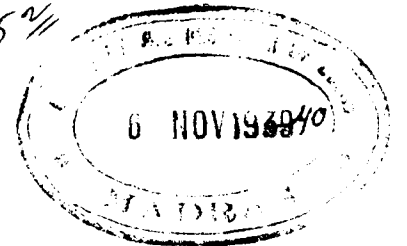


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No. 10

EDUCATION FOR DEMOCRACY IN INDIA

By PROF. DIWANCHAND SHARMA, M. A., Lahore

IN his Convocation Address at the University of the Punjab the Hon'ble Sir Morris Gwyer dwelt at some length on the differences between democracy and totalitarianism and observed: "The first is the existence in the democratic State of the rule of law. The second is the right in that State to hold and to express one's own opinions and beliefs. And the third is this, that a democratic system of government is one which is based upon the personality of the individual man and woman, whereas the other system is based upon the conception of a State as an organization apart from and superior to the individual men and women who compose it, demanding from them complete and uncomplaining subjection, asserting all rights and conceding none."

From this it is clear that in a democratic State there is equal justice for all, every citizen has the freedom of speech, every person counts and there is much faith in individual worth and dignity. That these are the true characteristics of democracy no one would deny, for all exponents of it from Pericles downwards have stressed

them. It is, however, wrong to suppose that democracy is only a system of government which means a kind of representative government elected by the people. On the other hand, we should know that democracy is a way of living which leads to individual happiness, national prosperity and international amity. If democracies have collapsed in the modern world, it is because people have laid too much emphasis on the political aspect of democracy, and have ignored its social, economic, moral and intellectual implications. In other words, they have failed because the people living under democratic regimes have not been able to grasp, assimilate and practise the manifold aspects of democracy.

It is, however, not my purpose to describe the causes of the failure of democracy in some countries of the west, but to find how democracy can be made to function adequately and successfully in India. This becomes all the more necessary when we remember that the Act of 1935 which has been described as a grand experiment in democracy has made millions of Indians familiar

with the methods and institutions of democracy. It should, however, be remembered that merely a knowledge of these would not be enough if democracy is to strike its roots in India. What is wanted is an understanding of the aims and ideals of democracy. We are therefore to devise measures to bring home to the minds of the people of India a clear understanding of these.

No one who has any faith in democracy would gainsay the fact that it is only through education that people can understand the aims, ideals, methods and institutions of democracy, for every one knows that the theory that citizenship need not be taught is now an exploded one. In the totalitarian States the educational system has been so overhauled as to produce citizens of a particular type, and there is no reason why in the democratic countries of the world something similar should not be attempted. In England concerted efforts are being made to give the students training in democratic citizenship, and there is no reason why something like it should not be attempted in India. I believe that this is more necessary in the case of India than in any other country. India, it is believed, has no traditions of democracy and no love of democratic institutions. It is thought that the vast distances in this country combined with diversities of language, culture, race, caste and creed are such as would make democracy a perilous adventure in India. But there are also some observers who opine that democratic institutions are not alien to India. Whatever the truth be we have to take into account the obstacles to democracy that exist in India and have

to make an attempt to overcome them. be sure these handicaps can be got over if we enlist the active enthusiasm of the teacher. When I say this I do not deny that the administrator, the politician, the legislator, the average citizen, all these can play a part in making Indians understand the real spirit of democracy. But I also believe the role of the teacher in this matter is much more valuable and useful than the work of anybody else.

The teacher has therefore to do more in this respect than anybody else, and he has to do so by training the young in the aims, methods and ideals of democracy and by inculcating in them a love of democratic institution and procedure. This is also what Sir Morris Gwyer said in this Convocation Address. "If this analysis which I have attempted is correct, you will see that the pivot of all democratic systems must be the ordinary citizen, and that is what I meant when I said that a democracy is a system of government based upon the personality of the individual. It is the ordinary citizen who chooses his leaders and puts his trust in them; and the leaders themselves are chosen from the ranks of the ordinary citizens and are held accountable to them. But this conception of government exacts a very high standard of conduct from the ordinary citizen, if it is to work out successfully in practice."

The task of the teacher is therefore not merely man-making in the abstract but citizen-making. He has to turn out such students as can play their parts honourably and adequately in a democratic State and as can be the bulwarks of the liberty of the

individual—his liberty of thought, speech and action.

The problem is to find out how this can be done. I believe that this can be done only by the inculcation of some moral and intellectual qualities and by furnishing the students with some forms of knowledge which can enable them to discharge their duties adequately as citizens. Sir Ernest Simon, who has done much valuable work in this direction, has said that every student should be so trained as to have a sense of responsibility and a desire for service. It has been very well said: "We must make those for whom we are responsible see that love of their neighbour is something more than a pulpit platitude; that it will not do to look upon the State either as a universal provider or as a tiresome intrusion but a living family claiming their service." But along with these moral qualities go some intellectual qualities, for without these a citizen in a democratic State cannot escape the perils of propaganda which have become so powerful of late. The intellectual qualities should, however, be such as enable a student to think clearly, to see things in their correct prospective and to form a correct judgment. This does not mean that a teacher is to turn out cold passionless citizens who are to be guided in their choice of action merely by logic but that the teacher is to show to the student what fair-mindedness is, what the dangers of blind enthusiasm are and how the world has suffered on account of clever and mis-directed propaganda. But along with these things the teacher is to provide certain kinds of knowledge which would help a

student to understand the complex world of ours. For this purpose history should be taught in the right manner not that history which emphasises the diversity that exists in our country but that which shows the essential underlying unity of the country. A student would also have to be taught how geographical conditions have a bearing on the political and economic conditions of a country and how through geography we can promote understanding between the provinces and their peoples. It would also be essential that the student should not only know Hindustani but also English because with its help he would be able to understand not only India better but also the factors that are shaping the world of to-day. More important than any of these is the knowledge of the constitution of our country. A student should be taught how we are governed, what democracy means, what the worth of the individual implies, what responsibilities local self-government imposes upon us, how local governments can deal with social problems and what liberty and fraternity and equality mean. A student should also know a little of economics—not economics in the abstract, but descriptive economics. In this connection an English writer asks a very impertinent question: "How many boys know what a Trade Union is, or what a Bank does, or have ever analysed the budget?" If the English school-boy is ignorant of all these things, an Indian school-boy surely does not understand much about these matters. Again the student should be made acquainted with some kind of elementary science because without it he

cannot understand the world in which he lives. But above all a student should be taught that democracy means faith and action.

From all this it would be clear that if democracy is to become a vital force in India, we should make a teacher an active

worker in its cause, and through him we should make the student understand all that it implies. If we do not do so, democracy in India would remain merely a political catchword, and would not appeal to the head, the heart and the conscience of the people.

PRACTICE IN THE TEACHING OF ENGLISH

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QUITE a lot of books is written about the teaching of English. Number of methods have been practised, and good many devices have been adopted. With the increase of Training Colleges the ratio of trained teachers is also increasing. They spare no pains to make their training a success at the College. And yet, the actual teaching of the subject remains a ground of controversy and a teacher, who is called upon to teach the subject in the presence of an Inspector or an Examiner, is beset with much anxiety.

Of late, demonstration lessons are being arranged at various centres. Emphasis is also paid to "Practice Lessons" during Educational Conferences and Refresher Courses. Nevertheless, the approach to the subject has not become less formidable.

People complain that persons competent to teach English are not available. The complaint holds good almost in all language-teaching. It becomes more acute when trained teachers are found below standard in this respect. They distrust their own methods and lapse into the old rut. At times, teaching is looked

upon as a modernised form of "cheating," meaning that the art of instruction is a kind of farce. This shows that specialisation in a subject does not invest one with ability to teach it. Seniority in service or teaching experience of good many years is not a sure proof either. There is something wrong with the teacher or his method.

It is not fair to generalize that the teachers of English are unfit for their job; rather with their attainments and experience they can be more competent if they adapt their methods to varying needs. As for the methods, they are means to an end. They have a relative value. The usefulness of a method can be measured by its functioning capacity. But the fact, generally overlooked, is that the teaching of a language—especially a foreign one like English—is a very complex affair. It calls for a store of sound knowledge, wealth of devices, assimilation of methods and a genuine interest in the subject: each one of these should be employed in a way to respond to new situations, and this can only be attained by experiments and practice.

All will agree, without a dissent, that topics discussed in Educational Periodicals aim at improvement in the teaching of the subject under normal conditions. But unfortunately in their enthusiasm for theories, the practical aspect of the subject has not been given its legitimate share from our writers. It may be admitted that initiation in this direction was occasionally taken by *The Teaching* wherein actual lessons—not in conventional form—were used to be inserted. Even the *Progress of Education* devoted, at times, a page or two to the plan of a lesson or lesson-notes under the heading of "School-craft" but that appears to be a change as a variety in routine.

Whatever may be the cause of this indifference, time has come when efforts in this direction should no longer be delayed. Teaching, as a science, has justified itself, but as an art, it has not become free from subjective standards. In an age of objective value, the need of the moment is that everything connected with the plan and treatment of a particular lesson should be explored with detailed discussion. The suggestion, if acted upon, will bring into existence a body of lessons, carefully planned and actually handled, which will guide the profession into practice. It will be a source that will supply a felt need in the application of theories into practice. Actual lessons in different forms with varying situations and with necessary modifications will be nothing less than a Manual to teachers.

But the danger, envisaged by some, under the proposed scheme, is that

"Teaching is a 'Personal' activity, and any attempt to make it conform to a given formula would make it mechanical," and hence teachers should not be given any "temptation to make their teaching stereotyped and stale." A very sound principle involved in the above argument is that such a procedure is likely to restrict an individual's choice or freedom in approaching the subject, and time may come when teaching offers no variety. But, we carry our apprehensions too far. No two teachers, from a given specimen, can handle a lesson in exactly the same manner because the treatment of a lesson requires personal acumen which is bound to vary with different individuals, and this fact alone precludes it from being a mechanical imitation.

Again, practical skill necessary in every work of art has difference. A goldsmith, from a given sample, can prepare a bangle according to the sample even to the last finish. So also, a tailor, if accomplished in his job, may prepare a dozen of suits like the original. But it is doubtful, if not impossible, whether a sculptor or a painter can reproduce his art so faithfully. Though the material in both the types is inanimate, the reason for the difference in product is that mechanical skill is required in the one, while aesthetic taste predominates in the other. This phenomenon can as well be explained if we state that a poet cannot imitate the model of the other in all respects. The difference, under reference, however, will be all the more conspicuous in professions in which an artist has to deal with living organism.

A surgeon, for example, may have attended a number of operations; even the minutest details concerning the dissection are before his eyes. Still, an operation of the one is bound to differ from the other because of personal elements. In the same way, a teacher, whether a novice or an expert in his technique, cannot have behind him personal traits when he faces a class of forty children. A ready-made specimen, if followed blindly, may at the most supply him with a bare skeleton, but certainly not with life which must needs come from a teacher's own personality.

Teaching as an art has its charms in variety. Like an artist, a teacher indulges in diversity of forms and relishes to find unity in diversity. By means of analysis and synthesis, a teacher who is master of his craft, presents his material in a plenty of ways and forms. His pupils share his joy because he creates new situations in place of old. Isolation does not suffocate him and he makes the teaching free from conventional fetters.

It is not our misfortune, then, that the art of Teaching flows through a single channel when theories have eclipsed pedagogical science? Even though we have a host of theories, our actual teaching follows the old course of Herbartian steps. From this point of view our contention is a natural sequence to what Principal Hampton of S. T. College, Bombay, observed, that "theory must inform practice, and practice must guide and correct theory and the one should not be exalted at the expense of the other." Needless to state that in our teaching, practice has neither

guided nor corrected a theory or a method, and that practice has been sacrificed to suit a theory which has brought our teaching into disrepute.

On the other hand, positive advantages can be secured if model lessons selected from different topics, and tried with a specific aim in classes are regularly included in our teaching Periodicals because in view of a variety of methods and devices adopted, the Art of Teaching will be free from time-work formalities, the presentation will be life-like, and the comments at the end a guidance to many. In the absence of such a scheme, however, demonstration lessons are looked upon as a mere show of the stage. The conservatism, bitterly complained of in the present day teaching, is an outcome of rigid adherence to theories without due regard to practice, and this can be checked if ample specimens, from eminent teachers, with necessary suggestions are offered. It is indeed a pity to find an S.T.C. or a B.T. trembling to handle a class for the simple reason that his procedure may not appeal to his boss. A tragic situation like this can be avoided if teachers are made to see from time to time that individual variations have a free scope in the Art of Teaching.

The teaching of a story may require a picture, illustrating the necessary details, in lower classes. A picture is a very useful aid but it should not over-arrest the children's interest. The questions pertaining to the picture should lead to its study and the children's answers should form the preparatory stage for a story lesson. In this way inattention will be checked, and

the children will, automatically, be able to explain the details of a story. Briskness and alertness are very essential to a teacher here. He should not waste more time than necessary at this stage. The moment the class is able to express the required details, the teacher should jump on to the next stage with the statement of aim. In fact, the preparation should be linked, in natural sequence, with the aim which should connect the two stages of Preparation and Presentation. In presenting the matter of a new story, the teacher's narration plays a very important part. Pauses, due emphasis and proper modulation of voice would make narration effective. In no case should narration be in a lecture-form. A little acting, interrogatives and emotional tone are necessary. During the narration, the teacher should not lose sight of the picture which may be freely referred to whenever occasion demands. The test of an effective narration is the children's ability to reconstruct the story from the teacher's questions. The questions after narration should strictly be in the sequence of the story. The third stage in the presentation is the teacher's model reading which should be followed by the chorus or individual reading of the pupils.

The above method can as well be dispensed with if the story be introduced by word pictures. Here, the words and phrases used by the teacher should be capable of producing a picture. Slight sketches with coloured chalks on black board are a great help in this respect. Constant drilling and repetitions are indispensable in teaching new words and

phrases. The meaning of a new word may be fixed by its use in different context. Simultaneous or chorus reading is a necessary adjunct for learning to read in phrases. But a teacher has a free choice to use any of these devices. His aim is to see whether children follow him, and this can evidently be judged by their responses and restlessness.

A direct approach without a preparation-stage, to a poem is quite permissible in (a) Walter De la Mare's "Tartary" where colours, music and grandeur of the East would be sufficient to explain the poem. Longfellow's "Slave's Dream" is an illustration of (b) word-picture as in

"He saw once more his dark-eyed queen
Among her children stand;
They clasped his neck, they kissed his cheeks,
They held him by the hand! —
A tear burst from the sleeper's lids
And fell into the sand."

A poet's life sketch or his personal characteristic (e.g., Wordsworth's "Love of Nature") is at times helpful to introduce poems like (c) 'Solitary Reaper,' 'Upon the Westminster Bridge' etc. Paradoxical though it may sound, an experiment is worth a trial that (d) Vernacular translations of English poems should be employed as a very useful device in bringing home to the pupils the æsthetic taste of the two poets, e.g., (i) Cardinal Newman's "Pillar of the Cloud" with late Prof. N.B. Divatia's "Premala Jyoti," (ii) P. B. Shelley's "To a Skylark" with Prof. Divatia's "Chandolame," (iii) Wordsworth's "Daffodils" with Bobadarkar's "Âvalanâ fulane," (iv) Scott's "Breathes there the man" with N.D. Kavi's

translation "Chhe Shun Koi Mânavi," etc. Instances can be multiplied to show that attempts in this direction will go a great way to understand the spirit of a poem.

A prose lesson in a higher class should aim to explain the linguistic peculiarities, i.e., usage peculiar to a language and idiomatic formations; e.g., the Emden *made way* to Cocos Island; she made her *dramatic* appearance; the assembly rose *to a man*, etc. A composition lesson, on the other hand, requires other kinds of devices suitable to the purpose, but the question-answer method predominates. The point is that the teacher has full option to adapt his method to varying needs. It is absolutely immaterial whether all the formal steps are gone through, because, at times, close adherence to them spoils the whole plan, and hence in no case should they be allowed to be our masters.

But unless such a variety in Art is shown, an average teacher has no other alternative except resorting to hackneyed procedure with a result that a lesson becomes annoying. It is no fault, then, of a headmaster if he opines at the end that 'Recapitulation stage was left out'. Nor can we blame the other who shows his displeasure because of 'yes-no' questions, which were considered inadmissible under certain conditions. The poor Inspector, who has neither leisure nor desire to peep into a modern book, is to be pitied

if he is offended at the use of vernaculars in the teaching of English and the Examiners are above argument when they show utter ignorance of methods in drawing question papers. With due apology, one should be permitted to state that these great 'Grandeess' make an exposition of their linguistic knowledge when one of them has the audacity to correct 'What colour are the trees?' into 'What is the colour of the trees?'; the second corrects "The movement started by B. P. grew popular" into "Movement which was started by B. P." etc., and the third writes in a personal letter "Every possible arrangements will be made."

Of course, the last may be an error due to haste but it is specially recorded here because of its frequency in vernacular as in "Darek Mânaso," etc., and the same is occasionally repeated in English. No defence can, however, be offered for the first two instances. The instances are purposely quoted to show the tragedy that persons having such language-content are to guide the teachers in the profession. The discussion on the Art of Teaching will not deprive these privileged personages of their monopoly of sermons but it would make them feel that they had abused their positions. The teaching profession will, therefore, ever remain obliged if they can make their practice a success among a host of methods and theories.

EXAMINATIONS

By MR. PAUL VERGHESE, M.Ed., B.A., L.C.P., M.R.S.T., Ollur (Cochin State)

EXAMINATIONS have always been held in distrust. By our examination system we profess to be measuring. That may be so, but our measurements are fraudulent. Dr. Boyd once remarked thus: "If any grocer were to sell goods with a measure as bad as the examination measure, he would find himself in gaol. People do not realise how unsatisfactory the examination system really is."

Whatever type of measuring we use we are referring new things to an old scale. This is fundamental. The scale is always there. It may be as objective as that of a draper who serves a customer with a yard of cloth or as subjective as that of a judge who gives one man four days and another four months for the same offence. The more the examinations become objective, the more the results become scientifically valid.

QUESTIONS

Our examinations are dominated by the essay. They are based on the essay form a piece of writing in which composition enters. All the question-papers usually contain a small number of long problems to each of which the answer is a brief essay except mathematical subjects and the whole paper has to be done in the course of two or three hours. These questions are hastily drawn up in the light of general experience. If a child has only very few questions to choose from, it will often be sheer luck that determines whether he knows or does not

know the answers to this small section. Pushing the argument further if there is only one long question a single slip may spoil the whole work. A change in this is however found essential as a result of the most suggestive discoveries of recent psychological work. To use Ballard's words, "It is idle to measure a field with a scaffold-pole or the works of a watch with a foot rule. And the fine grading of the scale is reflected in the initial units, the questions set."¹ Instead of a small number of long questions, the child is to be a given a large number of short questions.² This alteration largely eliminates the play of chance, as it offers him a wider field, effectively covering his range of knowledge. It has also been shown that marking of a subject in which the factor of composition enters is 'notoriously unreliable' and variable.³

COACHING AND PRELIMINARY PRACTICE

It may be pointed out that the questions set in the examination papers, if they are to be answered properly need assiduous coaching. In the case of scholarship examination the temptation to focus coaching on the brighter children is enormous.

¹ P. B. BALLARD: *The New Examiner* (Lond., 1936), p. 22.

² As many as 200 questions to answer in half an hour.

³ C. W. VALENTINE: *Reliability of Examinations: An Enquiry* (Lond. 1932). Also G. THOMSON & S. M. BAILES: "The Reliability of Essay Marks," *The Forum of Education*, Vol. iv (1926), p. 91.

Coaching is undoubtedly a disturbing factor in the results. The exact effect of it is unexplored owing to the varying amount of practice which pupils receive prior to the examination and to the very complex nature of the method of instructions. The experimental results of the effects of training and practice are based upon identical training for all persons as far as that can be managed. Educationally and psychologically, it is very significant to be able to say that relative gains are likely to be greater for those of poorer ability than for those of better ability and that even those individuals in the top ranks make very significant progress under training.⁴

The present examination system kills the true educational spirit and introduces a system of preparing children merely for passing the tests. It weakens the predictive value of the examination. It is injurious to the development of the children's faculties because it deplorably discourages originality and initiative in them. Prof. Valentine's study tends to conclude that the examiners employ a sort of examination which is totally unreliable and that the addition of good intelligence tests does improve the selection of brighter candidates.⁵ In a public examination the children are drawn

⁴ F. S. FREEMAN: *Individual Differences* (U.S.A., 1936), p. 136.

⁵ *Loc. cit.* See Ch. ii, where he suggests six reasons to throw light on the unreliable nature of the existing examinations. (i) Personal variability, (ii) unreliability of marking all subjects in which the factor of composition enters, (iii) influence of suggestion on a chief examiner, (iv) inequality of special preparation for examination, (v) cramming and (vi) existing of certain abilities revealed in later life and in the life at school which examinations do not test

from very different types of schools and homes and intelligence tests will help to counterbalance differences of opportunities. Moreover, in such tests **crammers cannot** play a significant part as in the customary examination.

But what about the effect of practice in mental tests? Slocombe suggests that practice in mental tests does not help the child more than habituating it to the process and methods of testing so that it will use all the mental energy it possesses on the problem in hand.⁶ It is also inferred that the influence of practice is specific to the form of test,⁷ and depends upon what acts are being trained. Even if a child had received special preparation beforehand in one mental test, **cannot do another satisfactorily unless he had the brains to do it.** Still it is wiser to give a short 'practice' or 'buffer' test before the test proper when an accurate result is required.⁸ It has been shown that the standardised tests would remove from the teachers all temptation to cram for the examination.⁹

AGE

It is usually found, there are different age groups in the same class competing for the same examination. The case is exceedingly grave, for example children of eleven years

⁶ C. S. SLOCOMBE: "Influence of Practice on Mental Tests," *Forum of Edu.*, Vol. iv, No. 3 (1926), pp. 173-179.

⁷ C. S. SLOCOMBE: "The Constancy of General Intelligence," *Brit. Jour. Psychology*, Vol. xvii, No. 2 (1926), pp. 93-110.

⁸ C. S. SLOCOMBE: "The Influence of Practice on Mental Tests," *loc. cit.*

⁹ *The Intelligence of Scottish Children* (Lond., 1933), p. 74.

are more matured both physically and mentally than those of ten and it is obviously unfair to compare the examination marks of the children in one age group with a distinctly different age group. Greater maturity at the age of eleven is of relatively greater significance than it is at fifteen because psychological researches have shown that mental age rarely increases beyond that age. If there is no compensating advantages, it gives the younger child an unhappy school life. The intention of allowances¹⁰ is to afford him an equal chance of competing with a twelve-year old boy of the same ability who had more schooling than the other. An extra few months' tuition is a big difference in school subjects like English and Arithmetic. Again, experience shows that the standard for boys and girls are different¹¹ and some allowance is to be made to counter-balance this difference also.

MARKING

Enquiries on marking reveal that the instructions to the markers of scripts¹² are

¹⁰ For further discussion of Age Allowances see J. B. T. DAVIES & G. A. JONES: *The Selection of children for Secondary Education* (Lond. 1936), Ch. vii. Also, *The Forum of Education*, Vol. vi, No. 3 (1928), Vol. vii, No. 1 (1929), Vol. viii, No. 2 (1930).

¹¹ Sex membership implies certain differences with respect to a number of specific mental traits which very probably have a genetic basis, since the group differences are present early in the lives of children. It is probably, also that sex differences in the tempo of physical development are additional contributing factors to sex differences in mentality as reflected in interests and motivation at least until maturity is reached. F. S. FREEMAN: *Individual Difference*, pp. 326-327.

¹² The technical term script is used to designate the book or books containing the answers of a single candidate to a paper of questions set at an examination.

seldom so detailed as to ensure uniformity. Examiners vary among themselves¹³ in their power of discriminating between the different candidates who are almost at the same level of excellence. This uncertainty is frequently met with near the borderline. The work of the same child may be graded very high by one and very low by another. Marking involves so much difficulty¹⁴ that even the most observant examiners are liable to slips of all kinds¹⁵ such as overlooking a question or marking a right answer as wrong. Moreover, unlike the psychologist who standardises both the methods and results beforehand, the ordinary examiner's main work takes place after the examination is over. If this be the case, the work of different schools cannot be accurately compared. Such irresponsible marking may work serious injustice to the children.

¹³ Dr. Burt considers what happens when there are more than two examiners or tests in his memorandum in the *Marks of Examiners* by Rhodes and Hartog (Lond., 1936), pp. 258-59.

He says that in the answers, there will be elements (i) those which every examiner is treating as relevant; (ii) those which only some examiners are treating as relevant; (iii) those which only one examiner is treating as relevant and (iv) any elements which may arise from the many minor accidental influences affecting the examiner unconsciously and which are therefore unrelated to elements actually present in the candidate's work, in a word, from the effects of chance.

¹⁴ Because there are some preliminary assumptions in it: A mark is a mental measurement—an appropriate estimate on an arbitrary scale of an individual's capacities or attainments (specified or implied in the syllabus of the examination). The observations are indirect; usually we are marking a script rather than a candidate. Mental measurements include a large admixture of error. The examiner, as it were, is subject to the pull of various influences, the true value or the script is one only *Ibidem*, p. 246.

¹⁵ *The Marks of Examiners* by RHODES and HARTOG (London, 1936), pp. 179-81. (Part II.)

The remedy is the psychological tests or questions of a psychological test type which greatly reduce the instability of examination brought in by the varying standards of marking.¹⁶

ALTERNATIVES SUGGESTED FOR EXISTING EXAMINATION:

A. ORAL TESTS

It is conceived that the examination can be perfected easily by introducing a *viva voce* examination. On two or three occasions the London Consultative Committee on Psychological Tests of Educable Capacity¹⁷ emphasised that special importance should be given to the results of an oral test, where examinations are concerned to discover ability. The same fact is driven home by the committee when they made some recommendations in the Primary School Report.¹⁸ Many of the education authorities in England blindly follow it without any strict scientific organisation. Several of the committee's witnesses thought that a child of real ability might often fail to do himself justice in a written

¹⁶ Dr. Burt explains what the standard of severity means in his memorandum already quoted. *The Marks of Examiners*, p. 262. "In mental measurement there are no nominal points which can be taken to mark an absolute zero. The sea level is not the bottom of land, but a convenient average. In the same way the best criterion for each examiner's general standard of marking will be the average mark which he is awarding to a large and typical batch of candidates. This we shall treat as the arbitrary zero from which to measure positive or negative variations. An examiner whose average for a whole series of scripts is lower than another's may be described as more severe." This is true for a candidate's standard of work also.

¹⁷ *Ibid.*, pp. 120 and 121.

¹⁸ *Ibid.*, p. 148.

examination and that this latent ability could be elucidated by a skilful oral examiner. Dangers in such a test are lying ahead. They are even worse than the ordinary written examination. The extreme consciousness that he is being examined, nervous tension, native diffidence, anxiety about the result are the companions of a written examination as well as an oral test. No real appreciation of intelligence can be formed by placing the child under novel conditions with an unfamiliar inquisitor. To afford all conditions equally to all candidates, to standardise the results and to fathom the quality of their mind through interrogation are difficult. Actually it might, well be a case of a much larger barge-pole. In my opinion it is as good as not taking the trouble to employ it if it is conducted in the traditional form without scientific treatment.¹⁹ E. H. Magson also supports this view in his conclusions after an elaborate research on oral tests. He writes: "The results show the necessity for these interviews to be carried out by skilled interviews under rigidly controlled conditions if the method is to develop into an efficient instrument for the purpose. Haphazard interviews conducted on the spur of the moment give useless results and lead to the discredit of a method which promises to be of value."²⁰ The examination centres are scattered and it is impossible to have the same panel of examiners for each candidate

¹⁹ See Dr. Wynn Jones: *An Introduction to Theory and Practice of Psychology*. (Lond. 1934), p. 224.

²⁰ E. H. MAGSON: "How We Judge Intelligence," *Brit. Jour. Psych. Mon. Suppl.* No. 9, 1926. Also HARTOG & RHODES: *An Examination of Examinations* (Lond., 1936), p. 39.

and when there are different examiners covering different areas it will be difficult to get a uniformity of standard. But much promise lies in the direction if the oral test is well-devised and properly standardised²¹ and applied with defined aims.²²

B. SCHOOL ESTIMATES AND RECORD CARDS

We have seen that the usual examination generally lasts only for a very few hours and in this limited period the candidate has to give evidence for his ability to benefit by higher education. If he cannot do so, he is labelled as 'unfit.' "The 'snapshot' impression of a single examination even with the best examination technique may present a distorted and badly weighted index of a pupil's normal achievement and power."²³ A child who fails to do himself full justice in a brief examination as this, cannot be summarily dismissed as 'unfit'; he may not be short of either ability or attainment. Owing to the time limits and emotional environments, it creates an atmosphere inimical to careful thought or to the comprehensive discussion of any subject.

To avoid such snapshot judgment the Consultative Committee in England urged²⁴

²¹ *Journal of Education* (1935), p. 667.

²² E. R. HAMILTON: *The Art of Interrogation* (Lond.) (1929), pp. 83 & 84.

²³ *Report of the British Association for the Advancement of Science* (1931), p. 565.

²⁴ In their report on the Primary School, H.M.S.O. 1931, p. 129, thus: "Nothing is more reliable than the personal judgment of observant and impartial teachers who have been in contact with their pupils over a period of years; even though, in a comparative estimate of pupils drawn from a large number of schools, this personal judgment, as we have implied, must be related to some general standard of ability and attainment. We accordingly judge that some form of continuous record of each child's progress should be kept in primary schools."

the school authorities to keep a continuous record of each child's progress in ability and in attainment. Let us now examine the teacher's claim in this much-disputed topic. His life is spent in educating the young, he is constantly in close touch with them observing their efforts and armed with a knowledge of child-nature, he can seldom fail to judge with a good degree of accuracy the mental capacity of those who pass through his hand. He does not form an opinion merely from the pupil's intelligence; he is able to consider the effects of the child's interests and industry; his environment and his character which are also important for a successful performance. It is almost impossible to take these factors into account by methods which are based on answers given by the child in two or three hours or during an interview which may last only a few minutes. For higher education not only general intelligence but keen interest and application to study are also needed. Viewing these facts, I think the school record has decided advantages over the oral and even over the written examination.

