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THE EDUCATIONAL REVIEW

A Monthly Record for India.

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RAO BAHADUR P. V. SESHU AIYAR, B. A., L. T., *Retired Principal, Govt. College, Kumbakonam (1-4-'27)* writes:—"I am glad to find that 'A Preparatory Algebra' by Mr. V. Raghunatha Aiyar, B. A., L. T. (published by Srinivasa Varadachari & Co.) is well planned and written very carefully so as to meet the requirements of pupils in the S. S. L. C. classes for whom it is mainly intended. The expositions and illustrations are clear and lucid and there is a good collection of nice examples and exercises. The appendices A and B are really well-written and add much to the usefulness of the book. I wish the chapter on 'Directed Numbers' were written a little more carefully so as not to lead to any incorrect notions and the so-called 'Property of Permanence of Form' given a more cautious treatment. Of course these are difficult portions to deal with. I hope the book will meet with the encouragement it well deserves."

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I. The Use of Symbols :—The use of symbols as mathematical shorthand. Some additional symbols in common use. The Formula, how derived and used. Exercises; **II. Some Fundamental Laws** :—Addition and Subtraction. Removal of Brackets. Insertion of Brackets. Multiplication and Division. The Laws of Indices. Order of Operations. Exercises; **III. Symbolic Solution of Problems** :—The extended application of the Formula. The Laws of Equality. Reversibility of Steps. Verifying the correctness of result by substitution. The Solution of Problems by means of equations derived from them. Exercises; **IV. Graphical Representation** :—Variables and Constants. Dependence of one variable upon another. Graphical Representation. Representation of values by marking points. The Graph. Readings from the Graph. Limitations of the Graph. A few points to be observed in graphical representation. Magnifying portions of a Graph. Exercises; **V. Directed Numbers** :—Directed numbers, their meaning and diagrammatic representation. Extended application of Directed Numbers. The New Number-Scale and its Study. The Four Fundamental operations applied to Directed Numbers—Addition, Subtraction, The Laws of Addition and Subtraction, Multiplication, Division. Some Laws of Multiplication and Division. Application of the Laws of Equality to operations involving Directed Numbers. Algebraic Form. Exercises; **VI. Algebraic Expressions and a few Elementary processes** :—Distinguishing expressions from the number or terms. Distinguishing expressions by means of their degrees. Exercises. Addition and Subtraction by Polynomials. Brackets. Exercises. Long Multiplication. Exercises. Long Division. Exercises; **VII. Special Products**. **VIII. Factors and Multiples** :—The Use of Factors. Factorising expressions of the form $Nx + Nb + Nc$. Exercises. Factorising by convenient grouping of terms. Exercises. Factorising expressions of the type $x^2 + 2xy + y^2$ and $x^2 - 2xy + y^2$. Exercises. Factorising expressions of the type $x^2 - y^2$. Exercises. Factorising expressions of the type $x^2 + px + q$. Exercises. Alternate method of factorising $x^2 + px + q$. Exercise. Factorising expressions of the type $Ax^2 + Bx + C$. Exercises. Highest Common Factor. Exercises. Least Common Multiple. Exercises; **IX. Fractions** :—The Algebraic Fraction. The Principle of Equivalent Fractions. Application of the above principle—Reducing a fraction to its lowest terms. Exercises. The sign of a fraction and the signs of its terms. Exercises. Expressing fractions with a common denominator. Addition and Subtraction of Fractions. Exercises. Multiplication of Fractions. Division of Fractions. Simplification of Fractions. Complex Fractions. A Continued Fraction. Exercises. **X. Graphs** :—Function of a Variable. Plotting. Exercises. The Straight Line Graph. Reading from the Graph. Study of Variation from the Graph. Graph as a Reckoner. Graph as a Locus. Choice of Scales to be adopted. Exercises. Graphical Interpretation of the Constants m and c in the Linear Relation $y = mx + c$. Graphical method of determining the Constants in a Linear L. W. Exercises. Parabolic Graphs. The Shape of the Graph. Symmetric Properties. Study of Variation from the Graph. Graph as a Ready-Reckoner. Note on the Choice of Scale. Graph as a Locus. Exercises. Geometric applications; **XI. Simultaneous Equations and their Applications** :—Notion of an Indeterminate Solution. Notion of Simultaneous Equations. Handy methods of solving simple simultaneous equations in two unknowns. Exercises. Applications. Exercises. Determining Constants in a Linear Law. Exercises. Problem—Solution by means of Simultaneous Equations. Exercises. Simple Simultaneous Equations in three unknowns. Exercises; **XII. Quadratic Equations and Problems** :—A Quadratic Function. A Quadratic Equation. Solution of Quadratic Equations. Exercises. Applications. Exercises. Evaluation from Formulae. Problems. Geometric Applications. **Appendix A. Special Developments** :—(a) *Fundamental Notation*—Dependent and Independent Variables. A Rational Integral Function of x . The Function-Symbol. Evaluation of Functions. Exercises. (b) *The Method of Detached Coefficients*—The Use of the Method. A Few Artifices. Exercises. &c. &c. &c.

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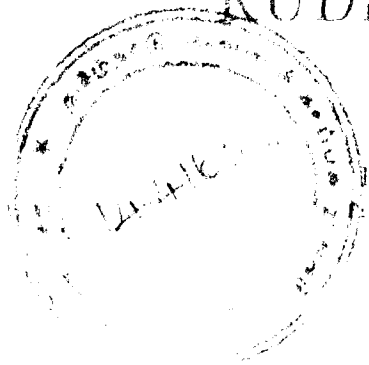
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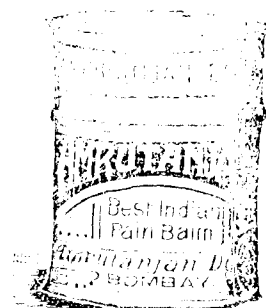
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THE MADRAS UNIVERSITY:
ITS PAST AND PRESENT—
A REVIEW

By

Mr. K. V. KRISHNASWAMI AIYAR, B.A., B.L.,
High Court Vakil, Madras.

IT is now nearly four years since the University Act of 1923 was passed. We have worked it for about three years, a period long enough to take stock of results. In fact, the Act itself contemplates a period of five years under it long enough to mark a definite stage towards progress in its scheme. The first elected and nominated members of the several authorities of the University have also gone out of office, three years having elapsed since their election or appointment. It is therefore time that we take a survey of the past to enable us to define our steps for the future.

THE UNIVERSITY ACT OF 1857.

In order to appreciate fully the aim and scope of the new Act, a general survey of the
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history of the Madras University may be appropriate. The Madras University was first incorporated under Act XXVII of 1857. Its purpose was the "better encouragement" of Her Majesty's subjects in the Madras Presidency and other parts of India "in the pursuit of a regular and liberal course of education." Towards that end a University was established "for the purpose of ascertaining by means of examination" the persons who have acquired proficiency in the several branches of learning and of rewarding them by academic degrees and marks of honour. The University with the Chancellor, the Vice-Chancellor and the Fellows, was constituted a body corporate authorised to hold examinations and confer specified degrees. The aim and ambition of the University were no greater and were conceived no higher.

The University under the Act was practically a department of Government. Even the Fellows were all of them appointed by the Gov-

ernor-in-Council. All the members of Government were *ex-officio* members of the Senate. The income and expenditure were under the directions and regulations of the Governor-in-Council to whom the accounts of the University had to be submitted. The University had no income other than fees. There were no Government grants. The University enjoyed no power to affiliate institutions, and the power to recognise institutions that could send up candidates was reserved to the Governor-in-Council. The jurisdiction of the University was not also confined to any local area. Private candidates could sit for the examinations. We find in fact that the first two graduates were students who came from the American Mission School, Jaffna.

THE ACT OF 1904.

This went on till 1904. The name "University" applied to a mere examining body such as the Madras University then was, was a misnomer. The Act of 1904 was therefore passed to inaugurate a definite advance towards real University life. It amended the Act of 1857, the provisions of that Act relating to the holding of examinations being retained. It was declared "that the University shall be and shall be deemed to have been incorporated for the purposes (among others) of making provision for the instruction of students, with power to appoint University professors and lecturers, to hold and manage educational endowments, to erect, equip and maintain University Libraries, Laboratories and Museum, to make regulations relating to residence and conduct of students and to do all acts, consistent with the Act of Incorporation which tend to the promotion of study and research." The University was thus (1) to provide for the instruction of students, by appointing professors, lecturers, etc., (2) to

erect, equip and maintain libraries, laboratories, etc., (3) to control student life, and (4) to promote study and research. Broadly stated the above ideals cover all that a University need possess.

But whatever scope the Act of 1904 afforded for further development, the University did not under it breathe an atmosphere of liberty. The control of the Government was as rigid as ever. The finances of the University, its income and expenditure, were subject to Government control. The Government could nominate to the majority of the seats in the Senate. Even in respect of affiliation of institutions the ultimate power to affiliate or disaffiliate was with the Government. The University had no kind of autonomy.

On the other hand, the University was liberalised in some respects. About twenty out of the 50 to 100 fellowships were left open to election. The status of the graduates, the *alumni* of the University was recognised, and they were enabled to constitute themselves into an electoral body entitled to send ten representatives to the Senate. Though the body of Registered Graduates enjoyed nothing like the privileges of a body like the Convocation of the London University, the recognition of a subsisting and continued relation of the graduates with the University was a great step towards its democratisation.

THE UNIVERSITY UNDER THE ACT.

From the point of view of academic expansion of the University the progress made was very little. The University was a Teaching University primarily in the sense that external candidates were not permitted to sit at the University examinations, and only colleges affiliated to the University could

present students for them. The Act did not seek to bring into mutual relation the colleges as between themselves and with the University. Neither the colleges nor the teachers in them had as such any representation in the Senate. The academic side of the University was not separated from its administrative side. There was also no guarantee of grant from Government for University purposes to launch any academic schemes.

But all these imperfections might not have meant very much if only the University had large financial support from the Government and from the public as the University of Calcutta had. Private endowments for University development, for the establishment of chairs and the like were *nil*. Such endowments as were offered were poor being mostly for prizes and of small value. The Travancore Curzon Prize endowed by the Maharajah of Travancore in 1901; the Sir Subrahmanya Lecture endowed by the late Mr. V. Krishnaswami Aiyar in 1911; the Gokhale Prize endowed by Mr. S. Srinivasa Ayyangar in 1915, and the Sankara Parvathi Prize endowed by Mr. K. P. Padmanaba Menon in 1921, were the only foundations of value to encourage research and higher teaching in the University. Dr. Griffith gave a timely and generous bequest of Rs. 25,000 for the University Library, to which the Government added a grant of one lakh of rupees in 1907. Quite recently, Sir William Meyer has made the largest of the endowments to the University bequeathing a sum of £3,000 for the study of Economics.

However, a permanent chair of History and two temporary chairs of Economics and the other in Sanskrit and Comparative Philology, were founded. University Professors were expected to conduct research and to give lectures. Research studentships for post-graduate study in or outside India were awarded from 1914 and facilities for research afforded. A special Overseas Scholarship was also awarded to S. Ramanujan in 1915. A scheme of University Lectures for the benefit of Honours students was organised at the same time and the University appointed teachers both in the mofussil and the metropolis to lecture to students. A small grant from Government enabled the institution of vacation lectures intended for the benefit of teachers in Secondary Schools. The University also undertook in 1920 at the instance of Government the publication of the Tamil Lexicon, a work of research. The above along with the establishment of the University Library mark the teaching and research side of the University in the period before the Act of 1923 was passed.

that effect made by the Government. It was primarily for research but the Government imposed as a condition of the appointment that the Professor should be under an obligation to train students in the methods of economic study and research. The chair was founded in December 1915 and the school worked with a number of research students. But an unfortunate turn was given to it in 1918. A Diploma class for non-University students was started and the Professor and his Assistants engaged themselves in teaching them with the necessary result that research work was thrown into the background. This was a long step taken by the infant teaching University and at that stage of its development. The University had first to do with Post-graduates doing research, then with the University students and lastly with non-University men as part of its extension scheme.

THE DEPARTMENT OF SANSKRIT AND COMPARATIVE PHILOLOGY.

The Department of Sanskrit and Comparative Philology was a deplorable affair. It worked only for a period of five years. A number of readers in the Dravidian languages were also attached to the Department as part of a scheme for the development of South Indian languages. A Professor was appointed, but his claims to scholarship in Sanskrit were questioned, with the result that no re-appointment was made. It is regrettable that no Indian Professor was thought of. The history of this Department would then have been different; but as it was, the department was abruptly ended.

INDIAN HISTORY CHAIR.

The chair of Indian History requires also a brief mention. A Professor was no doubt

appointed in 1915 but there was no sufficient equipment to utilise to the full the services of the Professor. There was no school, no body of young men attached to the Professor and enthused with the spirit of research. During the whole period from 1914 to 1923, there were only six research students. The chair was but a vestige of a teaching University.

THE TAMIL LEXICON.

The Tamil Lexicon is another sad story. It started as a Government publication, the Government taking the initiative. The Syndicate of the University as a learned body was at first deputed to supervise the publication which was entrusted to an expert Committee. The Government of India gave a consolidated grant of 1 lakh for the preparation and publication of the work and they would not increase the grant. The original grant was exhausted long before the work of compilation became complete. The Government then transferred the whole affair on to the shoulders of the University with the responsibility for the preparation and publication including the finding of the necessary funds. The Syndicate undertook the responsibility and secured the copyright. It was then roughly estimated that the scheme might cost Rs. 1,61,000 and permission was accorded by the Government to the University to utilise part of its annual grant for this purpose. The Syndicate also set its Professor of Sanskrit and Comparative Philology upon the task, but no satisfactory progress was made.

COURSES OF STUDIES.

As regards the courses of studies in the affiliated institutions an important change was effected. In 1911 the regulations were remodelled instituting Honours Courses dis-

tinct from those which led up to a Pass Degree. This arrangement was expected to provide for the needs of different qualities of mind, the more promising students having a course separate from the less intelligent without being kept back by the latter.

INTER-COLLEGIATE INSTRUCTION.

A new line of teaching in the colleges of the University that was allowed to develop was the system of inter-collegiate instruction. Two colleges neither of which alone had the requisite staff were allowed to combine their teaching resources and jointly prepare students for the examinations. Whatever justifications there may have been for recognising such a system in the earlier stages, it ought not to be allowed to become a permanent feature of this University. The mofussil colleges did not take advantage of the regulations and the system itself, it is feared, is not conducive to the best interests either of the students or of the institutions concerned. There is the tendency on the part of the institution having the weaker staff to act as a parasite and to lower the standard. Neither college is required to satisfy the University with the sufficiency of its teaching staff for the purpose and it may therefore lead in practice to a stage when both the colleges would be without the proper equipment. Division of teaching by specialisation which is an ideal to follow, ought not to be supplanted by a system of combined teaching which involves the very opposite of specialisation.

On the whole, therefore, the development of the University in the direction which the Act was intended to give it was not worth mentioning. The long period from 1904 to 1923, when the new Act came into force,

passed without any notable output of work by the University. In short, the University continued to be little more than an examining body.

THE NEW UNIVERSITY ACT.

Such was the state of things when the Madras Government proposed to reorganise the University. The prospects afforded by the Act of 1904 were not encouraging. The Sadler report gave lessons which those responsible for higher education in this province could not ignore. Local conditions had also to be regarded and a re-organisation suited to such conditions was considered desirable, if not imperative. Opinion as to the scope and function of a University had developed. It was easily recognised that the object of the University was to set young men face to face with great teachers and to enable the "impact of mind upon mind, that of ardent student upon ardent student and of the mature teacher upon the immature student." The narrow view that if the University was to be trusted without suspicion to decide the results of tuition, it ought not to have any share in it or begin to interfere in it, was no longer tenable. Experience had shown that teaching institutions ought not to be divorced from the examining body; for then, the courses of instruction would tend to get attuned merely with reference to the greatest possible success in the examination and without reference to what the teacher himself considers best for the student. Further, a too rigid Government control of the University necessarily arrested the freedom of the University to adjust itself to the needs of a growing institution in concordance with other independent institutions, viz., the colleges. The Act of 1923 was thus intended to set the University organisation

on the right path and give it a direction best suited to local conditions.

The Act undoubtedly marks a definite step in advance towards the cherished ideals of modern Universities and purports to provide for the ultimate realisation of these ideals. It may be that as a learned judge once remarked the Act requires to be translated into English. It may be that the Act creates bodies without distinctly demarcating their respective jurisdictions leading thereby to what a learned member of the Senate once described as "Kummi dances." It may also be that a re-distribution of jurisdiction between the several authorities of the University may improve matters. But these are not grounds for condemning the framework, or for scrapping it altogether. These are faults which could be remedied without a reconstruction. The Act has certainly no tendency towards evil. The question, however, is different, as to how far the ideal of a teaching and residential University for the town of Madras, which the Act proposes to give, is possible of achievement in the present condition of the Madras University, with its long list of affiliated institutions spread over the vast area of South India and without providing in an adequate measure other similar Universities for the province outside the city.

ITS PRIMARY OBJECT.

The Act has a primary object to achieve, *viz.*, the formation of a teaching and residential University for the city of Madras. There are the constituent colleges working in efficient condition, having competent teachers and possessing adequate finances. These are most of them private institutions having vested interests and no scheme of their absorption into the University can be thought

of. The incorporation of these colleges with the University, the abolition of their separate existence and their complete unification, are not within the range of practical politics. The future Teaching University of Madras cannot, therefore, be a single University of the unitary type. The co-ordination of the colleges with the University as their head, with the maximum of freedom, and mutual accommodation, is the best arrangement possible. Consequently the Act proposes to establish a teaching and residential University at Madras, "while enabling the University to continue to exercise due control over the quality of teaching given by the colleges which are to constitute the University of Madras." The means to attain this end are also contemplated in the second paragraph of the preamble: "to foster the development of academic life and corporate unity as well in the colleges as in the University by so promoting co-operation among the colleges and between the University and the colleges as to utilise to the full the teaching resources available within the limits of the University." Thus the University provides for teaching and also controls the teaching in the constituent colleges. The colleges will co-operate among themselves and with the University so as to utilise to the full the teaching resources available within the limits of the University. A definite radius of ten miles round Fort St. George is also fixed as the limits of the University, in order to enable teachers to come together, to attain to the corporate unity so essential to the growth of the University ideal.

RELATION TO MOFUSSIL COLLEGES.

