, simple and direct questions on discount and stock.

Square root—arithmetical and graphical extraction of, (with the theory involved).

Graphical representation of simple algebraic functions and statistics, graphical solution of simple arithmetical questions and verification of the roots of linear equations.

Experimental proofs of the properties of triangles, parallels, parallelograms and squares, and the chord and tangent properties of circles, such as Euclid I. 4, 8, 26, 29, 32, 34, 37, 41, 47; III, 3, 14, 35 and 36; VI, 2, 3, 4, 6, 19.

Experimental determination of the value of π .

Drawing of a given plan or figure to scale and the solution of simple questions problems on heights and distances by such scale drawing and measurement.

Mensuration and its application to simple arithmetical problems—of triangles; rectangles; circles, with sectors and segments included; trapeziums and other irregular plane figures; sphere; cube; rectangular parallelepiped; right prism, right circular cylinder; pyramid and right circular cone; (sector and segment of a sphere and the frustra of pyramid and cone omitted).

The use and simple application of Logarithmic Tables in arithmetical operations.

The application of arithmetical rules and terms and algebraic methods to simple questions on profit and loss, time, work, and speed, mixtures, partnership, exchange, taxes and insurances.

N.B.—No questions are to be set on portions given within brackets in the above.

P. V. SESHU IYER,

Secretary,

Mathematics and Science Section,
M. T. G.

TRIPPLICANE. }
21-3-10. }

ELEMENTARY MATHEMATICS.

Through the kindness of the Headmaster of the H. S. Department, Pachaiyappah's College, it has been possible for us to present in full the Elementary Mathematics Syllabus followed in the school. Mathematics teachers will find it interesting and instructive:—

IV Form.

I Term.

Vulgar fractions; vulgar fractions expressed as percentages; their simplification; continued fractions; conversion of vulgar fractions into decimals; investigation into the nature of vulgar fractions as leading to different kinds of decimals. Local values of digits in decimals and whole numbers, analogy of the metric system; significant numbers and figures.

Approximation of decimals and integers. Actual and approximate addition and subtraction of decimals and numbers. Contracted multiplication and division of decimals. Approximation to any required or specified degree. Scientific or statistical problems of practical interest involving approximation. Limits of accuracy.

Metric System.—(1) Unit of length.—Comparison with the British unit and conversion and reconversion of these units. Measurement of lines. Drawing lines of given lengths. Guessing lengths by observation, idea of ratio by comparison of lengths, bisection and trisection of lines. Finding middle points of lines by guess; horizontal lines; vertical lines; right angles; obtuse angles, acute angles. Parallels and perpendiculars. Measurement of angles. Construction of angles of given magnitude. Bisection of angles. Unit of angular measurement. The French unit and the British unit. The sexagesimal method and the centesimal system. (2) Unit of area—construction of rectangles and squares of given dimensions. Measurement of area by dividing them into inch squares and by using squared paper. Comparison with the British unit—conversion and reconversion. (3) Unit of volume, weight, capacity and money. Comparison with the British unit in each case—conversion and reconversion. Sums on metric system. Exchange; chain rule.

Measure and multiple. The rule $G.C.M. \times L.C.M. = \text{product of two numbers}$. Given $G.C.M.$ and $L.C.M.$ to find all possible pairs of numbers of which they are $G.C.M.$ and $L.C.M.$ Problems involving these principles. Races round circles. Description of circles, circumference, diameter, radius, chords, segments, semi-circles, sectors. Relation between circumference and diameter by actual measurement. π . Its different values. Evaluation of binomials, trinomials and monomials for given numerical values of the quantities. Solutions of simple equations of one unknown quantity having only integral coefficients, (to be taught only through simple problems,

preliminary stage being sums on generalised arithmetic).

II Term.

Ratio. Comparison of ratios. (1) by reducing to a common denominator; (2) by expressing each ratio in its simplest form with unity as one term and the other as a decimal fraction. Equality of two ratios. Proportion. The relation between extremes and means. Filling up any term of a proportion the rest being given. Geometrical illustration of proportion, (1) by constructing two rectangles of equal area but of different dimensions, (2) by drawing lines parallel to the base of a triangle, (3) by drawing a straight line on squared paper. Use of squared paper. Plotting. Problems on ratio and proportion. Direct ratio and inverse ratio. The straight line graph and the hyperbola. Time and work. Division into proportional parts. Income tax. The squares and cubes of numbers. Power. Index. Easy verification of the laws (arithmetical illustrations) $a^m \times a^n = a^{m+n}$; $\frac{a^m}{a^n} = a^{m-n}$; $(a^m)^n = a^{mn}$.

Formula for the area of a rectangle. Different kinds of quadrilaterals. Different kinds of triangles; their construction from the following data, (1) 3 sides, (2) 2 sides and the included angle, (3) 2 sides and an angle opposite to one of them, (4) 1 side and any two angles. Congruent of Δ s. Inductive inference of the following geometrical properties: (1) any two sides of a $\Delta >$ the third side (2) $3\angle$ s of a $\Delta = 2rt$ i.e. Symbolical representation in Algebra. Simple equations of the first degree involving decimals. Conversion of arithmetical numbers into algebraical expressions (radix 10.)

III Term.

Profit and loss involving percentages. Interest (simple) with graphs using the following formulae $P \times T \times R = S \cdot I$; $T = \frac{I \times 100}{P \times R}$ etc. Extraction of square root of rational integers and decimals. The significance of fractional index from the formulae $\sqrt[n]{a} = a^{\frac{1}{n}}$.

Easy problems involving extraction of the square root. Construction of right angled triangles. Experimental proof of the relation $(Hyp)^2 = (base)^2 + (perpendicular)^2$ —(1) arithmetical (2) graphical (on squared paper) (3) sectional by cutting paper. Application of this principle to find any side of a right angled Δ when the remaining two sides are given. Finding the height of an equilateral triangle when a side is

given (1) by measurement (2) by calculation. All sums on square measure depending on the formula for the area of a rectangle. Area of a parallelogram. Inductive inference of the geometrical property " $\square$ s and Δ s on the same base and between the same parallels are equal; Area of a Δ in terms of the base and the height. Verandah sums, path ways. Volumes of cubes and of rectangular prisms. Time and Distance as in Radhakrishna Aiyar's IV Form portion with graphical illustrations. Statistical graphs.

V Form.

I Term.

Recurring decimals; their addition, subtraction, multiplication and division (using contracted methods. Simplification of arithmetical fractional series and finding the result to a required degree of accuracy. Revision of approximation (problems of greater difficulty than those taught in the IV Form.) Percentage of error. Limits of error; Relative error. Revision of metric system. Practice. Decimalisation of English money and Indian money. Expression of one compound quantity as a decimal of another to be done by Practice. Double rule of three (sums of more difficult type). Angle of elevation and depression. Questions on heights and distances. Mariners' compass, directions, bearing of one point to another. Construction of squares, rectangles, quadrilaterals from given data. Perimeters of figures. Comparison of the sum of diagonals with the perimeter. Maximum and minimum areas with given perimeters. Experimental proof of the geometrical property "Equidistant parallel lines cut off equal parts from any line intersecting them." Division of lines in a given ratio. The diagonal scale. Evaluation of certain formulae for particular values of the quantities involved in them, e.g. $s = ut \pm \frac{1}{2}gt^2$. Geometrical illustrations of the formulae $(x+y)^2 = x^2 + 2xy + y^2$; $(x-y)^2 = x^2 - 2xy + y^2$ and $x^2 - y^2 = (x+y)(x-y)$. Simple factorisation based on these formulae. Squares of binomials, square roots of expressions that are squares of binomials. Completion of squares by the addition of the requisite terms. Geometrical illustration of the formulae $(x+y)(x+z)$. Resolution based on the formulae.

II Term.

Time and Work (more advanced sums). Revision of simple interest (advanced sums). Profit and Loss (harder sums). Bankruptcy, Partnership. Square measure (to be completed). Construction of different right-angled Δ s having the

same set of acute angles in each. (Similar triangles.) Proportion among the corresponding sides. perpendicular base per.

Constancy of the ratios $\frac{\text{Hyp.}}{\text{Hyp. base}}$, $\frac{\text{Hyp.}}{\text{Hyp. base}}$. Elementary notions of sine, cosine, tangent of an angle. Relation between any two sides of a right angled Δ having 30° and 60° or 45° and 45° Calculation of heights of equilateral triangles from these ratios; also by measurement, verification. Simple equations involving fractions.

N.B.—In the chapters on Time and Work, interest, profit and loss, bankruptcy, partnership and square measure algebraical quantities may be substituted for arithmetical numbers thus leading to generalised Arithmetic.

III Term.

Square root of fractions and irrational numbers. Approximation in square root.

Geometrical representation of square root. Graphical extraction of square root. Rationalisation of arithmetical surds of the following form.

$\frac{1}{\sqrt{a}}$, $\frac{\sqrt{a}}{\sqrt{b}}$, $\frac{1}{\sqrt{a \pm \sqrt{b}}}$, $\frac{\sqrt{c \pm \sqrt{d}}}{\sqrt{a \pm \sqrt{b}}}$. Present Worth and Discount at simple interest; commercial discount.

The relation "Banker's gain = Interest on True Discount for the same period at the same rate." Calculation of the area of triangular plots of ground. $\Delta = \sqrt{s(s-a)(s-b)(s-c)}$.

Cubes.—Faces; surface area; calculation of the diagonals of faces and of the cubes themselves. Plan, elevation, scale. Representative fraction, construction of rectangular and triangular plots of ground to given scale. Plane sections of cubes. Easy sums in cubic measure. Circles—intersecting circles, touching circles, tangents. Inscribed and circumscribed circles of triangles. Positive and negative quantities—algebraical conception. Numerical values. Removal of brackets. Multiplication and Division by the Detached Method of Co-efficients. Filling up a tabular form of values of y or y and z for corresponding values of x . Solution of equations of two unknown quantities (Graphical). Solution of easy problems by means of such equations. Time and Distance (more advanced), as in the Radhakrishna Iyer's V Form portion. Graphical solution of interesting problems in this chapter. Conversion Graphs and ready reckoners.

VI Form.

I Term.

Divisibility of numbers; tests of divisibility. Maximum and minimum values of fractions. Con-

THE SOUTH INDIA TEACHERS' UNION.

Vol. I.]

APRIL 1910.

[No. 4.]

[All contributions, &c., should be addressed to the General Secretary, S.I.T.U., Wesley College, Madras S. W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

REPORTS OF THE AFFILIATED ASSOCIATIONS.

(1) THE MADRAS TEACHERS' GUILD.

THE ANNUAL MEETING.

The annual meeting of the Madras Teachers' Guild was held on the 21st of April, 1910, in one of the class-rooms of the Pachaiyappa's College. The Hon. Mr. J. H. Stone, who was to have presided, having intimated that he would come late, the chair was temporarily occupied by Mr. P. Lakshmi Narasu Naidu.

ANNUAL REPORT.

The proceedings commenced with the reading of the report of the last ordinary meeting and the annual report by the Secretary and the report of the Primary Section of the Guild by Miss P. F. Parsons.

All the reports were adopted.

ELECTION OF OFFICE-BEARERS.

The office-bearers for the ensuing year were then elected:—

The Hon. Mr. J. H. Stone was re-elected President.

Mr. E. F. C. Drew, Rev. C. Pollard, Rao Bahadur M. Rangachariar, Rev. W. Meston and Mr. P. Lakshmi Narasu were elected Vice-Presidents.

Miss P. F. Parsons and Messrs. K. B. Ramanathan and P. Subramanya Aiyar were re-elected Secretaries.

Mr. S. Vasudeva Charriar was elected Treasurer.

A Council consisting of 15 members was then constituted.

At this stage the Hon. Mr. J. H. Stone having arrived, Mr. Lakshmi Narasu vacated the chair which was occupied by Mr. J. H. Stone.

THE RAJAHMUNDRY TRAINING COLLEGE.

Mr. K. B. Ramanatha Iyer next moved the following resolution:—"That the Guild is of opinion that one Teachers' College for the whole presidency is not enough and therefore prays Government to retain the Training College at Rajahmundry." In moving the resolution, he said that, in consideration of the great demand for trained teachers and of the fact that it would not be easy for people in the North to go to Saidapet, it was not advisable to abolish the college at Rajahmundry. He added that the Council of the Guild had only resolved to place the matter before the Guild for consideration and that therefore it was for the Guild to come to the conclusion whether or not they should approach Government with a request that the college at Rajahmundry be retained. The proposition was duly seconded.

The Chairman then gave a brief account of the history of the Training College at Rajahmundry, and explained that if the Government proposed to abolish the Training College there, it was chiefly because it was thought better to concentrate attention on the college at Saidapet. He added that the Secondary Grade of the Training Department would still be retained.

After a short discussion, it was resolved to refer the proposition back to the Council for re-consideration.

CONTRIBUTION TO THE SOUTH INDIA TEACHERS' UNION.

The question that was next considered was the contribution of the Guild to the South India Teachers' Union for the year 1909-1910. Mr.

Ramanadha Iyer said that the capitation fee calculated at the rates fixed by the Executive Board of the Union might be paid out of the general funds of the Guild and the question, whether or not an extra fee should be levied from the members, might be considered at a subsequent meeting. The proposition was duly seconded, and was referred to the Council for consideration.

QUESTION OF REBATES.

Mr. Lakshmi Narasu proposed that those members of the Guild who have insured their lives through the agency of the Council of the Guild in the Oriental Life Assurance Company be exempted from paying sessional subscription to the Guild and that the commission which the Council is receiving from the Company on the premiums paid by those members be all utilised for the common good of the Guild. In moving this proposition, he explained to the meeting that the practice till now had been to make a rebate of four per cent. to the insured out of the five per cent. commission which the Company is giving, retaining the other one per cent. for meeting the incidental expenses connected therewith. The proposition was seconded; but was opposed by the Rev. Mr. Pollard on the ground that the gentlemen who insured their lives through the agency of the Council were induced to do so on account of this concession and that it was not therefore fair to ask them to forego this privilege. After some discussion, the proposition was put to vote and lost.

BUSINESS SECTION OF THE GUILD.

Mr. T. S. Subramania Aiyar next proposed that a Business Section of the Guild might be opened. He said this idea occurred to some of the members in 1908 and they wanted to start an Educational Society. The University and the Government had imposed certain regulations and the teachers could not equip themselves with the necessary books, maps, charts and other apparatus necessary for schools. He therefore proposed that a Business Section to the Guild be formed on the lines detailed below with a capital of Rs. 2,500 with which to buy all these apparatus and sell the same for a low profit which should go to strengthen the funds of the Guild.

This was seconded.

The Rev. Mr. Pollard in opposing the motion said that the proposition laid out an ambitious programme. He explained that with care several things could be got cheaply now in Madras and

elsewhere and it was not advisable therefore that they should compete with the local book-sellers.

The Chairman asked that supposing the concern was started, what should be the liability of the members of the Guild.

After a long discussion it was resolved that a Business Section to the Guild be formed and that before spending any money on the Business Section the Council should take legal advice as to the liabilities of the Guild and of its individual members and place the same for the consideration of the Guild.