Miss G. H. Jones²⁵ obtained a correlation of 0.70 between the teacher's estimate of general intelligence and actual examination measure of capacity after allowing for standard and age. She concludes that the teacher's appreciation of mental capacity does mean something and has a very direct and practical value when properly registered and handled. To recall Burt's

²⁵ "The Value of Teacher's Opinion of the General Intelligence of School Children," *Biometrika*, Vol. vii (1910), p. 512.

remarks²⁶. "There is no standard of comparison which can surpass or supersede the considered estimate of an observant teacher working daily with the individual children over a period of several months or years." With an equal force the Consultative Committee recorded on it²⁷ although they were conscious of the fact that in a comparative estimate of pupils drawn from a large number of schools this personal judgment must be related to some general standard of ability and attainment.

Ever since the movement of intelligence testing began, the teacher's estimate has been the touchstone, and the success of these tests has almost always consisted in correspondence with success at school. The testers rated the validity of their tests by its degree of agreement with the marks or estimate given by teachers.²⁸ If we scrutinise the relation between innate capacity and achievement or the possession of intelligence²⁹ and its use—a relation which is quite essential for a best performance, the teacher's position becomes more patent than ever. The tests of capacity measure ability in fields, where what he knows or can do has been influenced as little as

possible by schooling, while the tests of attainment measure knowledge acquired from teaching. What the teacher is apt to do is to interpret the results of achievement tests as indices of capacity for knowledge. Of course, this will be worthless for comparative purposes of uneducated intellect, because there has been no guarantee of equality of opportunity. There is some truth in V. A. Henmon's statement³⁰ that teacher's estimate and school marks which are used as measures of reliability and validity of intelligence scales in default of any absolute standard of reference, are based on what children know and on their capacity to know. Collier's article³¹ reveals the immense value of the school estimates. This view is also supported by Sandon.³² Prof. Valentine opines³³ that more exact observations should be made as to the prognostic value of the head teachers' reports on their own pupils and that special weight should be given to the reliable ones. Again in his latest book³⁴ he remarks that a scheme by which these reports would have more influence in the selection of candidates for higher education is worth considering.

²⁶ "Intelligence and its Measurement—A Symposium," *Jour. Educ. Psych.*, (1921), Vol. xii, No. 4.

²⁷ J. W. COLLIER: "The Northumberland Grading Examination," *The School Master*, May 31, 1934.

²⁸ F. SANDON: His paper on difficulties in using Entrance Examinations, Intelligence tests and school Results for Comparative Purposes summarised in the *Jour. of Educ.*, October, 1933, p. 667.

²⁹ C. W. VALENTINE: *The Reliability of Examinations—An Enquiry*, p. 166.

³⁰ C. W. VALENTINE: *Examination and the Examinee* (The Birmingham Printers, Ltd., 1938), p. 10.

²⁶ C. BURT: *Mental and Scholastic Tests*, (King & Son, London, 1921), p. 199.

²⁷ Cited in the foot-note No. 24 on the previous page.

²⁸ C. SPEARMAN: *Psychology down the Ages* (Macmillan, 1937), Vol. I, p. 1929.

²⁹ In the ordinary acceptance of the term, it has been defined by Lester F. Ward to be intellect coupled with the product of its operation.

i.e., The capacity for knowledge and knowledge, possessed. For many other definitions see "Intelligence and its measurement"—A symposium in the *Jour. Educ. Psych.*, Vol. xii, 1921, March and April issues.

From the high correlations with school examinations obtained by Oates³⁵ it was argued that the teacher's estimate were of distinct practical value as measures of general intelligence.

Kent follows an admirable system³⁶ of keeping a Cumulative Record Card³⁷ for each child. The teacher records two essential facts about the child throughout most of his school career, namely his inborn general intelligence and the use he makes of this in learning the fundamental subjects. Intelligence tests and scholastic tests are given at regular intervals during the period of his life in school. The cases of discrepancy and those who possess very high and very low I.Q.'s are again tested individually. The results of the tests are reckoned in Educational Ratio. All the information is indicated graphically on the card. At the back of it the child's personal and family traits and any special disabilities are mentioned with an assessment of his features related to his 'Character'. It is being used for the following purposes (i) To serve as an indication of the level of work to be expected from a pupil, (ii) as a preliminary step in diagnosis, (iii) for the information of new teachers in cases of transfer and (iv) for changes in class and school organisation. "It seems

reasonable to suppose that ultimately a scientific, objective and normative record of a child's school career extending over many years will come to be recognised as a safer guide than a one day examination, however skilfully conducted."³⁸

But these school records and estimates are not beyond flaws. The quality of the teaching staff and the general level of intelligence of the pupils vary from one school to another and to secure an effective standardisation between school and school is not very easy. If the records remain to be a summary of personal judgments and opinions they cannot be employed for the purpose of comparison. The form of estimates and records should then be standardised. Further, one teacher may perhaps base his estimate on the pupil's ability to learn one particular subject and another may be guided by the personal appearance of the child and another by his alertness and so on.³⁹ This may be the cause why some of the authorities hold the current intelligence tests made and employed on such principles in disrepute. According to Cornard⁴⁰ the personal equation in ratings of intelligence is 'surprisingly small' and 'practically negligible.' He mentions that it is only a smoke screen to cover less

³⁸ Quoted from 'Notes on the Record Card' in *The Examination Tangle and the way out*; ed. W. Rawson (Report of the International Commission of Examinations of the New Education Fellowship, 1935), p. 64.

³⁹ See W. F. DEARBORN: *Intelligence Tests*, (Houghton Mifflin Co., 1928), p. 7.

⁴⁰ H.S. CORNARD: The Bogey of the Personal Equation in Ratings of Intelligence," *The Jour. Educ. Psy.* Vol. xxiii (1932), p. 149, and "The Personal Equation in Ratings" *Ibidem*, Vol. xxiv (1933), p. 45.

³⁵ D. W. OATES: "The Nature and Validity of Subjective Estimates of Intelligence" *The Forum of Education*, Vol. ii, No. 2 (June 1934), p. 120.

³⁶ See J. W. COLLIER: in the *Testing of Intelligence*, ed. H. R. Hamley, p. 56. Also C. A. OAKLEY: in the *Human Factor*, No. 5, Vol. ix (1935).

³⁷ A Record Card was produced by W. F. Evans in the *Human Factor* (September 1934), pp. 326-327, Vol. viii.

easily located errors of ratings that have escaped the careful scrutiny.

If due regard is paid to this system, this can be advantageously used to eliminate the element of chance that often plays a violent part in a few hours' ordinary examination. It is obvious that sensible human judgment must in the last analysis determine the field and delimit it. "Validity is by its very nature determinable by no other means and the only statistical treatment which is essential to the establishment of validity is that which will refine or assist in the consensus of opinion of experts".⁴¹ It is inevitable that there must be some criterion with which we have to compare the merits and demerits of a new approach and the only available one is a properly maintained school estimate. So I believe that a well-composed school record or a teacher's estimate reporting the results of internal examinations, standardised tests and direct observation of the people will be considerable value to serve as a control on the external examination. Many signs show that it is in this direction that opinion and effort are moving.⁴²

C. NEW TYPE TESTS

An example of psychological test will clearly bring our foregoing arguments in the lime-light. "Why is beef a better food

than cabbage?" This is one of 212 questions set for the American Army Examination. Dr. Ballard remarks that if this were set as at an ordinary examination, it would produce a varied crop of answers. Vegetarians and non-vegetarians may bring forth all sorts of different arguments to establish the excellence of the thing they like. Dr. Ballard continues to say that this waste of words, and temper is prevented in the army test by the simple device of attaching to the tail of the question these possible answers, thus:

Because it is more nourishing.

Because it is harder to obtain.

The candidate is merely required to put a cross in front of the best answer and in order to make sure that no mistake is made in the scoring, the examiner is told that the cross should appear before the second answer. "The scheme does not.....distinguish between the literate and the illiterate, between the man of science and the ignoramus. But then it is not intended to do so; it is not a test of English, nor of science; it is merely a test of common sense.....a little thing that does a little piece of work, but does it with regularity and with certitude".⁴³

The questions in the new-type test are such that answers usually 'selective' or 'inventive' are definitely either right or wrong (on true-false plan). Partial scoring

⁴¹ A. H. TURNEY: *Jour. of Educational Psychology*, Vol. xxv, No. 2 (1934).

⁴² See *The Examination Tangle and the way out*. (Lond., 1935). Prof. Valentine indicates a method to make use of the Reports of the head-teachers in combination with intelligence tests in his very recent book, viz., *Examinations and the Examinee* (1938), pp. 10-11, which is worth experimenting.

⁴³ P. B. BALLARD: *The New Examiner* (Lond. 1936), p. 24. Any book such as C. BURT'S *Mental and Scholastic Tests*, R. B. CATTELL'S *A Guide to Mental Testing* or P. B. BALLARD'S *Mental Tests, Group Tests*, etc., will give copious examples of New-type tests.

and subjectivity arising from the personal bias of the examiner does not enter. In the selective, the subject chooses the answer from a number of given alternatives as shown above and in the inventive he supplies the answer himself.

ADVANTAGES OF PSYCHOLOGICAL TESTS

(i) New-type test gives precision of measurement, because it measures only one attribute at a time.

(ii) The marking is purely objective. It gets to a scale which will give the same score for the same paper whoever the examiner may be.

(iii) It appraises the pupil's mother with not his book-learning and so it affords a clearer and more conclusive index of what the examinee is likely to achieve in years to come. The usual examination fails to tell how much of the result is due to nature and how much to book, tuition and opportunity.

(iv) New-type examination demands only a small amount of writing. As a basis of measurement, the essay-type examination is egregiously bad. It fails through its very wealth and complexity. It confuses both the examiner and the examinee.

(v) It is not so much susceptible to practise effects as the ordinary examination and (vi) The bulk of the work is done before the candidate sets pen to paper. Here

the great task is to make the question paper and not to mark and it is in the marking all sorts of difficulties creep in.

NEXT STEP

Our next step is to seek a procedure by which the best forecast of a pupil's future standing could be obtained. It is the duty of the authorities to deal with the system of examination scientifically and above all to make effort to measure the potential mental ability (intelligence) of the children. "On the issue of such measurements," writes Prof. Spearman,⁴⁴ "is at the present day made to depend the fate of many thousand of school children....." We have very many imminent educationists and psychologists to sap after thorough investigations along the line, that intelligence tests showed a better prognostic value than the ordinary examination.⁴⁵ Intelligence testing is not a short-cut method to solve all our problems in the system, nor it is an end in itself; but it is only a very helpful instrument in the problem of prognosis.⁴⁶

⁴⁴ *Psychology Down the Ages*, Vol. i (Lond. 1937) p. 131.

⁴⁵ PAUL VERGHESE: "The Uses of Intelligence Tests," *The Educational Review* Madras. (Jan. 1939.) No. 1, p. 26.

⁴⁶ S. L. PRESSEY: *Journal of Educational Psychology*, U.S.A., Vol. xii (1921), p. 146.

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A MISUNDERSTOOD CHAPTER OF INDIAN MATHEMATICS

BY SRI A. A. KRISHNASWAMI AYYANGAR, M.A., L.T., Mysore

1. In 1150 A.D., the great Indian mathematician, Bhaskara gave a remarkable method known as the Cakravala, to obtain the integral solutions of the equation

$$NY^2 + 1 = X^2.$$

The true nature of this method has not been properly apperceived by many eminent European authorities including Colebrooke. Some years ago, it was pointed out how Bhaskara's method leads to a new type of reduced indefinite quadratic form (A, B, C) of determinant N satisfying the conditions

$$A^2 + \frac{C^2}{4} < N, C^2 + \frac{A^2}{4} < N$$

and a certain irregular continued fraction. In a subsequent study, we have shown that one or both of the inequalities can be replaced by an equality and the irregular continued fraction by a half regular continued fraction (which may be abbreviated to h. r. c. f.). This new h. r. c. f. we call the Bhaskara continued fraction (abbreviated to B. c. f.) or the nearest square continued fraction. Its cyclic part is a canonical h. r. c. f. in which the aggregate of complete quotients is characterised by the property of being greater than $(\sqrt{5}+1)/2$.

In this connection, it may be noted that earlier attempts to relate Bhaskara's method to a continued fraction have been a failure, the most notable of which is due to Dr. D.M. Mehta in his Doctorate Thesis. According to him, the Cakravala method

leads to the following h. r. c. f. development of $\sqrt{61}$:

$$8 + \frac{1}{(-5)} + \frac{1}{(-3)} + \frac{1}{(-1)} + \frac{1}{(-2)} \\ + \frac{1}{(-2)} + \frac{1}{(-1)} + \frac{1}{(-3)} + \frac{1}{(-5)} + \frac{1}{16}$$

The correct B. C. F. is

$$8 - \frac{1}{5} + \frac{1}{4} - \frac{1}{3} + \frac{1}{3} - \frac{1}{4} + \frac{1}{5} - \frac{1}{16}$$

a canonical h. r. c. f. in which every partial quotient is greater than 1 and the number of recurring elements is the least possible. From the property of canonical continued fractions, it will be seen that one great advantage of Bhaskara's method is the least number of recurring elements that it involves, and, in this respect, it may well claim to possess a decided superiority to other methods in the matter of practical computation. It may be remarked here that a method of continued fraction development of the square root of a non-square integer giving the least number of recurring elements was not thought of in Europe earlier than 1873.

2. A little historical perspective will easily explain why the earlier attempts to understand the Bhaskara method have not been successful. One obvious reason is the late discovery of the importance of the half regular continued fraction and its application to quadratic irrationals. The first reference to the possibility of developing a

number as a c. f. with negative as well as positive integral partial quotients was made in Europe by Wallis (1616—1703) in his *Arithmetica Infinitorum*, published in 1656. Later, it appears that in his *Vollständige Anleitung zur Algebra*, Euler (1707—1783) 'who revised almost all branches of pure mathematics then known, filling up details, adding proofs and arranging the whole in a consistent form' had also sought to shorten his solution of the indeterminate equation by the use of c. f.'s with positive and negative partial quotients in the place of the simple continued fraction. A French translation of Euler's Algebra with numerous and valuable additions by Lagrange was brought out in 1774. It was Lagrange who was mainly responsible for throwing cold water on the advancement of the b. r. c. f. for he showed, by an example in his additions to Euler's Algebra, that a h. r. c. f. will never uniformly lead to the solution of the Pellian Equation. It took nearly a hundred years to recover from the damping remark of the greatest mathematician of the eighteenth century. M. A. Stern in his studies from 1832—1860 re-opened the subject and asserted the possibility of convergent c. f.'s, whose partial quotients are not all positive. In 1873, Minnegeroth gave all the previous checkered history of the h. r. c. f. and proceeded to solve the Pellian equation by the c. f. development to the nearest integer. This was followed by more profound studies in the same line by Hurwitz in 1889, Vahlen in 1895, Auric in 1902, and McKinney in 1907 until H. Tietze in a series of articles from 1911—1913 gave a comprehensive account of the theory of the h. r. c. f. showing that its convergents are either principal or intermediate convergents of the corre-

sponding simple continued fraction, and investigating the characteristics of the most rapidly and the most slowly converging c. f.'s, and so forth. No wonder, therefore, when no systematic study of the h. r. c. f. had been made, Dr. H. Konen in 1901, wrote down in parallel columns Lagrange's and Bhaskara's methods of solving $67u^2+1=t$ and failed to be struck by the disparity in the two sets of convergents.

Lagrange's Convergents	Bhaskara's Convergents
$\frac{8}{1}, \frac{41}{5}, \frac{90}{11}, \frac{131}{16}, \frac{221}{27}, \frac{1678}{205},$ $\frac{1899}{232}, \frac{3577}{437}, \frac{9053}{1106}, \frac{49812}{5967}$	$\frac{8}{1}, \frac{41}{5}, \frac{90}{11}, \frac{221}{27}$ Here the convergents stop, since Bhaskara does not pursue his method further and prefers to take a short cut using his Bhavana or 'Composition'

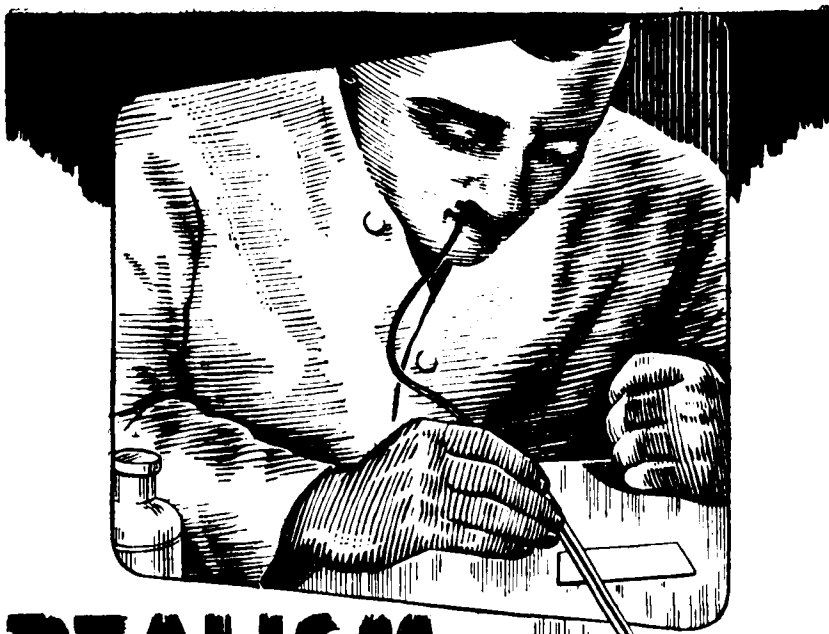
the last of which leads to the solution of the Pellian Equation.

Konen has failed to observe that the convergent $\frac{131}{16}$ is missing in Bhaskara's series of

convergents. All scholars have overlooked this lacuna and the late Sir T. L. Heath who refers to Konen's comparison, complacently remarks that the Indian method is, remarkably enough, the same as that which was re-discovered and expounded by Lagrange in his Memoir of 1768. There is perhaps no remark more untrue than this in all history of mathematics.

It is not necessary to recall in this connection the superficial and supercilious remarks of the late G. R. Kaye of the Indian Archaeological Department.

3. Thus, we have an age-long error in the understanding of the true import of Bhaskara's method, an error which is supported by high authorities in Europe. A detailed exposition of this error is, therefore, a great desideratum. At least, the historians of Indian mathematics ought to take due note of the existence of this error and not passively acquiesce in European judgment, however authoritative.



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VISUAL INSTRUCTION

By MR. N. S. ULLAL, *Bombay*

OF late we have all heard a good deal about Visual Instruction, but, I am afraid, very few know exactly what it signifies and I shall try to tell you what it is. Some, even among grown up and elderly persons, ask me whether, as a Deputy Educational Inspector for Visual Instruction, I go on testing the eyes of school pupils and I tell them that I go on not testing but training their eyes.

We are all aware that the cinema film is very largely used, in the Western Countries in general and by Germany and the United States of America in particular, in the education of pupils in schools and the masses outside. The reason is not far to seek. For the last quarter of a century and especially since the Great War of 1914-18, every civilised country in the world has been striving hard to develop its natural resources to the fullest extent, so as to be economically and commercially, as well as politically, independent of others and that as quickly as possible and, towards this end, has been in search of the surest, quickest and most efficient method of educating its pupils in schools, farmers in fields, workmen in factories and the masses outside. By experience and experiment, the visual instruction method has proved to be that method.

Of all our sense-organs, which are our agents for the acquisition of knowledge, the eye is the quickest, surest and most efficient agent. The eye not only acquires knowledge quickly and efficiently but retains best what knowledge has

been acquired. It is for this reason that in a court of law, the eye-witness is considered the best witness by the judge. In ancient India a Brahmin's book-education was considered complete only when he went to Benares and returned on a foot-journey, so that he might see what he had read of in books. Visual Instruction is instruction through the eyes. Many people suppose that only the instruction given through lantern slides or cinema films is visual instruction. This is not true. Instruction given through any of the visual aids like excursion into nature, parks, gardens, museums, models, maps, globes, charts, graphs, black board drawings, laboratory experiments, plays and pageants, is as much of visual instruction as that given through slides, films, but when large groups of pupils have to be given lessons in a short time, the lantern slides and cinema film serve as the most handy and effective visual aids. If the picture is thrown on a monster screen and the lecturer speaks through a loud-speaker, one teacher can effectively handle a thousand or more pupils at a time and the surrounding darkness helps to rivet the attention of the audience on the picture. Thus in mass education the lantern slide and cinema film are most potent factors.

The best way to study things in Nature is to see and handle them but this entails a journey or the maintenance of gardens and museums, which in its turn means a spending of time and money, which the average pupil can never afford, while in the study of

THE EDUCATIONAL REVIEW

the geography of foreign lands a direct approach to nature is simply impossible for him.

The next best way to study things is to see their pictures. Coloured pictures create a better impression than black and white ones, while moving pictures give us the nearest approach to nature, while talking and moving pictures make the experience of reality complete.

Then there are certain processes of nature which are long, laborious or scattered, so that they cannot be properly studied even by observation of nature. For example, the formation of vapour from water by the sun's heat, the formation of clouds, the evolution of the egg through the larva and pupa into the moth, the rising of the sap from the earth through the veins of a plant,—all these can be studied best through a slow moving film. Then there are other phenomena such as the formation of lightning, earthquakes, volcanoes, etc., which are too quick and vast for man's comprehension. These are also made quite intelligible through the slow moving film.

There is again another matter in which the film is specially useful. When the workmen in a factory have to be taught the working and manipulation of a complicated machinery they have to handle, only a few can be taught with the machinery itself, while, through a film, hundreds of them can be taught at one and the same time.

In the study of a foreign language, the proper pronunciation and intonation, the proper movements of the lips and the tongue and the proper gestures of the face

in talking can be very well taught through a talkie film.

The Travel-Talks-film is the best approach to the study of the geography of foreign lands.

In the study of geometry, things like superposition of figures can be clearly demonstrated through the film to large audiences.

As the slightest inattention in watching the film means the missing of several links in the chain of pictures, the audience is obliged to be very attentive and thus the habit of attention is automatically developed in the pupils viewing a film.

A consideration of the extensive use which a great many countries of the world are making of the film in the education of the school pupils as well as the public will show how backward our country is in this respect. In the United States of America the Mines and Agricultural Departments have produced hundreds of films, slides, posters and exhibits covering all the phases of the Mineral and Agricultural industries. These visual aids are available for use throughout the country, free of charge save for transportation charges. Similarly the big industrial firms use motion pictures as well as other visual aids for advertising as well as for teaching workers how to handle their machines.

Cinema films are produced and are widely used in the education of school pupils and adults also in England, Canada, South Africa, Australia, Russia, Germany, France, Italy, Japan, and even China and the Governments in these countries maintain film-lending libraries.

I only hope that every Provincial Government in India will, in the near future, arrange to maintain a central lending library of educational films for the benefits of schools, and, what is more, that entertainment film-producers will produce educational films also, for at present the educational films available in India mostly depict European surroundings and have got title heads in English.

Even in the matter of entertainments, people want, now-a-days, quickness combined with efficiency in the performances they have to enjoy. Thus the talkie film is fast replacing the ordinary drama and circus performance on the stage, inasmuch as all the time that used to be formerly wasted in setting the stage anew after each scene or act, or in the actors' changing their dress, is now saved and the audience can enjoy the whole drama or cinema performance on the screen within two, or at the most three hours, return home and have their sleep all right.

In the business, trade and industrial world the lantern slide and cinema film have long been used as effective advertising agents. Even the cinema and circus companies, now-a-days, advertise their shows with large-size and coloured pictures of the principal actors and events in their performances.

As a matter of fact, it is the teacher who has rather lagged behind, and especially so in India, in taking advantage of the value and usefulness of these visual aids in teaching.

In spite of the proved utility and efficiency of the film in education, there are many teachers in India who think that the utility of the cinema in education is doubtful or that, even if it be useful, its usefulness is not com-

mensurate with the cost involved. Regarding the utility of the cinema or the lantern slide in class-teaching, careful and elaborate experiments have been performed in America and it has been established there that education with these visual aids is at least 40 per cent more efficient than mere oral instruction. Then regarding the cost, I may say that, instruction imparted through these visual aids being very efficient, the number of repeaters at examinations grows gradually less and so, schools using visual aids can manage with a smaller number of teachers than those not using them, but, more than this, the fact that a much larger number of pupils can be kept interested and attentive and can be efficiently taught through the film than in the ordinary class-room make teaching through the film ultimately cheap.

Lastly I may state here that the western nations, cool and calculating as they are in the economic world, would never have gone in for the film, if it had not been useful and cheap enough as a visual aid in teaching.

There is still another class of conservative people among us who ask "Have not our boys passed the I. C. S. Examination or B. A. Examination in the first class without the lantern slide or the cinema film? Then what is the use for these visual aids?" The people who ask this question are those who take a very narrow view of education and to whom education means only a purely literary education such as we are even now giving to our pupils in schools and that too to the children of the well-to-do classes. But when we have to think of quick and efficient mass education, and vocational education, we cannot do without visual aids like the

THE SHELL

BY SRI A. V. SURYANARAYANA, M.A., B. Ed

Narasaraopet

Who made thee,
 Tiny shell?
 Little as thou art,
 Unknown to man's art.

The cold wind blows
 Hard to storm thee,
 But in vain.

The hail-stone falls
 To smash thee down,
 But in vain.

Fortress strong,
 Divinely built,
 Small as thou art,
 Reveal'st thou
 The glory of God.

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cinema. Again, even in the case of the literary education given in our schools, there are a great many things which the average pupil cannot visualise and properly understand from any amount of verbal description. The I. C. S.'s or 1st class B. A.'s are the exception and not the rule. They are geniuses who have a strong imagination to visualise things from mere verbal description. Hence it is that we, now-a-days, find a number of pictures in the text-books used in our schools for the benefit of the average pupil.

Lastly let me remove a misapprehension existing among some people regarding the utility of the magic lantern slide in these days of the cinema film. A good magic lantern gives a bright 7 ft. square picture of the thing we want to study and picture can be kept on the screen as it is necessary for us and thus is very useful in the study of the structure of a thing, while the film being a fast moving one, cannot be so useful in this respect. Thus for detailed and analytical study the magic lantern is very useful. But in the study of the movements, evolution, development or functions of a thing the film is decidedly superior to the lantern slide. Thus the structure of the human heart is best studied from the lantern slide while its movements and functions are best studied through the film. The best that can be said about the relative merit of the slide and the film is that a judicious combination of the lantern slide and the cinema film is the best way to use them.

ALPHONSE DAUDET

BY MR. M. J. MANERIKAR, Bombay

MANY French writers have conquered the world's mind by the power or the subtlety of their genius; few have won its heart through the catholicity, the broad sympathy of their genius. Daudet is one of these few. He may lack the poignant intensity of Balzac, the lyric sweep of Hugo, the immense architectural strength of Zola, the implacable disinterestedness of Flaubert, the marvellous concentration of Maupassant but he has more humour than any of them and more charm—more sympathy than any but Flaubert. He does not belong to any school. To Leon Daudet he once said: "You know how little importance I have always given to schools and classifications. I hate them all. I belong to none of them." "Benevolent nature," says Zola, "has placed him at that exquisite point where poetry ends and reality begins." "His originality," to quote no less a critic than Jules Lemaitre, "is closely to unite observation and phantasy, to extract from the truth all it contains of the improbable and the surprising, to satisfy at the same time the readers of M. Cherbuliez and the readers of M. Zola, to write novels which are at the same time realistic and romantic, and which seem romantic only because they are sincerely and very profoundly realistic."

To many Indian readers Daudet is known as the author of that great prose-elegy *The Last Lesson*. The simple version of the old French schoolmaster taking leave of his Alsatian pupils has a symbolic breath not

easy to match in his early lively tales written before the surrender at Sedan. In reading *The New Schoolmaster*, a sequel to *The Last Lesson*, we must judge leniently the portraiture of the Prussian schoolmaster with wife and children to match. They could hardly be painted otherwise by a journalist writing in the bitter years of his country's defeat. *The Clock of Bougival* castigates German solidity, or rather stolidity, in a way that Germans themselves may enjoy. *The Little Pies* is a delicious comedy in a tragic setting. *The Boy Spy* is one of the smallest and greatest of Daudet's works. *Belisaire's Prussian* is a horrible savage thing in which Daudet's anger against the Germans is expressed. *The Mothers* is a quite moving sketch in which his power of sympathy revives and in *The Siege of Berlin*, a strange, touching sketch of one of the soldiers of the great Napoleon, there is a vibrant patriotism far more poignant than we can discover in any of the playful apologues published before the war. He had an inside view of the Second Empire; he could not help seeing its hollowness and he revolted against the selfishness of its servants; no single chapter of Zola's splendid and terrible *Downfall* contains a more damning indictment of the leaders of the imperial army than is to be read in Daudet's *Game of Billiards*.