But there are the mofussil institutions which have been so long associated with the Madras University and enjoyed the privileges

of affiliation, on an equal footing with the Madras colleges. Reasons that stand in the way of the absorption or assimilation of the Madras colleges equally apply to the mofussil colleges. And a system of co-ordination between colleges at such distances from each other and from the University is also impossible. They cannot therefore be brought in under a single scheme with the Madras colleges, if the University should at all make an advance towards modern ideals of University education. It can well be conceded that there are at least some mofussil colleges which can well compete with the Madras colleges in the matter of their equipment and competency. It would not therefore be proper to suggest that continued association with the mofussil institutions would lower standards and operate as a setback upon possibilities of progress. Means must therefore be found for their independent development, towards the same ultimate goal as has been determined upon for the Madras colleges and till then the Madras University must continue to keep them under its wing. The Act therefore provides merely for the teaching in those colleges being controlled by the University in the same manner that the teaching in the constituent colleges is controlled, providing the same standards and the same courses of study and the same examinations and contemplates that the mofussil colleges will become members of new Universities created by the co-ordination of several colleges in the same "University centre." And thus the Act piously expresses that "it is desirable by the concentration and co-ordination of resources for higher teaching and research at suitable centres outside the limits of the University to prepare for the institution of new Universities."

ABSENCE OF A DIFFERENT SOLUTION.

An alternative that can be thought of is the dismembering of the mofussil colleges from the Madras University by the creation of a separate University for them. But the question of finance would stand in the way. A University without financial aid and consequently without scope for higher ideals would only be a retrograde step so far as the mofussil colleges are concerned, particularly alongside the growing University in the City. A further alternative is also possible. The Act can, as it were, provide two independent academic departments, one for the constituent colleges and another for the mofussil colleges. Such a proposal would be keenly resented by the mofussil institutions as branding them with an inferior status. The dissociation, therefore, of the mofussil colleges from the City colleges and the University working together in the new spirit, either by the establishment of a separate University for the former or by the opening of a new examining department in the teaching and residential University of Madras, must necessarily lead to discontent. It would be a clear case of sacrificing the child for the sake of the mother. Consistently, therefore, with the implied duty of the Madras University to the mofussil institutions, no scheme can be accepted, which does not safeguard the interests of mofussil colleges until such time as they can form themselves into Universities of the improved type, *viz.*, self-contained teaching and residential Universities with aims and standards of their own. The Act clearly recognises this and provides for the development of new "University centres." The Senate of the Madras University is charged with the duty to submit to the Government at the end of every period of five years, the

progress that the Madras University has helped to make in the development of such centres. The Act does contemplate the ultimate formation in mofussil centres only of Universities of the same type as the Madras University under the new Act, and does not very properly seek the easy solution of creating a new mushroom University for the mofussil colleges.

A MISUNDERSTANDING.

A misappreciation of the scope and aims of the Act in the early stages of the discussion before the Legislative Council justifies a reiteration of them. The aim of the framers of the Act is only to constitute local areas into Universities and not to metamorphose colleges into them. The establishment of a University at Madras ought not to lead to any inference that the colleges in Madras had attained to any higher level than the mofussil colleges. That the Madras colleges became entitled to be associated with and take part in the new movement is but the result of the accident of their existence within the area. No kind of reflection is thrown on the mofussil colleges, that they are not of the required standard or efficiency to entitle them to be brought closer within the jurisdiction of the University. The unit for purposes of the constitution of a University is not a college but one or more colleges in a local area.

DEVELOPMENT OF THE UNIVERSITY.

Thus, the development of the Madras University into a real teaching and residential University is not without difficulties. It is not achieved merely by an enactment piously declaring the intention. It is a matter of gradual evolution. The co-ordination of the several independent and powerful institutions

is a task of great magnitude. The process must necessarily be gradual and accomplished in a spirit of mutual good-will. Then, the mofussil institutions present a problem, not easy of solution, in the near future. The Madras University must therefore continue to occupy for some time at least, the anomalous position of an examining and of a teaching as well as examining University.

THE ANDHRA UNIVERSITY.

It is perhaps appropriate to refer here to the constitution of the Andhra University for the Telugu area, which has to some extent at least made easier the development of the Madras University, towards the ideal as confined to its ten mile radius. The Madras University has now been relieved of its trust in relation to the colleges within the area of that University and to that extent, certainly, the Andhra University Act is a welcome measure. But it is a matter for regret that those who were responsible for formulating the ideals laid down in the Madras University Act, should so soon have ignored those principles and established a University which does not attain to the standards that that Act contemplates for the new Universities that are to come into existence in the mofussil for the benefit of the colleges there. It is also surprising that the colleges in the Andhra area seem to be happy with the University provided for them. The satisfaction of the Telugu-speaking people in having an independent University, as a necessary prelude to the Andhra province, appears to have blinded them, to the absence of the necessary machinery that they should seek to possess for their higher educational advancement and progress. To discuss the matter further here would be irrelevant.

DISTINCTIVE FEATURES OF THE ACT OF 1923.

Turning to the Madras University Act of 1923, the Act contains some distinctive features, which while they distinguish it from the Act of 1904, characterise at the same time its new constitution. The most important of them is, the concession of autonomy to the University. The control of the Government is withdrawn in all important respects. The University is master of its finances including grants from Government. The control over institutions affiliated to the University is also wholly transferred to the University. The University is given the power to affiliate or to disaffiliate institutions without reference to Government.

The next feature is that the Government undertakes as a matter of statutory obligation to grant annually the sum of Rs. 85,000 which it granted to the University in 1922, and the University is free to spend it on any of its purposes without the liability to account to anybody, either in regard to the appropriation or the expenditure. The Government also undertakes to make further grants, but upon such conditions as it may impose, for other purposes of the University such as the salary of the Vice-Chancellor, the development of the Library, the Laboratory, etc., and the salaries of the teachers of the University appointed for higher research, and advancement and dissemination of knowledge, in particular branches of learning.

The third feature marks the aim to carry out the idea of a University co-ordinating the colleges with itself. Colleges and teachers as such are given a voice in the administration and an inter-relation between the colleges and the University is sought to be maintained. The Principals of all first-grade colleges are

ex-officio members of the Senate, and the second-grade colleges also have their share of representation.

Another important idea worked out by the Act is the separation of the administrative and academic sides of the University by the creation of the Academic Council. The advantages of such a separation are obvious. On the one side, the Academic Council with its full complement of teachers and with just enough of laymen to provoke thought and discussion from a non-educational point of view, is the academic authority of the University. On the other side, the Senate with its preponderant element of laymen, but with a sufficient number of teachers and representatives of colleges in it, sufficient to safeguard the interests of education and of the institutions, is the supreme governing authority of the University. The Senate has also a revisional jurisdiction but where it seeks to review any regulations passed by the Academic Council, a safeguard is provided in that its jurisdiction is limited to cease where the rescission or modification is made by a two-third majority of that body. The Act thus creates bodies appropriate to the duties they have to perform and provides at the same time by the adjustment of their constitutions sufficient safeguards against movements in narrow grooves.

The next is the creation of the Council of Affiliated Colleges. This is considered by many now to be a superfluous body. Possibly it is, and the duties assigned to it might well have been assigned to a Committee of the Academic Council. But when the Act was designed, great activities must have been contemplated for this body. The Council of Affiliated Colleges was assigned the important function of doing all things necessary to

foster the growth of the mofussil colleges and their formation into Universities, a matter which was quite important from the point of view of the framers of the Act. It was a body enabling the mofussil colleges to put forth all their needs and requirements with a united voice and to bring themselves into closer relation with each other, towards the fulfilment of the ideals set for them.

Another feature of the new Act indicating its scope, is the provision enabling the grant of research degrees. We have already referred to the obligation that the Government has undertaken to provide the necessary funds for the institution of chairs for research. These provisions afford encouragement to scholars and facilitate the growth of a large body of men, who have the leisure and the means to devote themselves to research and the furtherance of knowledge.

Nextly, the goal of a residential University is sought to be reached by the provisions relating to the residence of students in Hostels and their maintenance. The University is authorised to establish and maintain Hostels, and Colleges are required to do the same.

Then the control and management of the University Library is transferred to the Academic body. The Act provides for the appointment of a Library Committee to manage the affairs of the Library under the general control of the Academic Council.

Another distinctive feature is the composition of the Senate. It is democratised in a manner which is legitimately criticised in many quarters. Non-educational bodies like local authorities in the mofussil, *viz.*, the Municipalities and the District Board, the Corporation of Madras, the Chamber of Com-

merce and the Landholders' Association are all given representation in the Senate. Donors to the University *ipso facto* become members of the Senate for life or for a shorter period or are entitled to send their own representatives, according to the amount of their donation.

Lastly, we have the additional powers conferred on the several authorities of the University to carry out the purposes of the Act. Power is given to institute constituent colleges and to institute, maintain and manage hostels. The University bodies have the power to make such provisions as will enable constituent colleges to undertake specialisation of studies and to organise common laboratories, libraries, etc., and are enjoined to encourage co-operation and reciprocity among constituent and affiliated colleges. An aspect of University extension is also provided for and the University is empowered to provide for lectures and give instruction to persons, who are not students of the University, and to grant diplomas to them.

THE WORKING OF THE NEW ACT.

We have now to consider how far the expectations of the new Act have been realised in its working. The Act came into force in May 1923, and the first great task was to bring the several bodies into existence. The Vice-Chancellor therefore made arrangements under the transitory provisions for constituting them. It was no simple matter, in view of the complexity of their constitutions and it redounds to the credit of Dr. E. M. Macphail, our first Vice-Chancellor under the new Act, that he should have succeeded in bringing them to life so early as from the 5th of March 1924. Dr. Macphail had then the arduous duty of drafting the necessary Statutes, Regulations and Ordinances, to be placed before the several

authorities for being passed into law. He put such strenuous work into the matter that with his experience, ability and quickness, he accomplished it so rapidly as to enable him to place them before the several bodies even at their first meeting. The task was one of no small magnitude, particularly if we have regard to the very many difficulties presented by the somewhat inaccurate and inartistic drafting of the Act, and the thanks of all those interested in the speedy development of the Madras University are due to Dr. Macphail for the sincerity, earnestness and zeal which he brought to bear on the work.

FIRST MEETINGS OF BODIES—THE SENATE.

The first meetings, therefore, of the several bodies, were occupied with the consideration of the laws presented to them. But it was evident from the start that a new spirit had come over the University. In the Senate, proposals were made requiring that the Academic Council and the Council of Affiliated Colleges should be consulted before granting recognition and affiliation respectively, thus giving a voice to the representatives of the teaching institutions in the matter. A considerable section of the Senate also insisted that a proposed statute to the effect that the teaching staff should be represented in the management of institutions, ought to make no exception in favour of Government institutions.

THE ACADEMIC COUNCIL.

The Academic Council plunged into the new atmosphere, and appointed a number of Committees to consider the many problems that presented themselves. The principal amongst them was a Committee of the Vice-Chancellor and the Principals of the Constituent Colleges, to consider in what ways the object of the Madras University Act, as described in the preamble, in so far as they affect the constituent colleges, can best be

attained. Another Committee was appointed to consider the courses of study and examinations in Arts and Science, and in particular, the length and nature of the University degree courses with reference to sections 36 and 37 of the Act. A third Committee was appointed to consider the question of appointment of teachers of the University and the best methods of using the funds that may be available for the encouragement of research. Another Committee was entrusted with the task of considering and making proposals as to the best methods to be adopted for the encouragement of the study of the Oriental languages in general and the South Indian Vernacular languages in particular. Yet another Committee dealt with proposals to establish degrees in Commerce. A sixth Committee was charged with the duty of enquiring into the conditions of residence in Hostels within the University area. These were some of the activities but they sufficiently indicate the new life.

THE COUNCIL OF AFFILIATED COLLEGES.

The Council of Affiliated Colleges did not lag behind in its enthusiasm in the realisation of the ideals which it had to work out. That body also appointed a Committee to consider the question of co-operation and reciprocity among affiliated colleges, of the concentration and co-ordination of resources for higher teaching and research, and of the promotion of University life in suitable localities outside the limits of the University with a view to prepare for the establishment of new Universities. The Committees were organised on the basis of language areas, presumably on the well-grounded assumption, that community of language would foster co-operation.

THE COMMITTEES.

After the formation of the Committees abovenamed, various matters of academic

development have also been referred to them for consideration. Proposals with regard to Research Studentships tenable in Europe in Natural and Physical Sciences, the establishment of a Research Fund, proposals to institute a School of Experimental Psychology and a School of Geography, and the appointment of a Professor trained in the work of Historical Research are but some of the items that have been so referred.

THE LAWS OF THE UNIVERSITY.

The laws of the University, so far made, also tend to advance the same spirit. Detailed provisions have been made in regard to the appointment of University Professors, Readers and Lecturers, whole-, as well as part-, time. Inter-Collegiate and University lectures have been provided for and attendance of students at such lectures declared sufficient to count for purposes of attendance certificates. A scheme for the encouragement of research has been laid. In addition to studentships, fellowships of higher value to persons who produce evidence, preferably, by work already published, of capability to advance knowledge by original investigation, are provided for. Provision has also been made to enable the Syndicate to make grants in aid of research to persons who do not desire to become full-time research workers but are desirous of prosecuting definite research work in India. A residuary power is also given to the Syndicate to afford facilities for the prosecution of research and to defray out of University funds the necessary expenditure therefor. As regards students in colleges, a new provision of the statutes requires that students not living in hostels shall be assigned to individual members of the college staff for tutorial help and disciplinary supervision.

ACHIEVEMENTS UNDER THE NEW ACT.

We now proceed to consider the work done by the several authorities created under the

new Act, or so to say, take stock of the results achieved by them. In doing so, the academic side of the University may first be considered, as relating to the more important aspect of the University.

RESEARCH DEPARTMENT.

On the research side of the University activities, there has been a marked development. The establishment of a Research Institute of Advanced Oriental Studies including Sanskrit, Tamil and Urdu, has been finally decided upon and the institute itself with its full complement of Professor, Director, Readers, Fellows and Students will begin to function very soon. The idea of founding a Department of Oriental Studies was no doubt nothing new. As early as 1913, the Syndicate resolved that it was appropriate that the Madras University, as the South Indian University, should specialise on South Indian languages. An allotment of Rs. 36,000 was then set apart out of the annual Government grant for the development of Sanskrit and the South Indian languages, and the chair of Sanskrit and Comparative Philology and the Readers on the vernacular languages, already referred to, were appointed in carrying out that scheme. We have adverted to the very short life, that that scheme was destined to live. Portions of the allotment were then allocated to the account of the Tamil Lexicon also, a work of research in Oriental languages. When the new University Act, with definite promises of Government grants, came into force no time was lost by the then Vice-Chancellor, Dr. Macphail, to give an impetus to the scheme.

An explanation for the delay that has taken place is perhaps due. The University authorities first proposed a scheme for a Research Institute of Advanced Oriental

Studies, in which Sanskrit had necessarily an important part and Urdu was also given a place. The Government, on the other hand, put forward an alternative scheme for the encouragement of South Indian languages, dropping out the provision for Sanskrit and Urdu, as subjects of independent study. The University authorities very properly did not accept the position. While a Research Institute of Advanced Studies in Oriental Languages would properly lie within the scope of the activities of the University, the encouragement of the study of South Indian languages was not a matter of higher research and was more appropriately one that the Government should take upon itself, with or without the assistance of the University. The University, therefore, decided not to leave out Sanskrit and Urdu altogether but to provide for at least a less ambitious scheme in relation to them from out of the funds of the University itself.

Then Research Institutes in Science subjects, *viz.*, Botany, Zoology and Bio-chemistry, have been decided upon by the authorities of the University. The Government also accepted the scheme in part, excluding only the Botany section, and made the necessary capital grants for the erection of the Laboratories. The buildings will soon be erected. As regards Botany, however, the Government was under the mistaken impression that the Forest College at Coimbatore sufficiently provided for it. Provision has now been made by the University from its own funds for this section also, and it is hoped that the Senate will approve of it.

Then the University authorities have accepted proposals for the appointment of Readers in Indian Philosophy and Mathematics and for establishing a school of Indian

History and a Professorship for historical research. Details of the schemes have been prepared and the necessary funds have also been made available by the Government for the first two.

Further the University has resolved to contribute to the maintenance of a marine biological station at Krusadi Island for research purposes in order to make it available for teachers and students of the University. It has also contributed to the All-India Research Institute in Science organised by the Inter-University Board. The All-India Oriental and Economic Conferences had also their share of contribution and their sittings in Madras were very successful. The University also sanctioned a grant of Rs. 1,000 for the publication of the Mahabharata in Tamil and made other smaller grants for various other publications and Research Societies. The University also sent representatives to various Congresses and Conferences to which it was invited to send delegates.

The University also granted scholarships tenable in Europe for the study of Mathematics and of Physics. It also awarded for a time a special studentship in Mathematics to Dr. Vaithynathaswami, who, however, had to leave us for Benares, on better prospects. It is regrettable however, that the University could not retain its best talent by offering sufficient encouragement and that it should always be our misfortune to lose what is our right and duty to possess, while other Universities readily take advantage of the situation and profit by it.

The University also gave annually a number of ordinary research studentships in several subjects and also studentships of

special value in Medicine. Encouragement was also given to trained teachers of colleges to do research, and two teachers have already been awarded studentships of the special value of Rs. 150 a month in Economics. Aids to research are also given to teachers.

The University authorities have been knocking at the door of the Government for grants, to award in alternate years University scholarships tenable in Europe for three years of the value of £350 a year on the same lines as the State scholarships. The Government have been refusing to make the grant; but the University has been persisting in the request.

TEACHING DEPARTMENT.

Thus far about research. On the teaching side, the Economics Department which was till now temporary, has been with the aid of a special Government grant settled on a permanent basis. New courses of studies in Economics to prepare for the degree examinations of the University, with Economics as a subject of special study, have been introduced. The constituent colleges give the necessary instruction in the subsidiary history portions of the curriculum, while the Economics department of the University prepares them in the special and main subject of Economics. Thus, for the first time, the University has taken upon itself to give instruction to students preparing for its degree examinations—an experiment which must be watched with interest. We have already referred to the diploma courses open to non-University students, and that also is continued with some minor modifications as to the duration of the course.

Then effect was given to the provisions of Sec. 23, clause 1 (5) of the Act, and 18 Professors of Honours Colleges were appointed

Honorary Readers of the University. The usual "ordinary" and "vacation" lectures were also provided for and there were also a number of "special" lectures arranged to be delivered by eminent men. The University also launched a new scheme of "popular" lectures on "modern scientific inventions." The lectures were so successful and so well-attended that they are now being regularly organised as part of an "extension" scheme. Under this scheme, lectures have been arranged to be delivered also in the vernacular, on subjects of Political Science, Physics, Botany, etc. This promises to be an interesting development of the University.

The University has also resolved upon establishing a degree for Commerce. The details of the curriculum and the courses are under consideration. A proposal to introduce "Social Science" into the courses of study has also been accepted.