The Chairman in his concluding remarks congratulated the Guild on the useful work it had done in the year that had passed and wished the Guild another year of prosperity and success.

With a vote of thanks, the meeting came to a close.

At the close of the meeting, the members were entertained with music and light refreshments.

PROSPECTUS OF THE PROPOSED BUSINESS SECTION.

The objects of the Business Section shall be as follows:—

1. The establishment of an Institute, where all educational appliances—books, maps, models, scientific apparatus—are stocked for exhibition and for sale to members, as well as to strangers.
2. The establishment of a Printing Press, a manufactory for scientific apparatus, and a workshop for making school furniture, &c., to promote the objects mentioned in (1).
3. The starting of a journal of a purely educational character in the interests of schools and teachers.
4. The carrying on of such other work as may be conducive to the fulfilment of the above objects, such as the establishment of a Library, a Museum, a Loan Collection of Lantern slides and such other educational appliances as funds permit.

The abovementioned objects are within the scope of the Guild's activities. Whether the concern is to be a Limited Liability one is a matter for discussion. No one who is not a member of the Guild shall be eligible for membership to the Section.

Capital.—The capital shall consist of 500 shares, of Rs. 5 each, but it is competent for the Guild to add to the number of shares.

When shares should be paid and how.—The shares shall be payable either in one instalment or

in monthly instalments of 1 rupee for each share. The voting capacity will arise only when the share or shares have been paid up.

Maximum number of shares.—The maximum number of shares to be held by a subscriber shall be not more than 20.

Payment of share, compulsory or optional.—The payment of share is not compulsory. No new member shall be admitted, unless he consents to be a member of the Business Section as well.

Relation of a member giving up his connection with the Guild to the Business Section.—Special by-laws to be framed to meet such cases.

Loans.—It shall always be competent for the Council of the Guild to raise, in addition to shares, such loans as members may be willing to advance and pay interest at such rates as may be fixed from time to time.

The scope of initial activities proposed—

1. That a book-selling department be opened at first in Georgetown, and when it shows signs of successful work, branches be opened in other parts of the City.
2. That agencies be acquired, especially from Publishing Firms.
3. That cheap stationery in the shape of note-books, registers, etc., be supplied.
4. That no new line of business be undertaken by the Business Section without the previous sanction of the Guild.

Board of Management.—That the direction of this branch of the Guild be vested in three members of the Council, of whom one must be the Secretary of the Business Section. That the whole business of inaugurating the section, housing it, collecting shares, etc., be left to the Board of Management.

(2)

At an early hour on Saturday morning (2nd instant) nearly 100 teachers from all parts of the city assembled in one of the lecture-halls in the Presidency College to hear an address on "Nature-Study in Schools" by Mr. George Matthai, M.A., of the Madras Christian College. Professor Ramunni Menon presided at the meeting.

The lecturer mentioned the following advantages that result ultimately from a proper study of nature. A knowledge of the working of natural laws helps us very much in our practical living. The sense of perception is quickened and the qualities of

patience and perseverance are developed. Nature moreover is a school of virtue. He concluded his address by offering a few practical suggestions. He said that nature study should be very elementary. It must be made eminently interesting and intensely practical. The information gathered on the subject should as far as possible be first-hand. The scope of study should be determined purely by local conditions. Frequent rambles and occasional excursions should be arranged for. A school museum and what is more important a school garden would do very much to promote nature study. The objects put on show in school museums should bear their vernacular names.

Mr. K. B. Ramanadhan said that his interest in nature was through literature and thanked the lecturer for his valuable address.

Professor Ramunni Menon made a few interesting observations. It is often said that we have an introspective turn of mind. There is some truth in that statement, but it need not alarm us however. The introspective habit is not peculiar to this country. Europe indulged in it before the advent of the era of science. The speculations of the school-men are an instance to the point. This habit of turning inwards is but a temporary phase and is bound to pass away soon.

That the Indian has no constitutional incapacity for observation has been established beyond doubt. Early training is inevitable. Generations of nature study along with the habits induced by it have made the people of the West great lovers and students of nature. The recording of facts and the observation of nature would not do by themselves. The habit of mind induced by observing nature is all important. The contemplation of nature will open out a new world of facts.

There are some obvious difficulties in the way of nature study in India. A band of teachers interested in nature and qualified to inspire in others a love of nature should grow up. The object in nature study should be not so much to get children to collect facts and exercise reasoning as to lead them to take a kindly interest in nature. Thus nature study should be extremely elementary. Observation should be accompanied by simple experiments. The plant-world furnishes ample scope for experimentation. *Geotropism* and *Heliotropism* may be experimentally demonstrated. He concluded his remarks by saying that a mere beginning has been made in nature study in India and that it will soon take root. Even in Europe it is comparatively recent; only there it has spread rapidly. After a vote of thanks by Mr. Subrah-

manya Aiya, the members were shown round the zoological museum by the genial professor. Many of the striking specimens were lucidly explained.

From the zoological museum in the College, the members adjourned to the aquarium at about 9 A.M. Professor Ramunni Menon took the members round the aquarium and got them to admire all the wonders of the sea collected in the building. The sea-snake with its oar-like tail, the dog-fish that crawls along to snatch its meal, the fish displaying the hues of the rainbow, the fish that ever keeps its mouth wide open and the fish that tends to bloat up and assume the shape of a sphere, became the subjects of eager questioning and lucid and patient answers by the learned Professor. The spectacle of the fish that scrambled for their morning meal was a striking example of the struggle for existence. The members were also shown the apparatus that gave the supply of oxygen to the tanks and also the reservoir behind the building from which streams of salt water flowed on to them. The visit was of great practical use to teachers and every one felt highly indebted to the Professor who was again thanked by the Secretary. The interesting function came to a close at about 10-30 A.M.

P. SUBRAHMANYAM,

Joint Secretary,

M. T. G.

(3)

HISTORY AND GEOGRAPHY SECTION.

A meeting of the History-Geography Section of the Guild was held on Tuesday, the 19th instant, at 5-45 P.M. at Pachaiyappa's College when Mr. K. Chinnaswami Iyer read a paper on the 'Teaching of Geography in the Lower Classes.' Mr. T. R. Ramanadha Aiyar was in the chair.

"The lecturer based his whole paper on the definition of geography that it is primarily a study of certain ideas and interesting questions of men's relations to the earth upon which they live and to one another." The teaching in the lower classes, he said ought to proceed on logical lines and the pupils should know the 'why' of everything. The essentials of geography should be seized while much of the 'incidental' teaching of the subject which consists in drilling the pupils in the names of capes, bays, gulfs, rivers, mountains, &c., ought to be left out. The dependence of geography on physiography, geology, physics and other

kindred sciences can well be brought out by a series of object lessons in the 3rd and 4th standards and the first form on garden vegetables, grasses, grain, forest trees, fruit trees, tree-planting, the changes of the seasons, plant and animal life in ponds, various soils, such as sand and rock with their uses, quarries and stratified rock, water supply from wells and springs, domestic animals and their uses, air, water, vapour and clouds. Form 3 elementary science may be given a geographical aim. All this will prepare a child for an intelligent study of geography. The lecturer then proceeded to say that the child ought to begin with the home geography and for this purpose he said that a series of excursions should be arranged. Among others they should go to a house in the process of construction, to places where carpenters, masons, painters, &c. are at work, to gardens and farms, to shops and stores, to a baker's, to a printing establishment and to a place where vessels are unloaded. This might be done in the 3rd and 4th standards. When boys have seen all these things with their own eyes they will surely be in a position to use their hands dexterously in making rough sketches and plans of what they have seen. This local map-making is of great importance in the lower classes and it is only one of the many kinds of practical work that can be done by them. Clay-modelling, the preparation of rough relief maps, the practical use of weather charts and the rain gauge, the preparation of charts and special maps and the drawing of simple graphs should be attempted at this stage. Boys should be made to study the maps and after careful examination of them they ought to be able to give the topographical and political facts. Hence oral teaching should find greater prominence in the 3rd and 4th standards as it will promote greater attention and liveliness in the class. He said that text-books should not at all be used in those classes. There ought to be some preparation in the 2nd standard to carry out work on these lines in the 3rd and 4th standards. The narration of stories about the people of distant lands, their occupations and habits based on pictures ought therefore to find a place in the programme of work in the 2nd standard. The lecturer next objected to the teaching of district geography in the 4th standard as only natural divisions would afford scope for rational teaching. The continuity of things was spoiled under the existing system. The study of the world-whole was next touched upon and for this purpose a large globe should be used. Lively oral lessons can be based on the globe in the 4th standard and 1st Form and 'journeys round the world' may also be planned in the 1st and 2nd Forms.

The lecturer concluded his paper with the subject of correlating geography with history in the lower classes.

All the members present took part in the discussion that followed. The lecturer's view that text-books should not be used in the 3rd and 4th standards was strongly criticised as it was pointed out that teaching without text-books would become flippant. Suitable text-books should therefore be kept in the background in the 4th standard and they should be brought out when oral teaching has done its share of work. The Chairman was strong on this point and he also opened the question of the medium of instruction in geography in the lower classes. The members present were unanimously of opinion that it should be only vernacular but boys might be encouraged to give answers in English as they progress. One of the members read out extracts from a very interesting article on the "Reform in the Geography Syllabus of the Primary School" in *The Practical Teacher* for April 1910. They related to such useful topics as stories about different races, their occupations and modes of life as picture lessons and subjects for oral composition, the simple measurements of objects and areas as part of the arithmetic scheme and the expression of such measurements as part of the drawing scheme, and local geography of a very general kind. The Chairman laid great stress on the map-study and the practical work which boys ought to do. He said that they should measure distances from the maps and draw sectional maps for it is only by such means that they can gain any practical knowledge in the subject. The members then discussed the question of excursions and came to the conclusion that to be useful they should be well-arranged and well thought out. It was then resolved to give a practical shape to the proposals and two of the members were asked to arrange an excursion to the Madras Harbour Works with about twenty boys. The question of a practical working syllabus in geography for the lower classes was discussed and one of the members was asked to prepare one and submit it to the criticism of the members of the section. The meeting terminated with thanks to the Chairman.

K. A. VIRARAGHAVACHARI,
Secretary.

THE FIRST ANNUAL REPORT OF THE NAZARETH TEACHERS' ASSOCIATION, 1909.

The 13th of February 1909, was a Red letter day in the annals of Missionary Education at Nazareth, when in an evening hour, the Revd. C. W. Weston, the Manager of the many schools of the S. P. G. in this District, convened a meeting of the teachers and those connected with teaching in the locality, and formally inaugurated an association called the Nazareth Teachers' Association.

The necessity for having an association of the kind was felt by all and the formation of the same was welcomed by the Inspecting officers who visit the place occasionally, especially Miss Prager, the Sub-Assistant Inspectress, and Miss Lynch, the Inspectress of Girls' Schools here.

The aim of the Association is to bring about a spirit of co-operation among the teachers, to keep them abreast of the times in the Educational world, and to improve the methods of teaching in schools; this object is realised by means of monthly meetings held generally on the 3rd Saturday of the month in which one of the members delivers a lecture on some educational subject or a popular theme, and another gives a model lesson according to the recent improved methods of teaching.

The Association being an official institution, membership is compulsory on the part of all the teachers employed in the Mission Schools at Nazareth.

There are in all 68 members of whom 18 are women and the Association is managed by a Committee consisting of a President, a Chairman, a Secretary and Treasurer, and 7 others, of whom 3 are ladies.

Towards the up-keep of the Association and the Club a subscription of annas 6, annas 4 and annas 2, per head per mensem is collected, the Elementary Grade teachers being free. The subscriptions for 1909 amounted to Rs. 55-2-0, and the expenditure to Rs. 51-9-10, leaving a balance of Rs. 3-8-2 on 1-1-10, besides arrears of subscription.

Attached to the Teachers' Association there is a Reading Club in which the "Madras Mail" (daily), "The Hindu" (Tri-weekly), "The Educational Review," "The Illustrated London News," and some other papers kindly presented to the Club by the resident Missionaries of the place, are supplied for the use of the members, and provision

is also made for recreation in the shape of Tennis and Badminton.

In the year under review there were in all eight meetings held, one of which being inaugural, besides many other business ones. Two meetings were missed by the intervention of the Summer and Christmas vacations. A perusal of the lessons and lectures as hereunder given, will show that the teachers of higher grades join in helping their fellow-teachers in the Elementary Schools:—

I. A. Kindergarten and Geography of the Tinnevely District correlated. By Mr. V. Subrama Iyer, B.A., L.T.

B. "Cotton." By Mr. D.S. Massillamani, B.A., L.T.

At this meeting Miss Lynch was present and gave her valuable remarks.

II. A. "The Teachers' Association and its Usefulness." By Mr. Devavaram, B.A.

B. "Flowers." By Mr. S. Joseph.

III. A. "The Aims and Methods in an English High School." By Miss E.K. Groves.

B. "Direct Method of Teaching English." By Mr. C. P. K. Samuel, B.A., L.T.

IV. A. "Some Common Place Observations of Nature." By Mr. D. S. Massillamani, B.A., L.T.

B. "Sugar." By Mr. V. Subrama Iyer, B.A., L.T.

V. A. "The Smiling Face of a Teacher." By Mr. Devavaram, B.A.

B. "Salt." By Mr. S. Sathianadan.

VI. A. "Graphs." By Mr. C. P. K. Samuel, B.A., L.T.

B. "Clay." By Mr. S. D. Lazarus.

VII. A. "The Proposed Provident Fund for Teachers." By Mr. D. Devavaram, B.A.

B. "The United States of America." By Mr. D. S. Massillamani, B.A., L.T.

NAZARETH, } D. S. MASSILLAMANI,
April, 1910. } Secretary.

A MEMORIAL TO HIS EXCELLENCY THE GOVERNOR OF MADRAS

*Regarding the enhancement of standard rate of fees,
from the Trichinopoly Teachers' Association.*

To
HIS EXCELLENCY THE GOVERNOR IN COUNCIL,
Madras.

May it please Your Excellency:

I have the honour to forward herewith the following Resolutions of the above Association regarding the enhancement of the standard rate of fees in Schools and Colleges.

1. That this Teachers' Association, while approving of the intention of the Government to make Secondary education as far as possible self-supporting views with apprehension the proposal to raise the standard rate of fees before the School Leaving Certificate scheme has had a fair trial.

The result of the Matriculation Examination in recent years has created a feeling among parents and guardians that the money spent on the education of children is not in any sense a profitable investment: and although we do not, in any case, anticipate a reduction in the number of pupils, still we are strongly of the opinion that no step should be taken which might aggravate the present feeling of general dissatisfaction by a premature raising of fees.

Further we feel that any such increase in fees as that recommended by the Committee of educationists consulted by the Government should be made gradually.

2. This Association also desires that the interests of institution under private management should be safeguarded, and trusts that no Government 'model' institution will be erected where it might come unnecessarily into competition with an existing recognised institution—where, for instance, an actually existing school either secures the purpose which these model schools are intended to serve or with adequate aid could fulfil the same end.

Without proper safeguards, recognised institutions are bound to suffer considerably as regards the efficiency of the teaching staff and financial status.