But it is *The Letters from my Mill* which represents Daudet best. The tales lack only rimes to stand confessed as poesy; and many

a critic has preferred these first flights before Daudet set his Pegasus to toil in the mill of realism. These stories are simply tremendous trifles. They are bubbles, light, fantastic, iridescent, floating on the wings of poesy. It was Madame de Sevigne, I think, who once said that a French cook can make a fine dish out of nothing. Daudet resembles the French cook in that he can weave an exquisite yarn around a mere trifle. How slight is the foundation of *The Pope's Mule*! Just an old country saying going back to the times when the Popes had removed from Rome to Avignon. Yet what a work of art he makes of it! And what could be more naively ironic than *The Elixir of Father Gaucher*? Like a true Southerner Daudet delights in girding at the church; and these tales bristle with gibes at ecclesiastical dignitaries; but his stroke is never malignant and there is no barb to his shaft nor poison on the tip. It is not possible to point to an idyll of pastoral adventure of the meditative class more classic in its graceful purity than *The Stars*. In *Old Folks* we see Daudet smiling with a tear at the corner of his eyes. The style of these stories is inimitable. To try to cultivate the style of Maupassant's short stories would be the surest way to literary perfection; but to try to cultivate the style of *The Letters from my Mill* would be the shortest cut to literary disaster. It takes a Ulysses to wield the bow of Ulysses and it takes a Daudet to write like Daudet. But the chief charm of these stories lies in the consummate skill with which Daudet has evoked for us the country life and legend in the dreamy heart of Provence. *The Letters from my Mill*, says Henry James, "are

impregnated with the light, with the fragrance of a Provencal summer; the rosemary and thyme are in the air as we read, the white rocks and the grey foliage stretch away to an horizon of hills on which colour is as iridescent as the breast of a dove. The Provence of Daudet is a delightful land; even when the Mistral blows there it has a music in its whistle." Of Mistral's poem *Calendal* Daudet writes, "What is above all in the poem, is Provence.....Provence of the sea, Provence of the mountains with its history, its manners, its legends, its scenes, quite an artless and free people who found their great poet before their death. And now trace its railroads, set up telegraph posts, drive the Provencal language from schools! Provence will live for ever in *Mireille* and *Calendal*." These words, as Dr. Charles Sarolea points out, are equally applicable to *The Letters from my Mill*. Yes, Provence will live in these stories just as Berry will live in the works of George Sand, Cevennes in the works of Ferdinand Fabre, Normandy in the works of Maupassant and Savoy in those of Henry Bordeaux.

The first part of *Le Petit Chose*, styled the David Copperfield of French literature, is in reality but an echo of Daudet's childhood and youth. "Both Alphonse Daudet and his brother Ernest filled in later the biographical outlines which differentiated the author from the young Eysette of the fiction: the former observing that he had entirely omitted the strain of passionate truancy and vagabondage which characterized him as a boy, and the latter placing in truer perspective the collapse of the family fortunes, besides bringing out the

remarkable literary precocity of the younger brother whom—it is not too much to say—he mothered in the hard early days of struggle and privation in a Parisian garret. Yet, in the main upto the time when *Le Petit Chose*, fresh from the humiliations of usherdom, rapturously eats his first *dejeuner* in Paris in his brother's company, the novel is a true record. The happy childhood at Nîmes, the ruin of his father's business and the years of misery at Lyons while the Micawher-like parent fell deeper into debt, the death of his eldest brother, the resolute departure to earn his bread as a juvenile *pion*, and the picture of his soul-searing misery, with few alleviations, at that seminary for well-to-do rustics..... these were all experiences of Alphonse Daudet, and time has dimmed neither their pathos nor the fresh vivacity of their delineation." *The Times Literary Supplement*, 1st May 1940.)

Tartarin de Tarascon, *Froment Junior* and *Risler Senior*, *The Nabob*, *Numa Roumestan* and *Sapho* form a splendid pentagon wherein Daudet's fame as a novelist rests secure. Of these *Tartarin de Tarascon* is too well known to our readers to need any introduction. Tartarin is as immortal as Falstaff and Don Quixote and Daudet always felt proud of his creation for the real joy of the novelist, he tells us "must always be to create beings, to set on foot by their truth to nature types of humanity which shall thenceforward be known in the world, the expression and gesture he has bestowed upon them, and which has caused them to be talked of, detested or liked, by those who read of them, without reference to

their creator, or without so much as mentioning his name. For my own part, my emotion is always the same, when a *propas* of some passer-by, one of the thousand marionnettes of our human comedy, political, artistic, or of the world, I hear it said. He is a Tartarin—a Monpavon—a Delobelle." A thrill runs through me then, the proud thrill of a father, hidden amongst the crowd which applauds his son, and who all the time is longing to exclaim, "That's my boy!" *Froment Junior* and *Risler Senior* introduces us to the life of the working people of Paris and though it is not one of the best of his novels, it is the earliest in which his full force is displayed. *The Nabob* is probably the most broadly effective of all Daudet's novels; it is full of striking scenes; and as picture of life in the picturesque Second Empire it is of unique importance. In *Numa Roumestan* Daudet gives us a portrait *par excellence* of the Southerner. Numa Roumestan is a kindly and selfish Southerner, easy going and soft spoken, an orator who is so eloquent that he can convince even himself, a politician who thinks only when he talks. He has married the daughter of an old and grave Councillor of the Paris Court of Appeal, Monsieur Le Quesnoy, whose austerity and calm are in striking contrast with the exuberance of his son-in-law. Rosalie Le Quesnoy never completely sympathizes with her husband for a whole difference of race stands between them. Opposite in instincts, education, temperament, not having the same ideas about anything, it is a case of North and South, without hope of possible fusion. The novel has been considered to

be Daudet's masterpiece. Says Henry James, "Numa Roumestan is a masterpiece it is really a perfect work; it has no weakness, no roughness; it is a compact and harmonious whole. Daudet's other works have had their inequalities, their infirmities, certain places where, if you tapped them, they sounded hollow. The beauty of *Numa Roumestan* is that it has no hollow places; the idea and the picture melt into one." Even Emile Zola who finds a fault with the Hortense-Valmajour episode admits that Daudet "has put his whole nature into it, helped by his southern temperament, having only to make large draughts upon his recollections and sensations. I do not think that he has hitherto reached such an intensity either of irony or of geniality—. Happy the books which arrive in this way, at the hour of the complete maturity of a talent! They are simply the widest unfolding of an artist's nature; they have in happy equilibrium the qualities of observation and the qualities of style. For Alphonse Daudet *Numa Roumestan* will mark this interfusion of a temperament and a subject that are made for each other, the perfect plenitude of a work which the writer exactly fills." *Sapho* is the Manon Lescaut of the nineteenth century. It is the only work of Daudet which frankly belongs to the naturalistic school of fiction. It is the story of a youth called Jean caught in the toils of an aging courtesan who in the long run falls honestly in love with him. "It has been called immoral but it is so bare of suggestive descriptions, the lesson is so terrible, that the general effect strikes one as being austere. When

Daudet wrote on the dedication page: "For my sons, when they are twenty," he knew what serious subject of meditation he was offering them. (*French Literature During the last half Century* by pierre de Barcourt and J. W. Cunliffe.)

Most of Daudet's characters are directly copied from nature. In the *Thirty Years of Paris*, Daudet says: "Just as painters carefully keep their albums full of sketches where the outlines, attitudes, foreshortenings and movements of the limbs are caught on the spur of the moment, so I have for the last thirty years, collected a quantity of memoranda, in which I have recorded my observations, my passing thoughts, sometimes jotted down in a few short words sufficient to recall a picture, an intonation, which later on I have enlarged upon and brought into harmony with the larger and more finished work. In Paris, during my travels, in the country, these note-books have been carelessly scribbled in without a thought for the future work which was accumulating there; surnames are there too, which I have been able to change, finding in their very sound a physiognomy, a living image of those who bore them. On the publication of some of my books there has often been an outcry and a talk of a "key" to my novels; some such thing has indeed been published, with a long list of celebrated personages, without reflecting that in my other works many real characters have also figured, unknown, it is true, and lost among the crowd where no one has sought for them."

"Is it not the true way to write a novel, that is to say, the history of those folk who have no history? All the individuals in *Froment Junior* and *Risler Senior* have lived or are living. By my delineation of old Gardinois, I have grieved some one for whom I have a sincere affection, but I could not omit this specimen of a selfish and terrible old man, of the pitiless *parvenu* who many a time from the terrace in his park threw his covetous glance over the large buildings of the farm and manor, the woods and the cascades; and said to his children assembled around him: "What consoles me in dying is that after me not one of you will be rich enough to keep all this together." Planus, the cashier was in real life called Scherer. I saw him in a banking-house in the rue de Londres, shaking his head in front of the well-filled strong box, and muttering in a soft, tragicomic manner and strong uncouth Teutonic accent: "Yes, yes, money, lots of money, but I've no faith in it." Sidonie also exists, and the poor home or her parents, and Mother Chebe's little case of diamonds, stored away in a corner of the Empire chest of drawers, for so long the only bit of luxury belonging to the Chebe household. Only Sidonie was not so vile as I have drawn her: Full of intrigue and ambition, her head turned with unexpected fortune intoxicated with pleasure and dress, she was, however, incapable of behaving badly in her own home, in the way I have described,—with a view to scenic effect. Madame Gardinois still flashes and twirls her rings in the same manner far away in the provinces; but

she will never read this book. She never reads; her fingers are too busy. Risler is a recollection of my childhood. That tall fair man, designing patterns in a manufactory, was employed by my father. I made him Swiss instead of Alsatian, in order not to pander to any patriotic sentimentality and call forth an easily-won applause. Finally, Delobelle lived near to me, and more than a dozen times has said to me: "I have no right to leave the stage." In him I have, in order to complete the type, summed up all I knew about actors—their manias, the difficulties they find in resuming everyday life when they leave the boards, and in keeping their own individuality under so many different garbs. I have here, amongst old memoranda turned over while writing this book, a "Blessing of the Sea," recited by an actor, which is certainly one of the most extraordinary things possible. I cannot transcribe it here. It would be impossible for me to describe the rolling of eyes and voice, the maudlin emotion, the breathlessness, the quivering attitude of tremendous feeling that accompanied the delivery of this curious declamation, heard in the green room of the old Vaudeville theatre. Then again, I find in a note book a sketch of the wonderful attitude of another Delobelle, contemplating his house, burnt down by the Prussians, rendering a very natural feeling of regret by gestures so inappropriate as to be absolutely comical; for it is the peculiarity of this class whose study it is to interpret life that they misunderstand everything and are never able to divest themselves of the conventional stage

illusion, so devoid of light and shade. My mind was therefore well impregnated by the figure of Delobelle; but I had not yet conceived him as completed by his family, when about that time I assisted at the funeral of a great actor's daughter; there I beheld in a courtyard of the rue de Bondy the whole theatrical world; and all that I describe later on as taking place at the death of little Desirée.....the typical entrance of the guests, the play of their different shake hands, varied according to their habitual parts.....the tear wiped out of the corner of the eye and gazed at on the tip of the gloved finger. I immediately conceived the idea of giving Delobelle a daughter and I was desirous of describing that child as having inherited some of the oddity of the father, transforming the artistic irritability into the gentle sentimentality of the woman and the invalid. By reason even of her sickness, and in contrast with it, I bestowed upon her a trade devoted solely to luxurious accessories. First I made a doll-dresser, in order that this humble and unfortunate girl might at least satisfy her delicate and elegant taste, and in default of herself, clothe her dreams in shreds of silk and gold tinsel. The work was essentially one of those practised in the buzzing, droning Marais in the old scutcheoned mansions and black five-stories houses in which are sheltered those who prepare the pleasures of Paris, letting fall in the dust of their garrets or on the wrought-iron railings of their stair cases bits of gilding and chips of veneering woods. Go into those narrow alleys, climb up those melancholy stairs, through

the half-opened doors on each landing, you will see women and children working round a wretched fire by the light of a petroleum lamp. A bit of wire, a little glue, gilt paper, and a few snips of velvet, are sufficient notwithstanding poverty and cold, for them to create with their nimble fingers, almost without a tool, by sheer dexterity and ingenuity, those little trifles, "pretty and well-made," as the Boulevard street sellers say in offering their wares: clowns, dancing dolls, butterflies with wings that flutter, perfect marvels for twopence, toys for the poor, bearing the stamp of the delicate, childlike taste of this wonderful Parisian population."

Daudet has been styled the French Dickens. Daudet, however, denies any connection between Dickens and himself, beyond an intense and mutual sympathy for the same objects. In the *Thirty Years of Paris* he writes:

"In relating my book out aloud, as is my custom while mentally evolving it, I mentioned one day to Andre Gill, the sketcher of outlices, who was in all respects an artist, the little Delobelle and the manner in which I was describing her; and he warned me that in one of Dickens's novels, till then unknown to me, *Our Mutual Friend*, there was exactly the same account of an infirm girl, a doll-dresser; described with the deep, tender sentiment for the poor, the imaginative feeling for the street, which is so palpable in the great English novelist. I remembered how often I had been compared to Dickens, even long before a friend had, on returning from a journey in England, informed me of the

sympathy existing between *David Copperfield* and *Le Petit Chose*. An author who conscientiously records what he sees, can make no answer to such a criticism, except that there are certain affinities of the mind for which one is not responsible, but that on the day of the great creation of men and novelists, nature in a fit of abstraction may have mixed her materials. I feel in my heart the love that Dickens felt for the unfortunate and the poor, and for childhoods spent in the wretchedness of large cities; like him I began life in a heart-rending manner, obliged to gain my daily bread before I was sixteen years of age; in that lies, I believe, our greatest resemblance."

Dickens's humour is expansive and robust, relying on broad sweeps and calling forth great Gargantuan laughter. Daudet's is neat, incisive, cutting, and is rewarded with a smile of intellectual appreciation. It is the difference between Pickwick losing his hat before the soldiers on parade, and Ida wondering what noble thoughts, what exalted dreams occupied her poet's mind as he bestrode the room after dinner—and Daudet's succinct comment "He was digesting." Dickens tossed off *Pickwick Papers* in an ebullition of high spirits. Daudet in writing *Tartarin* had a serious satiric purpose. "He says," Goncourt writes, "that there is one thing which wounds his self-esteem, and that is that his *Tartarin* has been regarded only as a humorous frolic, and that he has not been recognized as a serious character study of a Southerner, a coarser Don Quixote."

In style a great ocean divides them. Dickens had an idea, immediately put it on paper; that paper passed at once to the printer, and thence to the reader—and all without revision. His novels made their first appearance in monthly magazines, and after having procrastinated like Micawber, he was hard put to it to keep faith with his publisher. He was constantly having to make literary forced marches, which rendered difficult of achievement a polished style, a pursuit after the one perfect word, and any consistent unity of design. Daudet on the other hand gives in his own words an account of his labours. "We make a precise image of it and that to begin with is an effort; then we apply to it various verbs, adjectives and nouns that come to our mind; these we test with eye and ear just as a jeweller tests his gems.

Dickens's style was like a tap turned on in full flow. Daudet's like a hose-pipe subject to delicate discrimination between "the geraniums red and the delphiniums blue." And if the style does express the man, the analogy can be carried further Dickens had an intense burning interest in all humanity. Like Rupert Brooke he could see "the essential glory and beauty of all people" he met. He pranced with love for the human race, he dearly loved its "ugly face." Daudet by contrast sat quietly watching, carefully noting; and having noted, carefully creating. Where Daudet delicately etched, Dickens splashed paints. Where Daudet sipped champagne from old Venetian glass, Dickens quaffed down great tankards of foaming beer. Where Daudet was content to watch others, himself toying ever and anon with *pate de foie gras*, Dickens gobbled up life as greedily as Mrs. Nubble ate oysters.

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A 'C. P.' SASHTIABDAPURTHI MEMORIAL HIGH SCHOOL

BY SRI A. PADMANABHA IYER, *Trivandrum*

THE *Sashtiabdapurthi* or the Sixtieth birthday of the familiarly known 'C.P.'—or to give his full name Sachivothama Sir C. P. Ramaswami Aiyar, K.C. I.E., LL. D., the Dewan of Travancore—took place last year and it was celebrated in every town and village with great enthusiasm and jubilation. The *Sashtiabdapurthi* of a Dewan in power is not an ordinary event in Travancore. During the past fifty years only one Dewan had the good fortune to celebrate his *Sashtiabdapurthi* as Dewan of the State and that was Mr. Shungrasubha Iyer, C.I.E. Sir C. P. Ramaswami Aiyar is, therefore, the second Dewan to celebrate this great and auspicious event. The event naturally evoked considerable enthusiasm. There was another reason for the unprecedented demonstration of joy which found expression in so many ways. Under ordinary circumstances this great event should have been celebrated by the Sachivothama in his own home at Mylapore and amidst his kith and kin. But Sir C. P. decided wisely to celebrate it amongst his friends and relations and in the immediate presence of his Sovereign Master for the time being. This decision of his brought the people nearer his heart. The wave of public rejoicings reached its height when proposals were made galore in all parts of the State, practically from all Taluks in the State. The number became so great that the Dewan thought that the time to cry halt had arrived, for he doubted the disinterested

and unselfish character of some of the memorials which emanated from certain quarters and from certain individuals. In spite of the restrictions placed by the Dewan, the total number had stood as forty spread over twenty-eight stations in the whole State. These memorials took different forms such as Schools, Hospital wards, Playgrounds, Town Halls, Reading Rooms and Libraries, Parks, Oil Paintings, Sports Tournaments, etc. One of these was an English High School established at Pattom, an important suburb of Trivandrum, the capital of the State. This is a highly populous locality which sends several hundreds of boys and girls to the English High Schools in other parts of the town such as the Sri Mulam English High School at Vanchiyur, the Fort High School in the Fort, the St. Joseph's High School, Cantonment, etc. On account of the large distance involved the boys were suffering great hardship and privation which was inevitable. All these difficulties were removed by the forethought, philanthropy and charity of a Christian Missionary, namely, His Grace the Most Rev. Mar Ivanios, O.I., D.D., M.A., the Archbishop of Trivandrum. With true missionary spirit and with the munificence characteristic of these high class workers, His Grace offered to put up a building on the site already purchased. No better site could be selected. On the three sides of the school building is stretched a limitless scenery of evergreen verdure which to the ordinary eye would

look like a green velvet carpet of charming beauty. The plan of construction of the school building is that it looks like the segment of a circle running parallel to the magnificent sight spread in front of the eye, inspiring and stimulating thought. Such surroundings themselves afford liberal education to those inclined that way and show to the young minds the mighty Beauties of Nature. It is in fact a little world of the fauna and flora mixed in admirable proportion to relieve the eye from the dull routine and drudgery of the school. The whole premises form a Botanic Garden which may be utilised either for pleasure or study from a commonsense or scientific point of view. It is highly doubtful whether there are many seats of learning like this in the whole State where naked and unadorned Nature offers plenty of food for thought and contemplation of the intricacies of life other than human. Such is the environment which unfolds itself to the enquiring mind and observant eye.

For a populous and growing city like Trivandrum which has at present a population of over one lakh of souls the number of English Schools provided is too small and the number of High Schools much smaller. It is well-known that the movement of population has always been towards the town on account of a number of causes. In 1921 there was a population of only 72,784 in Trivandrum which in 1931 increased to 96,016 or an increase of 29 per cent. But the number of English High Schools has decreased as a few have disappeared. The need for a larger number of High Schools is greater now than was the case some

decades ago. The Government too have very often declared their settled policy of leaving higher education in the hands of private enterprise. All these circumstances were well weighed by the philanthropic Archbishop and no opportunity could have been more suitable for carrying out his laudable object than the rare event of the *Sashtiabdapurthi* of a Dewan who had already established his reputation as a statesman of the first order and had earned the undying gratitude of the people of Travancore. For, no Dewan of Travancore has had such a number of memorials raised to speak to the coming generations of one who has done such benevolent work in the various and varied fields of human activity. The necessary permission was obtained and the ceremony of laying the foundation was performed last year by Mr. Kerala Varma, the father of His Highness the Maharaja. The construction of the buildings was started immediately and the school house was ready in a few months with a complete set of furniture and equipment supplied on a lavish scale. Throughout this period the enthusiastic Archbishop was busy not only in the construction of the school house but also in seeing that all the articles of furniture were made as quickly as possible, so that they may be ready before the date fixed for the opening ceremony. It is now complete with a copious supply of maps, charts, diagrams, etc., so necessary for a modern institution of its kind.

When the good Archbishop took me round the various classes humming with life, I was surprised to find that each class was full and had reached the limit imposed by the

Travancore Education Code and the VI Form had already attained a stage necessitating two Divisions, like a few other classes having more than one division. The Laboratory for the teaching of science is also well equipped not only with the necessary apparatus but also with all other facilities for the worker. A very convenient system of water supply is a predominant feature and also the necessary electric installation. My attention was drawn to the working of Linguaphone used in the teaching of foreign languages. The teaching staff is an efficient one for an institution of its kind which is only in its initial stage with a total strength of 373. The Headmaster, Mr. A. Sankara Pillai, is a B. A. in Mental and Moral Science and an M. A. in Dravidian Languages and was a successful Headmaster in several High Schools of the Educational Department and retired only a few months ago. He is still hale and hearty and not lost his vigour of body and mind and his usual enthusiasm as a teacher and organiser. The other teachers are all distinguished graduates, each an expert in his own line. The teaching of Languages and Science is in competent and safe hands, while Physical Education has been given a prominent place in the curricula of studies and is placed under a graduate who holds a Diploma in that subject. The proprietor has a large programme of adding to the

institution a well built Hostel, so as to make the school a residential institution for which there are excellent natural facilities. Even at present the relations between the teacher and the taught are so cordial, nay, paternal, that the pupils spend their leisure with their teachers or with the patriarchal and genial Archbishop who treats the boys and girls as his own children and entertains them in their leisure moments with his Radio and other forms of amusement. I spent a pleasant couple of hours in visiting this excellent institution which is certainly a model education institution. The Proprietor has an idea of converting it into a Residential College.

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BY

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PARNAL-PARVAT GRAHANAKHYAN

A HISTORICAL CRITICISM

BY MR. G. D. TAMASKAR, M.A., *Jubbulpore**(Continued from page 588)*

3. HISTORICAL VALUE OF THE BOOK

THIS book is much shorter than the Radhamadhao-vilas Champoo, but contains not only references to historical events but a regular account of some conquests of Shivaji, besides the detailed account of the conquest of Panhala. It is therefore of great historical value.

Bangalore was the place of residence of Shahji and, after him, of his son, Ekoji. One of the terms of the release of Shahji after his arrest in 1648 A.D. was that Singhagarh and Bangalore were to be returned to the Adilshah. It is clear that at that time these were the strongholds of Shivaji and Shahji. Though Bangalore was returned, it was, it seems, soon reoccupied by him as Singhagarh was reoccupied by Shivaji. Here Shahji ruled almost like an independent king and made it into a fine city. The Darbar Hall referred to in the Radhamadhao-vilas Champoo is Nawagaji (नवगजी), but it seems to have been replaced by a bigger hall called Gaurivilas that is referred in the Parnal-parvat Grahanakhyan (Ch. I-21)

We have already shown that the Radhamadhao-vilas Champoo was gradually prepared in its present collective form. “ततः कतिपर्यवर्षेभ्यः काव्यानि तन्वता । छन्दो विनिर्मितं तस्मिन् कृतः सर्वस्य संग्रहः” may refer to this very collection, for it is in this that we find collected the verses that the poet composed from time to time. It must however be conceded

from the preceding three verses and the following two verses, and a half that सर्वस्य संग्रहः may refer to some biography of Shivaji.

Before the poet begins the description of the taking of Panhala in March 1673, he gives a short account of forts and places that Shivaji took after the poet saw him at Raigarh after his departure from Ekoji. They are Trimbak, Karanja, Saler, Alangy, Kurang, Ahiwant, Markand, Tringalwadi, Ravala Javala, Achalgarh, Chamundagarh, Harishchandragarh, Mahishgarh, Adsargarh, Jiwadhan, Jawar, and Ramnagar. Most of these forts were taken in 1670-71-72 and have been mentioned in the *Jathe Shakavali*. Moghul commanders to defend Saler were Bahadurkhan and Dilerkhan. These have been mentioned in Ch. 2-6. They were very roughly scolded by Aurangzeb and they have tried to put in a defence for their defeat. The scolding and the defence seem both to be a matter of history. In this defence, the Moghul officers have tried to show that the Adilshah, the Kutbshah, the Portuguese, the English, the Carnatic kings, the Siddis were all forced to offer presents to Shivaji for their defence and protection, that the mighty, long-armed Afzalkhan Khan was killed by him singly, Musekhan and hundreds of others like him were destroyed and the Adilshahi Sardars were forced to make a treaty with him, the Emperor's

maternal uncle had two lakhs of horses and elephants with him, but his son, brought up as his own son by the emperor, was killed in a battle; from the capital itself, though surrounded by ten or twelve thousand horsemen, he escaped with his son; his own maternal uncle's son (Jadhaorao) and Hilal Siddi had already run away from the Nashik territory on account of his fear; though His Imperial Majesty was at war with him twenty years with the exception of a year or a year and a half (it proved to be of no effect). There is a mention that they had dispatched a Brahman envoy, well-versed in several languages and the head of the spies. In return he sent a good Muslim named Kaji Hydar on his own behalf. That this envoy of Shivaji was put in chains and imprisoned has also been mentioned.

The breach of peace between Shivaji and the Adilshah, that occurred in December 1672 has been referred to (Ch. III—I). How Khawaskhan had become the virtual master of Bijapur has been described in some detail and agrees well with the description of Busatine-Salatin. Then, in the third chapter, has been described in sufficient detail the taking of Panhala under the leadership of Annaji Datto. That there was not much fighting is clear from the description. In the fourth chapter, Shivaji's visit to Panhala has been described in detail. He was at this time at Raigarh. Having paid his respects to his mother at Pachad (below Raigarh) he started for the place. On the way he made a halt on the banks of the Savitri river. He, then came to Poladpur

and saw here the Goswami.* He then came to Pratapgarh and worshipped the Goddess of this place. Thus in three days he reached Panhala, where he was warmly received by Dattopant Wakenavis.

In the fifth chapter is described in detail the battle of Umrani that followed the conquest of Panhala by Shivaji. It occurred between the Adilshahi Commander Bahlolkhan and Shivaji's Commander Prataprao on the 15th April 1673 and ended in a victory for the latter. That one elephant was captured (see *Jathe Shakavali*) is also mentioned in the poem. There are names of the officers of both the sides given. Sarjakhan, moving near about Rangana, Mujaffir Malik, Siddi Masud of Adoni, Abdul Aziz of Karnal, Khidirkhan (Khizrakhan), Siddi Mohammad Barki, Jadhaorao (maternal cousin of Shivaji) with his lieutenant, Mahadaji Thakur, Bhairkhan Tarin are some of Bahlolkhan's assistants. Anandarao, Siddi Hilal, Vithoji Sinde, Krishnaji Bhaskhar, Vitthal Pildeo, Viso Ballal, Rupaji, Samji Mohite, Sidoji Nimbalkar, Pandara Naik, Kharada Naik, Dipaji Raoot Rao are some of Prataprao's assistants. The incidental facts referred to in this description of the battle of Umrani are Jayasinha's victory over Shivaji, the death of Amar Sinha and other Rajputs in a battle near a fort on the Sahyadnis (i.e., near Saler), escape of the grandson of Udaram from this battle, the capture of the elephant of Mullakhan in a battle near Junnar.

*Who this Goswami was we have discussed in sequel.

4. FACTS OF THIS WORK REFERRED TO IN OTHER BOOKS

Some of the facts of this book are to be found in other books. This can help us to determine the date of the composition of this book as well as of the books borrowing facts from it.

(a) In Ch. V-II, Bahalolkhan says to Khawaskhan—

रणे तस्माज्जयं प्राप्य निर्गतः कोऽपिदृश्यते ।
केवलं जयसिंहस्य स ज्ञातीयतया मनाक् ॥ ११ ॥
पर्वतव्यत्ययत्तिन जयाभासः प्रदक्षितः ॥
..... ॥ १२ ॥

“Who is there, who is come successful out of a battle (with him, i.e., with Shivaji)? It was only Jayasinha, who on account of being of his own caste, was given (by him, i.e., Shivaji) a little show of success by exchange of forts.”

Now compare with the above the following line of Sabhasad:—

“मग जयसिंह बोलिलजे हीचगोष्टखरो आपण राजपूत,
तुम्हीव आम्ही एकजाती आहो अगोदर आपलंशीर जाईल,
मग तुम्हास कायहोणे ते होईल” असा भस्मेसा बोलून
शपतवाहिली मगराजे बोलिलजे तुम्हास जेगडे पाहिजेते ते
देतो दिलेलखानास बोलाऊन आणवणे पुरंधर तुम्हांस देतो
निशाण तुमचें चढवितो परन्तु मुसलमानास यशदेतनाही”

“Then Jayasinha said (to Shivaji), ‘This shall be so. We are Rajputs, you and I are of the same caste. First, my head will drop, then only whatever be fated will happen to you.’ Thus he assured him and took an oath. Then the King (Shivaji) said, ‘I am ready to give you whatever forts you want. You call away Dilekhan, I am ready to give you Purandhar; but I

do not want to give the credit to a Musalman.”

It will be clear that Sabhasad has borrowed his ideas from Jayaram.

The description of the battle of Umrani given in detail by Jayaram seems to have been noted by Sabhasad, though from memory, in short.

It is now well known that Shivaji used to give new names, which were generally Sanskrit in form, to the forts conquered by him. Jayaram mentions this:—

प्रत्येकं नामकरणं नवीनं श्री महीभुजा ॥
..... ॥ ११ ॥ प्र.म. ॥

There is a reference of this very kind in what is known as the Shivapur Shakavali (*Shio-Charitra Pradeep*, p. 50).

More references, and sometimes the very words, are to be found in the *Shio-bharat* written by poet Parmanand Kavindra.

In Ch. IV-2, the following line occurs—

दधिदूर्वादिक् दृष्ट्वा सवत्मा धेनुमस्पृशत् ॥ २ ॥

“(He) (Shivaji) having seen curds and grass, touched a cow with a calf.”