A new and important era has been marked by the re-introduction of an Indian classical or vernacular language as a compulsory subject of study in the Intermediate and the B. A. courses. This is but a reversion to a state of things that existed a few years ago, and it was unfortunate that the importance of the study of a classical or a vernacular language was ignored in the meantime. It is gratifying therefore that a change back to the old order of things has been decided upon and the true purposes of a South Indian University justified by the courses of study now prescribed. The Intermediate course has also been broadened so as to provide alternative courses for those who seek to enter higher University education and those who would cut themselves off at that stage to vocational training.

STUDENT LIFE.

The relation of the University to student life has not also been ignored. The information bureau called "The Students' Advisory Committee" intended to give information and aid to students proceeding to foreign countries for study and now under the control of the Government, will soon be taken up by the University. The University makes grants to the University Training Corps, and is working out, through a Committee appointed for the purpose, the question of affording facilities for Military Training to students in colleges. Another Committee, which considered the question of Hostel accommodation, has recommended that the Government be requested to build hostels for Madras students, and that in the meantime the University should hire lodgings for them. A special request was addressed to the Surgeon-General to reserve beds for University students in the General Hospital and he has agreed to do it. The Council of Affiliated Colleges resolved to ask for special grants from Government for providing hostel accommodation, and the Government on being addressed, have agreed to consider the question when the Grant-in-Aid Code is revised.

PUBLICATIONS.

The publication side of the University was not also idle. Competitive Theses for Prizes, the theses submitted for Doctorate degrees; Research papers, the "Sir Subramanya Aiyar's Lecture" and the ordinary University lectures form some of the publications. A publication of great value, which is to be carried out under the supervision of the University, is Dr. Robert Sewall's "Historical Inscriptions in South India and Outlines of Political History." There have also been

proposals to enlarge the scope of the Publications department of the University and to allocate specific amounts therefor in the Budget. But the schemes have not yet crystallised and there is no reason to doubt that the fullest scope will not be given for the expansion of the University on the publication side.

Proposals were also made for the establishment of a University Magazine. A considerable body of opinion was in favour of it, and the Syndicate has finally resolved to give effect to the proposals.

ADMINISTRATION.

On the administrative side too, there has been useful work done. A large item of University expenditure is on stationery and printing. Committees went into the question of economising under this head and the Syndicate resolved to call for competitive tenders both for printing and stationery, subject to existing contracts in respect of the same. Proper safeguards have also been provided against any undue expenditure on these items. Then the University has been paying a large amount by way of commission on sales of University publications. It was resolved to make a saving to the University under this head also and a "sales" department has been opened in the University Office. New pension rules were drafted and a set of Provident Fund rules is under consideration. The Senate also appointed a Committee to enquire into the financial resources of the University with reference to its commitments in the past and its expansion in the future. The Committee made a report which was accepted and as the direct result of it, a large increase of income to the University in the shape of fees has been secured. The clerical establishment of the University Office was also re-organised with due regard to efficiency and economy. Last but not least is the

matter of the construction of the Library buildings which the Syndicate has to arrange. That entails an amount of work which is not apparent on its face. Many complications arose particularly in the relations between the University and the Government and gave rise to delicate situations. The Syndicate had to give anxious consideration to the question and it is gratifying that the situation has been solved by the decision of the Senate.

THE SYNDICATE.

In assessing the work done by the University, a word about the part played by the Syndicate may not be out of place. The Syndicate is the body responsible for the functioning of the University in all its sides—the academic, financial and the administrative sides. A perusal of the laws in respect of its duties would make it clear that nothing pertaining to the University can be carried out without the Syndicate having its part in some stage or other. The Syndicate initiates movement in some cases; in others, it co-ordinates the movement of the different bodies, and in all cases, it has a function to perform in the final stages. Its jurisdiction is, in a sense, an all-pervading one. But that is no reason why any attempt to curtail the scope of its jurisdiction should be thought of. No proposal to that effect can possibly work. It will be conceded that there must be a central authority to bring into relation appropriately the several authorities of the University, *viz.*, the Boards of Studies, the Faculties, the Academic Council, the Senate, and the Council of Affiliated Colleges. There are besides many Committees whose functions have to be correlated. There must also be a common authority to give effect administratively to the resolutions of the several bodies. Otherwise, it may lead to conflict and con-

fusion if each body were to put into action its own decisions without reference to the decisions of other co-ordinate bodies. Notwithstanding the large crew, a man at the helm is necessary and the Syndicate is constituted as that responsible person, not with powers as is erroneously supposed, but with trust duties.

Then it is not possible to have the several bodies in session more frequently. There is also the question of costs. There must necessarily be a smaller body functioning throughout the year. The comment, therefore, that the Syndicate has appropriated to itself all powers, is baseless. The Syndicate is certainly not the master but the Senate is, and in most matters, the jurisdiction of the Syndicate is but derived from delegation by the Senate.

The Syndicate has also other arduous, responsible and heavy duties to perform. To enumerate some of them: As regards colleges, the Syndicate keeps watch over their work and progress, appoints Inspection Commissions when required, considers their reports and affiliates or recognises them. It grants exemption to students, makes orders on the equivalence of the examinations of other Universities or combination of attendance in different institutions, appoints Examiners with due regard to the entire teaching staff of all the colleges, conducts the examinations and publishes results. It decides upon the grant of studentships and appoints lecturers for 'ordinary,' 'special' and 'popular' lectures. It also looks after the student life in colleges. It considers and carries out the resolutions of the Senate and the Academic Council and the Council of Affiliated Colleges and acts as the connecting link between them and with the Boards of Studies, Faculties

and other Committees. It controls the establishment, safeguards investments and regulates payments and expenditure. It prepares the budget and the annual reports and answers audit objections of which there is no end. It supervises the work of the Tamil Lexicon and of the Library Committee. It is also in charge of the construction of the University Library buildings. Last but not least, there is the correspondence with the Government and the outside world which, when not of a routine character, is brought up before the Syndicate. Finally there can be no doubt that with the prospect of increased finances, the work ought to multiply itself many-fold. The items of work are really too numerous and too varied to mention.

There is, however, an opinion entertained in some quarters that the Syndicate is confining itself more or less to matters of administrative routine and that it is not taking sufficient initiative in the matter of the academic development of the University. The *resume* of the work of the University given above, every one of the items of which must pass through the Syndicate in its ultimate stages at least, must be clear

proof of the work that the Syndicate has been doing on the academic side. At the same time, we cannot complain against the opinion that more work might have been done. But, it must first be remembered that there can be no thought of academic expansion of the University without adequate finances. With the Andhra University on the one side, and the threatened Tamil University on the other, no permanent scheme of University expansion can be projected without a reliable foundation of finance. The current fee-income of the University and the annual savings therefrom, form no solid basis to found a scheme upon. Secondly, it is but appropriate and desirable that the initiative on academic matters must move from the academic bodies. The Syndicate by its constitution, the purposes designed for it and the multifarious functions assigned to it, is hardly a body that ought to be expected to take the initiative in such matters. Thirdly, the system would perhaps work better and give more satisfactory results if the University administration should be distinctly demarcated into the academic and administrative sides under different heads.

BOOKS BY P. V. JAGADISAYYAR, of the Archæological Dept., Madras.

MATTAVILASAM

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EDUCATING BY STORY-TELLING.

By Miss C. GORDON, ED.B. (Edin.)

Lecturer, Teachers' College, Saidapet.

EVER since the beginning of things, the story-teller has been a personage of power, an individual welcomed by young and old alike. Hailed as a joy-bringer and needed as an oracle, his tales have been the open sesame to admit him to any throng and his departure has always been attended with regret. During the nomadic existence of the race, the mightiest men of the tribe were the chieftain and the story-teller, the one receiving homage because of his ability to vanquish his adversaries in battle, the other because of his skill in entertaining his fellows as they huddled round the fire at night. Each ability was believed to be evidence of divine gift and the possessor of each was revered as being a little higher than a mortal, a little lower than a god.

Primitive man like civilised man was fond of power, and realising that his talents made him mighty, the narrator exercised them in such a manner as to promote their development. Every emotional response on the part of the hearers served as a key to unlock the door into the land of his desire, and as he listened to exclamations of approval, condemnation or delight, he saw ways of arousing these emotions to even greater degrees of intensity, and possessing an elemental love of the spectacular made the most of his opportunity. Thus he evolved from a crude declaimer into something of an artist. As the race emerged from a barbaric into a pastoral state, he grew to be more than an entertainer; he imparted knowledge to the young by keeping alive the tribal traditions.

On the Asiatic highlands, before the Aryan migration, it was the story-teller who preserved the tales of the fathers, the nature-myths that were primitive man's explanation of the things he did not understand. The journey of the Sun across the heavens, the shifting of the clouds from one fantastic form to another, the chromatic skies of sunrise and sunset, and the starry firmament of the night aroused his curiosity and awakened his awe. He wondered about them just as children to-day wonder about them, and just as twentieth-century children question their mothers, so he questioned one whom he deemed wiser than himself. This consulted oracle gave as an explanation something that out of his own wondering and puzzling had grown into a vague belief, and consequently the clouds that presaged showers come to be regarded as heavenly cows from whose exuberant udders came the rains that refreshed the Earth; storming oceans and rugged mountains with ravines beset with perils held giants that avenged and destroyed; while the Sun, a beneficent creature that drove away the monster of darkness, and all the saving forces of nature were metamorphosed in the fancy of these early men into protecting heroes and divinities.

As generation succeeded generation and the young received their heritage of lore from the old, these stories became fixed so firmly in the minds of the people that they were carried with them at the scattering of the tribes, told and retold in the new-found homes, and modified to suit conditions of life in strange lands which the wanderers came to inhabit; and they still survive as present-day fairy tales.

Always it was by the lips of the story-teller that the legends were kept alive. It was

his mission to teach children the tales their fathers knew and as the race evolved towards civilisation, he gave them something besides nature-myths. He recounted and reiterated the achievements of the heroes of his people, until youths who heard were fired with desire to emulate them. Because he was deemed a man of supernatural powers, his words were believed; consequently he created the ideals of the age in which he lived and just as his own standards were fine or base, so the ideals for which he was responsible came to be high or low. Fortunately for the world, however, these old-time narrators were wiser than their fellows. They were poets and dreamers who saw life through eyes vision clear. They glorified virtue and deprecated vice, taught that right triumphs over wrong, and that sinning brings inevitable punishment, and explained in a crude way the workings of the law of compensation. They fired men to achievement just as they fired boys with desire to emulate the heroes of whom they told and as centuries passed they grew in skill and power; their tales came to be the inspiration of some of the most thrilling chapters in the annals of man. Alexander the Great declared that the lays of a wandering bard, Homer, made him thirst for conquest. There was no more puissant man in Ireland when she was in her golden day and Tara in its glory than the low-born minstrel Brian of Fermanagh; and the Crusades which re-created Europe by the introduction of Eastern culture and the breaking down of old traditions might never have been undertaken but for tales of defilement of holy places from the lips of Peter the Hermit. Story-tellers, every one of them, swaying their fellows and making history, subjects of kings and nobles, yet often

mightier than the masters who held their destinies in their hands.

There is no age or racial limit to this story love, representing as it does an emotional hunger that is the human heritage. Those who have even a limited knowledge of child-life know that before the babe can read, he delights in listening to a nursery tale and that even after he journeys into bookland, he is more interested in the story told him than in the one he reads for himself. Why? Because the voice and personality of the speaker make it alive and vital.

The tales heard during childhood become fixed and lasting possessions. They stay with the hearer through the years and because their ideals become his ideals, do much toward the shaping of his character. The child who hears many good stories unconsciously learns to distinguish between the tawdry and the real, reads good stories when a boy and becomes a man for whom sensational 'best-sellers' have no charm.

For a number of years it had been conceded that story-telling is of value in the Kindergarten and Primary school, but little provision had been made for it in the educational scheme of the older child. That view however has long since passed and it is realised that the narrator's art can be a powerful element in the mental, moral and religious development of the child, and can mean as much to the adolescent child as to the thing told.

Yet with all the interest that is manifested everywhere, story-telling is not doing its greatest and most vital work, because so little thought is given to the selection of material, so little study to the response of children who hear the tales and the effect upon them,

Before even half of its possibilities can be realized, those who tell stories must know the story interests of childhood, and must choose materials not only because they are beautiful in theme and language and embody high ideals but because they are fitted to the psychological period of the child who is to hear them. They must realise that the purpose of story-telling is not merely to entertain, although it does entertain, but that in addition to delighting young listeners there must be a higher aim of which the narrator never loses sight. Every tale selected must contribute something definite toward the mental, moral or spiritual growth of the child. Story-telling planned and carried out to fit conditions will help to solve many of the problems that confront educators to-day. Besides developing the emotional nature and giving moral and religious instruction, it will intensify the interest in history, geography, nature-study, awaken an appreciation of literature, art and music, enrich the child's power of discrimination, and teach him to distinguish between the cheap and the ephemeral and the great and lasting. It will help to eliminate much of what he considers the drudgery of school-life and give him information that will fit him for broad, sympathetic, useful living. This does not mean that the teacher is to do all the work, thereby fixing children in habits of idleness, nor does it mean the addition of an extra subject to an already over-crowded curriculum. It simply means leading the child to do things for himself because of the incentive that interest gives. It means illuminating the formal subjects and sending pupils to them with greater eagerness.

If the work of the narrator is to be of real value, he must have a knowledge of the

story-interests of childhood. The heart or framework of the story must be made up of events that are fraught with interest in his particular period of mental development and must introduce personages with whom he would like to companion and whose movements he will follow with approval, pity, condemnation, or rejoicing. Under such conditions the boys or girls or animals who contribute to the action of the tale are not strangers out of a book, but mean as much to him as the people and animals he knows and because they do mean much he loves the tale. It becomes part of him and he part of the story. His emotional nature is stirred, his power of evaluating is strengthened and some of the foundations of character are laid. Naturally the question arises: "How is one to know which tales to choose, when there is such a wealth of stories and such a diversity of interests? Is there any rule or guide to keep the conscientious but untrained worker from the pitfalls and show him the right road from the wrong?" Such a guide there is—the psychological axiom that the child between birth and maturity passes through several periods or stages of mental growth, which determines his interests.

The little child, the one from the age of about three to six, is interested in familiar things. He has not yet reached the period of fancy during which he wanders into a world of make-believe and revels with fairies, but dwells in a realm of realism. His attention is centred on the things and personages he knows—the mother, the father, dogs, cats, cows, horses, chickens, and children of his own age—and consequently he enjoys stories about these creatures.

Especially fascinating in this period of childhood are stories which contain much

repetition and they are disappointed if the well-known expressions are omitted. The repetition strengthens the dramatic element and helps to make the pictures vivid and the child loves to experience again the thrill he felt upon first listening to the tale.

Stories introducing the cries and calls of animals are much loved at this period. The squealing of the rabbit, the barking of the dog, the mewing of the cat, the clucking of the hen, give charm to a narrative because the child has heard those sounds in his own garden or along the road, and knowing them is interested in them. Broadly speaking then for the period of early childhood, the time of realism which extends from the age of about three to five or six, the narrator should choose stories of animal and child-life, those which introduce sounds peculiar to the characters and which abound in repetition.

When the child leaves the realistic period he enters a world of make-believe and no longer desires tales that are nothing more than a recounting of facts he already knows. He delights in playing, he is some one other than himself, in pretending he is doing things beyond the range of his possibilities, and because he craves a larger experience he craves also fanciful imaginative tales in which he may have those experiences. He knows that the bees sting, that the dog has a cold wet nose, that the cat lands on its feet, and the squirrel holds its tail up. He wonders about these things, but he is still too limited in experience and in mental capacity to give them real theoretical meaning. Consequently he employs the wonder-tale or as some call it the "primitive why" stories.

Primitive man through fear and fancy personified the forces of nature and gave them human attributes, and because they were less

tangible than the creatures of jungle and plain that figured in the earliest fables, his mind visualized them as fantastic beings, sometimes lovely, sometimes grotesque, fairies and goblins, destructive monsters and demons, and avenging giants who preserved him from that which he feared. Thus originated the fancy-story that was the expression of his religion. The child enjoys these tales. The narrator can gather this material with comparative ease, because the science of ethnology has brought to light many of these tales from primitive literature and not a few of them have been put into collections available to child-workers.

The fairy-tale that grew out of the life of the race is also rich in material for children of this period. By 'fairy-tale' is meant that type of story usually associated with the names of Grimm and Anderson. Little people will delight in it and will listen to it again and again; but because these tales have had a mighty place in the history of the race and still have their work in the education of the child, it does not follow that they should be given to young listeners as so much unassorted grain should be given to chickens. There are many that should not be used at all. Those that are used should be carefully graded, because a child will enjoy a narrative in which children are heroes long before he enjoys one in which adults held the centre of the stage. The child's imaginative nature should be developed, but there should be no doubt in his mind as to what is make-believe and what is real; let him wander at will through the realm of fancy but let him realise that it is a realm of make-believe, not of facts which he inhabits during that period. His imagination will be as much aroused, his emotional nature will be stirred as deeply,

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At this age when the adventure spirit runs high, how are we to keep boys and girls from running away from home to lead similar lives? One way is by letting them live the lives of the heroes that thrill them—in other words, by dramatisation.

BUILDING THE STORY.

Story-telling is a creative art and therefore a knowledge of underlying principles is as indispensable to the narrator as to the sculptor or painter. Without this knowledge, he cannot hope to adapt material to his needs, but must be limited in his choice to what is already in print to give children; with it he can avail himself of many opportunities to bring to his charges treasures of which they could know nothing, but for his ability to dig them from the places where they are hidden, polish and classify them, and put them in a setting within the understanding of the child.

The beginning of the oral story should never be an introduction, because from the first word the child expects something to happen, and if nothing does happen, his attention wanders and interest is lost. Therefore the narrator must bring his characters on the stage and get them to work at once: he must not let them stand round waiting, while he gives a detailed description of their hair and eyes and of the clothes they wear, but must have them do something. It is often necessary to make some explanatory remarks in the beginning, but it should be done in such a way that the

hearer has no time to wonder when the story is to begin. The story must be full of *human interest*. The written story may depend for its charm upon character-drawing and local colour, but the oral story demands *plot*, and if this plot is badly hung together, the story fails in its aim, for it does not make a deep impression.

The narrative style is better adapted to beginning the oral story than dialogue, because it is more easily handled. 'Once upon a time' or 'long, long ago', arrest the attention immediately even though the teller be a novice, and having made a good beginning, he is reasonably sure of holding his hearers to the end. On the other hand, if he does not make a good start, his story-telling time is apt to end in failure.