I have the honour to be,
Your Excellency's most obedient servant,
S. S. VYASA RAO,
Secretary.

Committee.

The Rev. Allan F. Gardiner, M.A., S.P.G. College
(President).

" " Father H. J. Quinn, St. Joseph's College.
Mr. S. S. Vyasa Rao, Secretary and Professor,
S. P. G. College.

" S. K. Devasikhamani, S. P. G. High School.
" M. C. Rajagopal Naidu, Srirangam High
School.

" E. C. Rangaswamy Aiyar, Hindu Secondary
School.

" Thiagaraja Dikshitor, National High School.

ANNOUNCEMENTS.

I. Teachers' Registry.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Re 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

Wanted:—

(1) A Mathematics Graduate

(2) A Physics " "

(3) A History " "

for a College in the West Coast. L.T.'s will be preferred.

Apply to
GENERAL SECRETARY, S.I.T.U.,
Cathedral,
Madras S.W.

II. S. I. T. U. Membership.

All persons actually engaged in teaching, whether in a College, High, Secondary, or Primary School, and all who have retired from teaching and have adopted no other profession, are eligible to become members. Teachers in each station where no association exists should meet and form themselves into a local association and appoint a secretary. The secretary of the association will forward to the General Secretary of the Union, the names of all members in his association with an annual capitation fee of As. 8 for all College or Secondary teachers, and of As. 2 for Elementary teachers. All persons so reported will be registered as members of the Union.

THE SOUTH INDIA TEACHERS' UNION.

Vol. I.]

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[No. 5.]

[All contributions, etc., should be addressed to the General Secretary, S.I.T.U., Wesley College, Madras S. W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

THE DIGNITY OF THE TEACHER'S CALLING.*

It is surely not amiss that at the very first meeting of our Teachers' Association, before we consider any of the minute and technical matters of our profession, we should direct our thoughts to the dignity and importance of our calling. We achieve high results in proportion as we place before ourselves high aims, and the drudgery and monotony of all work—and especially of such noble work as ours—is transfigured in the light of ideals seen and welcomed. I cannot indeed hope to say anything new or original on this theme, but after all it is by the old truths we live and platitudes are only such for platitudinarians.

I have spoken of the teacher's work as a 'calling,' and beneath the very expression there lies a wealth of ennobling thought. The All-Father has a purpose for the life of every man whom He bids live on this earth. There is a predestined service for each one to render to the cause of humanity, which is the cause of God. Not that every activity of man is a calling from God; nor that every man engaged in a useful activity is in his own proper calling; but there is for each, if only he can find it, if only he is allowed to follow it, one special work which God has designed for him and designed him for. Happy are those who are in their God-appointed callings; happier still those who know that they are. And the teacher's profession is a calling; perhaps one of the very happiest if we are really called to it, one of the most miserable if we have engaged in it uncalled. Thrice unhappy is that man of whom his pupils, his colleagues, or his own heart says—"that man ought never to have been a teacher."

But I presume that all of us here feel we are engaged in a work we love, a work in which we are happy, a work for which we have got natural or acquired aptitude to some degree,—a work there-

fore which we may reasonably think is our calling. Now however imperfectly you define the teacher's vocation, its inherent dignity stands out in the definition. It is the training, the 'drawing out,' of the latent powers of body, mind, and soul in children for the purpose of service and enjoyment here and hereafter. A German report on education defines the scope of Primary Education as follows:—"Primary education shall have for its aim to develop the faculties of the soul, the reason, the senses, and the bodily strength."

Our work is then the preparation of the rising generation for the world's service, and to any who take a serious view of life we cannot stop there, for the crisis we call death is, we believe, only the entry into further and, if we will, fuller life. We are preparing men for perfected humanity, for eternity. It is true that our work of training is shared very largely with the home; but the share that rests with the teacher is surely large enough to awaken our sense of unmeasured responsibility, and to stir us up to the bending of our highest energies to the accomplishment of the great duty laid upon us.

Our work lies before us in a series of ascending steps, which, while they intermingle in the complex being of man may, for purposes of thought, be considered separately. The lowliest of them is a task of importance and interest, the uppermost is one whose value stretches beyond our utterance and our thought. These steps are 1. The *Physical*. 2. The *Mental*, including the imparting of knowledge, and the training of the intellect. 3. The *Spiritual*, including the inculcating of good habits, the development of social principles, and the formation of noble character.

I. THE PHYSICAL.

The teacher has to do with body as well as with mind and soul. His success with the two latter will largely depend on the soundness of the work done in the former sphere. *Mens sana in corpore sano* is a dictum which latter day psychological

* A paper read at a meeting of the Bangalore Teachers' Association.

thought is serving to illuminate and establish with increasing force. To develop, as far as possible, in each pupil a healthy, harmonious, physical frame, strong to minister to and to carry out the orders of the informing soul; strong to do or to suffer in the world's work; strong to resist disease and happy in possession of abounding health—this is the first aim of the teacher of the young. Fortunately or unfortunately, as the case may be, the teacher is only one of the educators (or the neglecters of education) in this respect. Parents and guardians have long since laid the foundation well or badly, and are all along co-operating with or thwarting the teacher; with the result that many teachers throw aside all responsibility and neither study the subject nor take any steps for the physical development of their pupils. Most schools have a gymnastic instructor, and more or less arrange for games; and, given these arrangements, often totally inadequate in amount and unscientific in scope, the ordinary teacher divests himself of all further care and thought in the matter. In boarding schools, of course, a definite responsibility is undertaken with regard to diet, to sleep, to ventilation, to light, and to hours of play and study; and in most cases the results are such as to suggest that the co-operation of the home with the school in these matters in the case of day-boys is not always enlightened. But in this paper I am only dealing with the question as it throws light on the dignity of the teacher's calling. The development of healthy bodies and of physical powers is a part of the teacher's calling, and though the responsibility is a divided one, it cannot be set aside. Teachers ought to know enough about the subject by study and thought, to be able to advise and direct their pupils in many matters concerning health; and they should know enough about their boys and girls to be able to advise if necessary not only them but their parents in these subjects. They ought to know for instance the number of hours of sleep required for children of different ages (a matter terribly neglected and with potent evil results among Indians) and they ought to know whether their children are getting this great essential of health, and it need be to drop the parents a hint. They ought, as far as they can, to know whether in matters of diet, of hours of study (often far too long for little children in India), of cleanliness of person and of dress, of adequate artificial light, of exercise, etc., the children entrusted to them are on the lines which will lead to health and vigour. They ought to give clear instruction which will, may be, save their children in after life from undermining their health by wrong or injudicious

habits, especially in the use of alcohol. The intelligent co-operation of all the teachers of a school in these matters might lead to far greater results than would be supposed, results which would operate beyond school days, beyond the immediate generation, and beyond the mere physical well-being of the children.

II. THE MENTAL.

Passing on now to the *Mental sphere* we consider first the dignity of the teacher's calling in the mere imparting of knowledge. Our profession is occupied with matters of interest and of intelligence. It urges us to the perpetual acquirement of stores of knowledge, since we know that the more we know about and around our subject, the more interesting it becomes to us, and the better we can teach it. It is our duty as well as our pleasure to keep ourselves abreast with new knowledge. And it is also our duty and our pleasure to be ever studying the art of teaching, that science ever new and ever fascinating.

However elementary the subjects or the class we teach, there is always room for adding to our knowledge and for improving our methods, and the humblest teacher can satisfy the requirement of Arnold: "I prefer in a teacher activity of mind and an interest in his work to high scholarship."

But imparting knowledge is by no means the most important or the most interesting part of our mental work as teachers. Our glory is that we are engaged in fashioning the human mind itself, in teaching young intellects to think, to grasp, to reason, to imagine, to feel, and to perceive. Our object is not cramming in books, but drawing out thought. We are set to teach accuracy of thought and of expression, and there is a keen mental pleasure in training ourselves thereto, and still more in watching the power grow under our teaching in the minds of our pupils. Equally delightful is the drawing out of reasoning power, of imagination, and above all of taste in our pupils. Even a simple lesson in prose, or verse, or science, becomes a joy as we use our own powers in leading youthful minds to see the beauties, or the wonders, we have seen; and it often happens that the study of quite simple things in order to teach others, reveals to us beauties and delicacies that had quite escaped us in our more hasty reading or study.

III. THE SPIRITUAL.

But we move one step higher, and reach above the mental the *Spiritual sphere*.

The teacher is not merely training an intellect, but an intellect which is to act in accordance with law—and with the highest law. He has an almost unique vantage ground in disciplining the mind in the formation of good habits and the conquest of bad ones. He is expected to maintain discipline, and discipline includes order, tidiness, punctuality, respect, obedience, and ultimately self-control. But he has the further advantage of dealing with pupils not only as individuals but in the mass, and provided the individual training be not neglected, this gives the opportunity for a wider and deeper training than would be possible with a single pupil. The class, the school, are, or at least can be made, a real body corporate. Class-room and play-ground, especially in a boarding school, can provide a true training ground for citizenship, and empire, and humanity. The altruistic instincts can be quickened and developed, as boys and girls are taught to think of their comrades, to play for their side, to live and work for their school. All that department of morals which deals with our duties to others—unselfishness, generosity, sincerity, courtesy can be excellently developed in a high-toned school; and surely to produce, and maintain, and increase such a tone is a work of the utmost dignity, full of interest and taxing the finest powers of mind and soul.

Most of us have laid upon us, as a regular part of our duty, the instruction of our children in the truths of religion, which alone can produce in them the full prints of noble character; and who can overestimate the dignity of that special branch of our calling, the highest work that has ever occupied the greatest saints on earth? But even if that be not a specific part of our duty, we are directly and indirectly, by what we say in class and out of class, and still more by what we are in school and out of school, moulding the souls of the men and women who shall make or mar the world. Character-building is the ultimate result of school work, and the test of the teacher's success.

And may we not add to these considerations the thought that the dignity of our calling is evinced by the fact that we are dealing with human beings at the most interesting, and, from one point of view, the most important period of their lives? Is it a small thing that to us are entrusted, for a great part of their lives, bright-eyed lads and lasses full of love, and full of trust, to whom we act more or less *in loco parentis*? Is it not a privilege beyond our utmost deserts—a work that angels might envy us,—to win the respect and the generous love of so many children,

and to have the moulding of their characters at a time when the mind is "as wax to receive and as marble to retain?"

If the veil could be drawn from the future we might be startled by the greatness of the responsibility we have undertaken, as well as by the light-heartedness and shallowness with which, may be, we are assuming it. Could Prince, Headmaster of Birmingham School, have guessed that of three boy friends who sat together on the bench before him, one—Hort—would have been the greatest authority on N. T. Textual criticism, another Westcott, the profoundest spiritual thinker of the age, and a third Benson, the saintly and wise Archbishop of Canterbury? And if it be so of the lifting of the earthly veil, what might be disclosed to us if the veil of eternity were withdrawn?

(Or yet again the dignity of the teacher's calling may be illustrated from the fact that the very highest qualities are needed by him for the execution of his work, and that he is required to cultivate these qualities under the most adverse circumstances. "Children," says Calderwood, "submit to be governed only in so far as they recognise the elements of governing power in their superiors." The essential qualities of good-humour, kindness, firmness, and justice so needed by a teacher, have often to be acquired in the difficult atmosphere of the class-room; he has to learn through many failures, and he never comes to an end of learning.

Perhaps no other calling makes such continuous demands on him, under such difficult circumstances. And as the greatness of a work may be gauged by the exertions needed to accomplish it, so may the dignity of the teacher's profession be estimated by the amount of self-discipline and self-consecration needed by him to successfully perform it.

It is not by the average and normal children that his ability as a teacher is tested, but by the peculiar cases, by the stubborn, the hot-tempered, the nervous, the stupid child. Tact, wisdom, knowledge, and love are needed in a large degree, if he is to triumph in the really difficult cases that come before him. He may superficially succeed in checking faults, while he is wholly failing to eradicate the evil dispositions from which those faults arose, and which will show themselves again, as soon as his restraining hand is lifted.

Bishop Westcott sums up the whole succinctly when he says: "I speak from my own experience. I know that nothing is harder, even as nothing is more fruitful, than elementary teaching."

Fellow-teachers, joined with me in a noble brotherhood, a glorious enterprise, I have striven to show you and to remind myself, of the dignity of our calling. The thoughts elevate us to the skies and humble us to the earth. We are dimly aware that we are moving in the midst of mighty mysteries, and that our work is greater than we know. Let us regard our office and our pupils with deeper reverence, and let us in whatever way we can fit ourselves for the high task that has been given us. Let us be studious of self-perfection, and though we fail, as the worthiest must fail, let it be the failure of a noble effort and not of a contented blindness.

H. PAKENHAM WALSH.

ANNOUNCEMENTS.

I.

At the Educational Conference held on the 22nd of December 1909, the following resolution was passed in regard to admission into Colleges of pupils with School Leaving Certificates:—

"The Conference resolves that a Committee consisting of the Rev. A. F. Gardiner, the Rev. Father Bertram, Messrs. K. B. Ramanadha Iyer, A. Panchapakesa Iyer and S. Vasudeva Chariar, be appointed to consider and suggest such recommendations as may seem necessary for the guidance of Principals of Colleges in the matter of admission of pupils with a School Leaving Certificate, and that the recommendations drafted by this Committee be circulated to the affiliated associations of the Union and be placed with the opinions of the associations before the Executive Board for adoption and submission to the Syndicate of the Madras University in due form."

In accordance with the suggestion then made the three Madras members of the Committee met in February last and suggested that recommendations to the Syndicate might be made on the lines indicated below—

Recommendation No. 1.

Holders of completed Secondary School Leaving Certificates issued under the authority of the Government of Madras or such other authority as may have been accepted by the Syndicate may be declared eligible for admission to University course of study and may be registered as Matriculates of the University, provided they have obtained not less than—

(a) 40% of the marks in English;

(b) 35% in Vernacular Composition and Translation;

(c) 35% in Elementary Mathematics;

(d) 35% of the aggregate marks in the subjects mentioned in Group B; and

(e) 40% of the marks in subjects to be taken up in the Intermediate course, except with regard to History.

Recommendation No. 2.

If a boy shows high proficiency in English he might be allowed to bring up History in the Intermediate Course as his optional subject, even if he should not have brought it up as optional in the School Leaving Certificate Course or has brought it up as optional and has obtained below 40% of the marks in it.

Recommendation No. 3.

The low minimum of 35% in Vernacular Composition and Translation might be raised to 40% in 1913, i.e. after the pupils have had a full three year course in Vernacular Composition and Translation in the lower classes.

These recommendations were sent to the Trichinopoly members for their consideration. They have expressed their opinion in the following form:—

(1) With regard to Recommendation No. 1, we approve of the suggestion that students who obtain the minimum percentage of marks proposed should be recognised as fit and proper persons for a College education, provided their conduct has been satisfactory.

(2) Under the School Leaving Certificate Scheme the points specified in Recommendations 2 and 3 will be left to the discretion of Principals. We feel that it would be in violation of the spirit of the Scheme and a presumption on the part of the South India Teachers' Union to suggest to Principals what course of action they should take with regard to students who have failed to obtain the proposed minimum in one or more subjects.