In the *Shio-bharat* occurs the following in Ch. 21—

दधिदूर्वाक्षतान् स्पृष्ट्वा दृष्ट्वा मार्तण्डमंडलम् ॥ १२ ॥

स्थितामभ्येत्यचपुरः सवत्सां स्पर्शसंयुताम् ॥

वित्तीयं सुरभिं सद्यः सगुणायाम्जन्मने ॥ १६ ॥

“Having touched curds, grass and rice, and having looked at the disk of the sun, having gone to a cow standing with her calf, gave her away to a meritorious Brahman.”

There are some differences no doubt. In one Shivaji looks at curds and grass,

in the other he touches them together with rice. In the *Parnal-parvat Grahanakhyan*, there is no reference to Shivaji's looking at the sun which obtains in the *Shio-bharat*. In the former Shivaji is said to have simply touched a cow (standing) with her calf; in the other he gave her away together with some gold (money) to a Brahman. The occasions are different. In the one, Shivaji starts to see Panhala newly conquered; in the other, Shivaji starts to see Afzalkhan, at whose hands death was more certain than anything else. But even these references, though slightly different, can lead us to think that one had read the other. We have already seen that Jayaram had begun composing poems on the life of Shivaji. His description is a very simple one. Parmanand's description is generally of an expanded form and full of imagination and poetic beauties. Had Jayaram read Parmanand's book, he would have certainly borrowed much more than this. From this view point, the following verses are also to be taken into consideration:—

हयो हयो जिनेजिनो खड्गः खड्गः धनुधनुः ।

इतिव्यग्रगिरंतावत्तत्सैन्यमभक्तक्षणात् ॥ ६३ ॥

(प.प.प्र. अध्याय - ६३)

“In that army, there was all confusion in a moment and (rose an uproar) ‘Where is my horse?’ ‘Where is the saddle?’ ‘Where is the sword?’”

अदबोऽदबोऽसिर्दसिः प्रासः प्रासइत्यादयस्तदा ।

आरवाः समजायन्त शिबिरे शाहभूभुतः ॥ २३ ॥

शिवभारतम् - अध्याय—१२)

“In the camp of king Shahji was produced a confused uproar (where is my) horse? (where is my) sword? (where is my) spear?”

The kind of description is the same though there are some variations and additions of words in the last. The occasions are of course different. In the one the occasion is the battle of Umrani between Adilshahi, Bahlolkhan and Shivaji's Prataprao. In the other, the occasion is one of the arrest of Shahji by the Adilshahi commander, Mustaphakhan. But there can be again no doubt that one has borrowed from the other.

But there is a further similarity. Jayaram makes Bahlolkhan say:—

श्रूयते किल हिन्दूनां शास्त्रे कैश्चिदुदाहृतम् ।

कल्की विष्णवताराणां दशमस्संभविव्यति ॥ ६ ॥

छेत्स्यते तेन सर्वत्रव्याप्तं यावनमण्डलम् ॥

तस्यैवकल्किनस्तावदसावध्रे समागतः ॥ ६ ॥

दूतोवै प्रतिभात्यस्मान्यतोऽस्मन्निधनोद्यतः ॥

“It is said that the Hindu Shastras say that there will be Vishnu's tenth incarnation by name Kalki, who will kill all the Yavanas (Muslims) spread all over; it seems that he (Shivaji) is the forerunner of that very Kalki, for he has begun destroying us.”

But he is not without some confusion on the point. In Ch. I-40, he says:—

जगृहे लीलैवायं लीलाविग्रहवान् शिवः ॥ ४० ॥

“Shivaji, the incarnation of Shio, took it with ease.”

But the *Shio-bharat* is perfectly consistent in maintaining that Shivaji was the incarnation of Vishnu. The name Shivaji has been explained by saying

यतः शिवगिरेर्मूर्ध्नि जातः स पुरुतोत्तमः ।

ततः प्रसिद्धो लोकैस्स्य शिव इत्यभिधाऽभवत्

॥ ६ ॥ अ.६ ॥

(As that Purushottam was born on the top of the Shigiri, his name came to be known in this world "Shio").

Nowhere does Parmanand hint that Shivaji might be the incarnation of Shio. On the other hand, he says at hundreds of places that Shivaji was the incarnation of Vishnu or, a part of Vishnu. These are some instances :—

विज्जोर्दशो विशेषेण लोकपालांशमभवः ॥ १२ ॥ अ० १ ॥
साक्षात् नारायणस्यांशः — ॥ २५ ॥ अ० १ ॥
शिवस्तु वैष्णवं तेजोऽवतीर्थं क्षोणिमण्डलम्
॥ २४ ॥ अ० ५ ॥

This is described at length in Chapters V and VI and to some extent in Ch. VII also. Though there is no reference directly to the Kalki incarnation of Vishnu, there is an indirect reference to it; for the incarnation next to the Buddha incarnation is, according to the Hindu Shastras, Kalki and there is definite reference to carrying out the promise of restoring Dharma and destroying the Yavanas, (See *Shio-bharat*, Ch. V, verses 54-56; also Ch. XVIII, 28-35). So, simply the absence of the word 'Kalki' does not make much difference in the references to God's incarnation upon this earth to destroy the Yavanas. Jayaram's reference to it through the speech of a Muslim is rather most inappropriate; while Parmanand's reference to it through the words of Brahma is most appropriate. At other places, the references are directly by the poet. He does not make any Muslim say out things of the Hindu Shastras, literature or mythology — which Jayaram has done. Had Jayaram read Parmanand's book,

he could have borrowed the poetic flights of the latter, could have avoided wavering between the Vishnu incarnation and Shio incarnation theories and would not have made the Muslims speak out beliefs of the Hindu. From the literary view-point, Jayaram's Parnal-parvat Grahanakhyan is much inferior to Parmanand's. This latter author has borrowed information from various sources and, sometimes, some poetic imaginations too; but he has shown the ability to give the information in his own way and use the imaginations of others most skilfully—so skilfully that one who has not read other books very carefully cannot know his borrowing from others. He has nowhere mentioned how he got his information. Jayaram has at least said that he has known the information from others.

So, we can safely conclude that it was Parmanand who borrowed from Jayaram. In other words, Parmanand's book was written later than Jayaram's Parnal-parvat Grahanakhyan. That they knew each other can be well established. They were both present on the occasion of the coronation ceremony (see the well-known Rajapur decision and the names of the signatories on the deed of the adoption of Balambhat by Prabhakar Bhat in July 1674 in the Shivaji Nibandhavalī, Part I, p. 68). We have shown that Parmanand has borrowed some of his description from Radha-madhao-vilas Champoo also. So it should not be a matter of surprise if he should have borrowed some ideas and description from Jayaram's other book, Parnal-parvat Grahanakhyan. That they

knew each other well can be inferred from a passing reference in the Parnal-parvat Grahanakhyan. Jayaram says in the fourth chapter of this book :—

ततः पौलस्त्यनगरे परमानन्दनन्दितैः ।
रसैस्तु पंचदशमि कर्वादैर्वर्धितैर्द्विजैः ॥ १६ ॥
गीयमानं यशः स्वीयं श्रुत्वा श्रत्वा शनैः शनैः ।
नरयानादवातीर्थं चतुः शालं मनोरमम् ॥ १७ ॥
मन्दिराग्रं समासाद्य एक एवाग्रगोऽभवत् ।
गोस्वामिचरणद्वन्द्वं नन्दयामास मन्दिरे ॥ १८ ॥

"Then he got from the palanquin in Polastyanagar, while hearing of his great deeds being sung with feelings by fifteen Brahman poets encouraged by Parmananda, and gradually came to the frontage of the temple; he then advanced all alone and bowed his head at the feet of the Goswami in the temple."

At first thought, it seems, as the translator of the book has interpreted, that in the poem the word 'Parmananda' is used in the ordinary sense (great pleasure), and that the word Goswami refers to Swami Ramadas. But it has not to be forgotten that it would be most inappropriate for any author to use an adjectival appellation for a person without giving his proper name. On this fact full light is thrown by the 91-Qalami Bakhar. In this Bakhar, on page 10 (Sane version of Wahashar's publication), there are these sentences :—

परमानन्द गोसावि पोलादपुरी ठेविलें, ते बाबा बहुत सिद्ध पुरुषहोते, व यावगांवीमोहनी बाबा, लिबकनारायणाश्रम, असेथोर सत्पुरुषहोते त्मांची भर्थादा राखून ज्यांचेत्याप्रमाणें साहित्य करूनदेऊन समाधानकरून देऊन समाधान ठेविले.

"(He) (Shivaji) kept Parmanand Gosawi at Poladpur. This sage was a highly self-

attained man. And in the same village Mohani Baba, Trimbak Narayanshram and other great saints used to live. (He) (Shivaji) used to look after the requirements of all and gave them comfort by arranging provisions for them, in keeping with their position (in the society)."

That Paulastyanagar is Poladnagar is an undoubted fact. So the sage whom Shivaji paid respects on his way to Panhala from Raigarh (after the former fort was taken in March 1673) is undoubtedly Parmanand Gosawi (Goswami). So, the word परमानन्द (Parmanand) is a proper name and the name of some learned sage or saint in whose company lived many other similar persons. That this Goswami was come from Benares can be well surmised. For, just before the above quoted sentences of the 91-Qalami Bakhar, there is a statement that Baba Nitalpuri Gosawi (Nischalpuri who performed the second coronation ceremony of Shivaji) was a man come from Benares. This is preceded by an account of the first coronation ceremony and the coming of Gagabhat and other learned men from Benares. So we can infer from this word (ठेविले) (kept) that Parmanand Gosawi was also a man come from Benares. And, therefore, it would be no hazard to infer that this Parmanand is the very author of "Shiobhorat." For, the word "Kavindra," though used in relation to other poets about him can also refer to him in particular. From the letters newly discovered by Sir J. N. Sorhar, there is good ground to believe that Parmanand was a man of Benares (as has been mentioned in the Rajapur decision). Even then, i.e., in 1666, he was known as Kavindra or Kavishvar. Lately, we have

entertained a suspicion that Kavindra Parmananda was a court poet of Shahjahan like the well-known Jagannath Pandit. In the Hindi world there is a poet known as Kavindracharya Saraswati. He was a resident of Benares. He lived at the court of Shahjahan and composed three books (1) Kavindra kalpalata (कवीन्द्रकल्पलता) (2) Samarsar (समरसार) and (3) Yogvashishthasar (योगवाशिष्ठसार). The word कवीन्द्र (Kavindra) is noteworthy. The name 'Kavindracharya Saraswati' seems to be a title and not a personal name, but definitely shows that he was a learned man. This is also clear from the fact that he wrote out a summary of the well-known philosophical book, 'Yogvashishtha.' From the

description of the 91-Qalami Bakhar, it is clear that he was a leader of Brahmans and must be a learned man with a religious bent of mind. Parmanand, having met Jayaram, must have borrowed from him the idea of writing an account of the life of Shivaji in detail. He should have then begun collecting information; but should have been hindered in his work by the death of Shivaji and the invasion of Aurangzeb. He should have then been forced to seek refuge in Tanjore and collect information there. Having written the available portion of the Shiobharat, he should have gone to Benares and died there. Thus, Jayaram was clearly a fore-runner of the poet, Parmanand.

THOUGHTS FOR A WISE MAN

(Being the translation of *Sumati Satakamu* Century of Verse in Telugu)

By Mr. R. B. PINGLAY, Bangalore

[FOREWORD: The writer, Mr. R. B. Pinglay has asked me to write a brief foreward to his rendering in English Verse of the well known Telugu Work, *Sumati Satakamu*. While I am not competent to judge about the quality of his verses, I write these few lines to show my interest in the author and his literary attempts. It is difficult to bring out in English the spirit and force of these homely verses of practical wisdom. The rendering is free and fluent and generally faithful to the original. I have no doubt that his work will have due recognition—SIR S. RADHAKRISHNAN.]

By Sri Ram's grace I shall proclaim
Saws prais'd e'er by Great Minds remain,
And they when heard will induce to read
As the mouth waters before a feed.

Hie off from them who fly from timely need
All those of blood be they claim near or far,
Ev'n away the God who favours not when pray'd
Ride not the steed that fear on field-of-war.

Bliss 'tis to till the land and be at ease,
A pair of bulls to yoke the plough and gain;
Alas, why serve the lord who heeds not to ease
The servant of his toil and feel a-pain!

Serve no service that returns no good ends,
Ne'er serve within the sacred stone walls¹,
Prolong not the acquaintance with fiends
And travel not the forests but with pals.

Pride and arrogance the ill of extreme power
Ends in benumbing of speech, sight and sound;
What's this hot head but a live body dead,
Hence, O Wise, approach him not for favour.

Inhabit the land wherever reside
A shroff, a physician, a stream
That glide perennate and a Brahman 'bide
But enter not the land where these unteem.

¹ Hindu Temples in India are fabulously wealthy. There is certainly the temptation for the employees to misappropriate god's earnings offered by devotees.

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Hear not a son-in-law grateful for e'er
 On earth, a cowherd wise², a woman true,
 Rice pounded from the paddy void for ever³,
 Or a crow white: are these of rare virtue.

Food is sweet nectar at the proper hour,
 Almner great that instant gives at earnest call,
 Man he is who all worldly pain endures,
 And pride of family is a bold, O Wise.

The unsatiable food, the fertile whore
 Merged still in her walk, the water of old
 Unused well, and goat's milk⁴ are in sure
 That excite loath in rationals of mould.

Valour is entry in arena true,
 Bountiful is the Muse, O Wise, on soil,
 What great poets glorify is 'skill' virtue,
 Ill-will is the harbinger of all broil.

Doesn't an ignana live a years a cent,
 A snake ten cents, in lake a heron
 For absolute, but what's life worth prolonged
 But to win charity, gold, love and heaven.

Whence a vile fool at all in him arise
 The elegant virtues ennobled of wise
 When the base brass poise in weight with gold
 Shall when melted count not to sovran gold.

The mouth that cannot lear aright, O Wise,
 The mouth that does call not *mother* for food
 And the mouth that opes not to *brother* utter —
 Are not these the dug-pits of a potter?

O Wise, durst not near the nag quenching thirst,
 Near not the loose untraded elephant worst,
 Approach not the bull at the cow attend
 And ne'er towards an idiot intend.

Reciprocate good for a good atlast
 Cannot claim great when reasoned aloft,
 But he's great who unveils the virtue weal
 Never cared of the meted past ill-will.

² Cowherd is known more for his dull intellect.

³ However well rice is removed from the paddy, still rice will not be free from particles of husk.

⁴ However carefully the milk is drawn, it will still be filled with small particles of goat's hair.

Ill-fellow's friendship when esteemed tends
 Good at first but dull and dangerous ends,
 As the saccharine grass tastes sweet at first
 Dullens thereon, ends insipid at last,

One that fashions to the varying hour,
 Verily talks no more but in a nut-shell
 Wounds not the hearts of rest or himself sore,
 Is a success and adjusts all pelt-mell.

O Wise, why e'er labour to serve upon
 Him who only finds faults e'er and anon;
 As this verily may compare to a toad
 Couching under the shade of a cobra's hood.

When a shallow pond is full to the brim
 A host of frogs then there in full do teem;
 Alike when Dame Fortune smiles stores in kind,
 O Wise, kith and kin flock in mobs to find.

Immatured greens do not strip off on earth,
 Chide not the kin for 'tis sin in truth,
 Retreat not away from the field-of-war,
 Dis'bey not the parents and the master.

A single townclerk and a judge second
 Are suffice for a village to amend,
 Will it not if more than one in each pair
 Cause extreme chaos and at last impair⁵?

On earth, a man should have a spouse unlov'd,
 A lord unkind and a friend unbelov'd —
 He is a cowherd⁶ still who keeps his unlov'd —
 Sense-cowherd not a cowherd though by blood.

In ships are carried vehicles o'er brine
 And vehicles do carry ships as well,
 As these two alternate on earth, in fine
 Does go round the merry fortune whirl-wheel.

Howe'er great and wise one may seem in world,
 Should he leave his spouse at her parents fold
 Longer than need, is like he commission
 Her to base lewdness and prostitution.

⁵ The significance in not maintaining two townclerks or judges for a village is to avoid internecine putes between themselves.

⁶ Cowherd is known more for his dull intellect. There will be no wisdom in him.

If a dog be enthroned on golden throne
 All rites of coronation done aright,
 Will that creature forget its silly prone
 Character of its past and prove aright?

O Wise, on earth a frog a leg to lose,
 Snake to suffer pain, shrew to be wife,
 Penury for old: these are to arouse
 Grief multiplied in them very true all life.

The lotus shifted off its water-stand
 Turns singed by rays of its friend, Sun, on land;
 Alike, O Wise, when men leave their homes high
 E'en friends dear alter foes and turn shy.

Sure the life peril to confront, O Wise,
 When a townclerk confides in another clerk;
 Know then hence, a townclerk in a townclerk
 Ought not to repose and ne'er at all disclose.

E'en the wheels of *Isvara* will roll not
 When no lubricant for the axle daubed:
 Alike yeomen save to townclerk allot
 A tithe of their means, won't breathe well in gold.

Should e'er a townclerk turn docile and meek,
 An elephant untraded in guise shapes weak,
 A snake or scorpion pass non-harmly,
 O Wise, no soul on soil would breathe happily⁷.

Kinship with a knave is not to be made
 On earth, Dame Fame once come will ne'er evade,
 To pledge gold is sure to welcome a strife,
 There ne'er is the sovran love from a wife.

Do bite and taste an unripe fruit and feel,
 What will it fulfil save unsweet and sour!
 He who selects a virgin is beast real,
 While adult girls are spare for his desire.

The writings that are of no poet-born.
 Love of ladies without the aesthetics nine⁸,
 The skillful archery of one, in fine
 Aims not at sighted boar on earth, are vain.

⁷ The significance is that townclerk, elephant, snake or scorpion cannot be harmless in their own nature.

⁸ Nine aesthetics (*Nava Rasa*): *Sringara*—Love, *Karunya*—Tenderness, *Hasya*—Humour, *Veera*—Heroism, *Bhayanaka*—Terror, *Raudra*—Anger, *Bhibhista*—Disgust, *Adbhuta*—Surprise, *Santa*—Tranquility.

Gold pledging for gala enjoying,
 Young spouse for old age, penance of a fool,
 Kingdom of a king who judge not a crime
 Wax unbrokable, land in worse aft' a time.

To desire for coition a lady love
 Full enjoyed by a lover before shew
 A like to a swarm of ants for a piece
 Of saccharine grass after complete chew.

Laughter without proper motives, O Wise,
 On earth a woman without a bodice,
 A pie without the sweet-dhol in contain,
 And wedding without music are but vain.

O Wise, on earth when a tiny bug should bite
 The nice cot receives hurls as a result;
 Alike the kinship with a knave to all
 Would return sure but misery and fall.

Ne'er at all a blemish will chance in days
 When acquaintance entice acute, O Wise,
 But should that friendship perchance turn cross-wise,
 Ev'ry act then would be a fault to face.

Howe'er well versed in the sexual science,
 Or be beautiful, or the greatest prince,
 Unless, O Wise, full money is well mete,
 No harlot sure will indeed easily meet,

When spike should outshoot up the saccharine grass
 At end, it spoils the taste: alike when son
 Unworthy is born, besides he debased
 Vitiates his father's name too soon.

The love of ladies, friendship with serpents,
 Other women's affection, the sweetness
 In Margosa, the grace of the princes—
 Are in sooth, O Wise, on earth quite faithless.

The ladies when meet they their earning lords,
 Trip by fantastic toe 'neath cloak end folds,
 Should they meet their lords else, O wise, they then
 View them as walking corpse and laugh within.

Why wail, O Wise, over the actions past,
 That a woman will love true never trust,
 With seraglio ladies no arcana deal—
 Are these of high value on earth to deal.

THE EDUCATIONAL REVIEW

As the sand mounds raised by ants for shelter
 Are usurped by serpents for their cellar,
 So all the assets, O Wise, of a fool
 Will only enrich the coffers royal.

When e'er Dame Fortune his coffers should fill,
 O wise, even the non-relations will
 Pride themselves as his relations too dear
 And flood for the front and fawn him for ever.

Know Wise, truth is jewel for all kings,
 Charity's the ornament for all hands,
 Just is treasure on earth for all human,
 Chastity is a gem for all women.

With patience for all delays and all strain
 Even a failure in life may success turn,
 Else, without patience to gain to act haste
 Will, O Wise, ne'er prosperous terminate.

Ire of the self is a foe of the self,
 Fortitude is a saviour to this self,
 Self-love is his kith, joy is his heaven,
 And grief is his hell—so speak the savant.

The penance virtue of his native ground,
 The erudition of his son, the grace
 Of his spouse, the drug of his garden grown,
 Who on earth, O Wise, to others self-praise!

Self-happiness to that of *Indra's* bliss⁹
 Self-poverty to the whole world's distress,
 Self-lov'd spouse to *Rambha* divine on mould¹⁰
 And his death to deluge: thus thinks the world.

O Wise, bide not at homes where men are not
 Akin, where between there no love is lost,
 Where people by nature remain civil,
 And where people mistrust and uncivil.

The mouth that tastes not the betel luscious,
 The sense contrite o'er friendship with mistrust,
 The green pond undecked with lotus crimson
 The night off the snow moon—are non-renown.

⁹ God of all happiness, chief of the Gods.

¹⁰ One of the beautiful damsels. A nymph produced at the churning of the Ocean by Gods and *Rakshasas*.

THOUGHTS FOR A WISE MAN

Venom engirds the snake at the top-end,
 And for a scorpion at the tail end,
 But for a malice the venom does spire
 Without ends the anatomy entire.

O Wise, heap treasure to a woman's height
 There no verity is from a harlot yet;
 Should she vow with her hand over her head,
 Reason'd high, she not to be confided.

O Wise, when deeply well conceived in mind,
 With the head unbrushed and the body stained
 And the dress defiled, even the huswife
 On earth, verily loaths her own lord of life.

Sweet honey stored in hives in glades by bees
 At last but reach the hands of third in ease;
 Thus the pelf uplaid unavailed in vain
 Part fills the king's purse, the rest in soil drain¹¹.

Pleased at the vizier's tales for the love he bore,
 The king wrongly chastise his subjects sore,
 Is like mowing down the great *Kalpa* tree¹²
 For the sake of base carbon heap in glee.

For reasons had to beg e'en God *Siva*
 Own as his mate lord of wealth, *Kuvera*;
 Hence, O Wise, what e'er the store for his near
 Truly will he have to share his fate mere.

Well doing for a wise on earth will trim
 Like luscious liquid of nuts of coco-palm,
 First with honour high and later on issue
 For e'r and e'er happiness and virtue.

Inform not your feet on paths unaided,
 Ne'er dine with ease in a home unfriended,
 Eye not to usurp others' riches,
 And never wound the hearts with sore speeches.

Trust not a toller or a gambler sure,
 Ne'er in a smith or a lewd by her lure,
 Ne'er in an actor or a merchant-man,
 And ne'er on earth a left-hand working-man¹³.

¹¹ In ancient days wealth was hidden under the earth. When the fact was known to members, the treasure would be found by someone.

¹² One of the five celestial trees of Hindu lore.

¹³ *Madigas*, a caste in South India known as left-hand caste as opposed to *Malas*, right-hand caste.

By words charming who drink not the milk sweet
 Will swallow e'en bane gall by fierce threat ;
 Hence deeds unwrought by pleasing words, O Wise,
 Are well wrought by fearful voice in a trice.

Quite unjust to govern the ruling head,
 A widow to be real household head,
 And a townclerk turn religious, O Wise,
 Will sure confront us to deathful dangers.

The discourse on poetry with its intents
 And aesthetics nine and delightful music
 To a fool howe'er well spoken enough
 Is like blowing conch unto the stone deaf.

Ne'er gibe in a gathering wise, O Wise,
 Nor the parents or superiors sneer,
 Ne'er laugh for morale with others' wife folk,
 Nor the crude Brahman nobles mock.

For all life it is water that's life's blood,
 And the mouth it is for all well couched speech,
 For all men 'tis woman who's precious gem.
 Dress 'tis for beauty real: thus the wise name.

Ne'er be hostile with any on earth,
 Ne'er cut up when poverty should engirth,
 Be not direct and straight in talk in a group
 And ne'er the heart to a woman stoop.

A servant maid while attending the house,
 And a sky-born *Rambha* while with her spouse,
 Counsellor at counsels, ma at table,
 Ought e'er the huswife remain affable.

Well spoken 'tis that a wise when visits
 The ruler, his married spouse, the Almighty,
 Or his master, or his young children will
 Go not, O Wise, with hands free but in full¹⁴.

One who remains brother to ladies on earth,
 Free from avarice for neighbour's wealth,
 A friend for all, prides not at others' praise
 Ires not when others ire: is sure the wise.

¹⁴ It is a Hindu faith not to go without anything in their hands as an offering.

Have no desire for others' wives in true,
 Ne'er covet others' wealth nor count their faults sure,
 With the unworthy friend not any more,
 And, O Wise, ne'er near the kith losing store.

Be he bachelor *Bhishma*¹⁵ should any man,
 Stay with a woman sure he'll feel word's chide ;
 Alike a wife be she chastity real,
 Should stay with a man would share the ill-will.

O Wise, away the spouse who loves a third,
 Forgive not the sons when they cross the word,
 Have no servant who reveres not his sire,
 Oft go not to a lady for desire.

Ne'er the like or dislike to 'thers unlock,
 Without affairs ne'er to other's homes flock,
 Taint not the lady whom one has obtained,
 Being aware ride not the nag untamed.

Ne'er on *Parva*¹⁶ to a lady go up,
 Trusting in the king's graces ne'er puff up,
 Ne'er by high love allow the spouse pride up,
 And dwell not at places where men gave up.

The luscious betel on cleaning the teeth,
 On the day of oil bath the honey'd sleep,
 The coition with lady after a dispute,
 O Wise, priceless are these to estimate.

Service unto the lord who feels no strain,
 Co-habit with lady knows no coition,
 Make friendship that may easily dislodge,
 Well thought, compare to a swim facing flood.

For all eyes water is like fresh milk
 When dissolv'd with the pure luscious milk,
 But in true spoils the taste of milk entire:
 Thus friendship with a knave do not desire.

Will scorpion feel the good but sting in ire
 Him that rescued its fall into a fire,
 Hence e'en for Omniscient 'tis wrong indeed
 To pity the wicked and do his need.

¹⁵ *Bhishma* of Mahabharat is known for his being a bachelor all through, self-denial, devotion and fidelity.

¹⁶ Certain days in Hindu Calendar year are known as *parva*, e.g., New Moon period.

To go for a work uncalled, the coition
 With one unloved for union, the service
 By king unseen, grace an occasion
 Uncalled and friendship with unloved : foreclose.

*Vysya*¹⁷ in truth is the life for city
 On earth, water is the life for paddy,
 For elephant its trunk is the very life,
 And for fortune woman is the real life¹⁸.

Fetch and offer e'en the wild tiger's milk,
 Hew the heart and place it without a shirk
 On palm and heap treasure to her head's height,
 There n'er is the sovran love from a strumpet.

On fortune smiling days if ordain'd best,
 All things will flood e'en to the mid-forests,
 On days else, O Wise, ev'ry thing will mock
 E'en should we ascend the *Meru* rock¹⁹.

The townckerk sure will live no peaceful life
 When an enemy neighbour stays near his house,
 A good penman to be the ruling head,
 And a peasant to be the tale bearing head.

Hear, O Wise, pledge no gold e'en in days hard,
 If wise, heel not away from the field-of-war,
 Have no purchase on credit from a shop,
 And friendship with idiots for e'er stop.

O Wise, why e'er a strong man brag his strength
 And challenge pungent with others and strife,
 When a sturdy snake falls a prey on earth
 To black tiny emmets and lose its life !

The ruling emperor's court to strive main
 Without an able vizier in-remain
 Is like mountainous elephant of wild life
 On earth without its trunk, the light of life.

¹⁷ One of the four castes. Merchant class.

¹⁸ Hindus believe that a woman is *Lakshmi*. Goddess of wealth.

¹⁹ *Meru* is the Mount Olympus of the Hindus. "A fabulous mountain with the naval or centre of the earth on which is situated *Swarga*, the heaven of *Indra*."

The kingdom of a king with a premier
 With all diplomacy will stand austere,
 But the kingdom without the premier will,
 Like a machine without springs, sure stand still.

O Wise, for all speech the life is the truth,
 Strong army is the life for forts on earth,
 For woman self-respect is her life real,
 And for writ signature is the life seal.

A man of high self-respect losing heart
 To approach a base mind to serve at last,
 Is like an elephant huge, on earth, O Wise,
 Crouching its body in a shallow mere.

By serving the king who speaks no good words
 Shall a man have happy life and good ends;
 Alike persons game in a room without light
 To clap at one another's hands aright.

In sooth false not the word once firm spoken,
 Ne'er at heart chide the chief supporting kin,
 On earth serve not the king who e'er angers,
 Step not the land where no justice shelters.

Well thought, a moralist is stronger sure
 When well compared with sinew strong in pure,
 For on earth a mountain like elephant
 Is mounted by a small man in an instant.

O Wise, till not the land facing the flood,
 E'en if famine near no relation blood,
 Unveil not the secrets to others' hearts,
 And no commandant task deal to faint hearts.

O Wise, land where no paddy does yield,
 Land without a lord, tract without an aid,
 Devoid of its master home on earth,—
 Well judged may be termed cemetery in sooth.

One must listen to that whoso can tell,
 Expedite not anon, but must think well,
 For he is a moralist real on soil,
 Who judges the right from the wrong by skill.

The mouth that tastes not the betel luscious
 The mouth that tastes not the sap delicious
 From lady's lips, the mouth that cannot tune,
 O Wise, are pits where house ashes are thrown.