Next in consideration comes the body of the story, which our rhetoric teachers tell us is a succession of events moving toward the climax. Until the climax is reached, the oral story must be full of suspense. In other words, the hearer must be kept guessing about what is going to happen. The child does not care about the story in which he sees the end. He does enjoy hearing the same story told over and over again, if it thrilled him at the first telling, because he likes to re-experience that thrill. But if a new tale holds no suspense it falls flat. Stevenson says: "The one rule is to be infinitely various—to interest, to disappoint, to surprise, yet to gratify. To be ever-changing as it were the stitch, yet still to give the effect of ingenious neatness." In other words, the succession of events must follow one another in a regular sequence and each must contribute something to the one following it. As a rather homely illustration of the meaning of this, we may say that plot centres round a hole, and in a well-constructed story, the steps by which the hero gets

and there will be no discovery later that the teacher deceived him.

In selecting fanciful tales for this period of childhood, choose first of all the old ones, those that originated in the childhood of the race and have delighted many generations. They have stood the test of ages, they are expressed in beautiful language, they create ideals and arouse inspiration, they feed and satisfy. There are some fairy-tales of later origin that are the works of great writers which may be used (Hans Christian Andersen).

The function of the story is to refine rather than brutalise, to give pleasure, not to shock a sensitive child or whet the cruel tendencies of a rough revengeful one. If it does, do *not* use it in your list of fairy-tales, even though it be reduced to a very limited one, but choose other material for this period from the lore of science that will feed the fancy and not warp the soul or distort the character.

When the child leaves the imaginative period, he enters another realm of realism. The fairy-world is no longer a place of enchantment to him. He is now in a condition corresponding to that of primitive man, when he was not satisfied to sit by the tribal fire and listen to stories about creatures who personified the elements, fared forth on the path of adventure, eager to know what lay beyond the lodge place of his people, feverish with desire to conquer and remove whatever obstructed his way. This instinct manifests itself in children also, they long to repeat the experience of their ancestors in this same period. They want to live through nights of danger and days of daring, but since authority hovers Argus-eyed about them, the nearest approach to the experience consists in listening to and in reading tales of adventure. This

age is usually from eight to twelve years although there are no tightly-drawn lines of demarcation, individual cases of course differ.

There is no time in the child's life during which the story-teller has a finer opportunity of sowing seeds that shall come to splendid fruition by-and-by than in the heroic period. Human nature is much the same in all climes and in all ages. Until man reaches a very high state of enlightenment he is more thrilled by manifestations of physical bravery than by mental and moral courage, and he who possesses muscular strength is the hero in his eyes. It is useless to try to substitute something else for children in this period. This ravenous appetite of boys and girls must be satisfied, and if they are to grow into well-balanced men and women, we must feed it with wholesome food.

The national epics are splendid sources of story material for children in the heroic period, especially those formalised among nations not yet in a high state of civilisation. Their characters are elemental and their incidents appeal to boys and girls.

Biographical and historical narratives also fulfil every requirement of hero-tales. Boys and girls love the epical stories because they are true in spirit, but they love also those that are true in fact. It is a mistake to think that biography is dull and uninteresting to them because stories of the boyhood of great men, great rulers, great discoverers and pathfinders, great law-givers, painters, musicians and writers are hero-tales of the highest type. Many of them have been told admirably for young people and the narrator does no more valuable work than when he uses them freely. Alfred the Great, Jeanne de Arc, Cromwell, Sir Walter Raleigh, Nelson,

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into the hole are traced, and then those by which he gets out. The getting out is the climax, or as Dr. Barret says: "the apex of interest and emotion." In other words, it is a top of the ladder and the story must move in an unbroken line toward that topmost rung; if it does not do this, if the thread of the tale is broken to interpolate something that should have been told in the beginning, the narrator loses his audience.

The climax must be a surprise to the child. With very young children the suspense element should be simple; repetition used in sequence accomplishes it well.

After the climax is reached, the oral story should descend rapidly to a close. "Many of the best oral stories end in the climax. There should be no moralising; leave the child to see the moral for himself, and he sees it more clearly and is the more deeply impressed by it, if he is allowed a few minutes' silence after the completion of the story, instead of being drawn into conversation concerning it. Change of voice adds to clearness and interest in the story and pauses are wonderfully effective in heightening the interest of the story. Children fairly quiver with expectation if frequent pauses are used when the moments of suspense grow big. Above all things, there should be no stopping in the midst to correct a child. If one shows evidence of lagging interest, mention his name as if the story were being told to him. This makes him feel that although many children are listening to the story, it is being solely given for his benefit.

STORY-TELLING TO LEAD TO AN APPRECIATION OF LITERATURE.

One of the specific aims of education is to endow children with an appreciation of

literature, and to this end much of a teacher's energy is directed. The first, second and third year boy is required to read and memorise selections from such poets of the nursery as Stevenson and Eugene Field; not infrequently he is detained after school because of failure to have his lesson prepared at recitation time, and responds to the requirement in a mood that brings discouragement to his teacher. On the other hand, there are schools in which the literature of the reading hour is a period of joy, where the learning of the songs of the singers of childhood is accomplished without concern. These schools are the ones in which the teachers have learned that the acquisition of knowledge, to be of real value must be attended with enjoyment.

It is a mistake to believe that although the function of the school is to equip the man, the aim of education is only to give enjoyment in the future. It is also the aim of education to give enjoyment now, because in this way capacity for enjoyment in the future is made possible. The boy or girl whose early association with poetry or beautiful prose is attended with discomfort and displeasure is no more likely to be drawn to the finer types of literature later than the man or woman is apt to be fond of a person the first meeting with whom was a disagreeable experience. If we would have the man love good literature, we must first lead the child to love good literature, and we can do this only by making him enjoy good literature. Because story-telling brings pleasure to the child, it is a most effective means of leading him to an appreciation of literature. Through the medium of the story, we not only can heighten his capacity for enjoyment and elevate the standard of his taste,

but we can equip him with knowledge he will never acquire if the literature period is associated with force and punishment. If a tale brings pleasing pictures before his eyes and is beautiful in theme and language, he unconsciously forms a taste for beautiful language, for he is not only getting the succession of events that make the plot, but is also absorbing words and expressions. Certain sentences stick in his memory, and teachers who make children reproduce stories, know that frequently they use the exact phrases and sentences that have been used by the teller.

We can also interest children in the life of an author, so that they will want to know something of his work. But in doing so, one must keep in mind the story interests of childhood, and remember that children are interested in children and not begin for example "when R. L. Stevenson was a boy," but rather, "once there lived in the north country a boy whose name was Robert." Let the approach be from the child to the man instead of from the man to the child. Focus the interest of children upon one like themselves, then lead in a natural way to the man and his achievements. Sometimes children can be interested in a piece of literature through a story about it or suggested by it, because often one tale helps to illuminate and charm and add interest to another.

It is not sufficient just to tell the story, because it was not the plots of writers that made them great artists. It was the manner of handling their plots, their delineation of character, the philosophy and human wisdom they put into the mouths of their heroes, and the girl or boy who does not become acquainted with these great creators during school-days is likely never to know them. It is infinitely better that a child's school-life pro-

vide him with a capacity for the enjoyment of literature than that he have a technical knowledge of a few pieces of literature, because the latter endows him with a narrow outlook while the former makes possible a future growth, without a capacity for which life must be narrow and one-sided. The approach to the great field of literature must be through specific examples. But if they are to be enjoyed, acquaintance with these specific examples must be made in a pleasurable manner. They must first be held in a perspective that gives glimpses of them as a complete and beautiful whole and not through detailed workmanship; in the realm of literature each master piece enjoyed gives capacity for the enjoyment of every other masterpiece to be met with in the future. Therefore the story, because it is a means of flashing the entire structure on the screen and making it possible for children to see the completed whole in all its beauty, is the teacher's most valuable tool.

STORY-TELLING TO AWAKEN AN APPRECIATION OF MUSIC.

The public school aims not only to give boys and girls a training that shall equip them with ability to gain a livelihood and provide for the natural wants, but to give them resources within themselves from which to draw pleasure, broaden and deepen the emotional powers, enrich the soul by endowing it with capacity to respond to the beautiful and true and make them more sympathetic toward the joys and sorrows of their fellows. That is why the curriculum includes a course in Music, Drawing and subjects that are branches of a great art. We do not expect to make professional musicians or painters of all the children who receive instruction, but aim to give the average child, the one who will

grow to be an average ordinary man or woman, an appreciation of the things that give colour and beauty to life and make him or her richer in mind and happier.

Taste is formed by what is heard in youth and the child whose early years are associated with the best music of the times is the boy who in the older years enjoys the gifts of life besides being able to make others happy by his music. Besides teaching children to sing and play themselves, we should give them opportunity of hearing good music and it is possible to make the music period more interesting by giving them stories concerning the composers or their work, which will cause them to respond with keener pleasure to the higher standards of music. "Whoever puts a beautiful thought or melody into the world," writes an Italian poet, "gives more than a diamond of Golconda." Whoever helps a child to understand and enjoy beautiful thoughts and melodies gives in almost as great a measure as their creator. He too is a builder leaving behind him something fit to stand, and labour of that kind does not go unrequited.

STORY-TELLING TO AWAKEN AN APPRECIATION OF ART.

The child who is surrounded by good pictures from his earliest years grows to love good pictures and gaudily coloured inferior ones have no charm for him. His taste has been formed for the fine and true and nothing else will satisfy him. To behold a beautiful painting gives him pleasure, while to see a glaring one produces an unpleasant sensation. This is not because he is different by nature from one to whom masterpieces have no meaning but because he has learnt to know them.

It is not enough to place reproductions of masterpieces in schools and homes and say nothing about them. If children are to have an appreciation of them, they must be led to see their beauty to understand what they mean, to have some idea of the infinite patience and labour that made their creation possible. The average child must be led and directed, his interests must be aroused before we can hope to mould his taste as we would have it moulded. Only through an association that gives pleasure will he come to see and appreciate, and here story-telling can work wonders because through it we can intensify a child's delight in a picture.

In the field of art, the biographical tale is of immeasurable value, for the story of an artist's life illustrated by reproductions of his works can be made the pathway to appreciation.

In establishing standards of art-appreciation as well as those of music we must not lose sight of the strong interest of childhood because many a picture that is a great artistic achievement is not suitable to be presented to little children.

STORY-TELLING AND THE TEACHING OF ETHICS.

The function of education is not only to give the child knowledge and a capacity for acquiring further knowledge that shall equip him for the life-struggle and make success a possible attainment, but also to give him an ethical standard that shall make him fit to live among his fellows, and a respect for the rights and feelings of others, or as Goethe says: "Reverence for what is above, reverence for what is beneath, reverence for what is equal." He must be taught to realise that he is part of a great unit and that individual desires must often give way to the

welfare of the many. He must be taught that as an individual he owes to society obedience to laws that govern society and allegiance to the principles that make possible a harmonious family, civic and national life. Consequently it is required of every teacher that he give ethical instruction, that he endeavour to bring children to an understanding of what is generally accepted as right and wrong, and implant in them convictions strong enough to adhere to those standards.

In establishing ethical standards as in establishing standards in art, literature or music, we must appeal to the emotional side of the child as well as to the intellectual side. We must lead him to feel that the right act is the one that he wants to do and this cannot be accomplished by a presentation of facts and precepts. Every teacher knows that the time spent in admonishing a child what he ought to do brings no gratifying results. He is not swayed to repugnance of one act or to admiration for another by being told "Thou shalt" or "Thou shalt not." At the time the command is given, fear may cause him to obey it; but conduct that is the result of force does not strengthen the character or teach high standards of action. It tends instead to harden the child and make him determine to act differently at the first opportunity. Ethical training does not mean to attempt to control the child but to enlighten him and direct his volition to the point where he will attempt to control it himself. As some one says: "Its aim is to make the best there is so inviting to the child that he will work eagerly and persistently to win it." The ideal that is held up to him must be so beautiful that he will be willing to sacrifice and endure hardship in order to attain it and through story-telling he may be led to see this ideal more vividly than

in any other way, because the story makes right acts appealing and wrong acts repugnant.

In giving ethical instruction it is necessary to use the right material. Tales suited for the purpose should be suited to the child's particular period of development; they should contain a lesson the boy or girl ought to learn and they should be strong, virile and true to life.

Moral training should begin with the babe and therefore the mother and primary teacher need stories that have ethical values as early as they need nursery tales and jingles. Very early in life the child must be brought to realise that there is a higher law than that of its own will or desire. It must be taught obedience, cleanliness, kindness to animals, considerations for the rights of others, truthfulness, industry, honesty and courtesy, and these lessons can be inculcated more effectively by means of story-telling than in any other way.

In telling stories in which children are materially rewarded, the narrator should emphasise the fact that the greatest reward is the mental satisfaction that follows a good action, because the child who hears much of material reward sometimes thinks chiefly of the money or picnic or good tune commendable conduct should bring, and if it happens that he does not receive remuneration, it is useless to perform good deeds. Many fairy-tales and fables are of particular ethical value, and the narrator can draw much from the field of general literature. History and biography offer a particularly rich field from which to draw material for older children, for nothing drives home with more force a lesson in patriotism, loyalty, faithfulness, heroism, or obedience, than to read of some one who has been put to the test and has triumphed,

STORY-TELLING TO INTENSIFY INTEREST IN HISTORY.

It has been said "the pupil who gets a mark of 100% and thereafter hates Shakespeare has failed, rather his teacher has"—and it is equally true that the teacher has failed whose classes look upon history as a series of dates and dull facts instead of a colourful story.

To teach history successfully means to give the child vivid pictures of the past, to enable him to see as a whole the march of a race or of a nation across the canoes of time, to watch the legions of warriors go to victory or defeat, to hear the voices of statesmen whose wisdom has built empires, to walk side by side with the men and women whose life-stories make up the annals of the world. To be of value to the child, history must be felt, just as a work of literature must be felt. He must limit, must approve the worthy and disapprove the unworthy, must rejoice in and sympathise with the fortunes and misfortunes of its characters, else it cannot be anything more to him than the fact in a chronology, tiresome during his school days and forgotten as soon as they are over.

Story-telling can make history allied and vital because of its power to convey the child to distant fields and ages, and through it he may become not only a spectator, but a participant in every human activity. If our libraries were to be swept away and our publishing houses should shut their doors, we could still teach history to children and teach it successfully, through the art of the narrator. By the medium of the story we can make the child see what has been done by his ancestors and other people in the past; by it we can interpret to him how his fore-

fathers lived and acted, how other people have attempted to do what he is trying to do or sees done, and give him a vivid idea of human ways of living and conduct. This is history in the larger sense, and it was taught successfully by the story-teller in the past.

Before the days of printing, when books were manuscripts that no one but monks could read and kings could afford to own, story-telling was the only way in which this subject was taught. Tales of by-gone days were told in castle halls and to groups of eager listeners on the village green, and boys and girls of King Alfred's time knew as much of their countries' story from the lips of wandering bards, as those of our generation know from cramming the contents of text-books. They knew it because through the tales they heard they were able to re-live it, and what has been done before can be done again. Because of the story's power to vivify, modern children can re-live the world's story just as those in medieval times re-lived it, and history can be made a subject fraught with delight to the child.

Child's attention centres first upon familiar things, and radiates from them to the unknown. Through his interest in creatures that are a part of his environment, the Kindergarten child becomes interested in those of other regions, in the men, women and children and animals that are part of the life of some other child. Through knowledge of his immediate surroundings he comes to acquire knowledge of life in other surroundings, and according to the appeal it makes to his imagination, he understands and sympathises with it, and his social sense is broadened. Therefore in the study of history the attention should be focussed upon local environment, and from it should radiate to

other sections of the world. In other words, by what the child sees happening around him, he must be led to see what has happened in the past and what is happening now in distant regions. This requires imagination and a boy or girl cannot see or feel these events if they are presented as a dry chronology, because under those conditions they do not arouse the imagination. He must behold them flashed on a canvas like a coloured picture, and because the story can do this, because it can make real to the imagination situations that cannot be experienced, through it he can be led to see and feel all that we desire him to see and feel.

The biographical story, the tale of the leader who towers above his fellows like the Matterhorn above the Valais foot-hills is a boon to every teacher of history. Because it is unified in plot and dramatic in appeal to the imagination, it is the most easily handled of all the history material and should be used as freely. But if children are not to have a distorted idea of the story of the human race, we must not stop with the biographical tale. We must give them also a conception of the part that masses have had in the making of the great human story; of the yeomen of England upon whose sturdy shoulders the foundation of British liberty stands, of the army of unknown toilers who built the Pyramids and the Chinese wall. Sometimes in satisfying the child's hero-love, we make him one-sided by laying too much stress upon individual achievement. We do not leave him to value the importance of the humble who toil in the rank and file. This is not as it should be, we should make it clear to him that the stokers who feed the furnace of the man-of-war are as splendidly patriotic as the admiral who commands the fleet, and are as

necessary to the country because were there no coal-heavers there could be no navy.

Sometimes, too, because martial events are more spectacular than those of peace, we give the impression that they are the only important and heroic ones, and fail to convince children of the fact that the peasants of Lorraine, who tilled their fields until they blossomed like gardens, served their land as loyally as the soldiers who marched to victory under the oriflamme of Henry of Navarre. We are too prone to centre the child's interest around military affairs and neglect to emphasise the importance of conflicts of another kind. The history of every modern industry, of every achievement that has meant anything to the world, is a story of struggle, of victory over opposing forces. It has its succession of events, its periods of triumph and defeat, its moments of suspense and its thrilling climax, and if presented in all its possibilities, is as fascinating to boys and girls as Napoleon's Russian campaign. Let us not fail to give these narratives of struggle that are unstained by human blood and in doing it lead children to understand that there are other ways of serving one's land besides riding a war-horse or carrying a sword.

We teach that Robert Fulton invented the first steamboat, but it is only the exceptional child-leader who makes the most of that event, who throws upon the canvas for youth to behold, the story of the struggle and disappointment, the triumph and despair of the young engineer. To give them the fact that the 'Clement' made a successful trip from New York to Albany in 1807 is like telling the end of the story without the beginning or intervening chapters, and a snatch of a tale never has the effect of the

whole. But if the children have all the light and shade of that splendid narrative of invention, of the labour beside the Seine, of the hope and discouragement there, it becomes a fascinating, unforgotten tale. They remember the 'Clement' episode because they have employed a story and years afterwards when they see a ferry-boat or an ocean grey-hound they will think of the Engineer through whose dreams and labour it came to be.

To the teacher who looks upon history as a great fascinating tale, who regards it as a narrative instead of a mere record of dates and periods, who knows the story of man's inner development as well as that of his outer, and who uses the myths, legends and epics of a land as side-lights to illuminate its true story, great results are possible. There is no phase or period of history that he cannot make intensely interesting to the child, no page of the world's story, that will not teem with life and colour to the boy or girl who receives it from such an instructor. It may be an account of happenings in the stern white north country, or in the opalescent south, it may be knights in glittering armour or of serene-faced, brown-coloured friars, of men from the masses or from the ranks of the exalted, but it will breathe and pulsate for him; it will give him the information that he should receive, and it will give him an understanding that no memorising of dates and outlines can give, because he has lived with those who made history.