The Madras members have accepted these amendments, and the recommendations thus amended have been sent to the affiliated associations for their opinions. It is hoped that the Executive Board will meet in September next, when these recommendations will be considered by them and submitted to the Syndicate in due form.

II.

A copy of the Resolutions passed by the Educational Conference of the South India Teachers' Union held at Trichinopoly was sent to the Government for their favourable consideration. An order has just now been received that they have all been recorded.

III Teachers' Registry.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Re. 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

IV. S. I. T. U. Membership.

All persons actually engaged in teaching, whether in a College, High, Secondary, or Primary school, and all who have retired from teaching and have adopted no other profession, are eligible to become members. Teachers in each station where no association exists should meet and form themselves into a local association and appoint a Secretary. The Secretary of the association will forward to the General Secretary of the Union, the names of all members in his association with an annual capitation fee of As. 8 for all College or Secondary teachers, and of As. 2 for Elementary teachers. All persons so reported will be registered as members of the Union.

V. The Bangalore Teachers' Association.

A Teachers' Association has been formed at Bangalore, the rules of which are given below.

It will be noticed that the Association has resolved to apply for affiliation to the South India Teachers' Union, the capitation fees to be paid by the Association. The first paper given by the President of the Association, the Rev. H. Pakenham Walsh, is published in this number of the Journal and will be read with great interest. Charles F. Lipp, Esq., Pastor, Methodist Episcopal Church, Bangalore, is the Secretary. It is hoped that the Association will do good work and will be a source of great strength to the Union.

Rules adopted at a Meeting on March 19th, 1910.

1. That the Association be called "The Bangalore Teachers' Association."

2. That membership be open to all managers of, and teachers in, recognised schools and colleges, who are duly elected under Rule 4, and to all teachers who have retired from active service.

3. That the fee for membership be Re. 1 per term (three terms in a year) with a rebate of 8 annas in the case of teachers only qualified to teach from IV Standard downward.

4. That candidates for membership be proposed by one member and seconded by another at a meeting of the Association, and that their election be decided by the Committee.

5. That the Association elect a President, Vice-President, Treasurer, and Secretary, and four other members of Committee at their first meeting each year. These eight will form the managing committee with the President, or in his absence the Vice-President as Chairman (with a casting vote in addition to his own vote). Four to form a quorum. Two members at least of the Committee are to be Indians.

6. That the Association meet one day in each month at 6 p.m., except in holidays and broken months of term, at different centres, where papers on educational or kindred subjects will be read by members or others, or such other programme be gone through as the Committee shall arrange. Light refreshments shall be provided, and the expense borne by the Association.

7. That the Association will apply for affiliation to the South India Teachers' Union. The capitation fees of members will be paid by the Association.

THE SOUTH INDIA TEACHERS' UNION.

Vol. I.]

AUGUST, 1910.

[No. 6.]

[All contributions, &c., should be addressed to the General Secretary, S.I.T.U., Wesley College, Madras S. W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

REPORTS OF AFFILIATED ASSOCIATIONS.

(1) THE MADRAS TEACHERS' GUILD.

A meeting of the Guild was held on Friday, the 12th instant, in one of the upper rooms in Pachaiyappa's College. About 45 members were present. Mr. P. V. Seshu Iyer was voted to the chair. It was resolved after some discussion that the Guild do make its contribution for the year 1909-10 to the South India Teachers' Union as it did in the past year. The question of nominating candidates to offices in the S. I. T. U. was next taken up. Mr. P. Lakshminarasu was nominated for the Vice-Presidentship, and Mr. A. Panchapakesa Iyer for the Secretaryship. The Guild then elected Mr. S. Vasudeva Chariar as its representative on the Executive Board.

The debate of the evening on how to keep a steady and continuous record of the progress of boys under the School Leaving Certificate Scheme was opened by Mr. S. Gnanamuthu of the Christian College. He outlined the scheme as it is being tried in the Christian College at present. The system that was adopted last term was found cumbersome and has now given place to a more convenient one. Under this system provision is made for one entry per month for each boy as detailed below :—

1. English. Prose	one entry	maximum	5
Poetry	"	"	5
Composition	"	"	15
Written Exercises two	"	"	10
Total	...		35

There is no restriction as to the number of oral questions that may be put to a boy, but the entry should be only one for each month. There are three exercises in composition bearing on general topics as well as matter taken from non-detailed portions. By written exercises are meant exercises written within a school period. Of these there are two, the subject-matter of them being the texts as well as some General English. The object of these written exercises is to test accurately what cannot be so accurately tested orally. The relative value of sessional examinations to regular class-work has not yet been determined. At the Inspector's Conference held last term, it was suggested that 50 % might be taken for the term examinations.

For other subjects, the system is as follows :—

1. Elementary Mathematics :

Oral	one entry	maximum	5
Practical	"	"	5

2. Science :

Oral	"	"	5
Practical	"	"	5
Note-books	"	"	5

3. History and Geography :

Oral and written	"	"	10
Map-drawing, &c.	"	"	5

4. Vernacular two entries " 10

5. Vernacular Translation and Composition, three exercises " 15

6. Geometry	Oral	"	5
and Algebra :	exercises	"	5

The examination of rough note-books maintained by the boys is a special feature.

Mr. V. Venkatasubba Iyer of Pachaiyappa's College then spoke about the system prevailing in his College. Composition work is assigned to tutors, who thus relieve the class teachers of considerable strain. Translation work is distributed among six teachers. All the exercises set to a class are not corrected. A few of them are done during the day in the presence of the boys. A fresh batch of boys is taken up for the next examination. For English work they have a total of 100. In Mathematics much oral work is not possible, unless it be that the boys are made to do sums on the board. Great latitude is given to teachers in the matter of Home-Exercises. These do not count for purposes of the record. In concluding his speech, Mr. Venkatasubba Iyer remarked that under the new system the boys showed evidence of better attention and preparation, and that, for one thing, their handwriting seemed to be improving. But he feared that where formerly examinations dominated the minds of boys, marks have come to take their place. Though it may be rather premature to pronounce on the working of this system, he apprehended that under the undue strain thrown on boys, their health might suffer very much.

Mr. T. A. Swaminatha Aiyar of the Hindu High School is adopting a system that has the stamp of simplicity on it. He has fixed a maximum of 100 for each subject and has allotted a specific percentage for written work and another for oral work.

Mr. Manikka Chetty of the Muthialpet High School emphasised the value of 'uncertain' examinations, as they furnish a good test of uniform preparation on the part of boys. His maximum for this important item of school record is 30. He does not believe in a vigorous and set method of maintaining the record. He is for getting masters to offer their remarks on the general ability of boys and reducing them later to a mathematical percentage.

Mr. Viraraghava Chariar of Pachaiyappa's has a maximum of 30 for history and 30 for geography, (10 for written work, 10 for oral, and 10 for map-drawing done in the class). He said that exercises should be corrected in the presence of boys. He was glad that notes taking has become a thing of the past. He was not for maintaining any secrecy in the matter of marking (for the record is bound to go up to the parents).

Mr. K. B. Ramanatha Iyer observed that though one devil had been driven out of the house, seven fresh devils had taken possession of the house swept and garnished. Between the managers fancying that the schoolmasters have an easy time of it now and the Inspector bearing down on them, the situation has become acute. He was afraid that with the undue burden of marks, the boys might go mad. He said that very often he felt the need for a record even in the case of College students, particularly those who did not prosper at the University but wanted certificates to enable them to enter life. He wanted to supplement the fertile devices already laid before the meeting. It occurred to him that it would be a good way of relieving the strain both on masters and on boys and of introducing an element of cheerfulness into the classroom, if masters would get to close quarters with boys, lead them into genial and familiar talks, get them to unfold themselves little by little and thus build up a satisfactory record. He said that steps should be taken to see that with the marks system, the examinations did not become a permanent inmate of the class-room.

Mr. P. V. Seshu Aiyar in his concluding speech said that there was no reason to envy the lot of the high school master and his pupil. He suggested that the *viva voce* examinations might be adopted more extensively. He apprehended that the supervision of records would be rather a difficult task for inspecting officers. With a vote of thanks to the chair and an announcement of a magic lantern exhibition on Pallava archi-

ecture in Southern India by Mr. Ewing of the Y.M.C.A., to come off for the 29th August, the meeting closed.

(2) SCIENCE AND MATHEMATICS SECTION, M.T.G.

A meeting of the Section was announced to be held on 12th April 1910 in the Hindu High School Hall, Triplicane; but as there were only four members present, the meeting was adjourned and the adjourned meeting was held on 25th April 1910 in the Pachaiyappa's College with Mr. M. C. S. Anantapadmanabha Rau in the chair.

(1) First business was the election of the Secretary to the Section for the year 1910. Mr. P. V. Seshu Iyer was unanimously re-elected Secretary.

(2) Next, a paper on the use of squared paper in arithmetic, was read by Mr. C. K. Krishna Iyengar of the Hindu High School. The paper contained many hints as to where squared paper may be profitably used in arithmetic. The following are some of the cases where squared paper may be used:—

(1) in addition, specially of arithmetic series like 1, 3, 5;

(2) (a) in multiplication, *e.g.*, to prove $3 \times 4 = 4 \times 3$; (b) to find the product of two numbers of the form 18×23 ;

(3) equivalence of fractions, *e.g.*, $\frac{2}{3} = \frac{4}{6}$;

(4) division of fractions by integers, *e.g.*, $2\frac{1}{2}$ by 3;

(5) multiplication and division of a fraction by another fraction;

(6) division by factors and amalgamating remainders;

(7) teaching the principle of the ordinary method of finding the G.C.M.

The lecturer then pointed out some parts where squared paper is advocated, not to any advantage, but simply as a fad, *e.g.*, in problems in time and work, etc. The Chairman in his concluding

remarks said that $\frac{1}{4}$ th inch squared paper notebooks must be used by boys from the very beginning to work exercises in arithmetic, for such use will make them write arithmetical figures with space apart and one below the other and thus avoid a good portion of the mistakes otherwise committed. He said that graphs and squared paper should be regarded as means to an end and not as an end, and their use must be confined to whenever it is profitable and really advantageous. Also graphical solutions give only approximate results and hence should not be unduly used in arithmetic one of whose aim is accuracy. He then gave instances where graphs are really useful in framing Railway time-tables, in plotting statistics, etc.

With the usual vote of thanks the meeting terminated.

Another meeting of the Section was held on 4th August, 1910 in Wesley College, Royapettah, with Mr. A. S. Kasturi Ranga Iyer in the chair. There was a discussion on the exact scope of Elementary Mathematics prescribed in Group A of the School Leaving Certificate Scheme. Mr. P. V. Seshu Iyer opened the discussion by reading out the Syllabus published by the S.L.C. Board and pointed out how the Syllabus is in a condensed form, the Syllabus prepared by the Mathematics the Science Section of the Guild. The Syllabus practically comprised the whole of Arithmetic as was hitherto taught for the Matriculation pupils, including graphical and practical exercises as well as simple algebraical rules and processes up to the solution of linear equations of one and two variables and practical and experimental Geometry covering the first four books of Euclid and similar triangles.

Mr. G. S. Ramaswamy Iyer of the Wesley College then explained in what order the several parts of the subject are taken up in the three higher forms of his College. The distribution is given in a tabular form in Appendix C.

Mr. T. A. Swaminadha Iyer observed that the scope of the subject as published by the Board is not quite clear. One could not say whether the Syllabus includes Practice, Time and Distance, Time and Work, &c. He wished the Syllabus had been more clearly and definitely sketched.

Then there was some discussion as to the number of hours to be allotted to the subject and it was agreed that four periods a week must be given to the subject. With the usual vote of thanks the meeting came to a close.

P. V. SESHU IYER,
Hon. Secretary, Mathematics
and Science Section, M. T. G.
TRIPPLICANE,
18th August 1910.

ANNOUNCEMENTS.

I. The Executive Board.

On the 31st of October next, the members that form the Executive Board now will vacate their seats and new members will be elected in their place. M.R.Ry. K.B. Ramanadha Iyer, who is now the Vice-President of the Union will be the President of the next year according to Rule 3 b. Nominations have been received for the Vice-Presidency and the Secretaryship from the various affiliated associations and voting papers have been sent out for the final election. The various associations in each circle have also been asked to elect one of their members to represent them on the Executive Board. It is hoped that the votes in these elections will be recorded early in October, when the names of the members of the Executive Board for the new year will be announced.

II. The Annual Conference.

In accordance with the provisions of Rule 13, the Annual Conference for the year should be held in December next. The date and place of meeting will be settled by the Executive Board and the programme drawn up early in October, when, it is hoped, the Executive Board will meet. Suggestions regarding the matters that may be

taken up for discussions and other points connected with the Conference are hereby invited, and it will be a convenience if the suggestions are sent so as to reach the Secretary not later than the 30th of September, so that they may be taken up for consideration by the Executive Board when they meet. It may not be out of place to draw the attention of members, in this connection, to the aims of the Union as detailed in the Rules:—

(1) to focus the opinions of the various affiliated associations on important educational questions and present them as the opinions of the Union;

(2) to improve the status, pay and prospects of its members;

(3) to encourage an *esprit de corps* amongst its members.

I may also draw the attention of the Members of the Union to Rule 14, which requires, that every alteration in the Rules shall be made only at the Annual Conference of delegates and that notice of suggested alterations must be sent to the General Secretary before the 31st of October previous to the Annual Conference. To facilitate making these suggestions, the Rules of the Union as they are at present are printed below as appendix A.

As regards the voting at the Conference each association will be invited to send representatives who will have voting power equal to the number of members in their Local Association. Each Association will therefore be able to influence the result according to its size.

III. Teachers' Registry.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Re. 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

IV. S.I.T.U. Membership.

All persons actually engaged in teaching, whether in a College or High School, Secondary or Elementary, and all who have retired from teaching and have adopted no other profession, are eligible to become members. Teachers in each station where no association exists should meet and form themselves into a local association and appoint a Secretary. The Secretary of the Association will forward to the General Secretary of the Union, the names of all members in his association with an annual capitation fee of As. 8 for all College or Secondary teachers, and of As. 2 for Elementary teachers. All persons so reported will be registered as members of the Union.

APPENDIX. A.

RULES OF THE UNION.

1. The Union shall be called the South India Teachers' Union and shall consist of members of local association of teachers having their own officers and rules.

II. The aims of the Union shall be:—

(1) to focus the opinions of the various affiliated associations on important educational questions and present them as the opinions of the Union.

(2) to improve the status, pay, and prospects of its members.

(3) to encourage an *esprit de corps* amongst its members.

III. The affairs of the Union shall be managed by an Executive Board which shall consist of—

(a) a President;

(b) a Vice-President who shall be a member of the Union and who shall be annually elected by ballot by the members of the Union before the 1st of October of the previous year. The Vice-President of any year shall be the President of the following year;

(c) a Secretary who shall be a member of the Union and who shall be annually elected by ballot, by the members of the Union, before the 1st of October of the previous year;

(d) a Council of one member for each circle into which South India is for the time being divided for the purposes of the Union. The local associations in each case will elect by ballot, before the 1st of October of the previous year, one of their Union members to represent their circle on the Executive Board.