No grass grows on soil frequent by men,
 But should the grass grow 'twill not long remain ;
 Alike there no love is from a lewd sure,
 But should love spring forth 'twill not long endure.

The unfruitful learning and the music
 That agrees not with *Tala*²⁰ and *Raga*²¹,
 The lecture devoid of fun and the speech
 Unacclaimed by wise : are all insipid.

All mocking talks will in enmity end,
 The most happiness do for most wretched tend,
 The excess growth will but bring a downfall,
 The prices run cheap to a rise forestall.

If a king to have for his counsellors,
 The wretched who feel not the well-doings,
 The outcaste or the smith or the barber,
 And rule, the kingdom will to dust repair.

Ne'er strife with a woman on universe,
 Friend not with boys young and too oft converse,
 Leave not the virtuous and noble trait,
 Ne'er deride the ruling sovran of state.

Fortune willing will smile stores quite unseen
 As the sweet water in a cocoanut ;
 Else, O Wise, will frown and stores off unknown
 As a wood-apple gulped by elephant uncut.²²

At heart when the affection is for one
 Senseless incontinent will mad pursue ;
 Will the parrot lear if in its cage own
 A cat, O Wise, is let free as mates too !

²⁰ *Tala*, time duration

²¹ *Raga*, tune or sound.

²² It is believed that the elephant has the ability to gulp the wood-apple and then throw it out without a break having absorbed the contents of the fruit.

When soon a son is born, the parent will
 Ne'er feel the mere son's birth as a great joy,
 But he does feel the son's joy in real,
 O Wise, when the world eulogise the boy.

The sincere vows of prostitutes on earth,
 Friendship of *Velamas*²³ and goldsmiths in truth,
 And the wealth and happiness in dreams beheld,
 In sooth, O Wise, are not to be upheld.

O Wise, ne'er wrong a wife shielded by chaste
 By blames unfair and only strive in waste,
 For the chaste when opes her eyes and tears fall,
 The house of fortune fame will meet downfall²⁴.

Be a man bastard born, or be a man remain
 E'en to an atom unto 'thers on earth a vain,
 Or be a man the son of a lewd, O Wise Man,
 Is not the rich alone the sovran sure in main !

THE NINETEENTH UNITED PROVINCES SECONDARY EDUCATIONAL CONFERENCE, DEHRA DUN

PRESIDENTIAL ADDRESS

BY PRINCIPAL P. SESHADRI, M.A., Ajmer

I
 IT is now seventeen years since I was first invited by the United Provinces' Secondary Education Association to preside over their annual conference, which was held that year in the ancient city of Benares. The Association had just started its existence and it was one of the earliest sessions, perhaps the third, held under its auspices. The profession could not be said to have been particularly well organised at the time; the authorities of the Association had to do much to stimulate interest in the teachers themselves, but there was the inspiration and the hope that we were laying the foundations of a movement which would grow into power some day. In responding to a second request now, to preside over the nineteenth session of the same conference, I am conscious, I am coming to an organisation which has survived its early trials and difficulties, passed through its adolescence, become almost an adult and has become a great friend and champion of all secondary school teachers in the United Provinces of Agra and Oudh.

²³ A caste in South India.

²⁴ Woman is valuable for Hindus and woman's tear therefore is considered ill.

I may confess, at the outset, that I have not the feeling I am an outsider here, in any sense, only invited to act as President for three days, but I feel I am one of yourselves and have always formed an integral part of your Association and your annual conferences. Technically, I may not belong to the United Provinces, as I was born in South India and at least, at present, my work is also in another part of the country. But I have spent as many as sixteen years of my educational service in these provinces, which have been a second home to me, and it is not improbable, I may come back to them again at the end of my active life. In any case, I am happy I am coming to a conference where I am being greeted by many old familiar faces, students, friends, old colleagues and co-workers in the cause of our profession.

It has also always been my endeavour to identify myself with all the ranks of the teaching profession in this country and work for the advancement of the profession all round, though my daily duties are in the sphere of University education. The various stages of education are really so intertwined that we cannot afford to think we belong to different categories. After all, we are members of one great brotherhood, striving to spread knowledge and illumination among different groups of the young in one country. While the conference is mainly concerned with problems of Secondary education, it is impossible to forget the fundamental oneness of all educational effort and the spiritual kinship of all members of the teaching profession.

Much has happened during this interval of seventeen years. I have had splendid opportunities of visiting many foreign coun-

tries, in the East as well as in the West, and observing educational conditions, not only in relation to the taught, but also with reference to our own profession. I have come back deeply impressed with the great need for organising ourselves into powerful associations which will make themselves heard in the councils of the land. It will be long before we can hope to become as compelling in our influence as the National Union of Teachers in England or the National Education Association in the United States, but in organising conferences of this kind, I have no doubt, we are adding brick by brick to the construction of a similar edifice in this country, at least in the fullness of time.

II

Some idea of the vast influence for good which can be exercised by the Secondary school system of these Provinces can be realised from the circumstance, that you represent nearly two hundred Secondary schools, containing about a hundred thousand pupils, for whose future you are mainly responsible. Such an extensive section of educational work cannot be ignored with impunity and it is obvious that everything possible should be done to improve and advance its conditions.

In spite of all the educational discussions we have had in various parts of this country, it is doubtful if the aims of a sound system of Secondary education are very clear to the minds of even those who are directly concerned with it. There have been two mistakes in handling the subject. The Secondary stage has mostly been looked upon only as a corridor leading to the university, though only a small percentage of the pupils find entry into colleges. The

syllabuses, examinations, and the entire organisation of the Secondary school system have been subordinated to the needs of University education, though the latter touches only the fringe of the community and the large bulk of those who receive the benefits of education or are found in services can be expected to possess only a High School Certificate. High School or Secondary School Leaving Certificate Boards have now been functioning for some years at least in parts of India, including the United Provinces, but it cannot be said that this has necessarily implied either freedom from the tyranny of the University, or the completeness necessary for a self-contained stage of education.

Errors of another kind there have been, consisting of a mere intensification and prolongation of the subject and the studies of the Primary courses. There has been a wearisome grind of the same old subjects' only with some more detail filled in, and not much of an uplifted vision, for either preparing the pupil for complete living, or for the duties and responsibilities of citizenship, to quote some of the well-known definitions of the aims of education.

Bodies like your Association will be doing a very useful piece of service, by studying the problems of Secondary education, with special reference to Indian conditions and laying down for the benefit of the public, a clear statement of aim and method. One of the most comprehensive and useful discussions of Secondary education we have had in recent years, is the report of the Spens Committee on *Secondary Education with Special Reference to Grammar Schools and Technical High Schools*, published last year, under the auspices of the Board of Education in England. "In the interests of the large

number of pupils who will leave school at or shortly after the age of sixteen," observes the report, "we regard it, as one among a number of essential conditions, that the courses of instruction up to that age should be in some sense complete in themselves. Nor do we consider that this need or should prejudice the interests of those pupils who continue an academic education at school or elsewhere and go to a University."

The course of instruction for pupils between the ages of eleven and sixteen should, according to the report, fulfil the following conditions:—

(i) It should cater for the special needs of adolescence; that is to say, it should be related to the natural activities of body and mind during that period, and both illuminate and guide the pupil's experience.

(ii) It should develop and harmonise the powers of body, will, intellect, emotion and conscience.

(iii) It should not consist, to any considerable extent in courses which are only of value if the subjects are carried further.

(iv) It should be reasonably 'all-round' while giving full opportunity for the pursuit of individual interests.

(v) It should stimulate or create the desire to continue some form of study, whether or not pupils leave school at sixteen.

A Secondary school, maintains the report, "must give the knowledge and training, required for the routine duties of adult life and also foster the creative impulses needed, not merely for new enterprises and adventures, but even for the daily adaptation of routine and technique to changing situations."

Among the other valuable ideas in the report is the need for teaching the twin subjects of History and Geography as recording and interpreting the human movement, History explaining the genesis of the present from the past and Geography teaching the dependence of man's activities upon the natural environment and their inner dependence all over the globe. There is also a powerful plea for bringing the ordinary Secondary school into closer contact, than at present, with the practical affairs of life for making the curriculum more a matter of activity and experience, than of knowledge to be acquired and facts to be stored; for inculcating a habit of mind which will ensure that while there is need for enthusiasm in causes which are felt to be vital, there is also need for study and judgment; for careful training in comprehension of what is read and in the expression of ideas both orally and in writing, and for the proper education for citizenship, particularly in view of recent developments in world-politics. "Democracy is now challenged," observes the report, "and the duty of citizenship in a democracy renders it essential that all should be taught to understand and to think to the best of their ability."

It is matter for regret that we should not have as yet any such authoritative exposition of the principles of Secondary education in relation to this country. I commend the report to your serious attention and I hope you will be able to give similar guidance to India, in the light of your special knowledge and experience.

III

Regarding the current developments of Secondary education in the United Provinces, I have come here, I may confess at

the outset, more to learn about them than to expound or interpret them. It is difficult to understand, to what extent, you have benefited by the recent attempts at educational reform in your Provinces. Have the Basic schools been a success and have the teachers trained for them shown considerable superiority to the existing class, at least in relating education nearer to practical life? Have they succeeded in imparting education through creative activity correlating hand-work with culture? Has their work resulted in any solution of the financing of Indian education? Has there been, in essence, any real advancement of Secondary education, either in quality or in quantity and has a new order dawned upon your Provinces in matters educational? It is for you to answer these questions for the edification of the general public.

I may, however, draw attention to the fact that considerable headway has still to be made in these provinces in Secondary and other branches of education, even to compare favourably with the more advanced provinces in India, not to speak of some of the progressive countries of the West. According to the last Quinquennial Report on Education for 1932-37, issued by the Government of India this year, your Provinces had only 91,980 pupils in Secondary schools, while the Madras Presidency with almost an equal population, had as many as 161,600. The disparity is greater when we come to girls' education. The Madras Presidency had seventy High Schools for girls while you had only thirty-four and the number of girls in the former was nearly two and a half times larger. The actual figures for the classes which constitute the 'high stage' are also discouraging. Madras

had 64,795 pupils in the 'high stage,' while the United Provinces had only 23,528.

No system of Secondary education can be a success, unless it is broad based on a flourishing ground work of vitalising Primary education, from which it can draw sustenance. Here, there is even more reason for discouragement, in spite of the undoubted progress which has been made in recent decades. The number of pupils in Primary schools in the Southern presidency was 2,875,117, while the number was less than half in the United Provinces, being only 1,280,883. It is essential in judging the prospects of educational advancement in any area to find out the percentage of pupils under instruction, fifteen per cent. of the total population being the general standard for children of school-going age. While Madras has more than 7.1 per cent. of the population at school, U. P. had only 3.4. The situation is much worse regarding the education of girls. Only one girl out of every fifteen who should be at school was actually receiving instruction in the United Provinces, while the proportion was four times higher in Madras. There has, however, been such rapid progress in the United Provinces in recent years, that at least the report for the next quinquennium ending with 1942, should show more heartening figures.

A candidate whose paper I was valuing at one of our University examinations, the other day, declared that the United Provinces were the most advanced in India in matters educational as they had five Universities, while most other provinces had only one or at best two or three! He did not see the logical fallacy in his argument, but these statisticians should make all educationists in these Provinces think furiously.

In wealth of natural resources, richness of historical tradition and the intelligence of her people, the United Provinces are not behind any other province in India and there is no reason why this comparative backwardness in education should not be remedied by the combined efforts of the people and the Government.

IV

I have always held that Associations like yours should have a twofold aim to work for the advancement of your profession and also to set up high standards of efficiency and conduct for your members. Never having been a believer in poverty, I have no hesitation in advocating your material advancement and the acquisition of reasonable wages, which will enable you to lead a decent and comfortable life and discharge your onerous duties without serious handicaps. I hope you will never get mesmerised by people who ask you to wed yourselves to poverty, having themselves made piles of money in their own professions and even leading lives of luxury. They advocate sacrifice for others, taking care to put their own children into the most lucrative professions possible. Poverty is a curse, even if it is not the result of the sins of a past life, as is the popular belief among Hindus, and you must not be misled into glorying in it, in the name of the nobility of your profession.

You have not the monopoly of nobility of service, let me remind you: in fact, all service is noble, as Carlyle has repeatedly told us. The Judge who holds the scales of justice even among people is not less noble. The Doctor, who safeguards the life God has given us, to the best of his ability and skill, is in no way doing less commendable

work. The Engineer who constructs works of beneficent activity, fertilising the parched-up land and opening the means of sustenance to thousands of hungry people is also doing work as sacred as yours. But nobody has suggested the ideal of poverty to the members of these professions. The advice is reserved only to the unfortunate teachers in our schools, perhaps because they are a gentle and docile class of people who can be exploited by members of the more aggressive professions who often manage to become, somehow or other, members of the Boards of control of our educational institutions.

It is good to recognise that in the modern world, where material circumstances play such an important and compelling part, poor wages can only be a serious handicap, particularly in view of the manifold and responsible duties expected of a teacher. You cannot have the peace of mind necessary for concentrated intellectual work if you are continually worried with efforts for balancing your monthly budget. If you have to run after tuitions of various kinds and wait upon your pupils and their parents in their homes, you cannot have any time for improving the treasures of your own mind. If you cannot afford to give your own children the education which you are offering to everybody's child, it is a tragedy of the most profound type. If by your dress and general equipment you are to be marked down easily, even by a casual observer, as 'only the schoolmaster,' your position in society cannot be comfortable at all. More than all, if you are perpetually conscious of your less favourable position than that of the members of other professions around you, you are bound to suffer from an inferiority-complex and even lose

self-respect, unless you are a person of very high character and wisdom.

Whatever conditions were in ancient India, it is impossible to reproduce them in the twentieth century, at least in the material sphere. "No river runs back to its source," wisely said William Morris. "The philosophy of the loin-cloth," as one of my distinguished friends has called it, can no longer apply to present conditions, whatever sentimental attraction the ideal may have to some minds. You cannot expect the teacher to-day to sit half-naked, under a tree on the banks of the Ganges, with a few boys round him who will collect fuel for him everyday, beg alms for him from the neighbouring village and do all the personal service necessary for him, avoiding expenditure on the various amenities of life and therefore content with a nominal salary. You should not be apologetic at all in asking for better wages and better conditions of service, because you are doing it not merely for yourselves, but also for the educational advancement of your country which is not possible without such improvement. I wish our public men also realise the truth underlying what the late Rt. Hon. Mr. Fisher meant, when he said that "a discontented teacher is a danger to the state!"

Things were bad enough at one time even in England, as far as the teaching profession was concerned, but conditions have improved enormously since the last War. It was realised that real educational efficiency was possible, only if the teaching profession was improved and placed in happier and more comfortable circumstances. The Rt. Hon. Mr. Fisher, as President of the Board of Education, was never tired of impressing on his countrymen, that expenditure on education was one of the best forms of national investment. One of the first things

he did was to improve the salaries of teachers, introducing the well-known Burnham scales, the observance of which is compulsory for any school, if it is to receive official aid or even recognition. I observed the beneficent effects of this reform, during my visit to England in 1931, when I went round various schools in London, under the auspices of the Board of Education. It was difficult to discover the traditional picture of the poor, awkward ill-dressed teacher, man or woman. There were school mistresses who did not seem very different from the ladies one met with in an ordinary drawing room and there was nothing on the part of the average school master's dress or appearance which need have caused him any embarrassment. It was also pleasant to notice that several of them had come to school in their own cars.

Spending a delightful afternoon with the late Mr. Fisher in his rooms at New College, Oxford, over which he presided with such distinction after he retired from the Presidency of the Board of Education, I had the pleasure of congratulating him personally on what he had done to improve the condition of teachers in England. His face lit up immediately with a happy smile and he said it was a great satisfaction to him to see, when he had occasion to visit the houses of teachers, that they were now living in decent conditions. He was glad to find comfortable furniture, a well-stocked book-shelf in a corner, a gramophone or a radio-set sometimes even a small two-seater in the adjoining garage, papers and magazines and well-fed children brought up in good surroundings as gentlemen's children are expected to be. May this not be a suitable ideal for an Indian minister, unless he intends that appeals to a life of poverty

should be his only contribution to the advancement of education?

Visiting America soon after, in the same year, I noticed how American teachers were placed, even more favourably, though the general economic conditions are so advanced there that no comparison is possible with India. On the occasion of the World Conference of Education in Denver, on the Rockies, teachers had assembled in thousands from more than fifty countries in the world, though I was the only delegate from India. We were all taken out on various excursions all over Colorado, motoring hundreds of miles over the Rockies, after seeing the various sights of the city itself. I noticed that most of our hosts were teachers in the various schools of Denver and they had all brought their own cars to show us round. Even making allowance for the fact that cars are very much more common in America than in any other country of the world, it indicated a highly satisfactory state of affairs for the teaching profession.

We can afford to be even more emphatic regarding suitable conditions of work and security of tenure. Written contracts, arbitration boards in cases of dispute with your managers, a good Provident Fund and other amenities are your inalienable rights, as necessary in the interests of sound education itself, as they are for your own comfort and happiness. As the result of continual agitation, and consultation with the educational department, the teachers of Bombay have got some rules regarding conditions of service agreed upon, the enforcement of which should be a marked improvement. The teachers of the United Provinces can do no better than press for the adoption of similar rules here.

There are people who cast envious eyes on the vacations of the schoolmaster, under the impressions that they are a luxury and they are not necessary for recouping mind and body. While the holidays are probably enough for normal purposes, it is matter for regret that we have no provision in India for a Sabbatical year of leave as in America. The daily grind and monotonous work of the teaching profession has the unfortunate influence of making the teacher lose his freshness of mind. It is an excellent idea, therefore, of compelling the teacher to go on an year's leave every seven years, on full pay, so that he can come back to his work with a mind refreshed by travel or study. Here is another legitimate demand to be put forward before the authorities concerned.

If I have supported your claims for better emoluments and better conditions of service with such keenness, I must be equally emphatic in insisting upon high standards of efficiency and character. Times without number, have I noticed teachers very inefficiently equipped for their task and displaying a reprehensible want of intellectual vigilance or even an ordinary sense of duty. There are inefficient persons in all professions, but there are some in which the consequences are serious and should therefore find no quarter at all. The inefficient and neglectful lawyer, for instance, to whom the unfortunate client has to entrust life or property is undoubtedly a curse to society. Even a greater curse to society is the incompetent doctor to whom we entrust our bodies. But the greatest curse of all is the inefficient and characterless teacher who ruins the minds and souls of the unfortunate pupils entrusted to his charge!

V

Not merely by virtue of being the President of this conference, but also as one who has already put in more than three decades of educational work, starting at the early age of nineteen, I may perhaps take the liberty of offering a few words of advice and exhortation to the teachers assembled here, regarding the methods for realising the high ideal expected of every member of our profession. When I was in Japan in the summer of 1937, representing the Government of India and the All-India Teachers' Federation at the World Conference of Education held in Tokyo, I was approached by the Broadcasting authorities to give a special talk to the teachers of Japan in the hour set apart for the purpose in the weekly programme. The Director wanted, not a review of educational conditions in India or elsewhere, but "something of yourself," as he tried to explain. In response to his request, I spoke on the basic principles which should guide a teacher and enunciated the *Five Lamps of Education*, borrowing the title from Ruskin's famous book on the *Seven Lamps of Architecture*. I can perhaps do no better than repeat the substance of my talk here, though I am also intending to develop it into a volume at an early date.

First and foremost, there is the *Lamp of Knowledge*. There is nothing more important to the teacher than the guidance of knowledge, and one who is not anxious to acquire it every moment of his life, may as well bid farewell to all hopes of achieving distinction. It is a great mistake to imagine that the preliminary intellectual qualifications with which a teacher starts are enough for his work. Often they are not, and imply only a beginning on the long and toilsome journey

one has to undertake in the profession. Even the most brilliant of young men can acquire only an infinitesimal part of the total amount of knowledge in any particular branch of study during their stay at school or college, and it is only by persistent application in later years that they can cover any substantial part of the ground. Then what about the ravages of forgetfulness? What also about the increase in knowledge, with which one can hardly keep pace, except with the utmost vigilance and industry?

The ideal of the amount of knowledge to be acquired should be far above the everyday needs of teaching. It is a fatal mistake to aim only at knowing just what is enough to communicate to the class. A background of higher knowledge gives one a sense of confidence in his work of teaching and enables him to perceive the full bearing of the subject in all its details. The accuracy and precision necessary in all good teaching can come only to the teacher with deep and profound knowledge. The Lamp of Knowledge is of course intended to include knowledge of methods of teaching, quite as much as knowledge of the subject itself, the two qualities together, constituting the essentials of teaching on the purely intellectual side. Educational methods have advanced so much in recent decades, that it would be almost criminal on the part of any teacher, not to place the latest knowledge and experience of methods at the disposal of his class.

The *Lamp of Knowledge* cannot light up the entire way of a teacher's path, unless it is also accompanied by what may be called the *Lamp of Love*. The Teacher deals in his classroom, let him remember, not with

mechanical units to be marshalled and manipulated, in accordance with certain rigid and immutable principles, but with highly delicate human organisms, each with a peculiarity of its own, requiring the most careful and affectionate guidance. He can be compared to a highly gifted gardener whose persistent endeavours and vigilant watching enable individual flowers to blossom into all their beauty of shape and sweetness of perfume. Educational systems make the unfortunate mistake of trying to reduce all to one mechanical pattern; but the successful teacher is he, who continually battles against the danger and is able to treat the children as quite independent personalities, each different from another.

So early as in the sixteenth century, Roger Ascham said in his *Schoolmaster*, that knowledge cannot be communicated in an atmosphere of fear, because when fear is roused, all other faculties are in suspense. It is surprising that even today there are teachers, who do not realise the value of this fundamental principle in education. Apart from the fact that affection and sympathy are expected of any decent teacher towards the young pupils entrusted to his charge, they are necessary even for the success of the teacher's work in the classroom and they may be practised at least for this reason, if not from any altruistic motives.

Allied to this is the *Lamp of Joy* without which all educational work must be depressing to the taught as well as to the teacher. The teacher must be a centre of joy in the class-room, radiating cheerfulness to every child. "He has always a smile on his face" is one of the highest compliments which

could be paid to any teacher. The teacher's profession is handicapped by a number of disadvantages, in emoluments and conditions of service, but cheerfulness is his duty in any adverse circumstances. Whatever his troubles in balancing his household budget and however wearing to the flesh and to the mind his mechanical daily grind of routine, he ought to be a picture of joy, inspiring the whole class to a happy frame of mind as he daily swims each morning into the orbit of their vision.

All the moral qualities necessary to make a teacher a model to his pupils may be said to constitute the *Lamp of Truth*. Whether direct, moral and religious instruction fulfils any useful purpose or not, there is nothing which exercises a more profound influence on a pupil's character than the teacher's own personal example. A high sense of duty; scrupulous adherence to truth; self-respect and dignity; these are qualities, the possession of which by a teacher will be easily noted by his class with highly satisfactory results though they may not be immediate.

It has always seemed to me—though I have not seen the point elaborated anywhere—that one of the serious difficulties of the teacher's profession is the high standard of conduct expected to be lived by its members. The teacher cannot afford any lapse in behaviour or conduct, without losing his capacity for success in his work, however eminent his intellectual qualifications. He cannot be caught using bad language, or losing his temper, or even forgetting the laws of decorum, without serious consequences. He is always in the limelight, like well-known public men, being watched every minute by the argus-eyes of the young people who surrounded him. The need for high principles is all the greater in his case, as his example is infectious, and each act of his is responsible for the

conduct of many young men in his immediate neighbourhood.

There is need, again, for the *Lamp of Sacrifice*. Even if all the improvements demanded by the teaching profession are conceded, there would still be need for sacrifice on the part of its members. Its emoluments can never hope to rival those of professions like Law and Medicine but it is to sacrifice of a nobler kind that I wish to refer to here. There is sacrifice in the mere choice of the profession. The teacher has to keep always the company of those who are intellectually at a lower level, from whom he can hardly expect any mental or cultural development. A good teacher wears his life out in the service of those who are entrusted to his charge and in a sense may be said to build up other lives, at the expense of his own. What greater sacrifice can be expected of any profession? Combined with sacrifice, there is idealism which ought to be the dominating principle of a teacher's life, more than that of any other. In no other profession is there such need for loftiness of aim and high ideals. It is idealism which makes the teacher's work yield its highest fruit and is responsible for lifting educational endeavour to real success.

VI

There are now dangers of various kinds looming on the horizon of the educational world against which I must sound a grave warning. There is growing an unfortunate tendency in this country for education to get mixed up with political parties. It is proper that education should serve the larger ends of national life, but it is a potential source of great danger to the state, if any political party gets hold of the machine and keeps manipulating it for the propagation of its own doctrines. Let it be realised that this has brought Germany and Italy under the heel of Dictators and it will be generations for the people there to think for themselves instead of being led by the nose by some powerful Dictator or other.

Apart from the risk of constant changes of policy inevitable where politics are concerned, it will not be the interests of the children and the building up of their personality which will become the primary concern of such a system, but the propping up of some fashionable political stunt or other. The question will be, not whether anything is sound educationally, but whether the younger generation can be regimented by it into a particular party. This has also the danger of narrowing the moral and emotional outlook of children. Instead of being brought up in an atmosphere of international good-will and world-wide human sympathy, they will be taught, unconsciously perhaps to hate people with different political opinions even in their own country. This is not the way of laying the foundations of national unity, nor working towards the great ideal of universal brotherhood.

This brings one to another menace which has reared its ugly head in some parts of India in recent years—the danger of communalism spreading to our temples of learning. It is bad enough that the elder generation of our politicians should often exhibit an intensely narrow and communal outlook, but all hopes of a great India at least in the future will have gone, if this evil is not nipped in the bud. Time was within my own recollection, when the boy at school or college never bothered whether the class-mate sitting next to him on the bench belonged to his faith or not. Much less did the teacher dream of making any distinction between those who belonged to his own community and others, but circumstances seem to be drifting in the direction. The existence of communal differences outside the school may be an explanation, but many a teacher who is true to his ideals should refuse, resolutely, to be drawn into this pernicious maelstrom. Inside the school, whatever

may happen in the arena of politics, there is no Hindu or Mohammedan or Christian or Parsi. The teacher again, should belong in spirit to the Community or race of each of his students and be their universal friend, philosopher and guide. One who gives room to the conviction that he is communal in his outlook, either in his dealings with his students or even with his colleagues, does not deserve to be kept in an educational institution, whatever his academic qualifications or his efficiency as a teacher.

An allied manifestation of this evil is a desire perceived in some quarters to model the educational system itself on communal lines, under the mistaken conviction that the educational needs of one community must somehow differ from those of another. There may be need for special religious training or discipline peculiar to each community, but it is best to keep the public educational system above such considerations, paying attention to them outside the school. It is absurd to imagine that intellectual illumination and the training for complete living require communal differentiation. Two and two must make four for the Mohammedan as well as the Hindu; the Law of Gravity does not vary with the communal localities in a city and the great facts of history will not allow themselves to be manipulated to suit communal pride or sensitiveness.

But the greatest menace of all and one which has a more direct bearing on the every day work of schools is the weakening of discipline, without which it is impossible either to attempt to build up character or even to impart useful education. The British have given ample evidence, in their national history, of what discipline can do for the greatness of a people. We have before our own eyes enough proof to-day how the spirit is sustaining her mighty struggle against Germany. "Do you wish

to command?—then learn to obey," said Burke and there can be no greater lesson to place before the young. It is alarming to see the numerous strikes of students there have been, in the United Provinces more than in other parts of India, and the difficulties which heads of institutions have had in dealing with them. Students have claimed the right of dictating whether and when terminal examinations should be held. Headmasters have been told that Physical education cannot be made compulsory without their previous approval and consent. It is apparently for them to decide whether a particular teacher should be retained in service or not. They must be allowed to absent themselves from the school with impunity, whenever in their opinion circumstances warrant such a demonstration and no authority of any kind should be imposed upon them!

No effort should be spared to put an end to this state of affairs, if our dreams of national glory should receive any fulfilment. Otherwise, we shall only be digging at the very foundations of our life. It is unfortunate that there should be great laxity of discipline in the average Indian home and it reacts on the atmosphere of the school. Parental enlightenment should therefore be taken on hand as part of school-work. Intimacy of touch with pupils and the winning of their sympathy and affection is obviously another remedy. Vigilant watchfulness over the pupils entrusted to one's care and prompt removal of any legitimate grievances should always be the aim of a Headmaster. After all, mistakes may not be entirely on one side. The organisation of rich scholastic life, giving ample scope for the expression of youthful interest and energy, is also another method of dealing with the trouble. Above all, there is the need for some strength and courage to deal with such situations—the way to success has never been through softness.

Speaking on this occasion, it is impossible not to refer to the greatest danger of all,

the danger which is now threatening the cause of freedom and civilisation in the shape of Hitler's war. It should be one of the imperative duties of the teacher, to explain to his pupils the great issues at stake and the need for exerting all effort to put down, the most serious menace to their independent existence which nations have yet faced in the history of the world. It should be obvious to all right-thinking men that the war is being fought, not merely for the safety and prosperity of Britain, but also for the future happiness and political advancement of India. As has been declared by Aurobindo Ghose, who cannot be suspected of any want of patriotism for India or over-zealous loyalty to the British, "Not only is this battle waged in just self-defence and in defence of the nations threatened with the world domination of Germany and the Nazi system of life, but it is a defence of civilisation and its highest social, cultural and spiritual values and of the whole future of humanity. To this cause our support and sympathy will be unswerving whatever may happen; we look forward to the victory of Britain, and as the eventual result, an era of peace and union among the nations and a better and more secure world order."