Every great historian is more than a recounter of events of the past. He is an artist who fits himself into the words of men and women who lived and accomplished before his time, puts them into his paper as creatures of flesh and blood, and gives to

their activities as much freshness and interest as have the events that happen before our eyes.

Motley, Guizot, Hume, Hallam, Froissart and Prescott created as splendidly as ever Hugo, Corneille or Balzac created, because they endowed characters of fact with as much life as these other men gave to the characters of fiction; and consequently with sources rich in inspiration from which to draw, the teacher who aspires to vivify history by story-telling is confronted by no hopeless task. He need only go to works of the standard historians for his background, and then by giving the imagination sufficient play to supply setting and detail of situation, he can carry a joyful lesson to the children, and make it hold delight for his pupils and cause them go from his instruction with a fondness for history, an understanding of what history really means, which is worth infinitely more than a thousand dates or outlines crammed into the mind for an examination or recitation, or stored there permanently to rust and grow useless, because they have no meaning and therefore no broadening or illuminating effect upon his life.

STORY-TELLING TO INTENSIFY INTEREST IN GEOGRAPHY.

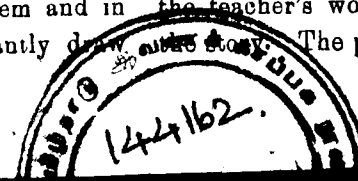
In the study of geography the story means as much as in history. The child is keenly interested in what he is doing and in what those around him are doing and when he discovers that people in China, in South America, in Australia or in Russia are doing the very things he is attempting to do or sees done, that they are engaged in industrial occupation very much as his father or uncle or neighbour is engaged in it, that distant occupation loses its remote quality, and the country with which it is associated becomes real and near to him. In the larger sense,

geography is something that must be felt and lived. It is an interpretation of foreign lands and the regions in which they take place, and because the story can interpret these activities, because it can make situations so familiar instead of aloof, it is of inestimable value in teaching the subject. Here the myth and the fairy-tale can be used with excellent results, because through them the child sees something of the struggle of man in his effort to interpret the world and comes to have a broader sympathy for the ideals of people of other regions. Moreover in many instances it tends to fix definite information concerning a certain locality and to invest distant regions with vivid interest, for the boy who associates the Rhine or Alps or Himalayas with the tale of a hero or people who once lived there and did brave deeds there, those rivers and mountains will be more than black specks on a map. If he hears of the two frogs in Japan who started out to see the world, he will not say that Kioto is somewhere in South America, because the spot has been fixed in his mind by a story. Because it is associated with something he has enjoyed, it stays there, and while the highest aim of the study of geography is not merely to stuff the mind with facts, but to broaden the horizon and the world within the child's own surroundings the acquisition of certain information tends to give him that broad outlook which makes all people seem creatures of his world and all activities a part of his own experience. Unfortunately, however, teachers sometimes lose sight of this fact and the larger aim is made subservient to memorizing data.

Geography and history are so closely related that it is difficult to separate them and in making one vivid we must constantly draw

from the other. One value of using stories with a geographical or historical background is that they develop the child's social instinct and give him something of a realisation of the brotherhood of man. Through hearing and reading them he becomes broader and more tolerant. He sees that in every part of the world men have their standards and ideals which although they may be greatly at variance with his own are entitled to respect because they represent deep convictions and desires. Instead of viewing the world through a keyhole, he sees it across unobstructed fields and comes to have a bigger human understanding. In the study of geography there is a finer opportunity than anywhere else in elementary education to divert the child's feet from a narrow provincial trait into the broad highway of cosmopolitanism.

As in the study of history so in geography, the story should radiate from local environment to other sections of the world and every worker with boys and girls should endeavour to give them some idea of the history of their own locality. The child should know something of the story of the primitive men who first inhabited their land and whose records are still to be seen in many parts, and teachers especially should aid in bringing to the children the folklore of their surroundings. It will not only heighten the interest in their own locality but it will broaden their understanding of other lands and races and their sympathy with the struggle of different peoples. This kind of work belongs to the field of history but it so greatly increases interest in geography that the teacher should not miss the opportunity of using such material. In using the story in geography, the teacher's work does not end with telling. The places mentioned in it should



be located on the map so that their exact position may be fixed in the mind of the child. Interest in the story will make this a pleasure rather than a task for the boy, just as it becomes a delight rather than a hardship for him to follow the route taken by his father or uncle when he goes on a journey, or to work out the itinerary of a trip he hopes to take himself. More than one man or woman attest to the fact that some book read and loved during their school-days did more to fix the location of river, city and mountain in their minds than hours of class-room study spent in tracing the boundaries of states and countries and the courses of rivers and mountain-ranges.

RUDYARD KIPLING AND INDIAN READERS*

By Mr. P. R. KRISHNASWAMI, M.A.,
Lecturer, Government College, Kumbakonam.

[T was not very long ago that a Calcutta paper published the account of a couple of human girls who, after being lost for years, were recovered for human society. One of the two children died, but the other is growing up in a mission house. Bishop Pakenham-Walsh's story attained a great sensation, for it was telegraphed to all newspapers in the country, and readers of both sexes read it eagerly, for they had not known such things before. Human memory is wonderfully short, and every generation forgets the revelations of the previous one. The recent account of the wolf-children should have caused no kind of extraordinary wonder if readers had known and studied with some care the Mowgli of Kipling's "Jungle Book." Kipling wrote two books, the 'First and the Second Jungle Books, and he filled them with the marvellous facts of natural history combined with the rarest, the most humorous and the most delightful creative fancy. Kipling inherited from his father perhaps, John Lockwood Kipling, the author of "Man and Beast in India," a love of animals, and the art of Kipling has transfigured the denizens of the Indian jungle into the members of a world of never-ending fascination. The wolf, the tiger, the jackal, the elephant, and the bear are all portrayed with a remarkable vividness and individuality. There are again fascinating real stories of life, of man and beast living

* "The School Kipling"—Macmillan & Co., 4s. each.
The Jungle Book (Pp. vi + 276.)
The Second Jungle Book (Pp. 299.)
Puck of Pook's Hill (Pp. x + 306.)
and Rewards and Fairies (Pp. x + 335), by Rudyard Kipling.

together in the Second Jungle Book. Few in India have perhaps known the charm of the "Miracle of Purun Bhagat," and yet it was a substantially real story.

Kipling has long been misunderstood in India. Instead of being regarded as a pure artist of universal appeal, he has been taken only as the proud and exultant mouth-piece of a proud and conquering European nation in India. Kipling has written indeed many jingling verses describing life, and official and military life in India. He was apt to be looked upon, therefore, as a writer of ephemeral stuff. But Kipling has belied this presumption. His was the eye of the true artist and he knew the immortal parts of all he described.

The greatest injury to Kipling has resulted in what amounts to a misquotation of his words. He is always quoted as having said that East is East and West is West, while the later words in which he says that there can be no difference of the kind when two strong men meet, are omitted, unfairly to him.

Kipling's permanent fame is said to be ensured by three of his works, the two Jungle Books and "Kim." But later works have certainly added to his achievements. We cannot doubt that his outlook, and the appeal of his work are growing in the width of their range. One who wrote the poem "If—" is not merely a poet of England, he has a claim to be regarded as a world-poet:

If you can talk with crowds and keep your virtue,
Or walk with Kings—nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much:
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And—which is more—you'll be a Man, my son!

The poem "If—" occurs in a fascinating book, "Rewards and Fairies." Like its twin-

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work "Puck of Pook's Hill," "Rewards and Fairies" has its special appeal to English children. Both the books re-tell, with a new and extraordinary art, the tales and legends of old England. With very little effort Kipling takes us back across the past centuries.

To see what we should see and hear what we should hear,
Though it should have happened three thousand year.

To readers who are not natives of England, the books can yet possess a charm, to those who have read English literature with some assiduity. In a reversed fashion, Kipling's books may inspire a new interest in us to turn back to the far-off remote tales, as well as the more modern ones which form the lore of England.

It is a laudable idea of Messrs. Macmillan & Co. to have re-issued these four books of Kipling's in a "School" edition. The price of four shillings per volume should be a very tempting reduction for England, but not sufficiently so for India. But it should be mentioned to the credit of Messrs. Macmillan & Co., that they have not sacrificed practically anything of the excellent printing and get-up of the original issue of the books at 6 or 7½ shillings.

We presume that the present four books are but the beginning of a full re-issue of Kipling's books. In these days of great enthusiasm for scouting, "Kim" should be very welcome in a school edition, and "Stalky & Co." would be quite appropriate too for schools. We cannot speak too highly of the value of Kipling for study in Indian schools and colleges. For the crisp modernism of modern English, we can go nowhere for such a good example, as to Kipling. Time was when Johnson spoke eloquent words about the prose of Addison. But they do not hold good to the modern student. We shall use the same words, with better justification at the present time, in favour of Kipling: "Whoever wishes to attain an English style, familiar but not coarse, and elegant but not ostentatious, must give his days and nights to the volumes of Rudyard Kipling."

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INTELLECTUAL ACTIVITIES AND ECONOMIC CONDITIONS.

By Mr. L. V. RAMASWAMI AIYAR, M.A., B.L.,
Ernakulam.

THE schoolmaster's wail for the betterment of his lot everywhere goes unheard, custodian though he is of the moral and intellectual interests of the future citizens of the land. Lord Brougham once said that he trusted to the schoolmaster, with his primer, against the soldier in full military array. Starved and snubbed, will the schoolmaster ever be able to rise equal to this trust? Relying on what little of idealism is left in him, he plods on "lofty and sour to them that love him not, but, to those that seek him, sweet as spring." If his is the duty to keep the lamp of learning bright and without a flicker, to the intellectual, working in laboratories and museums, falls the greater function of creating the materials. The State may afford for a while to ignore the cries of the schoolmaster, but to starve the intellectual is to court instant national peril.

There is a prevalent feeling that genius has an enormous power of forcing itself into prominence and winning recognition, however cramping the economic conditions of the environment may be. In so far as this view recognises in the intellectual a certain amount of upward buoyancy, it is unobjectionable, but experience shows that economic factors are far from being unimportant in their influence on the development of the intellectual life of a land. This point has been discussed in a recent article in the "Revue de Geneve." Economic conditions in Europe to-day—especially in Central Europe—are not calculated to sufficiently foster intellectual activities. The woes of the Central European intellectuals resulting from the recent war

are still fresh in our minds, and it is doubtful if the acuteness of their agony has yet appreciably abated. No one who has studied these conditions can to-day venture to make the proud boast—which a generation or two ago used to be made—that intellectual activities could be carried on in perfect independence of economic conditions. Says the writer in "Revue de Geneve": "If the difficulties of the intellectuals had been merely individual or personal, then the heroism of the individual would have effectively tided over them; but to the personal difficulties are to be added innumerable collective troubles. Stipends, prizes and rewards have been greatly reduced in number and in amount, owing to the policy of retrenchment in European States....."

Intellectual work need not be thought of without adequate material grants in aid of it. That is the great lesson which, according to the above writer, emerges out of the study of conditions to-day. Without the material well-being of the intellectuals being assured preliminarily, there can be no progress in science or in art or in literature. At the same time it is this same intelligence of the intellectuals that ultimately contributes to the shaping of the social, ethical and material well-being of the land. These two factors are closely inter-related, and at least out of considerations of self-interest, the State should hasten to the rescue of the distressed intellectual.

To ignore either of these two factors is disastrous. The moment intellectual activities, whether in science, art or religion, are prevented free play, that moment material progress and ethical advance suffer a setback which may eventually lead to social catastrophe or national downfall. A society which merely confines its activities to its

self-maintenance, without ceaselessly striving for progress, simply falls to pieces. It has to swim or to sink. "Our material civilisation," says the writer of the above article, "of which we are so gaily proud, is liable to easy destruction unless the watchword of progress ever guides our actions. We need only to have experienced the tremors of a political revolution or a general strike in a city, to feel the ground shake violently under our feet. In the Middle Ages, no want was felt for electric lighting or pipe-water or railways, but to-day we have dispensed with, and even forgotten the use of, oil-lamps, wells and the old slow means of communication. The moment we are deprived of these material adjuncts to our life, we shall be lamed and we shall be hurled back into a barbarism more primitive than that of the

farthest past. The intellectuals alone can prevent such a calamity....." The remarks here made in connection with material progress apply with equal force to the spheres of art, religion and literature.

All the efforts of the intellectuals should therefore be directed towards restoring and improving the well-being of the community, and the State as the representative of the latter in its turn should grant them freely and ungrudgingly the wherewithal to live upon. The State should recognise its duty to the intellectuals without whose work its existence would be at stake. The intellectual class should live and live well too, in order that the State of which it forms an indispensable part might itself live.

COMMERCIAL ARITHMETIC

FOR

SECONDARY AND COMMERCIAL SCHOOLS

Prepared in accordance with the S. S. L. O. Syllabus

By T. V. SUBRAMANIA AIYAR,

Commercial Instructor, Govt. Muhammadan College, Madras;

Author of

Commercial Correspondence, Book-keeping for Beginners, Graduated Exercises in Typewriting, etc.

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OPINION.

Mercantile Miscellany, April 1926:—The enterprising firm of Messrs. Srinivasa Varadachari and Co., Mount Road, Madras, have sent us a copy of Commercial Arithmetic for S. S. L. C. students which they have published. The book is a very useful addition to the existing literature on the subject and bids fair to be regarded as a Standard Text-book on the subject on this side. Needless to add that the book being written with a Commercial bias it should prove invaluable to all youths aspiring after commercial or business career. We congratulate the author, Mr. T. V. Subramania Iyer, and the Publishers, for the neatly got-up little volume before us.

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MATTER, ENERGY AND ÆTHER.

By MR. G. SUBRAMANYAM, M.A.,
Lecturer in Physics, Maharajah's College,
Vizianagaram.

THE beginning of the present century marks a new era of scientific thought and progress, not because it discloses any startling advances over the existing order of things but because it calls forth ideas and conceptions which a few years ago we would unhesitatingly have declared to be revolutionary. Radio-activity, Relativity, Electronic theory and Radiation, which last include Spectroscopy, X-Rays and Quantum theory have broken new ground and opened fresh fields. I propose to deal in what follows with the fundamental changes in our notions of matter, energy and æther necessitated by these new advances in the realm of physical science.

At the outset I cannot, however, refrain from drawing your attention to one important feature in the trend of modern scientific thought, namely, its supremely intellectual character. We know the nineteenth century has seen great industrial developments. It was pre-eminently an age of steam-engine and of electrical dynamo which have made man master of gigantic power undreamt of before. He could conquer the forces of nature to his own purposes and make them do his bidding. Long before he understood what electricity is, he could subdue it. Nor did he stop to enquire for a moment what the nature of electricity or of magnetism is. I believe it is Helmholtz who once remarked: "Our ignorance of magnetism is the disgrace of the nineteenth century." Beyond a few vague guesses as to the nature of magnetism, no theory worth the name seems to have been put forward, much less worked up. The

advancement of science appears to be partly circumscribed by the industrial needs of the country.

It is said of that great scientist, Michael Faraday, to whom we owe the electrical dynamo that he used to carry in his pocket a small coil of wire, a magnet and a tiny galvanometer. He was always eager to demonstrate to "the man in the street" how the galvanometer was deflected whenever the coil of wire and the magnet were moved relatively to each other. In his enthusiasm he once said to an English lady: "Madam, do you see the deflection here?" The lady at once replied: "Well, master, even granting that the needle is deflected, of what earthly use is it?" And the scientist with his characteristic curtness retorted: "What is the use of that new-born babe?"—and we know as a matter of fact to what a giant the babe has grown to be. Pure research—research that is undertaken without any thought of an industrial application, is relatively of a recent growth. The quest of an atom and an electron, the modern attempts to understand the nature of the world around us and to unravel the mysteries of what we call matter and energy without the main motive of reaping a material harvest—at least with no immediate prospect of such—but pursuing knowledge for knowledge's sake is what I call the intellectual character of modern physical science. It is the same spirit with which a rich man is reported to have approached Sir J. J. Thomson when the latter was on a short visit to America and expressed himself: "I wish to do something for the atom and the molecule." But this is by the way.

Now coming to our story. Before we can think of the changes in the classical views demanded by the modern science, we must ask ourselves the questions: What is matter? What is energy?

The world around us abounds with an infinite variety of objects of totally different chemical and physical properties. There has been a perpetual effort to reduce the complexities of the world to simpler terms and to build up this infinite variety out of different arrangements of the least possible number of elementary substances. The chemist has successfully built up the whole material universe out of a few tens of elements. Whatever be the specific properties characterising different forms of matter, there is an inherent property common to all, stated for the first time by Newton and to be derived from a knowledge of motion and force. I refer to the principle of inertia enunciated by Newton in the first of his three celebrated laws. "Matter," he says, "persists in its own state of rest or of uniform motion," if it is free from all other extraneous influences. In simple language, it means a body at rest, continues to be at rest, and one in motion continues to be in uniform motion. This sluggishness of persisting in its own state is inertia and is the fundamental criterion on which the definition of matter is based, so that finally that which has inertia is matter and *vice versa*.

The science of energy founded experimentally by Joule found its first triumph in establishing the connection between the science of heat and the theorems of dynamics. It was he who for the first time discovered an unalterable relation between the mechanical and thermal forms of energy, and not long after, the same unalterable relation has been extended to the different known forms of energy: heat, light, electricity, magnetism, etc. The past century has already linked together these erstwhile isolated subjects. Electricity in motion is magnetism, and magnetism in motion is electricity; heat is light and light, heat so that the different forms are mutually transformable into one

another subject to the universal law of conservation.

These considerations seemed at one time to favour the view that electricity is a form of energy. We know that when a current of electricity is allowed to pass through a wire, it takes a finite interval, however small the interval be, before it grows to its final value. Similarly when a current is switched off, it would not die down to zero instantaneously—not before the lapse of a certain time. This property of an electric current is studied under self-induction and suggests that an electric current behaves just like a material body possessing the characteristic property of inertia—unwilling to start when it is at rest and to stop too, when once it is set in motion. Or suppose we study the discharge of a condenser charged to a certain potential. When the two plates are connected together, there is, no doubt, an equalisation of electric pressure finally. But before such an equilibrium is set up, there is a surging of the current first forwards and then backwards and this to and fro motion continues, rapidly diminishing, of course, in intensity, until at last it settles down to an equilibrium value. Such an oscillatory discharge, as it is called, gives us more insight into the nature of electricity than what it might seem at the first sight. One and all of these observations lead us irresistably to the conclusion that electricity has inertia and therefore mass. In our own day, Sir J. J. Thomson and Lorentz have established a quantitative relation between the amount of charge carried by a body and the consequent increase in mass and thus proved beyond all doubt the materialistic nature of electricity.