IV. For the purposes of III. (d) the following will be the circles

- (1) Ganjam, Vizagapatam and Godavory.
- (2) Kistna, Guntur and Nellore.
- (3) Ceded Districts.
- (4) Madras.
- (5) Chingleput, North Arcot and South Arcot.
- (6) Tanjore and Trichinopoly.
- (7) Coimbatore, Salem and the Nilgiris.
- (8) Madura and Tinnevely.
- (9) Malabar, Cochin and South Canara.
- (10) Travancore.

V. In each circle the Union shall endeavour to establish and increase the number of Local Associations of Teachers having their own officers and rules.

VI. The members of the local associations, in order to join the Union, shall, through the Secretary of their Associations and before the 1st of September in each year, pay the capitation

fee fixed by the Executive Board. [For 1909, the capitation fee shall be annas 8 with a rebate, for primary teachers, of annas 4. For 1910, the capitation fee for Elementary teachers is as. 2, instead of as. 4].

N.B.—Only persons actually engaged in teaching or who have retired from the profession and have adopted no other profession can be enrolled as members of the Union. This rule does not prevent local associations from admitting other persons to their membership should they so desire.

VII. The official year of the Union shall be from November 1st to October 31st.

VIII. The Executive Board shall have power

(a) to affiliate local associations;

(b) to determine the voting strength of each affiliated association;

(c) to exclude from membership any member whose conduct has in their opinion been such as to bring discredit upon the profession or Union, after due consultation with the local association of which he is a member. [*N.B.*—The members so excluded shall have the right of appeal to the Union at the following annual Conference].

IX. Vacancies in the Board shall be filled by the circle or circles affected, electing fresh representatives forthwith. A vacancy among the officers shall be filled by the Executive Board until the time of the next election.

X. The Executive Board shall meet at least once in a year and oftener if occasion demands it.

XI. The Secretary's expenses and office expenses and also the travelling and halting expenses of the members of the Executive Board shall be met from the funds of the Union after being passed by the Board.

XII. The Executive Board shall present at the Annual Conference a report and a statement of accounts for the previous year.

XIII. An Annual Conference at one of the educational centres of South India shall be held during the month of December. At this Conference all members of the Union shall have equal voting power. Associations can give their collective voting power to one or more delegates who shall be supplied with votes equal in number to the Union members of the Association they represent.

XIV. No alteration in, or addition to, the rules shall be made except at the Annual Conference of delegates. Notice of suggested alterations must be sent to the Union Secretary before the 31st of October previous to the Annual Conference, and the same shall be printed in the Conference Agenda.

XV. Five shall constitute a quorum for meetings of the Executive Board.

APPENDIX B.

THE COIMBATORE TEACHERS' ASSOCIATION.

Programme of meetings to be held on Saturdays for the half-year ending December 1910.

16th July at Coimbatore College, Study of Botany (A Demonstration with Lantern Slides), by M. R. Ry. K. Rangachariar, M.A., L.T.

23rd July at St. Michael's Institution, Comets, by M. R. Ry. M. Kannan, B.A., L.T.

13th August at L. M. H. School, Tamil Prose Writing, by M. R. Ry. C. S. Chockalingam Pillai.

3rd September at Coimbatore College, The Seasons, by Miss M. Peddie.

24th September at Coimbatore College, Open Air Schools in England and on the Continent, by Rev. Father G. Boulanger, S.A.

5th October at Government Training School for Masters, the Adaptation of the Curriculum of an Elementary School to the Needs of an Agricultural Community, by

M. R. Ry. R. Rangaswami Aiyengar, B.A., L.T.

22nd October at St. Michael's Institution, the Republic of Plato, by M. R. Ry. A. S. Vaidyanatha Aiyar, M.A., L.T.

5th November at L. M. H. School, Introductory Course of Elementary Mathematics, by M. R. Ry. N. Sanjiva Rao, B.A., L.T.

19th November at Coimbatore College, Some Determinations in Physical Science, by M. R. Ry. T. S. Venkataramana Aiyar, B.A., L.T.

3rd December at Coimbatore College, The Public Schools of England, by Mr. R. G. Wright, B.A.

COIMBATORE, } T. S. VENKATARAMANA AIYAR, Secy.
13th July 1910.

APPENDIX C.

ELEMENTARY MATHEMATICS SYLLABUS.

IV Form.

N.B.—H. & S. refers to Hall and Stevens' School Geometry.

Long term :—

The four rules applied to integers and fractions; Factors; G. C. M. and L. C. M. and problems involving them.

Bisection of lines and angles. drawing perpendiculars and parallels; Construction of triangles (Simple Cases).

Ratio and Proportion: Proportional parts: Extraction of Square Root.

Experimental proof of Theorems 1—7. (H. & S.) Averages and Percentages: Approximations: Addition and Subtraction of decimals.

Experimental proof of Theorems 13—17. (H. & S.)

Simple Interest; Profit and Loss (Easy).

Problems 1—3. (H. & S.)

Income-tax and Miscellaneous Problems.

Problems 4—6 (H. & S.)

Problems 7—8. (H. & S.): Revision.

Short term :—

Time and Work.

Problems 9 and 10. (H. & S.)

Time and Distance.

Problems 14 and 15. (H. & S.)

Square Measure; Metric System (Linear and Square).

Problems 11, 12, and 13. (H. & S.)

Revision.

Examination.

V Form.

Long term :—

Advanced G. C. M. and L. C. M.; Ratio and Proportion.

$(x+a)(x+b), (a+b)(c+d)$ and their applications. Experimental proof of Theorems 23—28 and Construction of Δ^* , having given base, altitude, and one side or one of the base angles.

Proportion and proportional parts by Graphs.

Graph of $y = mx + c$.

Areas of triangles and quadrilaterals (by graphs and actual measurement.)

Averages and Percentages (advanced); Approximation; Contracted Multiplication and Division; Decimalisation of Indian and English money.

Solution of equations of two unknowns by graphs.

Construction of a triangle = a given polygon, and a parallelogram equal to a given rectilinear figure.

Experimental proof of Theorem of Pythagoras. Compound Interest; Simple and Compound Interest.

Easy Problems (Two unknowns).

Income-tax, Profit and Loss; Discount.

Problems (contd).

Properties of chords of a circle.

Revision.

Short term :—

Time and Work.

Graphs of linear functions.

Properties of angles in a circle; Equal Circles.
Time and Distance.

Statistical Graphs.

Problems 20, 21, 22, 23. (H. & S.) Tangents.

Square Measure; Conversion of Metric units into British units and vice versa.

Cubic Measure (British and Metric.)

Statistical Graphs—Interpolation.

Revision.

Examination.

VI Form.

Long term :—

Principle of variation deduced from proportion (direct and inverse).

Description of circles from given data (simple cases.)

Significant figures; Averages and Percentages (advanced).

Graphs of Arithmetical Problems.

Areas of Prisms, Cylinders, Pyramids and Cones; Square Root by Graphs.

Exchange; Insurance; Income-tax.

Graphs of Arithmetical Problems (contd.)

Construction of Circles involving tangents.

Problem 32. (H. & S.)

Discount (advanced); Profit and Loss (advanced).

Bankruptcy and Partnership.

Volumes of Prisms, Cylinders, Pyramids and Cones.

Revision.

Short term :—

Time and Work; Time and Distance, including problems on trains and watches.

Drawing to Scale; Diagonal Scale.

Stocks and Shares; Brokerage.

Revision.

Examination.

IV Form.

GEOMETRY (Theoretical).

Long term :—

Definitions.

Theorems 1, 2, 3, 4. (H. & S.)

Theorems 5, 6, 7, 8. (H. & S.)

Theorems 9, 10, 11. (H. & S.)

Theorems 12, 13, 14, 15. (H. & S.)

Revision.

Short term :—

Theorems 16 and 17. (H. & S.)

Theorems 18, 19 and converse. (H. & S.)

Theorems 20, 21, 22. (H. & S.)

Revision.

Examination.

IV Form.

ALGEBRA (Part of Elementary Mathematics.)

Long term :—

Symbolical representation of arithmetical results and definitions; numerical substitution.

Addition and Subtraction.

Brackets; negative quantities.

Multiplication.

Division.

Revision.

Short term :—

Simple Equations in one unknown.

Problems on the above.

Formulae, $(a \pm b)^2$, $a^2 - b^2$.

Revision.

Examination.

THE SOUTH INDIA TEACHERS' UNION.

[No. 7.]

OCTOBER, 1910.

Vol. I.]

[All contributions, should be addressed to the General Secretary, S.I.T.U., Wesley College, Madras S.W. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U. not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

THE ADAPTATION OF THE CURRICULUM OF ELEMENTARY SCHOOLS TO THE NEEDS OF AN AGRICULTURAL COMMUNITY.*

The subject of this paper, involving as it does questions of vital importance affecting the welfare of large masses of humanity directly subsisting on the land, and through them their respective nationalities and states, is one which can be satisfactorily dealt with only by men of far greater capabilities, knowledge and experience, than I can possibly boast of, and one, too, which will not admit of being satisfactorily discussed in the brief space of a half hour. However, as I have been called upon to say something in connection with that topic, I have come forward with a few stray ideas which, I am conscious, are very much wanting in exhaustiveness and arrangement—with the confidence that the deficiencies of the paper itself will be more than made up for by the illuminating observations of the learned audience I am addressing.

Before proceeding further I have to premise that I restrict myself in what follows to South Indian conditions and my analysis of the requirements and needs of the people and the corresponding suggestions as to curriculum and methods are applicable only to this part of the country.

Going on to the subject itself, it seems to me that the following order of treatment will be useful :—

First :—The nature of the agricultural community which forms the subject-matter of the present

discourse—its composition, its social and economic life, and differences, if any, in that life between the constituent elements of the community.

Secondly :—Examination of the exact needs and requirements of the respective constituents.

Thirdly :—Consideration of the way in which the curriculum of the elementary school may be adapted to suit and provide for these varying requirements.

And it would be well to preface these considerations with a brief reference to some of the *Fundamental Principles* underlying the framing of any curriculum in general.

Following this line of enquiry, we have first of all to remind ourselves of one or two important principles relating to the proper framing of curricula which cannot be better enunciated than in the language of Prof. Welton, the eminent authority on matters educational. While discussing this point, he says, "It is seen, then, that the decision of this question of the value of any part of the school curriculum is dominated by the conclusion we arrive at with regard to the aim of the school-work as a whole. We have decided this to be, in the most general terms, to bring the pupils, as far as possible, into good, true and effective relations with the world of which they are constituents."

"If we analyse this idea we shall find that it covers—

1. Preparation for the *utilitarian life* of earning a living.
2. Preparation for *social life* in all its forms.
3. Preparation for the *private life* of cultured leisure.

On the *subjective side* this means a development of the *inner capacity* with reference to these ends. Now, according to our conception of the life our pupils lead in the present and are likely to lead in the future we shall emphasise the relative importance of one or other of these great departments."

* This paper was read by M.R.Ry. R. Rangaswami Aiyangar B.A., L.T., Headmaster, Govt. Training School, Coimbatore, at a meeting of the Coimbatore Teachers' Association which was held at the Agricultural College and Research Institute, Coimbatore. Mr. Wood, Principal of the College and a member of the Coimbatore Teachers' Association presided.

Again, he says, "Of a curriculum, as a whole, we therefore ask, does it instil a large number of fruitful and generous ideas in connection with all the typical relations in which the pupils are brought in life, and does it so relate and organise those ideas that they are in true relation with each other and with the life the child has to lead? Similarly, of any special factor of the curriculum, we ask: Is the matter calculated to bring the pupils into truer and closer relations with that particular part of their environment and is it likely to do this in an inspiring way, that is, so as to provide a nobler and wider outlook on life? If the answer is favourable, then the knowledge which it is proposed to give is both useful and disciplinary."

One more extract I may be permitted to make. "It is obvious that the application of our general test would lead to different details of curriculum in different classes of schools—the main conditions of difference being—the character of the actual life of the pupils, the age to which most of them remain at school, and the broad kind of Industrial or Professional life the great majority of them may be expected to live."

In other words—the curriculum of the school should be adapted to the sort of life which the great majority of pupils are living at present, their social status and civilisation, the age to which they are likely to continue their schooling, and their probable future.

The principles enunciated above will considerably help us in our present enquiry, and this fact may be taken to be my justification in going over this topic at some length.

To proceed next to the consideration of the nature and composition of the vast agricultural community with which we are concerned at present, we find that it can be analysed into two distinct elements, viz., the landowning class and the peasantry or the class of agricultural labourers who, while having no proprietary interest in the land, are yet intimately connected with it. We omit from our present analysis the Zemindars and other landowners belonging to the aristocracy of the land, for the reason that the education of their children is provided for by agencies other than the ordinary Elementary Schools. And between the two classes into which the agricultural community may be thus divided, considerable amount of difference in social and economic conditions, in civilisation, in intellectual attainments and capabilities, and in the probable future of their children, is found to exist side by side with a considerable

amount of homogeneity in other respects. It therefore follows that the same grade, if not the same type, of schools and the same subjects and standards of instruction cannot be suited to both of them to the same extent. On the other hand, these observed differences in civilization, intellectual capabilities, etc., call for the setting up of different standards and the adoption of different aims and methods. And these will, as has been pointed out, be determined by the actual and probable requirements and needs of the two classes.

This leads us to an examination of the needs, which forms the next division of our subject, and this examination we shall try to make as brief as possible. And in this connection it seems advisable not only to discover and discuss, one by one, the several needs of the two classes we have been considering, but also to suggest what appropriate subject or subjects may profitably be included in the curriculum in order to satisfy each need. Thus the question of the adaptation of the curriculum, which we have constituted to be the concluding division of our subject, will be taken up gradually and answered as we proceed.

Turning, then, to the land-owning class, which forms a considerable and important factor in the rural economy of our country, we find that any scheme of education and of curriculum that is elaborated and intended for them should, applying the general principle that has been already referred to, be such as would enable the children of that class to enter into typical relations with life as it is at present and in their own surroundings and also to prepare them for their probable destiny. To go a little deeper into the question, the several departments of human activity, can, as has already been pointed out, be roughly summarised as these:—(1) which serve the immediate utilitarian purpose of earning a living, (2) those which have relation to social life in all its forms, (3) and finally, those which relate to the private life of cultured leisure. And the education and the preparation given in the school should be preparation for all these departments of activity: or, to express the same thing in other words, the training of the child should be directed both to the Humanistic or the culture side and the Realistic or the practical side.

Taking the humanistic aspect of the question first, we have to consider what subject or subjects are best fitted for the purpose and must consequently form a part of the Curriculum.

First in order of importance comes of course the Mother-tongue and little need be said con-

cerning its value as a humanising agency which gradually leads the child to a sympathetic understanding of the thoughts and feelings and sentiment of others and thus enables him to share in the common heritage of human knowledge and experience and wisdom. It has only to be pointed out here that instruction in the mother-tongue should embrace all departments of literature—stories, narratives, fiction and poetry.