In conclusion, it only remains for me to wish you and the institutions to which you belong all success and prosperity. It is hoped you will go back from the Conference with a new vigour, born of renewed association with brother teachers, and you will be able to sustain your efforts for the advancement of the profession throughout the year. It is only with persistence and organised work that you will be able to achieve the aims of your association and improve your status in the community. If you find that you are not able to assert your leadership even in educational matters; that you are in a state of helplessness, unable to combat unhealthy restrictions which may be imposed on you and that your conditions of work and service are far from satisfactory, the responsibility will be largely yours. In the well-worn words of Shakespeare:

"The fault, dear Brutus is not in our stars
But in ourselves, that we are underlings."

NEWS AND NOTES

SHELLAC MOULDING GREAT IMPORTANCE TO ELECTRICAL INDUSTRY RESEARCH AT INDIAN LAC INSTITUTE

An important section of the work done at the Indian Lac Research Institute, Namkum, has been efforts to make the manufacture of shellac moulding powders as much independent of imported materials as possible, states the annual report of the Institute for the year 1939-40.

Of the several heads of research under which progress has been recorded plastic moulding takes the place of foremost importance.

The Institute has developed or adapted methods for the manufacture of urea and formalin in quantities sufficient for moderate-sized factories, and work has been done with a new chemical which has the property of further improving the quality of shellac-moulded articles.

This substance, melamine, is easily prepared from calcium cyanamide which, though not manufactured in India, is available in large quantities, being one of the basic fertilisers. The use of much smaller quantities of this melamine than urea is an economic advantage as well, and it is expected that it will play an important part in shellac moulding in future.

It is with the same idea of developing a moulding industry entirely based on indigenous raw materials that two other powders have been formulated; a shellac casein and a shellac-coal-tar powder.

As a result of researches carried out at the Institute it is stated that shellac injection

moulding, as distinct from compression moulding, promises a great future in the production of electro-technical goods. Already the Institute has been able to produce by this method electrical switches which can be sold much more cheaply than those made by compression moulding due to the higher rate of production and the simplicity of manufacture of the powder.

Varnishes and Lacquers

Researches have also been carried out at the Institute on the application of new shellac varnishes and lacquers. In a country which does not yet possess a solvent-manufacturing industry, the practically exclusive use of alcohol for the formulation of lacquers must undoubtedly have great economic significance. By the use of ten per cent. nitro-cellulose and 90 per cent. shellac compounded in spirit, and a small proportion of esters, quick-drying lacquers have been prepared which show good resistance to weather and mechanical wear. These have also been successfully used for preparing film surfaces over which sound grooves could be recorded and reproduced by playing on the gramophone.

Refuse lac has been processed to yield a baking varnish suitable for use as a stoving enamel. Lac oil varnishes, quick-drying and durable, have also been prepared.

Biological Control

In the field of etomological research the most important development during the year has been the initiation of a large-scale field experiment to test the practicability of biological control, which may be defined as the

controlling of enemies of lac by their own insect enemies. Such control has in previous years been shown to be practicable under laboratory conditions.

The field experiment is at present only in its infancy, but results so far obtained show considerable promise.

The insitute plantation has been fully utilised during the year and results obtained as regards the mortality and fertility of various strains of the lac insect have been recorded. Work has also been concentrated on two egg parasites of the major lac predators. These insects are being bred in the laboratory and indications, so far are that they are of great potential importance, in the control of these enemies of lac.

THE LATE MR. G. DAMODARA MUDALIAR

At an extraordinary and emergent meeting of the Kurnool District Teachers' Guild's managing council held on the 7th in the Coles Memorial High School, Kurnool, the Rev. B. J. Rockwood, M.A., B.D., presiding, the following resolution was adopted :—

"The Guild places on record its sense of profound sorrow and great loss caused by the untimely demise of Sri G. Damodara Mudaliar District Educational Officer, Kurnool, on leave, and its sense of high appreciation of his unfailing courtesy and consideration for teachers of this district, to whom he endeared himself during his five years of service here as educational officer. The Guild deeply mourns his death and offers its heartfelt condolences to the bereaved family."

Moving the resolution, Sri K. N. Pasupathi, the Secretary, said that the late Sri G. D. Mudaliar was a rare type of Educational Officer. He had conceived his job in terms of friendly guidance and service to the teaching profession and in terms of organisation and advice to schools, and not in terms of policing and domineering over them. He was hardly, if ever, a carping critic; he came in close contact with the teachers during his inspection visits and was appreciative of their actual class-room difficulties. He had a fair knowledge of curricula and syllabuses of school subjects. He evinced a sympathetic interest in the activities of the district teacher's guild and always extended a helping hand, whenever he was approached. He was exceptionally popular in the whole district. It was a great pity that, after 29 years of service in the department Mr. Mudaliar should die in harness in his fifty-third year. His death was a great loss to the Kurnool Guild.

Messrs K. Neelakanta Rao and N. Sundaresa Iyer seconded and supported the resolution. The President associated himself with the sentiments of the mover.

THE 16th ALL INDIA EDUCATIONAL CONFERENCE, UDAIPUR

Dr. Sir Shah Muhammad Sulaiman, M.A., Bar-at-law, LL.D., Kt., Vice-Chancellor of the Muslim University, Aligarh, and Judge, Federal Court, Delhi, will preside over the 16th All India Educational Conference to be held at Udaipur, from December 27 to 30, 1940.

REVIEWS AND NOTICES

UPPER SCHOOL ALGEBRA—ABRIDGED AND REVISED EDITION OF HALL AND KNIGHT'S "HIGHER ALGEBRA," BY L. CROSSLAND. MACMILLAN AND CO., LIMITED, LONDON. WITH OR WITHOUT ANSWERS: 6s.

Hall and Knight's *Higher Algebra* was written several years ago, but yet stands foremost among the standard text-books of this day notwithstanding the keen competition of the rapidly changing times. As such the present book, which is but a revised and abridged edition of the original, needs no introduction to the public. Several chapters of the original book have been omitted and the exercises have been carefully revised so as to make the present edition suitable for the Higher School Certificate Examinations.

The book is mainly intended for 'non-specialists', who take mathematics as one of a group of three or four subjects. The various principles and processes have been very clearly explained and illustrated by easy examples. The introduction to "Permutations and Combinations," for example, has been very well done. The chapter begins with illustrations from everyday life, which make a dull and mechanical subject highly interesting and easy.

A chapter on miscellaneous theorems and examples has been appended and some questions set in Higher School Certificate Examinations by various examining bodies have been added. The book may be used as a text-book in the Intermediate classes of the Indian universities.

LIVING GEOMETRY (A TEXT-BOOK FOR CLASSES IX AND X). BY S. A. HUSAIN. THE INDIAN PRESS, LTD., ALLAHABAD. Price, RE. 1-8-0.

The very name suggests the keen desire of the author to present the subject to the young minds not as a deductive science with its full vigour, but as one useful in every walk of life. He has, hence, indicated here and there in this little book how a knowledge of fundamental geometric facts and processes is necessary for a good artist, a carpenter or a pilot. The theorems are not presented in their usual order, nor ready-made proofs supplied. The pupil is placed in the position of an investigator and is made to discover the theorems and prove them for himself. Devoid of the usual phraseology, the whole matter forms easy reading. The very headings—for example, "Locus, a powerful instrument," "Side-trips in Geometry" are suggestive. Examples of optical illusions, Geometrical fallacies, fun for leisure hours, and recreations for holidays found in every chapter, serve to create in the pupil an undying love for the subject and at the same time put his intelligence and originality to test. The exercises for recreation are mostly puzzles. Practice exercises contain standard riders. Stress is laid on the practical applications of theorems.

The chapter on "Side-trips in Geometry" contains much useful information—the uses of the steel square used by carpenters, hexagonal graph, the Gothic style of architecture, the practical method of finding the

latitude of a place—and deserves special commendation. The note on the position of the stars, and a few exercises in "Recreations for holidays" ("Turks and Christians at Sea" on page 131, to cite an example) seem to be rather out of place in a Geometry book. It is well to attempt at simplicity in the presentation of matter: but to condense technical expressions will be detrimental to the growth of the subject. "Identical equality of triangles," when condensed into "Equality of triangles," conveys a different idea, and a knowledge of this difference is an essential equipment of a pupil of the ninth or tenth standard. This may not prove a burden to the young pupil who is introduced to such technical words as 'loci,' 'medians,' and 'projections'. There are a few typographical errors and omission of letters in two or three diagrams. These, we suppose, will be rectified in a subsequent edition. An appendix containing the proofs of theorems and constructions may enhance the value of the book.

SUGGESTIONS FOR THE USE OF NEW TYPE TESTS IN INDIA. BY EMIL W. MENZEL. OXFORD UNIVERSITY PRESS. Pp. 261. Price, Rs 3.

The type of education given to children in our country has satisfied none. The baneful influence of the system of examinations in vogue at present, or the methods adopted to produce results has been recognised by the reformers some of whom are for completely abolishing 'external examinations' which are at present responsible for 'coaching and cramming' in our educational institutions. A few do feel that education cannot do well without some sort of device to measure the educational progress of our pupils. Here

come in Mr. Menzel's suggestions for adapting the American scientific tests to suit Indian conditions as a solution of the problem.

Mr. Menzel pleads that the old unreliable 'subjective' system of examinations ought to give way to the use of the new 'objective' tests which are based on psychology. These tests have been proved to produce more reliable results uninfluenced by the 'whims and fancies' of the examiner. The book describes every new-type test that has been widely used with a fair amount of success in America. Unlike many other writers on the same subject, Mr. Menzel frankly discusses the practical difficulties of preparing these elaborate tests. He is fully aware of their limitations and pitfalls; yet he is hopeful of the benefit that the use of these 'standardized tests' can bestow on the system of education in our country. He desires that all New-Type tests ought to be tried widely in Indian schools and adapted to suit Indian conditions before they are used.

Dealing with 'purely psychological tests' which are used to measure the mental and moral qualities of the examinees, the author is not prepared to recommend them for use in Indian schools, as such tests are still in the experimental stage and none but 'expert psychologists' can handle them to produce any reliable results. However, tests like 'Prognosis and Aptitude Tests' may come in handy to the teacher to discover the educability and aptitudes of children that may seek admission in the new Secondary schools under the proposed 'Bifurcation Scheme'. This handy and attractive volume of Mr. Menzel's is certainly very provocative of thought.

Approved for class use for schools in the Madras Presidency. (Vide the Consolidated List of Approved Books, Parts I & II, "Fort St. George Gazette," dated 30th April 1940.)

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PREFACE

This new textbook of English Composition, intended for the use of pupils of High School classes, has been written on strictly practical lines.

In Part I, the essentials of Practical English Grammar, Usage and Idiom are treated in an interesting manner, and grammatical topics that have no direct bearing on composition have been passed over. (This Part forms a unique feature of the book.)

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Part III deals with Written Composition, and treats of several topics such as Story-writing, Reproduction of a Story-Poem, Letter-writing, Precis-writing, Dialogue-writing, Paragraph-writing, Expansion of Passages, Paraphrasing, Essay-writing, etc., in which questions are invariably set to test the pupil's ability to write simple and idiomatic English.

The Exercises and Examples form a strong feature of the book. They are numerous, varied, carefully graded and interesting, and as such should attract the attention of pupils, who are too often indifferent to the appeal of English composition.

K. & J. COOPER—PUBLISHERS—BOMBAY, 4

Sole Selling-Agents for the Madras Presidency:

The Christian Literature Society for India, Park Town, Madras.

TRAINING IN THOUGHT AND EXPRESSION.
BY FREDERICK T. WOOD, B.A., PH. D.
MACMILLAN & CO., LTD. PAGES 208.

The aim of this well-written book is, as claimed by the author in the preface, "to assist the individual in qualifying himself to assume the responsibilities of a citizen in a democratic state." And it is in accordance with the Spens report which recommended that the twin objects of the teaching of English should be to enable the student to "express clearly in speech or writing his own thoughts and to understand the clearly expressed thoughts of others", and "the development of the power thus acquired...to help him to take his place as a thinking individual and a wise citizen...It should lead to an ease in social relationships, a desire to know facts, and an ability to think clearly, which are essential elements in the education of the citizen of a democracy". The author begins with 'The Nature of Thought and Reason' and very pertinently observes that "Man is only an *animal rational* in the sense that he is capable of reasoning if he will, not that his life is consistently governed by reason". The second chapter enumerates and explains the conditions under which we should accept the judgment of another in preference to our own, and recommends caution in "controversial points" and "potted thinking." The third deals with the important part played by the universal law of cause and effect in the thinking process. And the unsound and irrational applications of this law are due to tendencies like "the assumption that because one thing follows another it must therefore be the result of it". Propaganda with the "sinister suggestion about it" in recent times, its origin

during the last war, when its aim "was no longer to enlighten but to mislead the public, and to sway its sympathies in a certain direction by whatever means would best achieve that end; not to supply information which would equip people to think and come to a reasoned decision on the questions involved, but to get them to accept uncritically whatever ideas the propagandists wished them to accept," have an especial interest to us to-day. The author deals at very great length on 'Some causes of crooked thinking', 'Red Herrings' or side-tracking an issue either unintentionally or deliberately, and the relation between Thought and Language. Language as an instrument of record and communication is employed for four different purposes—"to communicate a fact," "to express the feeling or attitude of the speaker or the writer towards his subject," "to affect the listener or reader so that he is led to adopt some attitude or to accept views which the speaker desires him to," and "to describe the speaker's or writer's experiences, either physical or subjective". The three essentials of good style, precision, clarity, and euphony are treated elaborately with numerous examples. The chapters on 'Quotations and Figures of Speech', and 'Essay-writing' are not only instructive but also very interesting on account of the wealth of examples from ancient and modern authors.

The book will be immensely useful to those undergoing training as teachers of English. The exercises at the end of each chapter enhance the utility of the work. There is moreover, a useful bibliography and index.



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FOREWORD

In view of the increasing demands for recreative activities in Elementary Schools this compilation of Plays and Games presented in the vernacular should be welcomed by a host of Elementary School Teachers, and by those who desire to promote recreation in the villages.

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The author is to be congratulated on this compilation translated into Tamil. He has made a much needed contribution to the play life of vernacular schools.

H. C. BUCK,

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EDUCATION AND THE CHALLENGE OF THE PRESENT CRISIS*

BY THE REV. C. W. RANSON, *Madras*

IT will be well to begin by defining our terms. Education may be described as "the process by which the community seeks to open its life to all the individuals within it and enable them to take their part in it. It attempts to pass on to them its culture, including the standards by which it would have them live."

By a "crisis" we normally mean a turning point. When we use the word in connection with an illness, we mean that the disease has reached its peak and that the "crisis" will determine whether the patient is to recover or to die.

There are elements not only of peril but also of hope, in every crisis.

When we speak of "the present world crisis," we mean (if we are using words with care) that we are at a turning point in world affairs. Most people would certainly agree that whatever the final result of this war may be, the world can never be the

same again afterwards. There is no doubt about the peril in which the world stands to-day. In 1914, Sir Edward Grey said: "The lamps of Europe are going out one by one: they will not be relit in our generation." To-day the last remaining lights of humane culture and free civilization in the West and the East are threatened with extinction by a barbarous and unscrupulous tyranny. To many, the elements of peril in the present crisis are so real that they cannot see the glimmer of a hope for the future. Yet, as Prof. A. N. Whitehead has reminded us, "The unstable ages are the great ages." Whether we recognise it or not, we happen to be living at one of the great moments of human history—a moment fraught with many and grave dangers, but also pregnant with hopes of a better world. That is why the present crisis is a challenge to those whose task it is to shape the thinking of the next generation, for they will, in some measure, determine whether these hopes

* A lecture delivered in connection with the Tenth South Indian Education Week, Madras.

are to come to fruition or to be stillborn. Let us then examine more closely the nature of the present crisis and of the challenge with which it confronts education.

I. THE NATURE OF THE CRISIS

There are many theories as to the nature of this crisis. The ordinary supporter of the British cause sees it as a perfectly straightforward issue—an attempt to stop unscrupulous aggression. The extreme anti-commonwealth politician tells us that it is nothing more or less than a clash of greedy rival imperialisms, between which there is nothing to choose. The doctrinaire communist would have us believe that we are witnessing the last agonies of a capitalist society which is bleeding to death as a result of its cut-throat acquisitiveness and its “inherent contradictions.” There are others who see the whole explanation of the war in the Treaty of Versailles and who talk as if European history began in 1918.

Those who are not prepared to make catchwords a substitute for thought will suspect over-simplified explanations and will seek to penetrate a little farther beneath the surface. It has been said that “the war of ideas is not a mere episode in hostilities. Hostilities are an episode in the war of ideas.” That remark shows real insight into the nature of the present crisis, for it is in the world of ideas that we must seek for the real roots of this conflict. If we see it merely as a struggle on the military and economic planes, we shall not see it in perspective.

Behind the war there is another war—a vast conflict of moral and intellectual alle-

giances which is being fought out in the soul of this generation. In recent years, we have all become familiar with the hideous term “ideology.” We have heard a lot about the “clash of ideologies” in the modern world, and that phrase was usually understood to mean a conflict between two different types of political theory. I recall a conversation which I had a few years ago with a very learned and very wise professor in Edinburgh University. He said: “you know, the only issue that really counts to-day is Communism *versus* Fascism. People like you and me who refuse to take sides are throwing away our votes. We don’t count in the modern world.” And, at that time, it looked as if he were right. Ardent young idealists saw in the Spanish Civil War an epitome of the coming struggle—which was to be a gigantic struggle between the rival forces of Communism and Fascism.

But we have had to think again since then. Both Communism and Fascism have upset all the theorisings of the “Ideological” school of thought, and one of the happier results of that development has been that we hear a good deal less of the horrid word “ideology.” Nevertheless, the war of ideas continues, even if it is not according to plan. What we have come to see with increasing clarity is that the real conflict lies, not between rival totalitarianisms, but between the new paganism which defies the state as an end in itself and renounces all moral sanctions and the old humane and democratic traditions of tolerance, justice and respect for personality.

There is something more fundamental than political theory involved in this war of

ideas. Ethics and values are involved. The whole question of the ultimate ends of human life is involved. And the conflict lies between two fundamentally opposed conceptions.

II. WHERE DOES EDUCATION COME IN?

There is a sense in which education may be said to have produced the conflict. It is possibly significant that the three men who control the destinies of 280 millions and more—Hitler, Stalin and Mussolini—couldn’t muster a School Certificate among them! School certificates in themselves do not mean much. But it does matter and matter fundamentally how people are educated, what they are taught about the meaning of life, what “values” they are taught to respect and to desire.

Four years ago, I went to Berlin with a group of British people for the express purpose of finding out what the new Germany of National Socialism really thought and taught about education, economics, philosophy and international affairs. We were given every opportunity to meet representative leaders of the Nazi party and to hear their views. I have recently been looking up the notes that I made on that occasion and I read through carefully the notes on the principles of National Socialist Education. These were taken during the lectures of an important leader who was reputed to exercise a great influence on German education. We made enquiries about his history and discovered that until the Nazi Revolution, he had been an obscure teacher—distinguished only by his fanatical loyalty to the Fuhrer and the Party. When we met him, he occupied a position of great

importance in Berlin University—filling a post from which a non-Nazi had been ejected. Among other things, he told us that it was the aim of National Socialist education to abolish the old humanistic ideal of education and to replace it by what he called “the political school system.” This meant a break with European culture and the effort to build up a new system based on different “values”—the values of race and nation. Their aim was, in fact, to harness the whole educational system to narrow political ends and to use it as an instrument for whipping up the fiercest nationalistic passions.

We know to-day with what success this aim has been achieved, not only through formal education, but by the application of every effective device of modern science to propagandist activities. Nazi education and propaganda has been amazingly successful. But let us not forget that its avowed aim has been, and is, the complete overthrow of the old “values” of humane culture and the substitution of an entirely different set of “values.” The results of that effort we see in the chaos, the suffering, the blood, and the tragedy in Europe to-day.

In his little book in the Penguin Series, entitled “Why Britain is at War,” Mr. Harold Nicholson enumerates certain ideals and “values” which have emerged in the course of human history, every one of which is to-day challenged and attacked by Hitler’s Germany.

The Greeks discovered the beauty of the liberated mind: the Nazis deny that the mind of the individual should ever be free.

The Romans built up the conception of the rule of law and established the sanctity of treaties: the Nazis recognise only their own law and have violated every treaty they have signed.

Jesus Christ taught gentleness, tolerance, loving kindness: the Nazis deny Christ as a Jew, crying: "He who has a German mother, needs no Oriental nurse," and despising human charity as a decadent virtue.

The Age of Chivalry taught us that we should not kick in the stomach those who are weaker than ourselves: Herr Hitler has proclaimed that the weak have "no right to live."

The French Eighteenth Century evolved elegance of taste and the balance of reason: Herr Hitler has "reduced taste to the level of a cheap post card" and has taught that reason is the enemy of the state.

England has developed the conception of "decency" and "fairness:" the Nazis scoff at this idea as hypocritical and debased.

That is a formidable indictment. But it is not a distortion of facts for the purpose of propaganda. Each of these statements can be supported by abundant evidence. Nazi Germany has made no secret of the fact that for the last eight years the whole educational system has been bent to the task of propagating these ideas. The results may be seen in the ruthlessness, the brutality, the treachery which have been such a marked feature of total war on the German model. "Do men gather grapes of thorns or figs of thistles?"

The real tragedy of modern Germany is not merely that evil and cruelty are to be

found among her peoples. There are evil and cruelty everywhere in the world. It would be possible by a careful selection of evidence from the law courts and the more seamy sections of society to build up a pretty damning indictment of any country one cared to choose. The methods of the late Miss Katherine Mayo could be applied universally with equally startling results. In England we could find plenty of cases of cruelty, of sadism, of perversion. In America, with its larger population, possibly more. In India, despite the doctrine of Ahimsa, we could if we sought them find plenty of examples of callousness and cruelty.

Yet there is a fundamental difference. Germany's tragedy is that a generation of young Nazis has been educated according to standards which are a repudiation of all that humane civilization stands for. They have been taught not to look with shame and revulsion on acts of brutality, but to glory in them. As Harold Nicholson remarks: "We have all met boys capable of sadistic cruelty, but never in the history of civilized men have such boys been told by their elders that what they did was right."

In the present world crisis there are undoubtedly tremendous political and economic issues involved. But at the root of the whole conflict lies this clash of ethical standards, a war of "values." That is not to say that everything is good on one side and everything evil on the other. It is the simple assertion that we are to-day faced with this terrific crisis because certain nations (and notably Hitler's Germany) have openly repudiated the standards which have hitherto held the respect, if not the

allegiance, of the whole civilised world.

is in that sense a moral conflict. And that reason the crisis presents a challenge to education.

III. THE CHALLENGE TO EDUCATION

At the beginning I quoted a definition of education as "the process by which the community seeks to open its life to all the individuals within it and enable them to take part in it. It attempts to pass on to them its culture, including the standards by which we would have them live." What are the standards by which we would have men and nations live? We do not like the standards which the totalitarian states are seeking by force to impose upon the world. We oppose their attempt to do so and our opposition is based on what we claim to be democratic ideals. We are quite clear in our dislike of the totalitarian way. Are we equally clear about the standards which we offer as an alternative? Have we asked ourselves what is the positive content of the "culture" which we seek to pass on to those we teach. Or is our "democracy" just a negative ideal, capable of identifying what it dislikes and doesn't want, but incapable of stating clearly what it does? One of the great weaknesses and dangers of modern democracy is that it too often makes lipservice to its own traditions and "values" a substitute for the task of finding out what those values are, and the effort of following them. The democracy with which most of us are familiar is not a positive alternative to totalitarianism. We hardly know what it is. But unless we

can find out, and formulate a positive and constructive humanism we shall be ripe for the triumph of unscrupulous tyranny and the acceptance of passive and second-hand totalitarianism. That is the challenge which the present crisis presents to education: and upon the way in which we, as teachers, meet it the future of the next generation depends.

If positive victory and lasting hope are to be snatched from the peril of this hour, we shall need something more than armies and guns and tanks and aeroplanes. We shall need a revitalised education, and I would suggest that the things we need most in order to achieve that new vitality are (a) a true sense of direction and (b) a new social discipline.

(a) A TRUE SENSE OF DIRECTION

Professor C. E. M. Joad in one of his most recent books attempts to diagnose the malady of our time, and traces it to the almost universal lack of any true sense of values. The youth of our time has been brought up on the so-called scientific view of life. But what our educators have consistently failed to see is that science can give no complete or adequate account of mind or of value. It is concerned with means, not with ends. As a result of this concentration on facts rather than on values, we have succeeded in producing an age "without beliefs in religion, without standards in morals, without convictions in politics, without values in art." In fact, Professor Joad doubts, if there has ever been an age which was so completely without standards or values. Joad is righting of

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Britain. But his words have an application here.

We are tremendously busy on educational schemes. We talk eternally about reconstruction and reform. But fidgeting isn't progress. There is such a thing as motion on hinges. A door swings to and fro, but it remains in the same place. And a good deal of our so called educational progress is motion on hinges. We need to begin to ask more fundamental questions. What are we really seeking to impart? A crop of information? Sufficient knowledge to scrape through the S. S. L. C.? Ability to earn money and achieve a secure job? Are such aims as these the dominating impulses in our work? Or do we seek to impart a true sense of values? A sense of truth, an appreciation of beauty, a desire for goodness, a vision of a society in which men seek for higher ends than money, power and self-interest? The quality of our personal aims and "values" will inevitably be reflected in our work as teachers. If in the humanist tradition, there is that which is worth saving, then it is one of our jobs as teachers to discover it and hand it on.

(b) A NEW SOCIAL DISCIPLINE

But we need more than a true sense of direction. We need a new social discipline if we are to retain the democratic tradition of freedom. The countries which have become totalitarian have been those which

have proved incapable of that self-discipline which would have enabled them as free men to solve their social problems. They degenerated into a social chaos which left them fair game for the dictators. Only where men are prepared to impose and accept a social discipline devised by themselves as free men can they escape sliding down into the grip of a second-hand totalitarianism.

We must breed men fired with a passion for community in the proper sense of that much-abused word. Britain to-day seems to be learning this truth in the scorching fires and perils of war. We in India have still a chance of learning it in peace. The lesson is essentially a matter of education. The young German has been taught to put the community above the individual by a system of brutal force which crushed those who opposed. We believe that there is a better way. But if the energy of a new social purpose is to arise, the spark must be kindled in our schools and if it is to be kindled there it must first burn in the hearts of those of us who teach.

We must discover afresh a true sense of direction. We must brace ourselves to a new social discipline. Only thus can we help those whom we teach to find the secret of true liberty and learn the deepest lessons of the present crisis.

TRUE EDUCATOR

The teacher who really forms us, is he who sees better than we did ourselves what we really longed and strove for, how far our effort was right, and in what points we make it still finer and better. He who interprets us to ourselves, and at the same time gives us

—Sister Nivedita.

CHILDREN WANT TO BEHAVE

AN INTERESTING APPROACH TO AN OLD PROBLEM

By H. L. HAGMAN

DO not read this article if you have never attempted to teach what you termed "unruly" children, or if you do not know of some teacher who has "disciplinary" troubles, or if you are not concerned by fine distinctions between what constitutes "good" and "bad" behaviour.

The problem of control in the class room doubtless is the beginning teachers' greatest problem. Probably more teachers fail because of disciplinary troubles than for any other reason. It is true that many teachers of considerable experience find control a major problem.

Recently, there came to my office a questionnaire from the college from which one of our teachers is a graduate. Among other items listed in an attempt to rate this teacher was this: "Control of the Learning Situation." Here in polite terminology was an old friend. Where once the administrator might have spoken of "Discipline" or "Making Children Behave," now he may speak in the broader terms of "Control of the Learning Situation." Schools have come a long way from the period when a teacher's success was rated upon his ability to wield a birch rod. Discipline has a harsh sound reminiscent of military control or the "Toe the mark!" of schools of an earlier day. The means and type of control have changed, and yet the end is theoretically the same—the setting-up of a classroom situation conducive to learning. Opinion as

to what that situation is varies considerably. The problem is as contemporary as any educational problem, though viewed in different light than it was a generation ago.

Children ought to behave. But *how* should they behave? Obviously, what is good behaviour on the playground may be bad behaviour in the schoolroom. The class participating in a social science discussion exhibits a type of conduct perfectly proper in itself but reprehensible in an arithmetic drill. Schools differ in philosophy and thereby differ in setting up standards of pupil conduct. Confusion may exist in child mind when his behaviour meets approval at one time and disapproval at another. Failure of novice teachers to make the transition clear to the pupils often results in classroom disturbances seemingly uncalled for. Children *want* to behave, but to their confusion behaviour is good or bad as adult thinking makes it so.

Before the teacher can make standards of conduct clear to the pupils, he must form some clear conception of what he himself thinks of pupil conduct. A philosophy of pupil conduct ought to be formed by each teacher. Necessarily, no one philosophy will serve for every school. The following are suggestive rather than complete.

(1) Such order should prevail that learning may take place in an atmosphere conducive to study. (2) The teacher should be

at all times in complete control (inconspicuously) of his group of pupils. (3) Unnecessary disturbances should be minimized. (4) An attitude of courtesy and respect should prevail among pupils and between pupils and teachers. (5) An air of purposeful activity should be apparent. (6) The pupils should be enjoying themselves in a quasi-democratic society where the restraints are the restraints of ordinary good breeding.

Assuming that these suggestions are indicative of a desired conduct situation, responsibility for control lies with the teacher.

The school office, the dean, the counsellor the classroom teacher are at best supplements, though often valuable. Assistance is many times desirable but shifting the responsibility is sometimes simply running away from the problem which is certain to recur. The personality of the teacher is the final cause of the existence of good or poor control of the learning situation.

To help beginning teachers find procedures for correcting difficulties and for analyzing difficult situations the following are offered:—

POSITIVE

Be friendly, but not familiar.
Be approachable and understanding.
Be able to laugh at yourself.
Be impersonal in reproof.
Be impartial to the "nth" degree.
Calm yourself.
If you have your favourites, keep the fact to yourself.
Be interested in children's personal problems.
Be professional. (This implies much.)