Faraday's laws of electrolysis carry us still further. The process of electrolytic conduction consists in the bodily movement of the positive and negative ions, as the charged

atoms are called. Each material atom is associated with an electric charge and the most significant feature is that such charges can, in all cases, be expressed as a multiple of an elementary charge. This, therefore, is the undivisible unit or atom of electricity called an electron if the charge be negative, and a proton, if positive. Thus all electrical charges are built up of a whole number of electrons or of protons. In the chapter on Electrolysis, even Maxwell was constrained to admit the "molecular" nature of electricity though his classical electro-magnetic equations are opposed to the element of discontinuity which such an atomicity necessarily entails. In his Faraday lecture, Helmholtz tells us: "If we accept the hypothesis that the elementary substances are composed of atoms, we cannot avoid concluding that electricity also is divided into definite elementary portions which behave like atoms of electricity." Just as the atomicity of matter is a direct outcome of the fundamental chemical facts, so the atomicity of electricity is a direct outcome of the fundamental electro-chemical facts.

If electrolytic conduction has disclosed the atomic structure of electricity and has indirectly enabled us to find its magnitude, the extensive researches of Sir J. J. Thomson on discharge of electricity through gases have resulted in isolating and separating the electron from its attendant material atom and giving it a physical reality. He could, as it were, handle the electron, find its mass and measure its dimensions. The identity of an electron having the same mass and same charge has been established by Millikan of the 'electron' fame and a host of eminent scientists by methods of unimpeachable accuracy. Thus the modern researches have shown once for all the atom of electricity in

all its nakedness and have found the electron to be of sub-atomic dimensions. An electron therefore is not a product of the physicist's brain but an entity having an existence of its own. If a high literary authority says more in seriousness than light-heartedly that "an electron is the latest invention of the scientist to be replaced by the abracadabra of to-morrow," we know what such remarks are worth.

What then is electricity? We have seen that it has inertia, and more than that, it is atomic or granular in structure in much the same way as an ordinary piece of matter is. Is not the proof complete of the materialistic nature of electricity? Let me remind you of the far-reaching consequences which such a question is attended with. In view of the mutual transformability of the so-called different forms of energy, can we help asking ourselves: "Is energy also materialistic in nature?"

Let us now turn our attention a while to the science of Radio-activity and see what it has got to tell us. I am not going to place before you the genealogy of the radio-active transformations but shall be content with the statement that a few of the heaviest known elements: radium, thorium, uranium, etc., are found to possess very peculiar properties of shooting up electrons besides other radiations and to be transmuted into different elements. After a series of such transmutations, the final product has been recognised to be lead which thus can claim to be the immortal descendent of a family whose pedigree has been traced back to the radio-active elements. When we trace in this way the creation and evolution of new elements, it is impossible to resist wondering

whether the process of change so far observed to an appreciable extent only in a few radio-active elements may not in reality be a general property of matter though in other cases, possessed in such an infinitesimal degree that it almost transcends the delicate means of detection that are now at our disposal. Towards the middle of 1924, Miethe and Stammreich could turn mercury into gold. In May 1925, Nagaoka succeeded in transmuting mercury into gold and a silver-like metal, while early this year, Smits recorded the transmutation of lead into mercury and into thallium. Experimental evidence is therefore not altogether wanting in favour of such a view. We must at any rate cease to regard matter as essentially eternal and unalterable; the possibility of its undergoing a continual though slow process of disintegration is clearly before us and the dreams of the alchemist seem to be more than realised.

Add to this Rutherford's discovery of emanations from radio-active elements. These emanations are gases having definite physical and chemical properties continually being produced and continually vanishing. What happens to the emanation as it disappears? Have we here really a destruction of matter? Is something lost when a candle is burnt? Then again one gram of radium if entirely disintegrated is known to furnish enormous amounts of energy, whence is this energy? Creation of energy and destruction of matter: indeed nothing seems to be more revolutionary and foreign to our long-cherished ideas.

The nineteenth century has overthrown Newton's corpuscular theory of light and established the undulatory or the wave theory according to which the radiant energy is propagated through the all-pervading medium called the æther. The triumphs of the wave

theory scarcely need emphasis. By its means all the intricacies of interference and diffraction problems are explained in the smallest detail. It has established the identity of the electro-magnetic or wireless waves, heat waves, infra red waves, visible light waves, ultra violet waves, X-Rays and γ-Rays and has shown that these different forms are manifestations of one and the same kind of æthereal disturbance, differing only in degree.

Later researches have considerably shaken our faith in the wave theory and it will be no wonder if, before long "old order should change yielding place to new." Richardson's extensive work on photo-electricity has shown that when light is incident on metallic surfaces electrons are emitted. It is not a peculiar property confined to light rays alone but a general characteristic feature of all forms of radiant energy. Thus the incidence of X-Rays on a surface is likewise attended with the emission of electrons. When we remember that X-Rays themselves are generated by the impact of the electron stream on the anticathode of an X-Ray bulb we are led to the conclusion that electrons give rise to X-Rays and X-Rays in turn give rise to electrons. Similarly light is electron vibration and light falling on matter liberates electrons. Radiation, therefore, is convertible into moving electrons and moving electrons are convertible into radiation—a very novel result. As Prof. Bragg says: "Radiation immediately manifests itself—there is no other manifestation whatever—by causing electrons to spring out of bodies on which it falls." We have thus the grand truth established by Einstein and Bohr together, "that there is a reciprocal and reversible relation between electronic and radiant energy."

When we consider the interchange of energy between radiation and single atoms, the wave theory breaks down completely. A closer examination of the electrons emitted from a surface on which light or X-Rays is incident gives us interesting information. The number of electrons so emitted is found to depend on the intensity of the radiant energy and the most significant fact is that the velocity of ejection or the energy of the electrons is entirely independent of the intensity of the incident beam but only depends on its quality. This result is quite at variance with our usual notions of radiant energy. If the radiant energy is wave motion it follows that the intensity uniformly distributed over the wave-front should fall off in accordance with the law of inverse square and the energy of ejection must necessarily depend on the intensity of the incident radiation. But this is not found to be the case. Again, C. T. R. Wilson's beautiful 'cloud' experiments visually demonstrated that when X-Rays are allowed to pass through, say a gas, electrons are liberated. If the electric intensity in the wave front of the X-Ray is sufficient thus to hurl a corpuscle with huge energy from a particular atom, why does it not at least detach corpuscles from all of the atoms over which it passes? Is not the energy uniformly distributed over the whole wave-front? Is it localised or is nucleated in particular directions? Modern research emphatically says: "Yes, the radiant energy is localised in small bundles or quanta." Hence the need for the quantum theory of radiation. Radiant energy therefore travels in space as nucleated pulses or quanta, being unaffected by each other and preserving their own individuality until they make a suitable collision with an atom. Then if the quantum is absorbed, the whole

energy is transferred to the atom and an electron will be ejected. This is Einstein and Plank's quantum theory. Need I tell you that we seem to be drifting once again to a corpuscular theory and that we are dealing with atoms of energy?

The quantum theory has already scored great victories in certain branches of physics. The light-quantum theory at any rate will indeed be hard put to explain the interference and diffraction phenomena. It has failed to explain them so far. To meet it half way, Sir J. J. Thomson had to postulate that æther is not continuous but is fibrous in structure—an infinitely large number of threads extending from one end of the universe to the other. He has thus attempted to give physical reality to Faraday's tubes and supposed that energy could pass through these tubes alone. As to Thomson's theory, one encounters serious difficulties when one attempts to visualise the universe an infinite cob-web whose threads never become tangled or broken, however swiftly the electrical charges to which they are attached may be flying about.

With electron as an atom of electricity, magneton an atom of magnetism, quantum an atom of light—in short an atom of energy, taken in conjunction with an atom of matter—we seem to live in an atomistic universe. The nineteenth century physicist would have been immensely pleased but for the embarrassment that these atoms necessarily introduce discontinuous structures and discontinuous processes—a feature which characterises modern physical conceptions as distinguished from the Newtonian age. Thus our increased knowledge placed us between the devil and the deep.

Now to continue our story; the recognition of this reversible relation between radiation and electrons, namely, that radiation

EDUCATION AND THE CHIEF MINISTER AT MADURA.

By Mr. D. V. JAGANNADHAM, B.A., L.T.,
Municipal High School, Vizianagrum.

starts from electronic vibrations and ends in liberating electrons is a momentous one and directly lays the foundations of the great science of spectroscopy. Each piece of matter when suitably excited is a source of radiation which is being analysed, classified and interpreted by some of the best intellects of our time. I do not propose to take you into the details of their analyses or classifications or interpretations which have made the present age memorable and as it is aptly called, "the heroic age of spectroscopy," but suffice it to say that if matter is not electronic in structure, whence is this radiation? From electricity to matter is, no doubt, a long way but modern researches have well nigh established their identity. The spectroscopist sees the whole solar system reflected on a miniature scale in the atom—the electrons making their planetary orbits around a central nuclear positive charge. And now this twentieth century, though 26 years old, has successfully attempted to take a significant step by seeking to reduce the number of the primordial elements to not more than two, namely, the electron and the proton.

To sum up, therefore, all matter is electronic. All radiant energy is electronic too, in that it arises from electrons. We cannot but amuse ourselves with asking: "What can this electron be?" Sir Oliver Lodge ventures to think of it as a twist or a state of strain in the all-pervading æther so that the universe is a manifestation of the æther. As Prof. Jeans put it the other day in the Royal Astronomical Society: "Here comes a magician, not with a long grey beard as he is fabled to have in our tales of wonder, but an young man, scarcely thirty, in the person of Einstein who denies the existence of æther and explains things as inherent properties of time and space." So we are between all-important æther and no æther and it is exactly where we stand to-day.

XXXIII—22

THE Chief Minister's reply as reported in the *Hindu* of the 25th ultimo encourages the forlorn teacher to hope for better days. Education till now has been nobody's special child, and particularly so with regard to Secondary Education. It is refreshing to find the Chief Minister recognise the schools as Government children, be they own, step, or worse. The belief, however, of "limited hold" by Government over the managements, comes in handy as usual. But this holds good only in respect of the teacher, "bed rock," while even the bench on which the pupil is to sit is regulated by Government control. The promised revision of the Grant-in-Aid Code, which it is hoped will be a true index of the realisation by the State of its duty to the teacher and to education, is an angle of vision surely different from the spirit of commercialism which it has been the practice to associate with the running of a school. On the question of the popularisation of control in the matter both of Elementary and Secondary education the "strong views" may be such as will truly popularise the bodies by extending the field of selection beyond the established Local Self-Government bodies, and by affording special franchises to teachers. The exclusion of teachers working in Board and Municipal schools from membership on the Secondary Education Boards is a glaring injustice and detracts heavily from the popularity of the Boards. These schools are about as many as those under private management. Further, the principle of "master and servant not sitting on the same body" is waived in the case of private schools, and why

not here also? Som-times it also happens that the Headmaster of a private school is also a nominee for the management. It is hoped that this injustice will be removed.

In fact it is the "step children" in the Board and Municipal schools that suffer most, and particularly the latter. It is a peculiar irony now, in post-reform days, in virtue of which these are supposed to have a grade of pay and security of tenure "guaranteed" by the Government, while they are as a matter of fact, specially after changing the composition of the Appellate Committee, as helpless as any in a private aided school. The analogy of Government service and rules of service is availed of only to serve a purpose but not as a general principle of service. After the reforms, particularly, the Government is not only a mere on-looker, but often-times, in their anxiety to promote "Local Self-Government principle" and "decentralisation," a party (for other reasons also, chiefly financial), to educational mismanagements by local bodies. The powers of granting half-fee concessions and drawing Government scholarships are now transferred to the managements. Fee concessions are to be sanctioned by them. With attendant red-tapism, these render difficult the working of the school. The Headmaster is held responsible for every defection without anything to do with appointments and scales, even of clerks and servants. The Government itself has sometimes reduced the scales proposed by them. Tendencies were not wanting in the pre-reform days, making for a more common combination of teachers, betterment of prospects, and even expansion of Secondary education as introduced by Sir Henry Stone, though found out of tune, now. And hence perhaps the resolutions of the Local Self-Government

Conference on the eve of the reforms, under the distinguished presidentship of the veteran statesman, Sir P. Rajagopalachariar, which, alas! as far as they related to education, are a dead letter. The worst is that though their capacity for a combined effort is as great as any body's, prudential considerations born of the reforms seem to refrain them from not only combining with others, but also among themselves. In this respect Board Schools which ordinarily far outnumber Municipal Schools and enjoy the benefits of a common management and that from a head-quarters place are better circumstanced than Municipal Schools which are unitary under the managements and lend themselves easily to patronage in various spheres and that, under changing personnel and policy with traditions of local parties and factions. Every man, nay, woman is, was or will be a Councillor, and *ipso facto* Chairman. Thus barring Mission Schools where the terms of service and tenure are often pre-arranged for non-Christians, the Municipal Schools are the worst sufferers, and particularly so for lack of such understanding and definiteness in the terms of service. Private Aided Schools started for the purpose and recognised in that light, have an independent entity and secure better recognition for their teachers, whereas Municipal Schools are nowhere except for the purpose of patronage "to make hay while the sun shines" in the political outlook of their managements. The pre-reform privilege of public school teachers being taken on into Government services is also done away with now. In fact Associations, officers and the Government, all seem to ignore the existence of these schools (non-party and non-political) as a part from their managements which are constitutional bodies in the realm of political

advancement of the country. The only hope now lies in the Chief Minister, who by holding both the portfolios furnishes the "straw" to these drowning men, the question of Private vs. Public Schools apart as being too late, at any rate in respect of Secondary education.

The question of standardising the scales no doubt bristles with difficulties, and mostly because resources are different and net costs also differ. But all other matters of organisation are required to come up to a standard level. A beginning in this respect is also made by the Government by recommending certain scales in Elementary Schools, though they are wrongly based on qualifications. By the way, in this respect the S.I.T.U. also goes wrong in basing the scales on qualifications which to say the least are often a changing factor, and necessitate an ever-increasing financial condition. A further factor is that Government grants and subsidies are not uniform, and appear to be based generally on an equation of income and expenditure; prestige demanding expansion and consequent reduction in salaries. It is unquestionable that if the State should undertake the responsibility of promoting and rendering efficient the system of Secondary education, its statesmen should secure equal conditions to prevail in the field. Surely standardisation does not imply considerable enhancements so as to render it a financial impossibility. The question is simply one of standardisation: equality of treatment and opportunity with a clear understanding as to the terms and tenure of service and prospects in and beyond. This should not be too much for determined effort. An economic survey had better be undertaken.

The profession, as it now stands, enjoys neither the vaunted nobility inherent in it,

nor the trade-union spirit associated with commercialism. Unification of services is a far cry, now. It is the ever-dominating idea of getting things done as cheaply as possible that obscures the vision approaching the question of standardisation. But, "better work with better wages" is now established by Ford. And there is also the question of vested interests as in the case of a few Mission Schools. May the Chief Minister endear himself to his "poor relations" by constituting them into a profession with common interests, and common emoluments, and help them by driving away their worries to live longer and bless his name, with scales like those of Barnham.

But will the teachers themselves in Municipal and Board Schools, without the present extra self-sacrificing spirit, bestir themselves to keep abreast of times? What has come of the talk about elections to the Senate and nay, to the Legislative Council? Is any teacher returned to the Senate on behalf of registered graduates, and much less is any Headmaster of the Board and Municipal Schools, to a seat on behalf of the Headmasters' Constituency? The election results are an unerring commentary on the solidarity of the profession. High time for these to unite among themselves, and if they stand for the principle of unification and complete standardisation to unite with other kinds of schools. No knocking and no opening.

One word more is this, that the fad for starting more Secondary schools, for whatever reasons, be given up till the existing fabric is set right since education is particularly the field where inefficiency and discontent are bound to have far-reaching effects. If education is the mainstay of a nation's progress and not a mere vain glory, it has to be recognised as such and placed on a proper footing. All glory to the noble teacher working for national uplift in the face of very adverse circumstances.

the invitation of a professional match-maker. The official is bullied by a friend into going to see his prospective bride; is surprised at discovering a bevy of suitors on the same quest; is, to his still greater embarrassment, singled out as the lady's choice; and when the preparations for the ceremony are completed, is driven to make an undignified flight by jumping out of the window. "If he'd run out of the door," says the match-maker, "it would be another matter. But if a bridegroom skips out of the window, the game is up." It is all hilarious enough, but there is no edge to the merriment. *Marriage* has very little of the biting contempt of *The Government Inspector*.

The plays of Gogol mark a new era in the development of dramatic art in Russia. The comedies and dramas which were being enacted in Russia at that time hardly deserved to be called dramatic literature—so imperfect and puerile they were. But the stage qualities of Gogol's plays will be always appreciated; their sound and hearty humour; the natural character of the comical scenes, which result from the very characters of those who appear in them; the sense of measure which pervades them—all these make them comedies of the best kind.

Gogol's main work in life, however, was *Dead Souls*. This is a novel almost without a plot, or rather with a plot of the utmost simplicity. In those days when serfdom was flourishing in Russia it was the ambition of every nobleman to be the owner of a large number of serfs. The serfs used to be sold like slaves and could be bought separately. The hero of the book, Chichikov, conceives a brilliant idea. A census of the population being made after long intervals, and every serf-owner having in the meantime to pay taxes for every male soul which he owned at

the time of the last census, even though part of his "Souls" be dead since, Chichikov wants to take advantage of this anomaly. He will buy the dead souls at cheap prices because the landlords will be too glad to get rid of this burden. After purchasing a large number of these imaginary serfs, he proposes to buy cheap land somewhere in the southern prairies, transfer the dead souls on paper to that land, register them as if they were actually settled there, and mortgage that new sort of estate to the State Landlord's Bank. The book describes the adventures of Chichikov as he travels over Russia in search of dead "Souls," and we are introduced to every kind of man and woman—the sentimentalist Maniloff, the heavy and cunning Sobakevitch, the arch-liar and cheat Nozdreff, the fossilised antediluvian lady Korobotchka, and the miser Plyushkin. The book is conceived in a spirit of humour and there is an absurdity about the mission of the hero which gives rise to all sorts of ludicrous situations. But although all Russia is reflected in a comic mirror, it is not difficult to discover the real purpose of the book. The author has tried to give us a faithful picture of Russian Society. The general wretchedness of village gossip, the ridiculous affectations of small-town society, the universal ignorance, stupidity and dullness of the people—all these are remorselessly revealed in the pages of this book.