A second humanistic study which may usefully and appropriately be included in the curriculum for the class of schools we are considering is History, comprising local history and traditions in the first instance and the landmarks in the history of India, as also an account of the manners and customs of the English people, in the case of more advanced children.

Along with History, an elementary course in civics, the topics covered in it not extending beyond the limits of the home district, may also be taken up. Perhaps the more important facts relating to the administrative machinery of the Presidency may also be included, as well as an account of the benefits of British Rule in India.

And, finally, under this heading we have to recognise the necessity for, and the importance of, the training of the aesthetic sense, and arrange for the provision of a course of instruction and training in the perception of beauty of form and of sound.

So much for the provision of the scope for the training of the child on the humanistic side. The corresponding demand on the other side, viz., the realistic or the practical, is, if possible, still greater and pressing.

In the first place, a knowledge of the three R's as they have been traditionally designated is absolutely essential under modern conditions of society and little need be said on that point. The only remark that may be made in this connection is that sufficient attention should be paid to indigenous methods of reckoning and calculation.

Next comes a knowledge of the operations connected with the measurement and plotting of areas which is of daily practical utility to the class of people we are considering. I mean the reading of village maps, an elementary knowledge of Survey, etc., and this should of course, be duly provided for.

Closely akin to the above is a knowledge of the more important of the village accounts and forms

and registers, of the procedure connected with a few revenue transactions such as remissions, darkast, transfer of pattas, etc.

An acquaintance with the prominent rules relating to the execution and registration of documents will also be found to be of immense practical utility to the village landholder, and it may not be impossible to arrange for some kind of instruction being given on the subject.

To the same class as the above belongs a knowledge of the functions of the village officer, and the working of the village administrative machinery, and this subject has already been referred to.

Coming next to that department of activity with which the village landowner is brought into daily contact and which forms his all-absorbing concern, viz., that relating to Agriculture, the present writer may perhaps be pardoned if he feels somewhat nervous and disinclined to venture to offer any suggestions or make any comments in the presence of specialists and high officers of Government who are devoting their best talents, learning, time and experience to the satisfactory solution of the problem. However, having taken up the task, I am afraid there can be little justification in trying to evade it, and I venture to offer these remarks not because I feel they are particularly valuable but because I am sure they will be the means of eliciting from the learned Chairman, observations and suggestions which I have no doubt, we shall all be considerably profited by.

Returning to our subject, the one great life concern of the village land-owner, that on which his prosperity and happiness depends, is, as we all know, agriculture, and it needs no arguing to realise that a rural school which professes to educate the sons of this class of people ought to make some provision in training them in that science or art or scientific art, whatever it may be, which is to be of such vital importance to them when they grow up. The difficulty, however, is in the matter of coming to an agreement as to what definite shape and character that training is to assume, what are the possibilities of such a training in village schools, and how to facilitate such kind of work being turned out there.

And in this connection I may perhaps be allowed to remark that, in our earnestness to secure to the pupils attending our village schools the advantages of such an essential training as the one in question, we should not lose sight of the fact that, after all, the village schools are

primarily schools for general education and not intended directly to prepare for any kind of industrial or professional life that may be awaiting the pupils on their leaving the schools. That is the legitimate function of the *special* schools, technical or industrial or agricultural as the case may be, which the ordinary general education schools may not with propriety be expected to discharge.

It seems to me, however, that a course of instruction, as the one indicated below, which will be of considerable use to the pupils as preparatory to a more systematic study of agriculture later on, may be arranged for, the children going through the course in a spirit of intelligent enquiry, and adopting under the guidance of the teacher a method of study which may be characterised as scientific to some extent.

Thus, a course of lessons bearing on plant life in general, including the study of the life-histories of particular plants which may frequently extend over several weeks or even months may very appropriately be arranged for in almost all schools, the lessons being based, not upon second-hand information obtained from books or from other sources, but upon the *direct* study of the objects and specimens concerned.

As has been hinted at above, not only isolated facts, but also facts which are connected together in an organic series, the observation of which may extend over a fairly long period of time, may be studied, explained and understood.

The *school garden* forms in this connection a necessary adjunct of the school, the work done there being correlated with the Nature study work of the class-room. The garden may very appropriately contain specimens of the several kinds of crops grown in the locality, and in raising these crops the teacher, if he happens to be earnest and enthusiastic, will of course study the local methods and operations and thereby better equip himself for the task of the efficient handling of his subject. As for original experimental work in methods, etc., that is, I suppose, too much to expect from the village school-masters as they are at present.

And this naturally takes me to a brief consideration of the possible ways in which improvements in this respect may be effected; and, although this does not properly fall within the scope of our subject to-day, it is touched upon here because of its practical importance and because I believe that, if the question is raised in this meeting of the Coimbatore Teachers'

Association which has the special good fortune of being presided over by a high officer of the Agricultural Department, and of being attended among others by several distinguished members of the same service, it may possibly have a chance of being taken up and carried forward to some extent along its way to solution.

The problem may be stated in the following terms:—In consideration of the fact that a large majority of the population of the Presidency, to which we have confined our attention, depend directly and immediately upon the land for their sustenance and their welfare, and that, consequently, agriculture forms one of the most, if not absolutely the most, important industries of the country, and further that, owing to the foregoing facts, it is *forced* extremely desirable, if not absolutely *peremptory*, to make due provision in village schools for efficient instruction in a suitable preparatory course of study, in consideration of these facts, how can the ordinary village teacher on whom so much responsibility devolves, be made more competent and efficient and able to discharge this part of his overwidening duties at least to some degree of satisfaction? And, as I fear I have already been encroaching on your kind patience and exercising your spirit of tolerance to a considerable extent, I will content myself with a brief reference to a few ideas bearing on the subject which seem to me to be appropriate and possible.

In the first place I may be allowed to refer to the point which lies nearest to me, *viz.*, the possibilities of the Training school in the matter. All that has been said above concerning the duties and the responsibilities of the village teacher, their nature and extent, applies with infinitely greater force and propriety to the Training school teacher; and, if it behoves the former to bestir himself in his own humble sphere of work, it behoves the latter, a hundred times more appropriately to bestir himself and try to awaken to the new conditions and the new calls which are being daily made on his attention and activities; and, finally, if in the village schools provision has got to be made for efficient instruction in the elementary facts of agriculture, much more so should it be the case in Training schools. For that end, at least one teacher from every Training school should have gone through a course in training in practical and theoretical agriculture, a condition which, I fear, is far from being satisfied at present. In order, however, to bring about a gradual improvement in this condition of affairs

it may not, I imagine, be impossible to arrange periodically for the training of batches of teachers from Training schools in special institutions like this magnificent college. And this is one of the points which I referred to a little while ago as being capable of following up and realisation as a result of its being raised in this meeting.

Not only thus but in other ways too can the Department of Agriculture, in my humble opinion, expedite the otherwise tardy process of reaching the goal. For instance, it seems to me it would not be impossible to organise central agricultural classes for the benefit of village teachers in convenient localities and during convenient seasons of the year, classes which will be conducted by the subordinate officers of the Department somewhat on lines similar to the numerous Survey classes which are held throughout the Presidency for the benefit of the village *karuams*.

Again it appears it would be possible to arrange for the subordinate itinerating officers of the Department visiting village schools during their tours with a view to their advising the teachers on agricultural matters and encouraging them in the work they are engaged in.

And finally, these rural teachers may occasionally be afforded opportunities of studying the improved methods and operations which are adopted in model farms, such as those relating to manuring, ploughing, planting and transplanting; irrigating, harvesting, selection and preservation of seeds, rotation of crops, use of improved implements, etc., if such farms happen to be situated within convenient distances, and profiting by such studies and observations.

A considerable portion of the task I have set for myself remains yet untouched while I have almost touched the breaking point of your kind indulgence. I can therefore only refer in passing to the need for including in the curriculum instruction relating to Home Geography, Home Lore, to local economic conditions such as the nature and condition of the local market, to the fundamental principles of personal and domestic hygiene and sanitation and to social and moral life, including under the last category such topics as rural co-operation, the village panchayat and the village autonomy generally. Not that these are less important or less suited for elaborate

treatment but the exigencies of time and space impose on us such a restriction.

Turning to the consideration of the requirements of the other element, which taken along with the land-owning class makes up the great agricultural country of the land, we have got to consider whether their needs, educational and practical, are similar to those of the other class we have disposed of just now, and, if they differ, in what respects they differ.

Now, if we run through the analysis of needs we have made in the foregoing pages, we shall find that, with very few exceptions it may be taken to be applicable to this class also. And we need concern ourselves here only with the points of variation that may be discovered in the course of our comparison.

Thus the humanistic training that was provided for the higher class is also essential for the lower one, only the same quality and quantity need not be insisted upon; and this remark is applicable to all the aspects of such training, languages, history, artistic training, etc.

As for reckonings and calculation and measurements and knowledge of village farms, etc., we may be satisfied with a decidedly lower standard both as regards range and depth, because this class of village labourers are not likely to have very much to do with such things to the same extent in their every-day life.

A similar remark applies to instruction in Civics, Geography, and transactions connected with the execution of documents, etc.

In the case of Nature-study, Garden-work, and Agriculture and Hygiene, however, it seems to me that the same, if not a higher, amount of emphasis, ought to be laid; and, coming finally to the subjects which have reference to social and moral life, it does not appear to me justifiable to make any difference between the two types of school at all.

The last-mentioned topics, especially the subject of moral training and its inclusion in the School Curriculum, have formed the subject-matter of animated controversies throughout the civilized world in recent years and the question needs fuller treatment on a separate occasion.

ANNOUNCEMENTS.**(1) The Executive Board.**

The Union year comes to a close on the 31st instant; the existing office-bearers and the other members of the Executive Board will vacate their seats then. Elections for the coming year have been made, with the following result:—

President.

1. M.R.Ry. K. B. Ramanadha Iyer Avergal, M.A., L.T.

Vice-President.

2. M.R.Ry. P. Lakshmi Narasu Avergal, B.A.,
General Secretary.

3. M.R.Ry. A. Panchapakesa Iyer Avergal, M.A., L.T.

Other members.

4. Rev. A. F. Gardiner, M.A., Trichinopoly.
5. M.R.Ry. S. Vasudevachariar, B.A., L.T.,
Madras.
6. M.R.Ry. N. Paramasiva Iyer, B.A., Conjee-
varam.
7. M.R.Ry. T. S. Venkataramana Iyer, B.A.,
L.T., Coimbatore.
8. M.R.Ry. A. S. Masillamony, B.A., L.T.,
Nazareth.

(2) Annual Conference, 1910.

It has been arranged to hold the annual Conference in Madras, in December next, some time between the 18th and the 25th. The following programme has been tentatively arranged:—

(a) *Welcome Address*:—[The suggestion is to request Mr. J. H. Stone, President, M. T. G., to deliver this Address.]

(b) *Presidential Address*:—By M.R.Ry. K. B. Ramanadha Iyer Avergal, President, S.I.T.U.

(c) There will be papers on—

- (1) The School Record.
(2) The Government policy regarding Secondary education.
(3) Religious and Moral Instruction.
(4) And other subjects.
(d) The following Associations have been asked to arrange for a paper each:—

- (1) Trichinopoly Teachers' Association.
(2) Madura " "
(3) Coimbatore " "

The Board has resolved to make the following recommendations to the Conference regarding the Rules of the Union:—

(1) For the existing Rule 6, read:

"The subscription payable by each Association shall be calculated on the strength of the Association, at a rate that shall be fixed by the Executive Board. It is not optional to a member of an affiliated Association to be a member of the Association and not be a member of the Union."

(2) To Rule 4, add:

(11) The Mysore Province.

(3) For the existing Rule 11, read:

"The office expenses shall be met from the funds of the Union; the travelling and halting expenses of the members of the Executive Board shall be met from a special subscription to be levied for the purpose from all members of the Union."

(3) Admission of pupils holding Secondary S. L. Certificates into Colleges.

At the instance of the Committee appointed by the Conference of 1909, the Executive Board has resolved, after consultation with the affiliated Associations, that the following recommendation be made to the Syndicate of the Madras University:—

"Holders of completed Secondary School Leaving Certificates issued under the authority of Government of Madras or such other authority as may have been accepted by the Syndicate may be recognised as fit and proper persons for a college education, provided—

(a) their conduct has been satisfactory;

(b) they have obtained not less than—

- (i) 40 % of the aggregate marks in English
(ii) 30 % " Vernacular
" Composition and Translation.
(iii) 35 % of the aggregate marks in all subjects mentioned in Group B.

(iv) 40 % of the aggregate marks in each of the subjects in Group C, to be taken up in the Intermediate Course.
[Mr. P. Lakshminarasu suggests 35 % instead of 40 % in (b) iv above.]

(4) A Donation.

Considering that the finances of the S. I. T. U. are at a low ebb, M.R.Ry. A. Ramanan Iyer Ayl., B.A., of Madura, has made a very kind donation of Rs. 15 towards the funds of the Union.

(7) Statement of Receipts and Disbursements for the year 1909-1910.*Items of Receipts.*

	Rs.	A.	P.
1. Opening Balance ...	114	1	11
2. Capitation fee from affiliated Associations ...	166	8	0
3. Rent in respect of halls let out to publishers during Conference of 1909 ...	24	12	0
4. Private donation ...	15	0	0
Total ...	320	5	11

Items of Disbursements.

	Rs.	A.	P.
1. Travelling and halting expenses of members of Executive Board for meeting held on 30-10-09 ...	115	11	6
2. Conference expenses 1909 ...	20	8	0
3. Printing ...	63	13	6
4. Stamps and postage ...	41	4	3
5. Clerical charges ...	14	6	0
6. Advertisement charges ...	10	14	0
7. Miscellaneous ...	5	10	6
Balance ...	48	2	2
Total ...	320	5	11

Audited and found correct.

A. V. RAJAM,

(Auditor, M. H. P. Fund, Ltd.)

ROYAPETTAH, MADRAS. } S. VASUDEVACHARIAR,
31-10-1910. } General Secretary.

(5) Teachers' Registry.

The following are the rules for the registry of teachers seeking employment:—

(i) Every candidate who wishes to secure employment as a teacher shall send in his application in the prescribed form to the General Secretary.

(ii) The application shall be accompanied with a registration fee of Rs. 1.

(iii) Every application shall further be accompanied with three testimonials:—one of character, one of general educational qualifications, and one of professional qualification. The first testimonial must be from some responsible person and must be countersigned by two members of the Union.

(iv) The General Secretary shall be empowered to take such action as he may consider desirable with a view to securing suitable employment for those from whom applications have been received.

(6) S.I.T.U. Membership.

All persons actually engaged in teaching, whether in a College or High School, Secondary or Elementary, and all who have retired from teaching and have adopted no other profession, are eligible to become members. Teachers in each station where no Association exists should meet and form themselves into a local Association and appoint a Secretary. The Secretary of the Association will forward to the General Secretary of the Union, the names of all members in his Association with an annual capitation fee of As. 8 for all College or Secondary teachers, and of As. 2 for Elementary teachers. All persons so reported will be registered as members of the Union.

THE SOUTH INDIA TEACHERS' UNION.

Vol. II.]

NOVEMBER, 1910.

[No. 1.