Love children.
Fit your reproof to the seriousness of the offence.
Reprimand briefly and to the point.
Have your lessons well-prepared.
Sense coming difficulties, and prevent their occurrence.
Be courteous if you expect courtesy.
Be well-poised.
Ignore, when possible, slight offences which may be annoying to you but not disturbing to others.
Carry dignity but avoid stiffness.
Use a well-modulated, well-pitched voice.
Reprove in private.
Be generous and fair.
Provide interesting functional activities.
Be interested in your work.
Hold friendly, private conferences.
Exhibit your confidence in the child.
Discuss your problems with others in the profession, *but* assume complete responsibility for your work.
Win respect by displaying good breeding.
Be firm, but not unbending.
Be a democrat.

NEGATIVE

Don't jump to conclusions.
Don't protract reproof or punishment.
Don't harbour resentments.
Don't fear to apologize.
Don't blame the children for conditions arising from your own indisposition.
Don't punish by using school tasks.
Don't omit praise when praise is due.
Don't deny children the respect due them as persons.
Don't punish or scold many for one person's offence.
Don't forget your own childhood.
Don't promise rewards or penalties you can't inflict.

Don't create martyred students. Make your justice apparent.

Don't set yourself up as an authority beyond question.

A school should both teach and put into practice the principles of democracy which characterize our ideology. Pupils of primary and high schools should be participants in a community where participation is a privilege of worthy citizenship. Laws are

controls in a democracy as well as in any social order. Most children behave themselves. Disciplinary control in the schoolroom can be democratic and yet be existent. Responsibility must carry authority with it. But school children should learn by experience the controls of a democratic society.

—*Journal of the National Education Association of the United States.*

THE STUDY OF HISTORY IN SCHOOLS

BY M. V. C. JEFFREYS

HISTORY is one of the worst taught school subjects, if it is not still one of the best hated. Teachers whose annual task it is to prepare pupils for public examinations might well conclude from their painful experience that history is not a suitable subject of study for boys and girls. And, in a way, they would be right. Anyone, on the other hand, who has witnessed the delight with which children study the panoramas in the Science Museum illustrating the history of transport, or the models of sixteenth and seventeenth century London in the London Museum, and has attempted to cope with their observant comments and intelligent questions, will as readily form an opposite opinion, as also will those who know with what lively interest boys will enter into such diverse activities as excavating the site of a medieval building or using the resources of a library for the purpose of writing a historical play. A small boy of my acquaintance was asked by his teacher to make a model of a Roman galley. The

boy set off by himself and searched the British Museum and the London Museum, plagued curators and borrowed books; finally, having made his model, he returned to me a book which I had lent him at the beginning of his investigations, with the triumphant announcement that the information contained in it was hopelessly inaccurate. Yet this boy responds no more eagerly than his fellows to instruction of the traditional sort about the Constitutions of Clarendon or the Pragmatic Sanction. The contrast between the two attitudes, the one eager and the other reluctant, confronts the teacher of history with a problem, to the solution of which it is the object of this article to attempt some contribution.*

* In the space at my disposal, however, I cannot hope to do much more than make a rather bald restatement of ideas that have been more fully and less dogmatically expressed elsewhere. I would refer readers to my book, *History in Schools: the Study of Development* (Pitman, 1939), and also to the pamphlet *A History Course for the Senior School* (University of London Press, 1936). The results of some practical experiments in schools were summarized in an article published in *History*, December 1936.

DIFFICULTIES OF HISTORY AS A SCHOOL SUBJECT

The fact must be faced that, as a subject of instruction, history presents serious inherent difficulties. To begin with, as has often been pointed out, history concerns human experience in great complexity and at the adult level. Many of the events, and relations between events, described even in elementary text-books, are beyond the pupil's understanding, except in the most superficial sense. What the child lacks is not intelligence but experience. The difficulty cannot be overcome by mere verbal simplification—a method that leads only to futilities such as telling the child that 'Renaissance' means 'rebirth' and thinking that this is an explanation of an historical movement! Moreover, every teacher who has tried to make difficult historical situations intelligible to the young must have found himself in the dilemma of which the two horns are respectively the incomprehensible and the paltry. For example, it is fatally easy to leave the impression in one's pupils' minds that the great quarrel at the Synod of Whitby was all about the date of Easter and the way in which one should shave one's head—a view of the situation which, while giving it a kind of intelligibility, does so at the cost of implying that our ancestors were nitwits, which is bad history. If, on the other hand, we strive to get boys and girls of twelve, or even of sixteen, to understand what the issues really were between Celtic and Roman Christianity, we shall exhaust ourselves without edifying our pupils.

Another inherent difficulty of the subject is the plain fact that no direct access to the past is possible. Unlike the physical sciences, which deal with classes of events and whose data can therefore be reproduced any number of times, history deals essentially with the unique and non-recurrent. 'Historical reality...is above all a concrete and not an abstract reality.... Everything genuinely historical has both a particular and a concrete character. Carlyle, the most concrete and particular of historians, says that John Lackland came upon this earth on such and such a day. This indeed is the very substance of history.'* Furthermore, the history teacher is at a disadvantage in comparison with his geographical colleague in that he cannot take his class to see John Lackland seal the Charter, nor can he show a photograph of the scene. Not only is there no direct access to the past, but the materials for its reconstruction are fragmentary and confused.

A third difficulty is presented by the vast and ever-increasing bulk of historical material, which not only makes it almost impossible for the teacher to keep abreast of modern research, but also creates a grievous problem of selection of material for inclusion in the syllabus. There is in fact, far too much history. As regards the planning of the syllabus, the modern teacher is in a more embarrassing position than his predecessors of a generation ago, not only because of the great difficulty and importance of the chapter of history that has actually been made in that inter-

* Nicolas Berdyaev, *The Meaning of History* p. 13

val, and not only because of the wealth of modern research that has made necessary the revision of many of the earlier chapters, but also because we are to-day no longer content with the scope of a course that traces British history from 1066 (or 55 B.C.) to 1901 (or 1914). To-day we all subscribe to the doctrine that the syllabus should somehow span the entire evolution of human society, in its length, from the dim sub-human past to the very brink of the future, as well as in its breadth of cultural variety. When history syllabuses complacently followed the lines of *1066 and All that*, we at least knew where we were. But now we do not know where we are, for we have followed Mr. Wells into the wilderness, and he has left us there.

THE PURPOSE OF HISTORICAL STUDY IN SCHOOL AND ITS PLACE IN THE CURRICULUM

Many reasons for teaching history have been specified at one time or another, from standpoints of character-building, mental training, and practical utility. No adequate discussion of the matter is possible here,* and I can only indicate a point of view by means of the following dogmatic propositions:

(1) The unique contribution of historical study to our outlook on life, which defines its sufficient purpose, is that it enables us to see social change in its evolutionary perspective and cultivates the habit of mind that demands that perspective.

* Chapters II, III, and IV of my *History in Schools* represent an attempt at a reasoned statement of the point of view which is assumed in this article.

History, that is to say, is the study of social development.†

(2) The priority traditionally given by historians to dynastic, military, and constitutional events is without rational foundation. History is defined by its method rather than by its content. Any aspect of the life of society is fit matter for historical study provided that it is studied in its development.

If these assertions are accepted, two conclusions can be drawn from them. First, the content and methods of the history course must be such that the pupil can appreciate the principles of development. This implies something more than that the material selected must be intelligible and interesting to the pupil. The child may learn things with enjoyment about the past without his studies being in any true sense historical. If the pupil is to get some grasp of the fact and nature of development—if, in fact, he is to achieve the beginnings of a philosophy of history, subject matter must be chosen in terms of which he is capable of appreciating development.

In the second place, it is misleading to think of history as a 'subject' with its own proprietary subject matter. If, as has been suggested, history is defined by its method rather than by its content, there

† It should be added that the word 'development' is used throughout this article in a neutral sense, without prejudging the question of progress. By saying that history is the study of development and that a study is 'historical' in so far as it is developmental, all that is implied about the nature of the historical process is that it is a process of significantly related change and not a chapter of accidents.

is something to be said for eliminating it from the time-table as a separate subject. In its place we might well substitute 'Social Studies,'* which not only denotes more satisfactorily a certain range of content but also, as a principle of organization, invites a profitable correlation of studies that are at present divided as separate disciplines. At the same time, the study of the other subjects, such as the physical sciences and mathematics, should include enough of the history of the subject to elucidate its development as a branch of knowledge and its meaning to society.

METHODS OF STUDY

The preceding suggestions, if carried out, would involve a considerable reorganization of the curriculum—a reorganization which I am convinced is highly desirable in the interests of education as a whole as well as of historical study in particular. It is some time since John Dewey, perhaps the greatest modern prophet of social reality in education, drew attention to 'the standing danger that the material of formal instruction will be merely the subject matter of the schools, isolated from the subject matter of life-experience.† More recently Professor Lancelot Hogben has urged that curricula should be organized in terms not of 'separate disciplines, such as chemistry or biology' but of the historical development of social problems; and he has brilliantly practised

* Readers will scarcely need to be reminded of the work already done in this direction by Mr. F. C. Happold, described in his *Citizens in the Making*. An interesting American experiment on these lines is summarized on p. 92 of my *History in Schools*.

† *Democracy and Education*, p. 10.

his preaching in *Science for the Citizen*. 'The school of the future,' writes Mr. Happold, 'will have no room for men who can think only in the academic terms of physics and chemistry, history, and geography, who can only teach a body of knowledge which is virtually meaningless until it has built on it a superstructure which will probably never be built.‡'

But reorganization on that scale takes time, besides which it must be confessed that teachers are cautious in their attitude towards reform. We must therefore expect that history will remain for some time to come as a subject on the time-table. It is to history-teaching in this sense that the following practical suggestions are primarily intended to apply, though it will be seen that the treatment in terms of 'lines of development,' which is advocated below, is one that readily lends itself both to the planning of a course of social studies and to the historical treatment of the other subjects of the curriculum.

(a) *Content*. It was suggested earlier that the subject matter of the history course should be so selected that the pupil can, in terms of it appreciate the fact and nature of historical development. By this standard, the traditional type of syllabus fails, and for two reasons. In the first place, since the unit of study is the 'period,' and all 'important' events within that period are supposed to receive some attention, the result is a conglomeration which eludes the comprehension of the pupils. In the second

‡ F. C. Happold, *Citizens in the Making*, p. 61.

place, and for the same reasons, the traditional type of syllabus makes it impossible to exclude topics that are un-intelligible to the pupils while selecting those that they can understand. In fact, of all methods of organizing historical subject matter the 'periodic' is the worst from the point of view of facilitating the appreciation of development. Periods tend to be thought of as self-contained, and continuity is thus broken. The pretence of comprehensiveness within the period makes the story far too complicated for young minds, and also renders impossible the omission of topics which, though unintelligible to the young, are 'important'. A boy of fourteen, for example, can make very little sense of the reigns of the first two Stuarts. He does not understand what Puritans were, and (though he readily appreciates John Hampden's objection to paying an unfair tax) the constitutional implications of Ship-money, Forced Loans, Impositions, and so on, are too much for him. It is a blessed relief to have done with the legislation of the Long Parliament and get to the fighting. And, apart from the obvious and immediate difficulties, how is the boy to grasp the relation of this brief chapter of our history to the decline of feudalism, the rise of towns and trade, the Tudar bureaucracy, the commercial imperialism of the eighteenth century, the Industrial Revolution, and parliamentary democracy? We need a unit of study which enables us to omit, and omit rationally, what the pupil cannot understand, and which facilitates the developmental treatment of the topics that we select.

In my *History in Schools* I have used the term 'lines of development' to describe the units of which the syllabus should, in my view, be built.* In brief the suggestion is that suitable topics should be chosen and studied through the full length of their development passing through cultures and centuries. In each successive journey through the ages, the new knowledge must of course be related to the old, so that knowledge and understanding shall be well integrated. The nature of the lines of development chosen will, of course, vary according to the age and ability of the pupils. Young pupils need concrete and practical topics—material techniques are best. Thus pupils from nine to twelve years of age can study the development of such things as means of transport and communication, building, clothing. At thirteen, fourteen, and fifteen they can manage broader, but still concrete, subjects, such as the growth of trade, science, or public health. In the Sixth Form more abstract topics are possible, such as political and religious liberty, economic and political theories, and so on.

History courses of this type are already in use in schools of different kinds, not only in junior and senior elementary schools, but also in secondary schools, where some enterprising teachers have successfully planned courses based on 'lines of development' in the first three years which lead on to the existing School

* In Chapters V and VI of *History in Schools* the case for this extension of the 'topic' method, in place of the periodic, is set forth at some length, and many aspects of the matter are discussed there which there is not room to mention in this article.

Certificate syllabuses. Needless to say, however, a corresponding reform of the School Certificate is clearly indicated.

(b) *Methods of Study.* Teachers who adopt syllabuses based on lines of development will inevitably be led to reconsider the pupils' methods of study. The pupil who grasps the meaning of the particular history that he is studying, who has a sense of purpose in his studies and an intelligent notion of where they are leading him, can be given freedom and responsibility. With a syllabus based on lines of development, new opportunities will be found for individual and group work, with fresh stimulus to the pupil's initiative. It is not claimed that these changes in methods of study are the inevitable consequences of accepting the new principles of syllabus-organization, but it is certain that the proposed type of syllabus is specially conducive to these improved methods—for the simple and sufficient reason that the pupil knows what he is doing and sees some point in doing it. It will be found that, as the pupils become active instead of passive, there will be proportionately less need for class-instruction of the conventional type. And (an important condition of general education) pupils have much more incentive to use books intelligently, using the index and hunting out what they need from several books instead of merely submitting to whatever the next chapter in the class textbook happens to contain.

—*The New Era.*

OF THE ETERNAL

BY H. E. PROF. NICHOLAS DE ROERICH,

Naggar

Why didst thou want to tell me
Something unpleasant? My answer
Is ready. But first tell
Me. Think well. Declare
Wilt thou never change
Thy belief? Wilt thou remain
Faithful to that which thou hast lanced
against me?
About myself, know
My answer—I am here to forget.
Look, while we spoke
Already all around us has changed.
All becomes new. That which
Threatened us, summons us now.
That which summoned us, vanished.
We ourselves have changed.
Above us the sky is transformed
And altered, the wind. The rays of the sun
Shine otherwise. Brother, let us leave
All that is fleeting. Otherwise
We shall have no time
To think of that which
For all is unchanging. To think
Of the eternal.

The first work is to interest the child in life, work and knowledge, to develop his instruments of knowledge with the utmost thoroughness, to give him mastery of the medium he must use.

—*Aurobindo Ghose.*

STUPIDITY AND HOW TO AVOID IT

BY PROF. K. APPASAMY, M.A., B.D., *Lucknow*

The best of us are stupid at times and one stupid act may land the most brilliant of us in lifelong misery. Twenty years of sustained military genius could not save Napoleon after he left Smolensk for Moscow. Instead of going to Moscow from Smolensk, if he had gone back to France, the history of Europe may have been very different to day. With confidence, we are just waiting for similar stupid mistakes by the dictator States of Europe to-day. Most of us avoid malaria by sleeping under mosquito nets; we avoid typhoid by eating sterilized food; we avoid hydrophobia by getting anti-rabbiic injections; we avoid lockjaw by getting anti-tetanus injections, when we have inadvertently stepped on a rusty nail. Similarly, if we clearly know what stupidity is, we can avoid, or at least avert possible disasters. Even the use of the word disaster shows that we believe in evil omens and effects of stars on our lives, because the word *dis* means bad, *aster* means star; in short, the influence of a bad star.

Of all languages past and present, I am told, that the Japanese language has a more precise vocabulary for defining stupidity than any other language. The very terms they use more or less define and are self-explanatory. But let us look at the various terms in English for stupidity. For a reference of this type a thesaurus is of more help than a dictionary. A reference under the heading, stupid, gives the following words: dull, stolid, doltish, witless, dumb, dense, slow, crass, obtuse, foolish, imbecile, idiotic, short-sighted, incompetent, puerile, fat-witted, rat-

tle-brained, shallow, inept, fatuous, moronic, drivelling, blatant. While we are about it, let us also look up the synonyms for a fool: stupid, idiot, tomfool, wiseacre, witling, dunce, halfwit, simpleton, simple simon, ass, dolt, booby, nincompoop, oaf, block-head, calf, moon calf, colt, gawk, gauche, numskull, clod, clodhopper, rube, lubber, lout, sap, sap-head, owl, goose, gander, chump, moron, ninny, zany, dullard, fat-head, green horn; and after all this list I have not narrated compound words and phrases which signify the same thing.

Stupid acts result from various causes, most of which I herewith analyse:

- I. Deficient sensitiveness of eye, ear, nose, etc.
- II. Sluggishness in learning new facts.
- III. Slow recall or poor memory.
- IV. Unsound judgment.
- V. Difficulty in concentrating.
- VI. Habitual misunderstanding of other peoples' attitudes and motives.
- VII. Clumsiness of hand and posture.
- VIII. Too much ego.
- IX. Low mechanical intelligence.
- X. Excessive or uncontrolled emotion.

Let me go over them in detail, one by one:

I. *Deficient sensitiveness of eye, ear, nose, etc.* These organs are as God made them, and each person has a different rate of sensitivity. But within a certain latitude they could be trained to be more sensitive. Normally we find that artists and writers are

more observant than others. Tennyson wrote, "Black as ash buds in March" and a farmer made disparaging remarks about the poet's power of observation, laid a wager and lost it. The more civilized we are becoming, the less sensitive our nose is becoming. There used to be a book, which I read in my school days, and which I have never come across since, called *The Five Windows of the Soul*. We need a book of that type to train our senses.

II. *Sluggishness in learning new facts*, may be due to lack of concentration, or lack of interest or lack of early training. For instance, our students concentrate better from January to March, due to the proximity of public examinations, and it is far easier to teach them the difficult portions of the subject during those months rather than from July to December, when they do not concentrate at all. Then again, lack of interest in one subject may not mean that a person is dull or stupid. It merely indicates that he needs to change his subject. One of the dullest students in my class, was always talking about differences in the various makes of wireless sets. I had a long talk with his father, and the boy was dispatched to Calcutta to study radios, and is now making quite a good living at it. Then again, lack of early training may account for sluggishness in learning. We quite often discover that a student who is not doing much good in Physics, Chemistry, is tardy because he has not had enough of a mathematical foundation to follow these subjects intelligently.

III. *Slow recall* may be due to poor memory or at least an uncultivated and untrained memory. At one time in India we

possessed excellent memories and there used to be Pandits who could repeat whole *Vedas* and *Puranas* from end to end. In Macaulay's biography we read that one starlit night while crossing the Irish channel, he repeated most of *Paradise Lost*. This, of course, refers to "Rote" memory. But without a foundation of a trained rote memory, one's power of creative thinking also deteriorates. Memory does not decay with age. It is as keen as we keep it. Most of us let our memory lie fallow and hence it decays. Look at the leaders of the British Parliament. Most of them are over sixty and yet their memory by constant use, remains as fresh as when they were young. Memory consists in attention, retention and recall. When a person is stupid due to want of ready recall, it means that one of the first two items is defective. In addition to these, over-feeding, over-drinking, overwork, underwork, illness and all kinds of indulgences, lead to break down of memory. And if we want to avoid stupid blunders due to slowness of recall, we must develop or redevelop our memory.

IV. *Unsound judgment*. Most of us do not make mistakes about facts, but we do show stupid tendencies in judging people. Most of life consists in evaluating fellow-human beings. Was it Pope that said that the best study of mankind is man. Keenly observant people tell us that almost all the people who deal with law are keen judges of human nature. I mean policemen, lawyers, judges, lawyer's clerks, etc. Unfortunately, our schools and colleges do not teach us as to how to judge people. There is a field for somebody to collect data and write a book on how to accurately judge people. There

are six different ways in which we make mistaken judgments.

1. The tendency to appraise people by sympathetic insight. For instance, if we do not like sweetened rice, we denounce all people who like sweetened rice. In other words our judgment is coloured by our own sympathies.

2. The tendency to judge people in terms of crude sensory impressions and the feelings they arouse. We judge people by their colour. Duskier brides are a drug on the market. We also judge people by their looks, and quite often good looking people take advantage of the admiration we have for them.

3. The tendency to judge people in terms of obvious behaviour, and to judge people by their externals. One of the most brilliant men I know, dresses in the most outlandish clothes and has a most eccentric set of mannerisms. Several people intensely dislike him, because they see only the most obvious, and judge him by his behaviour and appearance. Robert Louis Stevenson was also like that, and he was quite often misjudged.

4. The tendency to judge people in terms of the narrow range of our daily habits. For instance if we are in the habit of rising early, we condemn all late risers. If cigar smoking is offensive to us, we condemn all smokers; and so on, through our whole catalogue of habits.

5. We have a tendency to judge people in terms of knowledge gained only by our own contact. For instance, I come across a poor bridge player at the club, and at once jump to the conclusion that he must be stupid in

all directions—a rather unwarranted piece of poor judgment on my part.

6. The tendency while judging to select some facts and ignore others according to our temperament. This was just the mistake made by an American lady when she wrote a book on Indian morals, which aroused the anger of all thinking Indians. We usually call this a prejudiced judgment, a *pronunciamiento* made on partial facts.

V. *Difficulty in concentrating quite often lands us in stupid blunders*. This may be due to a number of causes. It may be due to over-work, or over-feeding, or it may be due to lack of interest, or it may be due to want of practice, or it may be due to laziness, physical or mental; or it may be due to too many interests; or it may be due to under-nourishment; or poor living conditions. It may be due to financial or family worries. In each case, the person who finds himself unable to concentrate, has to analyse his own defect and rectify his particular impediments.

VI. *Habitual misunderstanding of other people's attitudes and motives*: in other words not wanting to see the other person's point of view, a closed mind, which believes that no other angle of vision except his own is right. A good many of our communal classes are due to this type of misunderstanding. When there are two political parties, one party does not at all want to see either the attitude or motive of the other party.

VII. *Clumsiness of hand and posture is quite often due to nervousness*. Opposite of this is gracefulness. I am told—I do not know how far it is true—that one of the things watched for when a candidate goes

for interview in I.C.S. or P.C.S. *viva voce*, the examiners assign certain number of marks for dash and verve, and deduct marks for clumsiness, if it were so, it is quite correct, because it will be a fiasco; if a public servant is timorous and awkward when he is at his job. This type of stupidity could be overcome by cultivating confidence in one's self, and by eliminating inferiority complex.

VIII. *Too much ego*. All of us have and must have a certain amount of ego. If I were given a choice to choose between an egotist and an egoist, I would choose an egotist, because the egotist is struck on himself, and uses the first personal pronoun more often than he needs to, but on the whole he is a vain but harmless creature. On the other hand, an egoist wants others to obey him, to consider him their superior. In his speech the first personal pronoun may not occur at all, but in action he is a domineering person, who forces his will and view point on all those who come in contact with him. Too much ego is a disease which is sometimes caused by a rise to power, or by sudden acquisition of money, and with the rise of the ego, he also becomes more stupid.

IX. *Low mechanical intelligence*. This may range all the way from inability to gauge distances, to calculating cost of building a house. Let me illustrate: One man who was delivering a series of extra-curricular lectures, came late one day, leading his cycle, and apologized for his tardiness saying: that something was wrong with his cycle, and so he has to walk. On looking at it we found, that his chain had slipped off the cog. If a man with a B.A. and L.T. cannot discover such a small defect in his cycle, his mechanical intelligence must be very low

indeed. There is a very rich man who builds and rents plenty of houses. He does not consult an architect and keeps on altering his ideas as the building goes up. Quite often he listens and alters his plans, according to what the masons say and the result is that he spends more money than he originally intended, and there are so many mechanical defects in the houses he builds, that several of his houses remain unoccupied. What a colossal waste of money due to stupidity arising from low mechanical intelligence. The average Indian is poor in mechanical intelligence, as compared with the westerners, for two reasons. The western child gets acquainted with mechanism from infancy due to so many electrical and mechanical gadgets in the house and mechanical toys. We also avoid handling mechanisms, because we consider it *infra dig*, or below our dignity.

X. *Excessive or uncontrolled emotions also result in stupid acts*. It is a well known fact that when a person is in love, he acts less intelligently than before or after. Individuals, communities, nay whole nations can and do act stupidly when their emotions are roused. Most of the religious clashes come under this head. Wars, national and international, are expressions of uncontrolled or uncontrollable emotions. Psychologists who have studied the level of intelligence say that a person's, or even a nation's faculty deteriorates twenty-five percent. during periods of emotional stress. Now, since we know, that the level of intelligence is lower when we are emotionally excited, in order not to be stupid, we must at those times act with more deliberation; which after all comes back to the old proverb, if you are angry, count ten before you act, and if you are very angry, count to a hundred.

A whole book could be written on this subject.

THE TEACHING OF ELEMENTARY GRAMMAR

By MR. J. P. SAKSENA, B.A., B.T., Baloda Bazar

THE extreme partiality with which we in India were wont to regard the teaching of grammar, due, no doubt, to the classical traditions of our land, gave place to an aversion no less extreme, cultivated along with our zeal for the so-called 'Direct Method' of teaching English. The study of formal grammar or the science of words as it has been styled, is not absolutely essential to the use of correct English inasmuch as correct habits of language uses are acquired through imitation rather than by memorising grammar rules. Nevertheless, several important advantages accrue from the study of grammar. These may be briefly indicated as follows:—

(a) Grammar affords valuable training in abstract reasoning and clearness of thought.

(b) It systematises and classifies the learner's knowledge of the forms of language, and renders his imitation of what is correct more intelligent.

(c) It is an aid to oral and written composition by supplying a standard of accuracy to test the language used.

(d) The study of derivation enlarges the pupil's vocabulary, and thus increases his ability to use words correctly.

The advantages, however, are to be purchased at a high price. There are some difficulties, which the student of English Grammar has to reckon with and overcome. Formal grammar deals with words at a period when the learner's vocabulary is very limited. It involves exercise in abstract

thought, since mental distinctions are much more difficult for the child to grasp than the qualities and properties of tangible objects. The study of this subject cannot be efficiently prosecuted without a high degree of mental concentration, judgment, and ability to apply definitions and general principles to fresh cases; all these are intellectual efforts of an advanced kind. Above all, in a language like English where grammatical principles consist so largely of exceptions, the learner's difficulties increase considerably.

These considerations show that the study of grammar, as a science, should not begin too early. In fact, in the early classes no technical grammar need be taught at all. The teaching of formal grammar, therefore, can be profitably undertaken only after the age of twelve or thirteen years under normal conditions.

The proper method of teaching grammar is oral with frequent use of black-board illustration. The intellectual value of the subject almost exclusively depends upon the teacher's skill to lead his pupils to arrive at general conclusion, grammatical truths, for themselves. They should be told as little as possible, and by means of skilful questions led to discover as much as possible.

The plan to be followed in most lessons on grammar may be indicated as follows:—

(1) *Analysis and Induction*.—From an examination of a selected number of examples

the pupils may be made to see the principle common to all.

(2) *Statement of Definition.*—The principle recognized thus is stated by them in their own words with the minimum help from the teacher to secure the necessary degree of accuracy. It is of the highest importance that the generalisations or definitions follow and not precede the formation of right ideas by the pupils with reference to particular examples.

(3) *Deduction.*—This is the stage where the definitions formulated are thoroughly impressed on the minds by applying them to numerous examples.

(4) *Comparison and Contrast.*—These may be occasionally employed in connection with the preceding stages, *e.g.*, the function of the adverb may be compared with that of the adjective; transitive verbs may be compared and contrasted with the intransitive verbs, and so on. This method can also be effectively used to drive home points in English grammar with reference to the already known ones in the grammar of the mother-tongue.

Having discussed in general terms the method to be followed in the teaching of grammar, a few points in regard to the treatment of its more important phases may be noticed. It is necessary, in the interests of sound teaching, to discard the order of lessons given in some text-books on grammar and take up simple analysis before anything else. This must be carried on along with sentence building. Thus, the use of the various parts of speech may be introduced and a firm foundation laid for fuller consideration later on.

The first point to be driven home into the minds of the pupils is the use of words in a necessarily conventional fixed order to express thoughts of varying significance. This is easily done by inviting their attention to sentences in different word-order. Take for example the following sentence. *The book is on the table.* This sentence is in order. Any other arrangement of words of the said sentence would lead the students to conclude that words must be arranged in a certain order to express sense. It is easy now to point out to them that such a sensible word-order is a sentence. Analysis in this stage must needs involve only the simplest sentences. For instance, the following sentences are written on the black-board:—

(i) Birds fly.

(ii) The ship was wrecked.

The students are required to state the name of the thing spoken about in each. These are written in a separate column headed *naming part*. Now, it may be explained that this naming part is called the subject. The remaining parts of the sentences are next examined. It is elicited from the students that words like "fly," "was wrecked," etc., speak about the subject. These telling parts are called *predicate*.

As soon as the essentials of simple analysis are understood, the students are fit to understand the parts of speech. The lessons on these must be concurrent with more detailed exercises in analysis, so that their recognition is based on their function. The noun and verb, for example, are best taught along with lessons on the subject and the predicate; the adjective is easily

introduced as an enlargement of the subject; the pronoun as a substitution for a noun—subject, and the adverb as an extension of the predicate.

The advantages of this method are:—

(i) The sentence forms the unit of teaching at all stages.

(ii) The mutual relations between analysis, parsing, and composition are kept in view.

(iii) The grammar is discovered from language, which is the natural order of procedure.

As already pointed out, noun and verb are best taught together by means of simple analysis. When the pupils have acquired the facility in separating a sentence into subject and predicate, a number of examples containing only nouns and verbs should be given for analysis. Thus, the function and definition of these two parts of speech can be readily deduced by comparison.