Dead Souls is no doubt a masterpiece, but a masterpiece of life rather than of art. Besides its unfinished shape, the book is characterised by that formlessness so distinctive of the great Russian novelists—the sole exception being Turgenev. The story is full of digressions, of remarks in mock apology addressed to the reader, of comparisons of the Russian people with other nations, of general disquisitions on realism, of glowing soliloquies in various moods. Gogol has

poured into it all his observations, reflections and comments on men and things and, therefore, the book gives us the impression of a colossal note-book. The vivid pictures of life which the author gives with the utmost detail have very little connection with one another, and there is absolutely no crescendo, no movement, no approach to a climax. Gogol has adopted the simple device of stringing all the incidents on a single thread of consecutive experience without the emphasis that can be obtained from skilful grouping. The result is that the book has little structural backbone or organic unity.

In spite of these defects in his art, there is no gainsaying the fact that Gogol is the great pioneer of Russian fiction. His literary influence was immense, and nearly all the subsequent novelists of Russia owe a heavy debt of gratitude to him. Reference has already been made to the element of humour in his works. He was also the first writer to introduce the social element into Russian literature. But his greatest contribution to literature was his realism. We have heard more than enough in recent years of realism in the novel, and advocates of this realism have told us that the one and only business of the novelist is to go direct to actual life and reproduce what he finds there with photographic fidelity. In common practice we find that this doctrine is abused. Sometimes it is made to justify detailed pictures of the sordid, base and ugly—pictures which, while they may be painfully accurate in their presentation of selected particulars, are so completely out of perspective that they are anything but true to life at large. Sometimes it is employed to dignify the much-ado-about-nothing of a certain class of writers whose chief concern seems to be the elaboration of the trivial and the commonplace, and who offer us little but cross-sections of life as seem

through a powerful microscope. But even when not so abused the theory of realism as generally understood—that the novelist should never venture beyond the actual fact—is to be rejected because it involves in another form the old confusion between scientific and poetic truth. Even Plato made this confusion and therefore held that all imaginative literature is "false" because it does not reproduce the actual facts of existence. But with the penetrative insight which carried him to the heart of so many questions, Aristotle pointed out the fallacy of Plato's view, rightly maintaining the existence in all great works of the imagination of a "poetic truth" which is deeper and more comprehensive than the mere literal fidelity to fact which we expect in the work of the historian. The scientist and the historian are bound down to things which have actually occurred, the creative artist is limited only by what Aristotle called the "ideal probability."

In Gogol we find this higher kind of realism. He has no preference, like some alleged realists, for the dung-heap or the slaughter-house or the asylum. He is not obsessed by nastiness. There is nowhere in his stories any attempt to thrill, to horrify or to startle. His tales are not pamphlets, indictments, or judgments, nor are they studies in *confetti*, orange-blossom and iced-wedding cake. Gogol's realism has always a higher background—the realistic description of things has been made subservient to an idealistic aim. Even when he writes the most comical things, it is not merely for the pleasure of laughing at human weakness, but he also tries to awaken the desire of something better and greater. Herein lies the chief difference between Gogol and the French realists like Balzac, Flaubert, Maupassant or Zola. While he had all the French love of veracity, and painted the *humble verite*, he had boundless sympathy with the weakness and suffering of his fellow-creatures and he, therefore, could not help preaching. "All art to be truly great must be moralised," said Addington Symonds, and Gogol has shown "how realism can be put to the service of higher aims, without losing anything of its penetration or ceasing to be a true reproduction of life."

AN EXPERIMENT IN THE TEACHING OF ENGLISH.

By Mr. K. S. SUBRAMANIAM, B.A., L.T.,
Assistant, Schwartz High School, Ramnad.

THE experiment was tried by me during 1925-26 in the Third Form of an infant High school whose pupils had been mainly drawn from the local private tuition classes.

Being a believer in the efficacy of the Direct Method of teaching, I began to follow the method rather rigorously as soon as the teaching of English for the form was entrusted to me. But it did not take long to discover that the pupils were not getting any the better for my teaching. They stared vacantly when I talked or put questions to them in English. A little anxious search showed the truth that the pupils were quite strangers to Grammar and Idiom, though they had picked up some stray vocabulary. The teaching of English to these pupils on the lines of the Direct Method therefore became at once a serious difficulty. The inhibition of the mother-tongue meant the inhibition of progress. But the Direct Method should not be totally abandoned. A suitable modification of it had to be found out.

I referred the problem to Prof. P. Shankunny, M.A., L.T., Vice-Principal, Teachers' College, Sridapet. He was good enough to send the following reply: "In your case I should try a modified form of the Translation and Direct Methods combined. Instead of devoting two periods to Translation as suggested by you why not adopt something like the following plan for every lesson? Before the lesson is read give the substance in the vernacular so that the boys are quite familiar with the ideas of the lesson. Then give a second short version of the subject-

matter, very much like a literal and close translation of the piece and let that also sink in their minds. When you feel that this has been done effectively take up the lesson and telling the children that they are going to have the lesson only in English give them a model reading very carefully, with proper pauses and expression, and then proceed along the initial lines of the Direct Method. For a considerable period of time do not take the children beyond what is in the lesson, but you will really find that in a short time they will become fit for much better work."

The plan has three parts. Item 1. Give in the vernacular a bird's-eye-view of the subject-matter of the piece to be taught. Item 2. Fill in this outline with a detailed, more or less literal, translation of the piece. Item 3. Do the piece on the initial lines of the Direct Method.

I was following the Direct Method till the 12th August 1925. From that date I tried the plan above described.

I had not announced beforehand my change of method to the pupils. I wanted to study their immediate and unprejudiced response to the new plan by throwing it on them as a surprise. The moment I began the lesson on 12-8-25 with a Tamil version of the subject-matter, their faces brightened, showing agreeable surprise. Perhaps they felt a relief from their former vain struggle to understand my previous teaching which was bound down to questions and explanation in English alone.

While listening to my Tamil version (item 2) I asked the pupils to follow the text with their eyes. As they did this, they easily made out not only the general meaning of the whole passage but also the exact meaning and force of individual words, from the context.

This part of the plan (items 1 & 2) was also useful to show the pupils how to express the same idea, the order of words in a sentence should be different in the two languages.

Items 1 and 2 were of great use to me in bringing home to the pupils the spirit of a meaning or idea, and to help the pupils to assimilate the structures of English sentences that express a meaning with spirit or emphasis. By spirit I mean the dramatic and emotional significance of an idea. An example may make my point clear. The following passage occurred in a lesson:—

"But one morning the forest moved! On they came a host of marching trees; and Macbeth's fate was sealed. When Macbeth saw them coming, he also saw the fulfilment of the prophecy."

Whether one can explain to a third form pupil the meaning of this passage, in English alone, is doubtful. I felt it next to impossible to make the pupils feel the spirit of the ideas in this passage by strict adherence to the Direct Method. But by translation as below, I think I was able to convey the spirit to the boys.

ஆனால் ஒரு காட்சியில் அந்த வனம் நகர்ந்தே விட்டது! ஒரு விரகக் கைனியமோ என அவை மேன்மேலும் சமீபித்துக் கொண்டிருந்தன. மேகப்பதின்கிதிரும் முடிந்தது. அவன் அவை வருவதைப்பார்த்தான். ஜோஸ்யம் பலித்துவிட்டதே என்றும் உணர்ந்தான்.

After all, items 1 and 2 of the plan occupied only 10 to 12 minutes, on an average, for a lesson planned for a period of 50 minutes.

The only difficulty I felt was this: because the first part of the lesson was conducted in Tamil, the pupils began to freely talk in Tamil, also while item 3 of the plan was being done. I thought the reason was that pupils

could not get rid of the Tamil line of thinking induced by the first part of the lesson.

Therefore I wanted to allow some interval of time between items 2 and 3 of the plan. I used to spend the first five or six minutes of an English period every day in examining the transcription exercises of the pupils and giving them dictation in English. After beginning the new plan of teaching, I transferred this piece of work between items 2 and 3 of the plan. This gave time for the Tamil line of thinking to be set aside, without interfering with the assimilation, by the pupils, of the subject-matter of the piece to be taught. For this same purpose others may find other devices.

In the course of a few weeks the pupils became familiar with the parts of the plan and therefore automatically adjusted themselves to its requirements. They endeavoured to speak only in Tamil when items 1 and 2 were in operation and only in English when item 3 was being carried out.

About two months after the introduction of the plan I used my discretion, according to the nature of the lesson, to drop item 1 or item 2. When the piece to be done was easy and long, item 2 was dropped; when the piece was difficult and short, item 1 was dropped. This was done (1) for the sake of variety and (2) for increasing the rate of progress.

The plan put cheer into me and the pupils. About the 1st of August, after one month's hard teaching according to the Direct Method I despaired of progress because it was sometimes difficult to do even a couple of sentences in a period of fifty minutes. After the introduction of the new plan the rate of progress was very encouraging; it almost doubled itself. The pupils also looked con-

scious of increased powers of understanding the language.

My experience with this plan induces me to conclude that the translation of a piece as laid down in items 1 and 2 does not (as it may be supposed) hinder but helps a great deal the subsequent conduct of a lesson purely on the lines of the Direct Method (item 3) (1) by previously familiarising the pupils with the subject-matter of the piece and (2) by completely dispensing with the need to use any translation whatever in the course of carrying out item 3.

In the short term, the pupils were found fit for better work. They could understand any passage of average difficulty, though they could not express themselves so well. Therefore in order to give them training in free expression, I conducted the lessons strictly according to the Direct Method during the whole of this term. I also introduced now (not till then) non-detailed reading of extra books by the pupils.

As a consequence of this treatment, I found as far as I could judge, that the composition and conversing abilities of an average boy at the end of the school year compared quite favourably with his attainments in this regard at the beginning of the year.

I have published this account with a double object in view; first in the hope that I may benefit from sympathetic criticisms of the plan from the readers of this article and secondly that this account may be of some use to those teachers who may happen to feel difficulties similar to mine.

Reviews and Notices.

INORGANIC CHEMISTRY FOR UPPER FORMS, BY P. W. OSOROFF. (GEORGE BELL AND SONS: 1926). Price 6s.

This little book has reached its fourth edition (revised and enlarged), the first edition having been published in 1914. This itself proves the popularity of the book. It can be used by the Intermediate students of the Madras and Andhra Universities with great advantage.

The treatment is simple and clear, though not sufficiently comprehensive. Each chapter is accompanied by practical exercises and numerical examples. It ends with a simple narrative of the recent developments on Spectrum analysis, Theory of electrons, Radio activity and the structure of matter. The last chapter revises the whole book through additional problems.

AN INTRODUCTION TO CHEMISTRY, BY C. G. VERNON. (GEORGE G. HARRAP AND CO., LONDON). Price 4s. 6d.

This is suited for general reading by students who are introduced into the mysteries of the growth of chemistry from its earliest times. It consists of two parts. The first part deals historically with the development of chemistry from the early Greek and Islamic period, while the second is devoted to practical work on portions touched upon in the first part.

The book does not profess to be a text-book.

COMMON SCIENCE, BY C. W. WASHBURN. (GEORGE BELL AND SONS: 1926). Price 3s.

This is an interesting little book attempting to answer a large number of easy but puzzling questions put by young inquisitive pupils. Several of our teachers snub 'as impertinent' such of our children who, with no other motive than satisfy their curiosity, dare to ask them questions like 'why glow-worms glow,' 'what makes a motor-car go,' 'why water puts out a fire,' etc., especially when

they themselves are not equipped to answer these questions.

The general principles of science are explained with illustrations and a greater part of the book deals with the application of these principles to every-day life.

The book will be found useful to teachers who have to teach Elementary Science in our Secondary and Training schools.

EXPERIMENTAL SCIENCE FOR SCHOOLS, BY DAVID B. DUNCANSON. (GEORGE G. HARRAP & CO.) Price: PARTS I—III, 3s. 6d.; PARTS IV & V, 4s.

This book consisting of five parts is intended to give a practical knowledge of Elementary Physics and Chemistry in the course of five years. At present, there is no suitable text-book to be recommended for the use of pupils of Secondary Schools studying elementary science and the present publication will fill up the gap. The book is so popularly written as to give a broader outlook and an abiding appreciation of scientific facts and principles. Illustrations are plenty and the book is very readable.

The little drama in Part IV to bring home the 'Law of Archimedes' is bound to appeal to our youngsters.

The get-up of the book is admirably neat.

THE JOURNAL OF THE MADRAS GEOGRAPHICAL ASSOCIATION, VOL. I: ISSUES NOS. 1 & 2—1926. ISSUED BY THE ASSOCIATION.

The Madras Geographical Association was started in the beginning of 1926, in order to provide a geography centre at the city with a view to promote the study of Geography in South India and of South India, and to provide facilities for the exchange of notes, observations, etc., between teachers and students and others interested in the subject. The inaugural meeting was held in March 1926 at the Presidency College with Sir

C. P. Ramaswami Iyer in the chair, when Dr. J. H. Cousins, who was a Geography master in the School of the Royal College of Science at Dublin and was closely associated with Prof. Herbertson, delivered an address on the place of Geography in the scheme of education. He divided the field of geographical study into three areas, the *Thamasic* (inertia) aspect, the *Rajasic* (energetic) factor in our physical environment and the vital factors operating in our human environment. The study of the factors leads to the satisfaction of the knowledge side, the cultural and the practical sides of our education. He also traced the stages of the geocentric study in three concentric circles which would co-ordinate the natural and the human aspects of the science; and he pleaded for the creation of a special school or at least a chair of Geography at the Madras University. Sir C. P. Ramaswami Iyer dwelt on the necessity of stressing the human aspect of Geography and the relation between man's conduct with reference to the climate and the country in which he lives.

The proceedings of this inaugural meeting and a note on the establishment of a School of Geography at the Madras University, with a list of typical questions illustrative of the scope of Modern Geography in the school and college courses as well as an account of the place that Geography occupies in foreign Universities form the first number of the *Journal* which we so heartily welcome as the latest child in the family of Madras Journalism.

The second issue contains about 30 pages of print and 8 maps and has an excellent contribution, read as a paper before the Association, by Miss E. D. Birdseye on the physical conditions determining the geography of the area outside the Madras City which have influenced the life and welfare of the people of the Madras District. The paper closed with a summary of the effect of the physical environment on the human activities of this area.

Mr. H. Narayan Rao, Emeritus Professor of Geology in the Presidency College and the Presi-

dent of the Association, read a paper on the Geology of Madras and its environs which shows us how the present geographical features of this region have evolved. The lecturer specially stressed on the unbroken stretch of the laterite area as rebutting on the riverine region and marked the successive stages in the process of the outward march of the sea-coast.

These two papers dealing with the physical environment side of the study of Madras Geography have been followed by other papers dealing with the fauna, the flora and bird-life of the region and will be further supplemented by other papers dealing with the human activities of the area. Both the papers are amply illustrated with maps. The Journal will embody for the most part papers read at the meetings and will be published in 4 to 8 numbers annually according to convenience. We hope this Journal will give a fillip to the true promotion of geographical studies in our Schools, Colleges and Universities.

INDIA: BOND OR FREE—A WORLD PROBLEM—BY ANNIE BESANT, D.L. (G. P. PUTNAM'S SONS, LTD., NEW YORK AND LONDON, 1926). Pp. 216. Price 7s. 6d. net.

The main object of this book is to prove that British rule in India is inefficient in those matters that vitally concern the nation's life and has produced a kind of 'dwarfing or stunting of the Indian race'—which is forced to live in a perpetual atmosphere of inferiority, compelling the tallest of us to bend "in order that the exigencies of the system may be satisfied." The English machinery of government is of course good; but it has "undermined the virility of Indians, humiliated them in the face of the world and made India into a subject nation." To Mrs. Besant, of whom Sir Valentine Chirol remarked that she was the first great Western apostle to openly proclaim her faith in the superiority of the whole Hindu system to the vaulted civilisation of the West, the very fact that most Indians live without feeling the

inferiority attaching to them, is itself the final proof of their denationalisation. For herself and her fellow-workers the first remedy to apply to better the situation is that of reclaiming Indian adults to faith in their ancestral faiths and of supplementing this action by starting a system of national education which would include religion.

The awakening of India may be regarded to have begun with the dis-illusionment that followed the suppression of the Great Indian Mutiny of 1857; the changes in Indian life and attitude and consequent demands were at first slow and then more rapid, "until the claim was made for Home Rule in 1906 and was never again silent."

This passionate plea for self-determination for India is supported for further strength by a clear elucidation of the past long-lived autonomy of the Indian village—at its brightest and best in the fully-developed Dravidian village of the Chola times—seen to be operative in all parts and in all times down to the establishment of the English power. The *Panchayats* were in the past the most stable institutions; and they still exist, though with diminished vitality, in some caste organisations. The present-day village with its heavy indebtedness, its scattered and uneconomic holdings, its labourers unemployed for the greater part of the year, and its liability to epidemics on account of malnutrition, due to increasing poverty, and the increasing pressure of population on the means of subsistence—is the greatest problem awaiting solution at the hands of the regenerators of the country.

Of course Mrs. Besant claims that her *Commonwealth of India Bill* is a potent remedy guaranteeing the revival of the ancient type of local self-government from the village upwards to the larger local areas. In Bengal, the experiment of the Village Self-Government Act of 1919 has succeeded to some measure; but the success of village autonomy requires larger and more comprehensive legislation as well as the co-operation of voluntary effort.

Education next claims the attention of the author. She traces the course of the ancient centres of higher learning of the Hindus, the Muslims and the Buddhists as well as the widespread character of her primary and high schools, *patasalas*, *maktabs* and *tols* which continued to survive in all their numbers and usefulness down to the days of Mr. Adams in Bengal and Sir Thomas Munro in Madras in the beginning of the last century. The percentages of boys and girls to the total male and female populations who are at school have not been over 5 and 1.5 respectively during the quinquennium 1919—1924. These low figures are the strongest indictment of British rule where education is concerned. The old traditions of the country still hold up the right of the boy to education. English education begun by Macaulay and organised by Sir Charles Wood (the grandfather of our Viceroy) has only succeeded in educating the professional classes in a foreign tongue and in developing their memorising capacity to the more or less effective exclusion of other aptitudes. The purely non-religious material basis of education has had however one good result—the awakening of a love of liberty and freedom in the Indian youth. It is again in village reconstruction that Mrs. Besant would find her first remedy for this state of affairs and in the use of the vernacular as the medium of instruction. The rescuing of village industries from their present plight, and their re-vitalisation, the overcoming of the opposition of vested interests and of foreign capital to all projects of our industrial revival, the spread of co-operative institutions, the revival of craft-guilds wherever possible as an adjunct to village organisation—these are parts of the real remedy; and it is claimed that they receive adequate recognition in the *Commonwealth of India Bill*. The awakening of the country should be comprehensive and all-sided. The last two chapters deal with the growth of the new political consciousness and the birth and progress of the Home Rule Movement culminating in the *Commonwealth of India Bill*; and the book

ends, as it begins, with the conviction that India's salvation and even vitality lies in Swaraj, Home-Rule, Self-Rule. The *Commonwealth of India Bill* is printed as an appendix. This passionate and cogently reasoned plea for an all-round regeneration of the country, coming from the pen of one of India's greatest and most self-less workers, writing with all the ripe experience of years and an age-long political wisdom, deserves our earnest study and close attention.