[All contributions, &c., should be addressed to the General Secretary, S.I.T.U., P. S. High School, Mylapore. Communications intended for publication in the succeeding issue, should, as far as possible, reach the General Secretary, S.I.T.U., not later than the 20th of the month. The Secretaries of Affiliated Associations are requested to send in every month advertisements and reports of meetings for publication.]

THE S. I. T. U. JOURNAL.

THE JOURNAL enters this month on the second year of its existence. It has been doing a lot of useful work under the able management of Mr. S. Vasudevachariar, B.A., L.T., the late efficient and energetic General Secretary of the Union who did admirable work during the past one year and more. It has served as a useful channel of communication to the members of the Union all over the Presidency about the activities of the affiliated associations. The journal could have been made more useful had the Secretaries of the Associations been regularly sending, month after month, the proceedings of the meetings held and the summaries of the lectures delivered and of the papers read. It is hoped that the Associations will fully avail themselves of the columns of the journal for the publication of their activities. We must not omit to mention here the invaluable service rendered to the Union by Messrs. Srinivasa Varadachari & Co., by their undertaking to print the journal almost at a nominal cost.

THE FINANCE.

The late Secretary has already made it known that the finance of the Union is at a low ebb, and has therefore appealed for donations. We hope that this appeal will be heartily responded to; for without the sinews of war no successful work of any kind will be possible. It is painful to note that some affiliated Associations have not yet remitted the amounts due from them. It is hoped that ere long the amounts due will be remitted and the Union will be enabled to carry on its work with less difficulty than now.

A PROVIDENT FUND FOR TEACHERS.

It is generally known that the Madras Teachers' Guild has from its very start made persistent efforts to make some kind of provision against old age for teachers grown gray in their profession. Mofussil associations also, notably the Coimbatore Teachers' Association, have been hammering at the question again and again. As a result of this continuous work and as a result of the resolution passed at the Conference held at Madras in 1908 and sub-

mitted to Government, the Hon. Mr. J. H. Stone, M.A., was deputed by Government to inquire into and report on the practicability of a "Provident Fund Scheme." Mr. Stone instituted a systematic and thorough inquiry and submitted an exhaustive and sympathetic report explaining in detail the desirability and the possibility of the scheme. Dr. Bourne, now on leave, sympathetically recommended the scheme for approval by Government, but Government in their G. O., recently received believe the scheme to be premature, firstly on the score of heavy demand on the public purse and secondly on the score of difficulties in the way of the working out of such a big scheme.

Government seem to think that such a scheme cannot be thought of without a legislative enactment. The elementary teachers of England have been able to secure pensions only by a similar enactment and by the levy of an educational cess. The Director believes that the amount that may, year after year, be required, for many years to come cannot exceed a lakh and a half of rupees. Is it really impossible to find this amount for a laudable object by which the families of thousands of teachers who have rendered and are rendering onerous service to the State and the public, can be saved from utter indigence and penury. Ways and means have to be pointed out to Government. Who are to do it but those who have to benefit by the scheme? How can this be done unless there is united and persistent work? Government will not attach any value to the representations of the Conference unless it becomes representative in character with delegates from all parts of the Presidency and from all associations. The number of delegates attending the Conference must be large and there must be a fair representation of all associations. Mr. Stone remarks in his report that the teachers of this Presidency do not give evidence of their united action which characterises the National Union of Teachers in England. He is, however, of opinion that though the teachers cannot help themselves, yet, considering the service they render in the cause of enlightenment, they must be helped. Is it not high time that we give

up our indifference and rise a little above the usual lethargy so characteristic of the teaching profession in regard to united action?

THE PROPOSED ESTABLISHMENT OF GOVERNMENT MODEL SCHOOLS.

Opinions are divided in regard to the need of these schools. Managers of private schools have expressed alarm that the establishment of such schools will interfere with the strength and consequently, with the efficiency of schools under their management, that are doing excellent work. The money that will have to be expended on the proposed Government Schools might well be utilised either for primary education or for increased grants to Secondary Schools. While we have good Secondary Schools all over the Presidency there is no necessity for new institutions. It has also yet to be seen whether the Model Schools proposed to be started will be really model institutions. The success of an institution depends not so much upon its money but upon its men. How can we be sure that the men secured will always be of the best type of teachers?

It is argued on the other side that the amount required may not be very large and therefore the experiment is worth a trial. It is only those that have had experience as Managers of High Schools that can be expected to know what outlay will be required. They are of opinion that the demand will be too heavy. It is hoped that all possible questions in connection with the scheme will be fully discussed at the next Conference.

OUR GRANT-IN-AID CODE.

According to rules half the deficit on the actual cost of management is the maximum amount which can be expected as grants, if funds are available. The Conference must first pray for the conditional clause being removed. The claim of schools must become absolute. In the other provinces of India the state of things seems to be different. A higher proportion is borne by Government in provinces other than Madras. Why should not a similar principle be adopted in Madras which is admittedly a poor province? This is a good subject for a paper and systematic discussion.

MORAL EDUCATION IN SCHOOLS.

Another subject that is uppermost in public mind is moral education in schools. Moral education leagues and conferences are becoming the fashion of the day. In many civilized countries of the world moral education has been made a part and parcel of the school curriculum. The

report by Mr. Gustav Spiller, a good-sized volume, on moral instruction and moral training in eighteen countries, gives a full account of the state of moral instruction in the various countries of the world. Some are for no moral instruction but for the personal example of the teacher. Others insist on moral instruction entirely divorced from religion. There are others who would combine both. The S. I. T. Union, consisting as it does of teachers of all creeds, nationalities and faiths is the body most competent to take up this question at the next Conference. A full discussion is awaited.

SCHOOL RECORDS.

The school records, consequent on the introduction of the School Leaving Certificate Scheme, have considerably multiplied the work of teachers and headmasters. Views have been expressed that the objects aimed at by the existing system of records can be realised without the complexity of the records now required to be maintained. This is another subject that is expected to be brought up at the next Conference.

THE MADRAS TEACHERS' GUILD.

The following is the report received from Mr. P. Subramanya Aiyar, B.A., L.T., Hon. Secretary of the Guild on the activities of this body during the month of November.

The School-Leaving Certificate Scheme in relation to the Lower Secondary Schools.

A meeting of the Guild was held on Friday, the 28th of October, in the Kellett Institute, Triplicane, with Mr. P. V. Seshu Iyer in the Chair. Mr. A. C. Pranatharthihara Iyer's application for membership was passed amidst loud cheers. Mr. K. B. Ramanathan intimated to the meeting that the question of the Provident Fund should not be left at the stage at which they found it but should agitate for it till they are on a fair way to get it.

Mr. K. Chinnaasawmy Iyer, Headmaster, Progressive Union Middle School, then delivered his lecture on the above subject. He observed that there were certain salient features of the S. I. C. Scheme which one misses but would gladly see in the working of Lower Secondary Schools. Work of the kind contemplated under the new scheme should not begin in the 4th Form as it does now, but in the IV Standard. The school record should take note of oral, as well as written work in the L. S. classes, as in the High School classes. The aim of instruction should be to cultivate in boys a readiness of expression

and accuracy of thought. With a view to harmonise and co-ordinate instruction in all allied or kindred subjects at school, he objected to a multiplicity of note-books and recommended that notes on related subjects (e.g., English Texts, Composition, Translation) should go into one note-book. The lecturer saw no charms in rough note-books. He observed that on one side of a note-book, the boy should do his own notes and summaries while the other side should be set apart for answers to the done by boys. He pointed out that the feeling of novelty attaching to examinations would thus wear off. Periodical written tests should not be made much of in the L. S. classes. Special prominence should be given to the teaching of English and Vernaculars. General study in English, as well as in Vernaculars, should be promoted and encouraged. He concluded by calling on the Guild to give its attention to producing literature of the kind issued by Mr. Stead in English and by Mr. Namasivaya Mudaliar in Tamil.

Mr. T. R. Ramanatha Iyer said that the work of the College should be generically distinct from that of the College, while Mr. Jaya Rama Rao pleaded for a more extensive cultivation of the Heuristic method in the lower classes. Prof. K. B. Ramanathan said that all that High School tests succeed in doing is to work out utterly bad boys and that at College, he is very often assailed by monstrosities of bad spelling and careless writing, which, with greater care in L. S. classes ought to disappear at College. He said that there should be a good foundation for true education: he said that it should not be like Nebuchednazzar's image, with feet of clay and metal all above. Mr. P. Subrahmanyam said that L. S. teachers need to be taken on hand by H. S. teachers and helped on in the evolution of syllabuses. He was for an organised course of general reading right through the L. S. and H. S. classes. Mr. P. V. Seshu Iyer in bringing the meeting to a close said that with the receding of the Matriculation examination into the background, greater responsibility attaches to work in the L. S. School. He said that subjects classed under group B should not suffer neglect at the hands of teachers and that greater insistence should be made on Handwriting and Dictation. He remarked that though Elementary Mathematics stood classed as one subject, it involved and called for, a due correlation of the various subjects included in it. He concluded his remarks by bemoaning the evil of 'private tutors' as an institution but was not oblivious of the slender pay of schoolmasters, especially in the lower ranks of the teaching profession.

Elementary Education and the way to improve it in Madras.

A lecture by Mr. A. C. Paranarthihara Aiyar, B.A., F.M.V., Inspector of Schools.

A well-attended and interesting meeting of the Guild was held on Friday the 4th of November in the Hindu High School, Triplicane. Nearly 50 teachers were present. Mr. A. Panchapagesa Iyer presided. Mr. A. C. Pranarthihara Iyer, Inspector of Schools, addressed the Guild on the important question of Elementary Education and the need for improving the status of Elementary teachers in Madras. He said there were two measures on which he had set his heart for long; one of them was to interest the Municipal Corporation in Elementary Education. He was glad to announce to the meeting that the Corporation had adopted the report of the Committee recommending the starting of 40 Elementary Schools in Madras. The scheme entails an initial outlay of 4 lakhs and a recurring expenditure of $\frac{1}{2}$ a lakh every year. He rejoiced to note that, with the opening of these schools, the badly-housed and ill-equipped Elementary Schools, run by teacher-managers, would go out of existence. The teacher-managers would thus get absorbed in the schools under the new scheme. Adverting to the condition of Elementary teachers, he said that their educational equipment was very poor and they needed to be taken on hand and rendered more fit for their work. He said that the scheme would take 10 years more to attain fruition. The other measure he wanted to carry out was to organise an agency of teachers with academic and literary qualifications for the diffusion of knowledge among the lower ranks of teachers. At the suggestion of the Hon'ble Mr. J. H. Stone, M.A., he committed this measure to the care of the Madras Teachers' Guild of which he had become a member. He observed that there were 263 teachers in Arts Colleges, 4,097 teachers in Secondary Schools and 34,572 Elementary teachers in the Presidency. For the benefit of Elementary teachers in Madras, he suggested that the Guild should form a Committee for helping the Elementary teachers to cope with the new Elementary scheme. He said that the Guild should (1) organise a series of lectures on the subjects comprised in the new Elementary Scheme, (2) arrange for a simple examination of those who attend the lectures and issue certificates, signed by the lecturer, two members of the Guild, and countersigned by the President of the Guild, (3) to hold exhibitions and demonstrations with a view to improve the teaching and organisation in Elementary Schools.

The proposition to start a new section for the improvement of Elementary education was put to the vote and passed. A Committee consisting of the Secretaries of the Guild and five other gentlemen of whom Mr. A. C. Pranatirthara Iyer is one, was appointed to start this new section.

English Literature for High Schools.

At the second session of the Guild Meeting held at 6-40 P.M., on Friday evening, Mr. A. C. Pranatirthara Iyer took the chair, Mr. Mark Hunter having been prevented from presiding owing to an urgent private engagement.

Mr. T. B. Krishnasawmy, M.A., formerly tutor, Madras Christian College, delivered his lecture on "English Literature for High Schools." The following is a brief summary of his paper:—

"For any knowledge of the fundamental facts of human nature, for any understanding of the primary and permanent elements of human life, for any appreciation of the soul-moving forces that have swayed to and fro the feelings of nations and individuals, an acquaintance, however meagre, with human letters is altogether indispensable. Happily in our days there is no need to be dithyrambic on the glories of literature. The true University of the present day is, as Carlyle clearly perceived, a library of books. It becomes a matter of paramount importance to create a love of books. Any selection of books is of necessity fraught with the greatest difficulty. Every list of 100 books is bound to vary with various individuals. We have had Lubbock's 100 books and Lord Acton's 100 books. Ruskin has given us a list improving on Lubbock's. Mr. Harrison has a list in his "Choice of Books"; Viscount Morley, another in his "Study of Literature." These are ill-adapted to the needs of schools and worse still, to those of Indian schools. Literature is essentially the region of liberty and the only bit of salutary advice is Shakespeare's: "In short, Sir, read what you most affect." I am considering in my remarks the school course from the 1st to the 6th Form and the pupil from the 9th to the 15th year. At this stage we look to the cultivation of a healthy taste as a preliminary to laying a larger foundation in the college classes. Perhaps the earliest and best books to study are Nursery Rhymes. All the joy of boyhood is gone if one has not heard of old King Cole, of Humpty Dumpty, of the frog that "would a-wooing go." Next come the fairy tales. Every one has read of Jack and the bean-stalk, of Cinderella and her glass-slippers. Mr. Lang has the extraordinary gift of writing beautifully for little children. Grimm and Hans are our good friends. The one characteristic of fairy tales is

their superiority to the sordid realities of life. The world-famous 'Arabian Nights' Entertainments will continue to enchant the world to the end of time. Meredith's 'Shaving of Shagpat,' 'The Adventures of Baron Munchausen' and 'Don Quixote' will please much, as also the ever fresh Aesop's Fables, Mr. Kipling's Jungle Books, Kingsley's 'Water-Babies,' and Louis Carroll's, 'Alice in Wonderland' and 'Through the Looking Glass.'

We may pass now to speak of books on adventure. All spirit of adventure is likely to be stamped out of young people, if they don't read, for very self-preservation, G. A. Henty's books, R. L. Stevenson's Treasure Island, some of Kingsley's novels, Captain Marryat's naval stories; and the American Dana's 'Two years before the mast.' I do not recommend any of Kipling's books under this head, because I consider the spirit pervading his writings to be distinctly bad. Robinson Crusoe and Swiss Family Robinson have fallen into the limbo of literary forgetfulness. But Jules Verne's novels are ever fresh, being the fairy tales of science. Manuals like Todd's are rather sorry and dreary. Books like 'Sandford and Merton' have a rare and peculiar charm. Nature-study through literature may be found very useful, e.g., Jeffries 'In the open air.' Rev. Wood's 'Homes without hands,' both of them being books on bird-life. Facilities for the study of Nature are afforded by the National Home Reading Union Series. For an interest in history and historical study, Scott's historical romances may be safely recommended.

Speaking of Art, it cannot be denied that the interest in Fine Arts evinced by Indians is of the feeblest. Boys could pick up ideas of Art from Methuen's Little Galleries, Popular Books on Art.