"BHIM SINGH," BY F. R. SELL. (MACMILLAN & CO.). Pp. 194.

Mr. Sell, who is a Professor of English at Bangalore, has brought to the writing of this romance of the Mughal times much careful historical learning. The book is illustrated with beautiful photographs and a map of Rajputana is provided at the end. The author is naturally indebted to Tod and Bernier and he has adapted history a great deal to suit his romance. Written with much sympathy for Rajput life and in good English, Mr. Sell's book is a credit to him, and should make a good reading book in Indian Schools and Colleges.

JOHN DONNE AND HIS POETRY, BY F. W. PAYNE —POETRY AND LIFE SERIES—(G. G. HARRAP & CO., LTD.). Pp. 167. Price 1s. 6d.

This book is of the now familiar and much appreciated critical studies of poets, which are ably related to their personal life. Donne attained a high reputation in his time, and if neglected in the interval, seems to be coming to his own within recent years.

HISTORICAL SONGS AND BALLADS, BY DOROTHY MARGARET STUART. (G. G. HARRAP & CO., LTD.). Pp. 95. Price 3s. 6d. net.

This is a very pretty book, with a coloured frontispiece, worthy of the very valuable pieces it contains. The fact that they have already appeared in such well-known or esteemed journals like

Punch and *The London Mercury*, is sufficient to guarantee their general excellence. There are eight divisions under which the poems are grouped. They are not just patriotic verse, but have a variety of appeal. There are child songs which approach the sweetness of Stevenson. The poems have all the true spirit of democracy, and the Songs of the Ancient Crafts have considerable charm. Very curious fancy is exercised in another section on "Beasts Royal."

TALES AND LEGENDS OF IRELAND, BY MONICA COSENS, ILLUSTRATED BY ILA HEARN. (G. G. HARRAP & CO., LTD.) PP. 128. Price 1s.

This little book should be of immense appeal to Irish children. To foreigners it has the interest that all literature of folk-tales should have. These Irish stories are not different from those of other countries, and parallel ones could be found in our own Indian lore. The character of these stories is really so general that they can be read with profit by children of any country.

THE ADVENTURES OF ULYSSES, BY CHARLES LAMB, WITH ILLUSTRATIONS, BY D. PAILTHORPE AND T. H. ROBINSON. (G. G. HARRAP & CO., LTD.) PP. 128. Price 1s.

This is in the same series as the above, "All Time Tales." It was a special gift of Charles Lamb's to be able to rewrite stories for children.

JUNIOR ENGLISH EXTRACTS AND EXERCISES FOR COMPARATIVE STUDY AND TRAINING IN COMPOSITION, BY F. H. PRITCHARD. (G. G. HARRAP & CO., LTD.) PP. 224. Price 2s. 3d.

This is a book of selections from prose and poetry, edited with the aim of teaching composition, each extract being followed by exercises. Among the authors represented are Dickens, Scott, Stevenson, Shakespeare and others. The exercises are devised with much ability and insight into the secrets of English style.

SCHOOL ESSAYS AND LETTERS, BY H. MARTIN. (K. & J. COOPER, BOMBAY). PP. 336. Price: Re. 1 4 as.

This large book should have meant a great deal of labour to the author, and if it was spent wisely will stand question. The fault of this kind of books is that "model writing" can never inspire the young student towards higher efforts to achieve style. Students may derive a certain amount of information from this book, but as to the model of style, there are many lapses. It is much better to select passages from the immortal masters of literature.

THE GOLDEN TREASURY, BY F. T. PALGRAVE, WITH A SUPPLEMENTARY FIFTH BOOK, BY LAWRENCE BINYON. (MACMILLAN & CO.,) PP. 524. Price 2s.

Messrs. Macmillan deserve to be congratulated on publishing this new edition of Palgrave with the additional section chosen by Binyon, the price of the book being kept so low as at two shillings. There are valuable and useful notes at the end, under the different periods of English poetry.

The Fifth Book, which is chosen by Mr. Binyon, covers the period of Victorian poetry, and "a little more." Tennyson, Arnold, the Brownings, Meredith, Rossetti, Hardy, Yeats, Bridges, Swinburne, Clough, Masfield, Kipling, Newbolt and others are represented in this section. Landor's famous lines on "Rose Aylmer" are to be found in this selection, as well as "The Lake Isle of Innisfree" of Yeats, which has become so familiar to modern readers as to be frequently parodied.

SELECTIONS FROM THE ENGLISH POETS—BOOK I, BY C. J. HALL. (G. G. HARRAP & CO., LTD.) PP. 128. Price 1s. 3d.

The enterprise of publishing houses sees no end to publishing selections of poetry. This little book prints in large bold type a large number of poems suited to children who are more than eleven years in age. Narrative poems are largely repre-

sented, as suiting youthful readers. Humorous poetry is also included. Many recent poets like Noyes, Masfield, Newbolt, Bridges and others are included. Songs from Shakespeare and ballads are also to be found.

LETTERS OF HORACE WALPOLE, SELECTED BY D. M. STUART. (G. G. HARRAP & CO., LTD.) PP. 236. Price 2s. 6d.

It is a good idea to print this selection of letters. A short biographical and critical introduction is provided at the beginning. Generally known to students of literature as the author of "The Castle of Otranto," Walpole was a prominent man of society, whose letters offer naturally that variety of interest which ensure a permanent value to readers. It was in 1747 that he purchased the 'Villa of Strawberry Hill,' in converting which into a Gothic Castle and adorning it with works of art, the rest of his life was engaged. Walpole's extant letters are so many in number that the present issue will serve as an excellent introduction to them.

THE ADVENTURES OF HAJJI BABA OF ISPAHAN, BY JAMES MORIER, ILLUSTRATED BY H. R. MILLAR, WITH AN INTRODUCTION BY THE HON. GEORGE CURZON, M. P. 1925. (MACMILLAN & CO., LTD.) PP. 456. Price Rs. 2.

This is a valuable edition of a well-known classic of travel-literature and should be considered very cheap for the price it is offered at. This was first printed in 1894, and the appreciation by the famous Viceroy of India, Lord Curzon, who recently died, prefixed to the book, has a unique interest. The book has long been valued as giving a remarkable picture of Persian manners and life. Morier was an artist and a humourist of consummate power.

ELIZABETH IN TOYLAND, BY MARJORIE COLLET. (G. G. HARRAP & CO., LTD.) PP. 46. Price 2s. 6d. net.

This is a very pretty book with a number of coloured illustrations. The pieces are very attractive and the following lines typify them:

"Have you ever been to a tea-party where
a waxen doll pours out?
Have you ever seen a Teddy Bear blow
down the teapot's spout?
...
Have you ever seen a woolly dog ride in
a clock work train?
...
Well, I've seen these things often! They
happen every day
Beyond the gates of Toytown before the
break of day!

ENGLISH LITERATURE SERIES: EDITED BY J. H. FLOWER, M.A., (MACMILLAN & CO.) ON HEROES AND HERO-WORSHIP, BY THOMAS CARLYLE, WITH AN INTRODUCTION AND NOTES, BY H. M. BULLER, M.A., VOLS. I & II. 2s. each.

This issue of Carlyle's work is very welcome. Carlyle is an author who cannot be understood without the help of "Notes." The first volume includes three lectures, on the Hero as Divinity, The Hero as Prophet, and the Hero as Poet. There are also four interesting illustrations in the book. The get-up of the books is excellent.

The second volume contains the lectures on the Hero as Priest, the Hero as Man of Letters and the Hero as King and there are also pictures of seven heroes.

SELECTIONS FROM SHELLEY, EDITED BY E. H. BLAKENEY, M.A. (MACMILLAN & CO., LTD.) PP. xv + 104. Price 1s.

Shelley's poetry requires a good deal of 'editing,' before it can be appreciated by youthful readers. Many of the valued poems of Shelley are to be found in this volume: "Adonais," "The Clouds," and the short pieces included in Palgrave's Golden Treasury. The notes are very brief, too brief, sometimes.

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V. History.

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The Educational Review.

In view of the fact that difficulties have been experienced in almost all Indian Universities to get the graduates to register themselves in large numbers, the following comparative statement of the fees charged will be of interest:—

Name of the University.		Initial fee.	Annual fee.	Late fee.	Compound-ing fee.
Calcutta	Rs.	10	10	10	150
Patna	..	5	5	10	40
Allahabad	..	5	2	10	20
Punjab	..	10	2	10	25
Bombay	..	5	2	2	10
Madras	..	3	1	10	5

These figures are not a correct guide however to the relative charges, as the facilities in the shape of the supply of publications and other things differ in the various Universities. Apart from the fees charged for registration, there is also the question of other restrictions imposed on the graduates. In all Universities, there is a restriction with regard to the number of years which should elapse before a graduate can be eligible for registration. The figures with regard to the years' standing required by the various Universities are given below:

Calcutta:	Ten years.
Punjab:	Ten years.
Madras:	Seven years.
Patna:	Six years.
Allahabad:	Three years.

Registration must be looked upon as a high privilege by the graduates of a University and should undoubtedly be

paid for, at least because the privilege may be properly valued, but in view of the poverty of this country and the poor wage-earning capacity of the average graduate, it is not unreasonable to suggest that the fees of registration should be kept as low as possible and we commend the example of Madras in this matter to other Universities. Again, a graduate is surely competent to exercise his franchise in the matter of elections to public bodies by virtue of his being a mere graduate, particularly as even illiterate persons are entitled to vote on the possession of a small property or the payment of a small rent. Any severe restriction with regard to the number of years' standing which a graduate should possess before exercising the vote seems unreasonable. The example of Allahabad which insists only on a three years' standing would seem to be eminently worthy of adoption elsewhere.

Apart from the fact that the teaching profession is poorly organised in India and therefore demands the

hearty co-operation of all its ranks, the interests of education possess a unity requiring a similar obligation. There has been an unfortunate tendency on the part of some members of collegiate institutions to look on themselves as belonging to a superior race who should not mix freely with secondary teachers in their attempts at the amelioration of their condition. We are therefore very pleased to notice that Prof. Jadunath Sarkar, the Vice-Chancellor of the

Calcutta University, has begun to befriend the interests of the school-teacher and has recently spoken more than once in support of his claim for further recognition and in appreciation of his high mission in national life. We commend the following moving words of his to the special notice of teachers:—

If our teachers are ill-paid, ill-treated, despised as paupers or beggars, what influence can they possibly have on the character of the growing lads placed in their charge during the most impressionable period of their lives? If the father's image and character are perpetuated in the son's, then the teacher's character ought to be reproduced in his pupils. The greatest monument of a man is not bronze or marble, but men—the men whose character and intellect he has moulded, whom he has inspired to be heroes, scholars, inventors, saints and servants of humanity. The long gallery of the brilliant pupils of Sib Chandra Shome—including Lord Sinha, Rasamaya Mitra, Justice Nalini Ranjan Chatterji, Jnan Saran Chakravarty and others constitutes a family more glorious than any duke's or prince's. It is proud boast to have been the maker of the makers of modern Bengal.

Hence, the supreme aim of the schoolmaster should be to give the best in him, all his time, all his thoughts, all his energy to the formation of his pupil's character. And it is the duty of the school authorities to enable the teachers to discharge this lofty function by placing them in a position of social dignity and comparative leisure. The mere taking of classes for 4 periods a day on starvation wages, which have to be supplemented by grinding private tuition, cannot be expected to produce a Ramtanu Lahiri, a Rajnarayan Bose or a Sib Chandra Shome. And without great teachers in this generation, there cannot be great men in the next. The country

must pay the price for creating its leaders to come.

On the side of the teachers, too, there is the need of a wider mental horizon, the need of a lifting-up of the heart. They must look beyond the immediate concerns of the day and the locality, the sordid needs of attendance and the percentage of passes. They must keep themselves in touch with the moving world outside, with the many-sided needs and modern interests of the Indian nation. This can be done only by wide and judicious reading, by association and discussion with teachers of other places and with men of other departments of life—by travel and even propaganda work in favour of new ideas.

Delivering the Foundation Oration the other day at the Birkbeck College, the

The Tyranny of Examinations. Rt. Hon. Mr. Fisher spoke on the dangers of pushing the examination far too far. The increase in the large number of students in our modern Universities and the need of educational certificates as guarantees of particular qualification required for the services have unfortunately given undue pre-eminence to examinations in our educational system. Mr. Fisher's warning was therefore not inopportune. "Well, now you have your grim, your formidable examinations," said Mr. Fisher. "Let us hope that they will not kill the discovering spirit which is the soul of all institutions devoted to higher learning. Examinations are, I am afraid, inevitable but they must be carefully watched, lest, like the great tracts of cactus of which we read in Australia, they smother the succulent plants. Let us then, whether we be educational statesmen, teachers,

or students, keep an eye on our examination system. Has not the time come when we should consider whether all our examinations, from the school certificate afterwards, have not become too hard? The examination is a useful drudge but a bad master. If we let it alone, it will obey the law of its own being which is to extend its prickly vegetation over all the unoccupied surfaces of the youthful mind." The tyranny of examinations is more pressing in India than in England and the need for such vigilance is therefore much greater in this country.

We have never had a high opinion of the value and usefulness of the Chiefs' Colleges in India. The education of the sons of ruling chiefs in an atmosphere of isolation from the people can never be of any good to them. It prevents intellectual development by the absence of any serious competition in the class-room. It invests them with an exaggerated sense of their importance thus adding to a weakness which is already an obsession with members of their class. The atmosphere of the colleges is very denationalising and all the important teaching appointments being held by Europeans, the young men are brought up in notions of the supposed inherent superiority of the Englishman, which they are not able to shake off even when they are invested with the serious responsibilities of the rulership of their States. When His Royal Highness the Prince of Wales, the heir to the

greatest empire known to history, can enter the University of Oxford as an ordinary under-graduate, is it not ridiculous to maintain that the petty chiefs of India, without any real independence and with hardly any solvent resources, should have separate institutions for the education of their sons? At the recent anniversary of the Mayo College, Ajmir, the Principal bewailed the want of appreciation of these colleges and saw no hope for their future. We are by no means surprised at the trend of events and the sooner they are closed, the better for the future of the ruling chiefs of India. Col. Patterson, who presided on the occasion, showed a real grasp of the situation when he said: "Ideals change, ideas change. Do the maintenance of a true aristocratic tradition and the education of boys in a manner that fits them to take their rightful places in the world weigh in a democratic age against the balancing of a budget or a question of excise revenue? They probably do not. Will the future rulers of India regard the education given at the Mayo College as consonant with the progress of the age? They may not. *Will they regard the maintenance of an adequate English staff essential? Very possibly they will not.*" Col. Patterson utilised these truths for an appeal for a large and liberal endowment to the institution by ruling princes, who have been its past pupils. It seems to us that it is not the proper solution. If only the ruling princes will read the writing on the wall, they will close down these costly and inefficient institutions steeped in an atmosphere of wrong

MARCH 1927.]

aristocratic ideals and bring up their children in manly and vigorous association with the best type of the educated middle class in India who are moulding the destinies of the land.

We are very pleased to find that many educational questions figured in the recent budget discussions in the Madras Legislative Council. In these days of unitary and residential Universities, it seems futile to go on increasing the number of colleges outside University areas and we are not surprised that the request for an Arts College had to be withdrawn. It is wrong that there should be so much delay in the matter of the expansion of the Government Arts College, Rajahmundry, by the addition of the long-contemplated Science Laboratories for Honours and Post-Graduate Classes. Mr. Satyamurti expressed some dissatisfaction with the Queen Mary's College and drew attention to some possible improvements, though the resolution was ultimately withdrawn. Mr. Satyamurti was on even firmer ground when he moved for a token reduction on work and organisation of the Law College. One of the most reprehensible activities of the regime of the *Justice* party was the way in which it managed the Law College and began filling up the teaching staff very largely on communal considerations, to the great deterioration of the efficiency and prestige of the institution. It is time the re-organisation of the institution was taken on hand, and

we are glad the Minister promised early action. Dissatisfaction was also expressed at the delay in the publication of the Secondary Education Re-organisation Committee.

It is with profound regret that we have to record the tragic death of Rao Bahadur K. B. Ramanathan. An erudite scholar, a distinguished educationalist and a gentleman of exemplary character, he was a great asset to Southern India, and his death will be deplored by a large circle of friends and admirers. To us the loss comes with special keenness, as Prof. Ramanathan always stood for the dignity of the teacher's profession and represented with great success all the ideals for which we have ourselves stood. When it is remembered that he was actually one of the editors of this journal for years and was an occasional contributor to its pages long afterwards, our indebtedness to him can be fully realised. For years, Prof. Ramanathan was associated with Pachaiyappa's College in the teaching of English and was held in high esteem as a Professor whose knowledge was as profound as it was wide. The Professor's intellectual tastes were very catholic and his studies were by no means confined to English Literature. Philosophy, History, Economics and even some aspects of Science, not to mention Sanskrit, French and German, came within the purview of his studies, and his extensive library was well-equipped with volumes on all these subjects. Beneath

a somewhat unemotional exterior, Prof. Ramanathan had a warm and generous heart and the memory of his personality will be cherished with affectionate regard by a wide circle of people for a long time to come.

The January number of the *Jaina Gazette* opens with an article on 'The Three Jewels.' Right knowledge (real insight into the great Jaina doctrines and scriptures), Right faith (unshakeable belief in the power of this knowledge to confer blessedness), and Right conduct, are the three jewels, the possession of which confers eternal bliss to finite souls. Mr. Saletore contributes a valuable article on 'Mudibidri—an ancient Jaina city of Tuluva.' The interesting feature about this paper is that it is illustrated with some good photos. Another article which will be read with interest is that by Mr. Hiralal Jain. Mr. Hiralal Jain presents a short historical survey of Jaina religion and philosophy from the time when it was comparatively young to the present day. In his excessive anxiety to claim for Jainism a hoary antiquity, he exhibits a tendency to trace everything Indian to Jaina origin.

Mr. Harisatya Bhattacharya contributes a very valuable article on "The Theory of Time in Jaina Philosophy" to the February number of the *Jaina Gazette*. Most forms of idealistic philosophy advocate the doctrine that Time, by its very nature, is self-contradictory

and, as such, not ultimately real. In Jaina philosophy the temporal process is not simply non-existent; it is not a mere illusion, any more than the existence of the finite world, of which, indeed, it is the characteristic form and expression. Jainism regards time as invariable accompanying condition of changes in things; but it makes a distinction between empirical time and time *per se*. Two other articles of interest are on "Concentration" and "Religion and Comparative Religion."

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SYED ROSS MASOOD,

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SOME OPINIONS.

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The Madras Christian College Magazine, January 1926.

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