We pass now to more solid reading. An acquaintance with Shakespeare through Lamb's tales, with Homer through Pope's translation, with Chaucer and Spenser in 'Told to the Children Series' will bring the mind in most inspiring contact with some of the greatest writers of all times. Addison, Goldsmith, Macaulay, the earlier writings of Burke, the smaller books of Ruskin, the novels of Stevenson, Scott, Dickens, Malory's Morte D'Arthur may be studied. Of Scott, whatever is read, is so much permanent asset to one's stock of wisdom and experience.

Poetry is the quintessence of language and thought. Considering the ethical and æsthetic importance of poetry, the attention paid to it ordinarily by students is insufficient and inadequate. Selections from the works of particular

writers are apt to give a fragmentary idea of great works. But nobody can say that Palgrave's Treasury of English Lyrics, W. E. Hentley's Select English Lyrics, selections in the Oxford Book of English Verse, do not serve a most important purpose. With these three books constantly to guide one, it is impossible to miss the right line of taste. I should like to mention one writer of great merit (Byron) who has been unduly depreciated at the present day. His poetry is a splendid bridge connecting the present with the past.

The Chairman, in concluding the proceedings, observed that he did not see much good in the assiduous cultivation of English literature. He pleaded for Oriental literature, as that alone would tend to the material advancement of the country. He regretted to note that the vernaculars had suffered from a species of vandalism."

The History and Geography Section of the Guild.

Under the auspices of this Section there were two lectures on 'Weather Charts and their uses,' on the 7th and 12th of November, by Mr. Adisesha Naidu, B.A., L.T., Science Demonstrator, Pachaiyappa's College. He explained to his small but enthusiastic audience how with the aid of standard Fortin and the Maximum and Minimum thermometers and the hygrometer, the weather-chart is constructed from day to day at observatories. The lecture was very useful, as it enabled the audience to get clear and practical notions of the weather chart.

The second lecture on Weather Charts was mainly in the form of a demonstration on the subject. Specimens of charts issued by the Observatory were exhibited and the various items of information mentioned in them were elucidated. The lecturer took up the chart for Sunday, the typical stormy day in October, and showed how, with its aid, the signs of the weather and the revolt in Nature could be prophesied. He explained by a series of diagrams which way the winds blow, how they are deflected, what rate they travel at, and how they converge at a point within the storm area. For instance, the curves for the typical stormy day referred to above all met between Madras and Nellore. The chart also gave warning as to which way the cyclone would go inland. A judicious and wary observer up in the Ceded Districts could have, by a reference to the chart, foretold the exceptional rain they had had at Cuddappah. Even with charts well made up, it might sometimes be difficult to account for the aberrations in Nature. Indians should interest themselves in the study of the weather and its changing conditions. English children order their

excursions and holiday sports with an enlightened view to the weather and show a facility in watching the signs of the sky. The Madras fisherman, who goes on daring excursions on his frail *catamaran*, sometimes makes a veritable prophet. Is it not necessary therefore that boys in schools should learn to read the weather and make their own charts in the school laboratories?

The Secretary of the Guild accorded a hearty vote of thanks to Mr. Adisesha Naidu, B.A., L.T., and the function ended at about 10-15 A.M.

The Science and Mathematics Section.

The following is the report on the working of the Mathematics and Science Section of the Madras Teachers' Guild kindly communicated by Mr. P. V. Seshu Aiyar, B.A., L.T., Secretary of the Section:—

A meeting was held in the Mahajana Sabha Hall on 18th October 1910 with Mr. P. Lakshmi Narasu Naidu in the chair, when Mr. A. Pancharagesa Aiyar of the P. S. High School, Mylapore, led a discussion on the scope of Physics and Chemistry in group C of the S. L. C. Scheme. The following is a summary of his speech:—

It may not be out of place to make a few introductory remarks in connection with Elementary Science before the subject on hand is taken up. The scope of Elementary Science is much wider than is commonly understood, it being much more comprehensive than Physics and Chemistry which in common parlance are taken to be connoted by the term Science. The scope of this subject included in group B must be enlarged so as to include Animal Physiology, Botany, Geology and Physical Geography. Very few schools have made provision for the teaching of these latter subjects though it cannot be very costly to make satisfactory provision. In teaching Elementary Science in Upper Secondary Forms simple notions of Physics and Chemistry may be given in Form V and the other sciences comprehended by the expression 'Elementary Science' may be taught in Form VI.

The syllabuses of Physics and Chemistry recently published by the School Final Board are too high and too tough for the Matriculation standard. The syllabus of Physics contains a terrifying array of things, especially in Electricity and Magnetism—such as current strength, E.M.F., Electrical Units such as Ohm, Volt, Amperes, &c.—items fit for and included in the Intermediate Syllabus. In Chemistry again a knowledge of the historical development of the subject and quantitative analysis is expected. There is first of all the

question of cost which may be found too heavy for average High Schools, and secondly one has also to consider whether such a high standard of knowledge as the syllabus contemplates is indispensable to the pupils of the Upper Secondary department of our schools. Ideas which are too difficult of comprehension at a particular stage of intellectual growth should not be brought in, prematurely, in our anxiety for the acquisition by our boys and girls of all possible knowledge. For considerations like these the syllabuses must be reduced in extent and difficulty. It may even be advisable to group Physics and Chemistry as one optional subject. If this can be done and the syllabuses can be made much simpler, our High School pupils will find it possible to take up more subjects in group C than now, which will enable them to be qualified to make their choice from a variety of groups for the Intermediate examination than having to depend upon only one.

The views of the opener were endorsed by the other speakers and the Chairman said that the scope of Elementary Science in group B should be enlarged so as to include the several branches of Physical and Natural sciences. The compulsory Elementary Science must be chiefly descriptive and conversational and the teaching must be based on the concentric system. There should be no specialization in Form IV. The syllabuses in Physics and Chemistry are really too high, as, for instance, the syllabus of Physics contains Tangent Galvanometer, Telephone, Induction, Coil, &c., which can be intelligently taught only to advanced students. These items of the syllabus presuppose a knowledge of Trigonometry for an intelligent grasp of them. Though a representation to the authorities is a thing to be desired, it may be postponed for the present to see how the syllabuses as they stand actually work.

However there was a strong feeling at the meeting that the syllabuses were high and that some representation must be made, but as the meeting was not a well-attended one, it was agreed to bring up the question before a better attended meeting.

Summary of the paper on the Value of the Study of Algebra, read by Mr. Balakrishna Aiyar of the Teachers' College with Mr. R. Littlehailes, M.A., Professor of Mathematics, Presidency College, in the chair.

The object of education is to promote nobility of life and to enable one to make a living. A teacher ought to keep before him these two objects. Practical life demands merely the rudi-

ments of Arithmetic, but Mathematics is taught not only for its practical value but also for its educative value. There is no part of Mathematics which is purely of educative value or purely of practical value. The processes of Arithmetic have practical value, whereas the laws and truths underlying these processes have an educative value. And these laws and truths constitute Algebra which is a sort of Phonography expressing these laws in a concise form. Algebra puts them in a convenient form and enables the laws and truths to be easily understood and easily remembered. Thus for a clear understanding of the principles of Arithmetic, Algebra is indispensable. Algebra again is not merely generalised Arithmetic but also cultivates deductive reasoning, for instance, when general principles are applied to particular cases Algebra should not be made dry and mechanical by presenting it merely as operations on symbols without a meaning, but should be suitably and richly illustrated, for example, in teaching negative quantities, the idea of the directions, positive and negative, must be largely introduced and, interesting functions such as the ordinary decimal notation must be used as illustration. In secondary classes Algebra and Arithmetic must go on parallel lines and many problems that could not be solved arithmetically might be solved by algebraic equations.

With a few valuable remarks from the chair, the meeting was brought to a close.

Another meeting was held on the 27th October, 1910 in the Pachaiyappa's College with Mr. Adisesha Naidu, B.A., L.T., in the chair, when Mr. S. Vasudeva Chariar, B.A., L.T., of the Wesley College, read a paper on Physics Teaching in Schools with special reference to its correlation with Mathematics. The following is a summary of his paper:—

There are many unsatisfactory features in connection with Physics teaching in schools—(1) The time allotted to it is very little. (2) The laboratories are not properly fitted up. (3) The methods of teaching are not satisfactory. These are some of the defects. Three points will be taken up for discussion in this paper—(1) When regular Science teaching should be begun, (2) What preparatory work may be done, and (3) What methods of teaching should be adopted. Some grounding in general education is very necessary for pupils to follow intelligently the instruction in Science; nay, we cannot have too much of it. Therefore regular Science teaching has no place in the Lower Secondary classes

whose main work should be to equip pupils in such knowledge as general education can provide.

There is also another reason why Science teaching should not be begun in lower classes. In case lower classes also are to go in for a share of instruction in Science, there might be difficulty in the arrangement of the time-table and the provision of a laboratory will become much more costly than otherwise. Hence it is advisable to begin Science only in the *Fourth Form* and not earlier. However as a preparation for Science work in the upper forms pupils may be given in the lower forms: (1) some object lessons in Science, (2) some training in Drawing, Manual work and Measurement, (3) A ground-work in Elementary Mathematics and Mechanics.

Coming to the subject of Physics teaching in High school forms, it must be remarked that there has been no laboratory work worth the name hitherto, no experiments were performed by pupils but only demonstration lessons were given by the teachers. Now a new era is beginning and better methods are being advocated and even forced upon teachers. Individual experiments by pupils and research attitude on their part are recommended.

The aims and objects of the individual experiments by students may be analysed into three main divisions: (1) Investigation, (2) Verification, (3) A clear understanding of the laws and principles. High school pupils cannot do any investigation work. Verification cannot be properly done and is unnecessary, and so a clear understanding of the laws and principles should be the only aim of individual experiments by pupils. Therefore the experiments must be chiefly of a qualitative nature and demonstration lessons should be kept ahead of the laboratory work. A research attitude on the part of the pupils is not desirable in High Schools.

At the conclusion of the lecture, the lecturer formulated a syllabus of Physics to be done in the three upper forms, which is given below:—

Other speakers followed and in the end a Committee was formed consisting of the following gentlemen for the elaboration of a Physics Syllabus:—

- (1) Mr. P. Lakshmi Narasu Naidu, B.A.
- (2) „ M. C. S. Ananthapadmanabha Rao, M.A., L.T.
- (3) „ S. Vasudeva Chariar, B.A., L.T.
- (4) „ A. Pauchapagesa Iyer, M.A., L.T.
- (5) „ S. Narayana Iyengar, B.A., L.T., (Convener.)

This syllabus presumes a preparatory course in (1) General Elementary Science—a continuation and extension of Kindergarten work, and (2) Drawing, Manual Work and Simple Measurements, including instruction in simple practical Geometry and Mensuration.

The method involves: (1) The teaching of the theory of the subject, (2) Demonstrations, and (3) Individual Laboratory Work. The demonstration should keep ahead of the laboratory work, although the latter should not lag far behind. In laboratory work, we need only short, comparatively easy qualitative experiment. The experiment which is performed with reasonable accuracy and with intelligence is that in which the pupil easily makes progress towards a desired end, which desired end he has at least partially in mind from the beginning. The first course constitutes a course of practical Arithmetic and Geometry exercises and gives infinite opportunities for problems upon ordinary surroundings. The experimental work in the remaining sections is also intended to serve as an introduction.

FORM IV.

A. Direct measurement of length, area, volume, and mass.

(1) Measurement in English and Metric units of all available materials. Measurement of curved lines. Measurement of distance round cylindrical surfaces, and finding the ratio of the diameter of a circle to its circumference. Finding the character of perpendicular and inclined lines, squares, parallelograms, etc., by means of the plumb-bob and of the spirit level. Use of verniers, callipers, screw gauge.

(2) Finding areas of rectilinear figures by drawing upon squared paper and counting squares, or by cutting out in cardboard and weighing. Finding area of circles. Relation between the area of circle and its diameter. Determining surface area of solids by wrapping round with paper and afterwards developing and measuring the areas of the paper.

(3) Measurement of volumes of irregular solids by the use of burettes and graduated vessels.

(4) Adjustment and use of the balance. Weigh blocks and find density. Weigh water and other liquids and construct graphic representation of densities. Use of the spring balance.

B. Centre of gravity. Experiments in balancing rods and regular and irregular plates of cardboard. Method of suspension. Ascertain the effect of inclining pieces of woodboard, of regular

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and irregular shape, on a board. Similar experiments with blocks of wood, oblong, cylindrical and conical.

C. Find and compare relative densities by weighing. Specific Gravity Bottles.

D. Use of the Thermometer. Make daily observations of temperature and plot on squared paper. Observe the melting and boiling points of water and note fixed points.

FORM V.

Mechanics:—Levers, moments, wheel and axle, pulleys, toothed wheel, inclined plane.

Hydrostatics:—Barometer, Syphon-pump, Fountain, Water press, Balloon, Air-pump.

Light:—Mirrors and Lenses, Telescopes, Microscopes, Lantern.

Heat:—Steam-pressure, Simple steam engine, Heat and Temperature, Expansion of solids, liquids and gases, Thermometry.

Magnetism:—How to make a magnet, Action of currents on magnets, Electromagnets.

Voltaic Electricity:—How to make a simple battery. Effects of a current, Use of Resistance Coils, Commutators, Galvanometers, Electric Light, Electric Bell.

Frictional Electricity:—How to produce electricity, Electroscope, Leyden Jar, Lightning.

FORM VI.

Mechanics:—Force, Components of a Force, Mass, Weight, Velocity, Acceleration, Parallel Forces, Centre of Gravity, Couples, Principles of Work, Work, Machines, Energy, Momentum, Laws of Friction, Electricity.

Hydrostatics:—Fluid Pressure, Boyle's Law, Archimedes' Principle, Specific Gravity.

Light:—Graphic representation of formation of images in plane and spherical mirrors, Images formed by refraction at plane surfaces. Images

formed by lenses, $\frac{1}{v} \pm \frac{1}{u} = \pm \frac{1}{f}$, Prisms, Spectrum,

Photometry, Velocity of Light.

Heat:—Coefficient of Expansion, Calorimetry, Change of State, Vapour-pressure, Dew-point, Transmission of Heat.

Magnetism—Magnetic Lines of Force, Magnetic Pole, Magnetic Moment, Couple acting on a Magnet, Force due to Earth.

Voltaic Electricity:—Electrolysis and Electroplating, Chemical action in cells, Dynamo, Ohm's Law, $C = \frac{E}{R}$.

Frictional Electricity:—Ice-pail experiments, Capacity and Potential, $Q = Vc$, Capacity of Sphere, Electric Force, $F = \frac{QQ'}{r^2}$.

VELATTIKULAM TEACHERS' ASSOCIATION.

A meeting of this Association was held on the 5th November 1910. Twelve of its members were present. Mr. G. Venkatarama Aiyar, Supervisor of Schools, Velattikulam, gave two instructive model lessons, one on Postal System and the other on Drawing. The paper that should have been read at the meeting had to be postponed to the next meeting owing to the unavoidable absence of the lecturer. It was resolved to request Mr. C. Subramanya Aiyar, First Assistant Master, Velattikulam Board School, to give a model lesson on 'Flowers' at the ensuing meeting.