To facilitate classification of nouns, the method of contrast may be employed. For instance, it may be obtained from the class that the word 'boy' may be applied to any member of the class; while names like 'Rama,' 'Krishna,' etc., can be applied only to particular members.

Next, the pupils are required to make sentences containing the names of persons and towns. The terms proper and common nouns may now be supplied, and a definition of each deduced. A similar procedure may be adopted to deal with other kinds of nouns.

The adjective should be introduced as an enlargement of the subject or object, and its function and definition thus deduced. Separate treatment may be accorded to the various classes of adjectives in several successive lessons. In order to more fully illustrate the function of the adjective, a series of exercises like the following may be given:—

In the following sentence use any other word, you like, to describe the nouns:—

We have a black cat and two kittens.

Or, complete the following by adding suitable descriptive words:—

Horse is a..... animal, etc.

In dealing with pronouns, the personal pronouns can be introduced very easily. The pupils may be asked to improve a sentence like 'Rama was going to school hurriedly when Rama fell and Rama's legs and hands bled,' etc. Again, a student may be asked to describe the incident assuming it befell him; or, how he would describe it if he were addressing the boy who fell. From this, it follows that the introductory lesson on pronouns may follow those on the nouns.

The teaching of relative pronouns and other allied types may be deferred till conjunctions are taught.

To teach adverbs the plan adopted for adjectives will suffice. By examples it can be easily shown that adverbs are words which enlarge or extend the meaning of the predicate. Next, the use of the adverbs with adjectives and other adverbs should be dealt with, and a complete definition finally obtained from the students.

The function of the commonest conjunctions in joining words will very likely have been recognized by the students much earlier. There is now little difficulty in extending their knowledge to the joining of phrases and sentences by means of illustrative examples given on the black-board, such as 'Rama went to school'; 'Krishna went to school'. It must be elicited from the students that but for the change of persons both sentences express the same action.

Hence, make them appreciate the necessity of expressing the idea in a shorter way, e.g., 'Rama and Krishna went to school.'

The class may be led to state that the word 'and' joins the two nouns. A series of examples, illustrating the uses of conjunctions and similarly dealt with, would lead the class to a definition.

This is the stage for teaching relative pronouns. Illustrations like 'I know the boy who won the prize' may be used to elicit from the students that the word 'who' stands for 'boy'; hence it must be a pronoun. It must be explained that the clause beginning with 'who' refers to something that goes before, i.e., the word 'boy.' Hence, the class is led to state that since 'who' is a pronoun, and also since it relates, it is a relative pronoun.

Interrogative pronouns may be taught by contrast with relative pronouns. The difference in the uses of the same word 'who' in two different contexts like 'I want to find the girl who spoke' and 'Who spoke?' may easily be pointed out. Hence the definition that interrogative pronouns are those which ask questions may be obtained from the students.

Students sometimes confuse a demonstrative pronoun with a relative pronoun. The students of the Matriculation Class in a High School were once asked to parse the word 'that' in the following sentence:—

'The teacher's role is not *that* of a shepherd in the midst of his sheep, but something entirely different.'

Not a single student—not even the best one—could parse it correctly. All of them parsed it to be a relative pronoun. They could not distinguish between a Relative pronoun and a demonstrative pronoun. The difference between the two could have been taught by contrast. For example, the function of 'that' in the following sentence is entirely different from that of the one in the above sentence:—

'I am going to visit my aunt *that* lives on the Continent.'

The parsing exercises should not be looked upon as a means of teaching grammar; it is really a means of test and revision. As a mere mechanical ability, parsing is almost useless; its value depends upon the manner in which the exercise is utilized as a mental discipline. To get the full benefit out of it, parsing must always be associated with analysis.

Generally speaking parsing lessons are best conducted orally. The tendency to guess, so manifest in such lessons, can be checked effectively only by skilful questions. In the higher classes after considerable oral practice in the earlier ones on the part of students, written exercises in parsing may be occasionally employed.

Suitable passages containing no novel difficulties must be selected. By means of skilful questions the class should be taken through the following steps:—

(i) If the passage is inverted as in poetry, arrange it in prose order; if elliptical, let the students fill in the ellipsis by suitable words.

(ii) Find the finite verb, the subject, and the object.

(iii) Find the qualifying words.

(iv) State the meaning or use of each of the remaining words. See if any of these are combined to form phrases. The students must be asked to state their reasons for their answers. The educative value of the lesson is, by this means, fully preserved.

It has already been pointed out that all teaching in formal grammar should be based on the analysis of sentences, which should be taught according to a well-graduated scheme throughout the course. The scheme may be arranged somewhat as follows:—

(a) The various forms of the subject.

(b) The various forms of the completion of the predicate.

(c) The various ways in which the meaning of the subject or the object may be enlarged.

(d) Different kinds of extensions of the predicate.

After these details in connection with simple sentences have been well understood, complex sentences will present little difficulty. By means of examples written on the blackboard, the idea of dependence

of a clause on another must be brought home. Then, let the class arrange the dependent and the independent clauses in tabular form. Next educe the various functions of the subordinate clauses. Let them see for themselves that they perform functions of adjective, adverb, or noun; finally, let them formulate their own definitions of the adjectival, adverbial, and noun clauses.

After dealing with the complex sentences, compound sentences will offer no difficulty. The principle of gradation is of great help here as well.

Before concluding, some of the defects often met with in the teaching of grammar may be enumerated:—

(i) The teacher gives too much assistance. In his desire to make progress sufficient time and opportunity are not afforded for the pupils to exercise their own powers of reasoning.

(ii) Definitions are taught first, and applied deductively too examples. The students thus blindly accept the statements of the teacher. Thus, the intellectual value of the study is almost entirely lost.

(iii) Words and thought are often confused owing to the use of careless phraseology in teaching. For example, a book is spoken of as a noun, and the students are not made to distinguish between the word 'book' and the 'thing' denoted by it. The conception of grammar as a Science of Words is often not well grasped.

(iv) Grammatical terms are introduced too early, and thus the memory of students

is unnecessarily burdened. No technical terms must be used until they are absolutely necessary for further progress

(v) Mechanical aids are sometimes offered by which certain parts of speech are supposed to be recognisable: e.g., lists of words usually employed as prepositions, conjunctions, etc., are memorized, thus leading to the classification of words according to form instead of function. The students should be trained to think first of the function, and then classify: what a word *does* should decide what it *is*. Hence, the place of reasoning in teaching of grammar is indispensable.

Finally, a model lesson on the teaching of relative pronouns is appended below as a finger post to other lessons on Grammar. It is quoted verbatim from *The Teaching of English in India* by Thomson and Wyatt, (O.U.P.):—

THE RELATIVE PRONOUN

Aim:—To explain the term ‘Relative Pronoun’.

1. Let us study these transformations:

- (a) The book *on the table* is mine.
The book *which is on the table* is mine.
- (b) The map *behind me* is a map of India.
The map *which is behind me* is a map of India.

The phrases ‘on the table’ and ‘behind me’ are adjective phrases, for they describe the book and the map respectively. The groups of words ‘which is on the table’ and ‘which is behind me’ also describe, but they are *clauses* and not phrases, because each can be analysed into subject and predicate; thus:

Subject	Predicate
which	is on the table
which	is behind me

2. Let us consider the word ‘which.’ What part of speech is it? (1) It is the subject in a clause and (2) it refers to and stands for a noun. It is therefore a pronoun.

But it is a particular kind of pronoun. It cannot be used alone; it must always be used with a noun or pronoun to which it refers or *relates*. It is called a *relative pronoun*.

The word to which a relative pronoun refers is called the *antecedent*.

3. There are several relative pronouns. The more common of them are *who, whom, whose, which, that* and *as*.

Who refers to persons; as, ‘Boys who work well win prizes.’

Which refers to things; as, ‘Trees which bear fruit are called fruit trees.’

That refers to persons or things; as, ‘The boys (or books) that came this morning are here.’

As is used after *same* and *such*; as, ‘This is the same book as that.’

4. But the name ‘relative pronoun’ does not fully describe the work done by these pronouns in sentences. Relative pronouns not only relate to an antecedent, but also connect the clause which they introduce with the rest of the sentence.

Join these sentences using relative pronouns:

- A book is on the table. It is mine.
- A boy is standing near the board. He is the monitor.
- You see a book in my hand. It is a reader.
- I have a pen. It writes well.

TEACHING IN OTHER LANDS* JAPAN

BY SRI R. SURYANARAYANA RAO, Madras

IN the introduction to a Picture Book entitled *Japanese School Life through the Camera* appear these significant words: “The road to learning and culture is a long and varied one. It leads from the Kindergarten to the University, from the playing fields to the research laboratory, from the childish repetition to independent thought. Throughout this course the body must be trained as well as the mind, so that the children may finally grow into useful and active members of society.”

The present educational system of Japan is comparatively of recent growth beginning from the accession of the Great Emperor Meiji known as the Restoration in 1868. This does not mean that prior to that period there was no indigenous system of education known to Japan. From the earliest periods of her history, Japan came under foreign influences, especially of China and Korea. Japan’s culture and civilisation before the Restoration of 1868 came mainly from these countries and Buddhism. She had copied, and transformed to suit her own peculiar genius, Chinese art, religion, philosophy, ethics and writing. But this influence had not permeated the common people and the Samurai class continued to be the custodians of Japanese culture and civilisation. The credit for the promotion of public education really belongs to Emperor Meiji,

who, soon after his accession to the throne expressed his ardent desire in the following words: “Henceforward shall education be so diffused that there shall be no ignorant family in the land and no family with an ignorant member.” The parents were held responsible for the neglect of their children’s education. That the decision of the Emperor was wise and that his desire has been wholly fulfilled will be evident from the fact that to-day more than 99·6 per cent. of children of school-going age are at school. Another factor of importance is, the period of Restoration also marked the complete abandonment of the policy of isolation. Owing to various historical circumstances, Japan had adopted a policy of isolation and shut herself off from all intercourse with foreigners. But Emperor Meiji saw the utter futility of isolation and among the five oaths he took there was one which put an end to this policy and transformed completely the attitude of Japan towards foreigners. It reads as follows:—“Wisdom and ability should be sought after in all quarters of the world for the purpose of firmly establishing the foundations of the Empire.” The Japanese from now became so eager and impatient to introduce things Western and adopt them that her system of education also was profoundly affected by Western influence. Emperor Meiji became fully aware of the situation and was anxious that all that

* A Radio talk given at the A. I. R., Madras, on 12th October, 1940. XLVI—91

was best in Japanese culture and civilisation should be conserved while adopting and assimilating all that was best in the West. He issued the famous Rescript on Education on October 30, 1890, which definitely established the educational policy of Japan. The result has been that the Japanese have now a system of education suited to their national requirements, both in substance and in form, having succeeded in the harmonious and judicious blending of the Eastern and Western civilisations.

A copy of the Rescript is supplied to every school in the Japanese Empire and is read on the 30th October of each year, the date of promulgation, so that the basic principles of Japanese education may always be remembered. Whenever any changes in the educational system are proposed, a reference is invariably made to this Rescript as it is sincerely felt that it embodies their fundamental educational policy and anything savouring departure from this fundamental policy is ruled out whatever its intrinsic merits may be.

As the Rescript contains the fundamental educational policy of the Japanese Empire, it can be understood why all educational agencies are under the direction of the Central Government. It is the desire of the Japanese Government that their national traditions handed down from generation to generation should be carefully preserved, nourished and promoted and that any new developments in the educational system should be in accordance with the general educational evolution of the world.

The Japanese educational system may be roughly divided into three divisions. The

first of these is the elementary education. Then follows the secondary schools and the third type is institutions for higher education such as universities, special schools and technical colleges. As elementary education is compulsory for all children from 6 to 14 years of age, the establishment of elementary schools has to keep pace with the enforcement of compulsion. This responsibility is cheerfully borne by cities, towns and villages with the help of contributions from the State Treasury. There are two kinds of elementary schools as we have in this presidency, the lower and the higher. The course in the lower schools extends to six years while in the higher it runs to two or three years. These elementary schools provide children the rudiments of moral as well as national education designed to impart general knowledge and skill necessary for practical duties in life, including special attention to bodily development and to make them good members of the community. In the words of an official pronouncement the purpose of elementary education is 'while paying due regard to the normal growth of the child, and providing the foundation for both national morality and education, it is for the imparting of such knowledge and arts as are necessary for the child in finding his place in life.' In higher elementary schools, besides general subjects, emphasis is laid on handicrafts and technical studies while domestic science is taught to girls. Subjects to be taught, the number of hours allotted to each subject, the text-books to be used and all matters relating to the

conduct of elementary schools are governed by Government regulations. The rigid uniformity may be considered an advantage as well as a drawback. But special provisions are made to meet the peculiar needs of particular localities. The elementary schools are housed in spacious buildings with large open spaces where mass drill is performed by the children more than once a day, in any case at the commencement of the school day, accompanied by music relayed through a microphone. In fact these are some of the best buildings in the villages and cities. The elementary school is the best conducted institution in the country both in regard to organisation and equipment and is the centre of culture around which all other cultural institutions have sprung up. The elementary school teachers, therefore, enjoy rightly the enviable position of being the leaders of the community and are treated with great respect and consideration both by the authorities and the public. The higher elementary schools act also as a kind of junior secondary schools. Co-education is generally a rule rather than an exception. Generally a kindergarten section is attached to an elementary school where pupils between 5 and 6 years of age spend a year for three or four hours a day. This section is usually in charge of women teachers. Day nurseries are also provided for the children of the working mothers. Though the kindergarten and the day nursery for children of tender age are becoming common, it is necessary to remember that in Japan children occupy a place of honour in their homes and the parents are greatly devoted to their welfare.

Almost all the festivals for children mark definite stages in their growth. The well-equipped day nurseries and the kindergarten classes leave pleasant memories on the visitors and show equally the devotion of the authorities for the development of children.

The secondary schools for boys are known as middle schools while those for girls are known as high schools. The middle schools receive children from elementary schools and provide general education for five years, emphasis being laid as usual on the development of 'National Morality.' In the fourth and fifth years two courses are offered, the one leading to higher schools while the other is intended for those who complete their education. As in the case of elementary schools, courses of study, hours of work, etc., are laid down in Government regulations and are uniform throughout the country. Gymnastics including fencing and practical work receive greater attention. The girls' high schools provide courses calculated not only to impart cultural education but also the development of national morality and the cultivation of womanly virtues. Besides ordinary subjects taught in middle schools, cooking and sewing receive special attention. Increasing provision is made for the physical training of girls including archery practice. Many schools provide special courses such as every day etiquette, flower arrangement, tea ceremony, the Noh dance, western music and other subjects which promote cultural development. The course extends to four or five years in the case of girl pupils from lower elementary schools while those from

higher elementary schools are taught for three years only. Everything relating to the conduct of girls' high schools is also prescribed by regulations and is uniform throughout the country.

To impart technical education suited to the industrial needs of the locality, schools have been established imparting technical instruction for a period extending from two to five years. In view of the rapid industrial development of Japan these schools possess increasing importance and a great deal of attention is paid to develop their character and curriculum. Japan is able to provide all the technicians required for her growing industries both during periods of peace and war. Unlike in schools imparting general education, there is no uniformity in the courses of studies in technical schools or in the text-books, etc., used. The subjects taught and the methods of instruction adopted are constantly under review. Recently when as a result of the Sino-Japanese conflict, the Government were forced to withdraw workers from factories to be trained as soldiers, short courses for technicians were instituted to train up young men to take the place of those called to colours. The organisation of technical education is so efficient and thorough that within a period of six months Japan could produce technicians equally efficient as those whose places they had to occupy.

There are special schools akin to our professional colleges mostly devoted to industrial training or to business. There are also many private schools of college grade imparting special courses in law, in literature, etc. The special technical schools

providing higher courses in industrial subjects, in agriculture, in commerce, and in mercantile marine are a prominent feature of Japan. Those who have passed out of these schools occupy high places as captains of industry. Besides there are higher schools which prepare pupils for the universities. The university education, as in all countries, forms the crowning feature of the Japanese educational system. Opportunities for further research in various fields are available and students are given every encouragement to do research work to discover and make their discoveries available for national use.

Normal schools for the training of teachers required both for elementary and secondary schools are maintained. They are well planned to provide efficient and able teachers required to teach children. Besides, licences are granted to those who prove themselves qualified in special subjects. Training schools are also provided for teachers required for special schools.

The Youth Movement in Japan has received great impetus. Young Men's and Young Women's Associations have been organised all over the Empire. They serve as a sort of continuation schools as these Associations undertake to arrange lecture courses, reading rooms, industrial studies, physical training classes, etc. They are under the control and supervision of a Director of Social Education appointed by the Government. The activities of these Associations are co-ordinated. As the Government realise the importance of these Associations as an agency for the education of the young people, subsidies are freely

granted for their work. There are also Junior Organisations for boys and girls run on similar lines. Libraries, museums, classes for adults, use of cinema and radio, these and other means calculated to promote cultural development receive encouragement from the State. Education of the defective and delinquent children also receives special attention. The Ministry of Education with its Bureaus and Specialists is constantly engaged in studying such movements in other countries and planning for their adoption, altering them to suit their peculiar conditions.

Those who have watched the progress of Japan as a modern power cannot fail to be

impressed by her advancement in all directions. What it took other nations centuries, with more favourable circumstances for development, has been achieved by Japan in the shortest period. To the foresight and wisdom of the Great Emperor Meiji her present position is largely due. Early in his reign he realised that education was the solvent for all the ills of Japan and he spared no efforts to establish a system of education based on all that is best both in the East and the West. The natural trait to adopt and assimilate which the Japanese possess in a remarkable degree has enabled that nation to derive the utmost benefit from the synthesis of the two cultures.

 Approved for class use for schools in the Madras Presidency. (Vide "Fort St. George Gazette," dated 30th April 1940.)

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THE TRAVANCORE UNIVERSITY RESEARCH INSTITUTE

A RECORD OF ITS WORK

BY SRI A. PADMANABHA IYER, *Trivandrum*

RECENTLY I had occasion to write in the columns of *The Educational Review* about the Travancore University—its origin and growth and the aims and intentions it has set before itself. I have also contributed to its columns an article about the University Oriental MSS. Library which in several respects is a unique institution in that it contains several works which are considered rare and valuable from a cultural as well as from historical point of view.

INAUGURATION OF RESEARCH WORK

It is now my turn to give your readers an idea of the Research work conducted by this youngest University in India. The record of its work under this head also is on all fours with the magnificent work it has done under its capable and enthusiastic Director, Dr. Moudgill, who, after holding the place of Professor of Chemistry for several years, is now Principal of the Science College and is also Dean of the Faculty of Sciences. The idea of pooling the scientific resources of the various Departments of the State is not new. It originated in 1921 when, soon after the European War of 1914-18, there was a spurt for the promotion of industries. But the enthusiasm oozed out. More than a decade and a half passed on for reviving that spirit of scientific research and enquiry. For, when the Travancore University was established in 1937, the first step taken was to open a central institute for search and make provision for

the collection of scientific data for the purpose of stimulating effort in that Direction, and for the co ordination and co-operation of the various Departmental Laboratories. For instance, there were Laboratories attached to the Departments of Agriculture, Public Health, Medicine, Water Works, and Industries. The Travancore University has been started with a view to find out ways and means for the conversion of its immense wealth of raw products into finished goods in the different spheres of human activity; the promotion of scientific research was accepted as one of its duties. The elements of basic research were there in the State in the shape of the Laboratories as mentioned above. The problem was how to unify the different agencies of Scientific work and Scientific investigation. It was resolved to entrust the work to the Travancore University. Before doing that, it was decided to depute a competent scientist of great experience in the State service to make himself acquainted with the working of the various similar research institutes in British India. Thus Dr. Moudgill was placed on special duty to prepare a scheme for the organisation of a Central Research Institute. His scheme was discussed in several Conferences of the University authorities and Heads of Departments. The result was that the research sections of the Department of Agriculture and Fisheries, the Public Health Laboratory, the Industries Department, the Meteorological and

Astronomical Departments, the newly organised Marine Biological Laboratory, etc., were transferred to the control of the Travancore University. These institutions together with the Research sections of the College of Science comprise at present the Central Research Institute. These efforts at unification work were started in right earnest in August, 1939. But "the power behind" which supplied the necessary working force to this new enterprise was Sir C. P. Ramaswami Aiyar, the Vice-Chancellor of the University, who is a great believer in the wonders of Applied Science. He supplied not only the driving force but also the different lines of work. Declaring open the Council of Research, the Sachivothama said:—

"The fact that a number of people who are engaged in widening knowledge are brought together is itself a great stimulus in the advancement of knowledge. In the second place, science, as I have stated, does not recognise boundaries. While specialisation is a necessary instrument in the hand of the individual, the team supplies the necessary integration without which scientific research would be barren and arid. It is good and useful to jostle together these different branches of science and unless each branch is so parsimonious as not to allow elbow-room, I trust that a chance of juxtaposition of mind, will do a great deal in the matter of advancing research work. In that spirit of comradeship, in that spirit of fellow-feeling, in that spirit of strenuous, continuous endeavour to see the light, to proclaim the light and turn the light to the best economy, let us work.

It is because we are all convinced that this Research Institute will aid us in that task and will help us to make our organised efforts more feasible that we have brought it into existence. I wish it god-speed and all prosperity." In conclusion, the Sachivothama quoted what one of the ancient sages has said with regard to learning in one of the Upanishads. The passage he quoted was:—"Let us enjoy common protection; let us enjoy the goods of life together; let us illuminate, educate ourselves together; and, above all, let us work in a spirit of generous co-operation and not of mutual hostility and rivalry". The stirring appeal of the Dewan was in these words of rousing earnestness. "So long as you work in that spirit, success is assured under the destiny of Providence." It was under such inspiration and guidance that the work of the Institute was commenced.

GOOD BEGINNING

The methods of work are absolutely thoroughly and most cautiously dealt with. The various problems are analysed into different subjects and specialised into various sections and entrusted to different persons specially trained for the particular jobs. The results are co-ordinated by the sub-committees in the first instance and later on by the Council. For instance, there is the Krishna Iyer Endowment under the terms of which a Research Fellow was appointed to survey the chemical conditions of retting of coconut husk. It is well known that the coir industry is an important cottage industry in the State. According to the Census of 1931 the total number of persons engaged in coir industry either as

full-time or as part-time workers was 1,26,427. There are various items connected with this industry. The preparation of the fibre from the husk takes about eight to nine months during which period the husk is kept soaked in water. As the results of the scientific investigations have to be exact and have to be depended upon for all purposes, the different kinds of water have to be tested and also the different seasons when the soaking is done together with the periods of time when each soaking takes place. All these details are investigated with a view to obtain satisfactory results. The next stage was to examine the bacteriological side to ascertain the influence of bacteria present in the water and in the husk. Another side of the problem was to devise a simple method to test the breaking load for single strands of the fibre so that the quality of the fibre obtained from the husks treated in different ways may be compared. When all these processes are satisfactorily carried out and the results ascertained from a commercial point of view, very valuable work will have been done in respect of the most important cottage industry in the State.

MANUFACTURE OF SHARK OIL

Another important aspect of the research work done last year which has more or less reached a commercial stage is in regard to the manufacture of shark oil. It has been the experience of the fishermen living on the coast to extract oil from shark which is a frequent visitor. The method of extracting oil adopted by these people has been very crude and suicidal. In the process of boiling the liver all the vitamins were lost because of

the high temperature involved. Some methods were devised under which the vitamins were obtained and when the oil thus prepared was sent to the Nutrition Research Laboratory at Coonoor, it was tested there and found to contain substances more potent than those in the ordinary cod liver oil at present imported. Even otherwise it has become difficult to get the foreign oil because of the War. The tests conducted conclusively proved the superior value of the shark oil on account of its vitamin contents, and in price also it was only one-third or one-fourth of the cod liver oil which is imported. The Department of Marine Biology and Laboratory where all these experiments were conducted and commercially found to be a success, has given it the patent name of "Shaliverol". It is a fact worth noting that the Government of India, after testing this "Shaliverol," have placed an order with the Travancore Government for the supply of this local substitute of the cod liver oil. This has been so firmly established as an industry and the oil has also been proved to be so efficacious that the next problem is whether it will be possible to meet the demand that has been created. It is now used in the Hospitals of the State.

PRAWN FISHERY

Travancore has been found to be the natural home of prawns. It is interesting to be told that this kind of tasty food is bred in the ordinary paddy fields without any effort made for that purpose. During the monsoon rains the backwaters and lakes get immensely flooded. There is naturally a large flow of all this surplus water into

the paddy fields. With this inflow of water is a large quantity of prawns which are inevitably driven into these paddy fields. When the floods subside and water recedes, the prawns remain in the paddy fields and later on multiply. When the agriculturist reaps his paddy crop, he unconsciously gets another crop, the prawns. In view of the cheap and unexpected supply of this harvest there is indiscriminate destruction of this excellent article of diet. What is done in the Marine Biological Laboratory is to investigate and study the life history and habits of prawns and shoal fishes, their breeding and migration and the conditions of fishing so as to prevent premature destructive and unprofitable hauls.

TRANSPORT OF FISH

As the crop of fish from the sea, backwaters, lagoons and rivers is over-abundant, ways and means have to be found for the transport of all this edible fish to the inland portions of the State. Another item of work which the Department has done is transport of this article of diet to the interior parts of the State and also distant places like far off towns like Trichinopoly, Madras, Tuticorin in India and also to countries like Ceylon. For this purpose Cold Storage arrangements have been made under which the fish cured last for several months without the slightest deterioration in its physical contents. Already the Department has been able to find a very good market and it is hoped that the Department will be in a position to popularise the fish cured under the scientific system and make it reach the masses in the interior parts of the State. In view of the difficulties experienced in the

transport of fish from the coast, especially in seasons of copious supply, the Government have ordered the Public Works Department to make available to the fisherfolk convenient means of communications.

TRAVANCORE SELF-SUFFICIENT IN VACCINES

As a result of the very good work done by the Public Health Laboratory it has been made possible for the State to become independent of outside supplies of small-pox, typhoid and other prophylactic and curative bacterial vaccines. Though the treatment of dog-bite was begun only last year by the application of anti-rabic vaccine which was manufactured locally, the vaccine produced has been on the increase, so much so that the demand for the whole State has been met. The popularity has been so wide-spread that it is found to meet the demand in full and promptly. It has, therefore, been found desirable to decentralise the treatment and a scheme has been submitted to Government the object of which is to enable cases in the mofussil parts being handled and given relief as promptly as possible. The Laboratory also gives assistance in plague and malaria control measures and has undertaken a survey of the rat-flea "cheopis" in Trivandrum, the local Municipal Council at whose instance this survey is undertaken meeting the necessary expenses. The subject of nutrition survey has been before Government for some time; now a survey has been recently sanctioned and as a first stage, the food habits of various representative groups in different areas of the State in different seasons will be surveyed. It is

also on the programme to examine the diet given in institutions under the control of Government with a view to suggest a better balanced diet where necessary.

SALT CULTURE

Travancore, in spite of its large sea coast and the excellent facilities in existence for the manufacture of salt, was importing salt from Bombay to meet the demand in full. A few years ago as much as 12 lakhs of pounds was being imported for local consumption from Bombay, Tinnevely and Tuticorin. By gradual extension of salt culture this import has been totally stopped and the area of local manufacture increased so rapidly that the quantity produced in the salt pans in South Travancore was found sufficient to meet local consumption in full. Import of foreign salt has been completely stopped. The next question was how to improve the purity of the salt produced. In this task the co-operation of the salt pan owners was forthcoming in abundance. The Professor of Chemistry, Mr. K. R. Krishna Iyer, was working in select pans placed at his disposal by private owners. Experiments conducted conclusively showed that, without increase of cost in production, the quality could be greatly improved by modifying the technique of evaporation and scraping. Another advantage which these processes yielded was that some chemicals were discovered which could be used in several industries. For instance, magnesium chloride and magnesium bromide for bromine have been successfully tried in industrial projects. Mass production of these bye-products is proposed to be undertaken.

MANUFACTURE OF LOCAL DRUGS

Another line of research work was an attempt to manufacture drugs locally. The State produces *Nux Vomica* in very large quantities which at present is exported. One of the Lecturers in Chemistry who for some years has been making a special study of organic drugs has successfully worked out a method for the separation of *strychnine* from *brucine* in the total alkaloids obtained from *Nux Vomica*. The steps taken so far justify great success in the production of *strychnine* which is so much in demand in allopathetic systems of treatment of diseases.

NEW MOTOR FUEL

A research work of great promise stands to the credit of the Central Institute. The State Transport Department has been using Light Diesel Oil as fuel for running its buses. This fuel was taken up for research and the attempts made to refine it have yielded results of great commercial value. At the instance of the Director of Transport experiments were conducted to run the buses with the oil produced. This has made the scheme commercially successful and so further steps have been taken in the way of starting a small distillation plan in which cruder fuel oil including garage waste oils are also rectified. The present stage not only paid for the entire experimental work and its attendant failures but also left a fair margin of profit which will enable the Government Departments to make a saving on their running cost.

THE TRAVANCORE UNIVERSITY RESEARCH INSTITUTE

FOR FACILITIES FOR RUBBER MANUFACTURE

Out of evil cometh good. This is nowhere better illustrated than in some of the industries affected by the War conditions. Travancore, it is well known, has a very large area under rubber. In fact, 75 per cent. of the rubber produced in India comes from Travancore. Such a great industry was seriously affected when war broke out over an year ago. In the manufacture of rubber, formic acid and acetic acid are used as coagulants for rubber latex. The price of these two materials rose very high on account of the War. Sulphuric acid has been used in Malaya in the past, but its corrosive nature and its hygroscopic character and, therefore, its changing composition, led to its replacement by other more costly coagulants. As a result of the work done in the Industrial Research Laboratory in the Institute, an optimum dilution has been obtained at which this acid is not difficult or dangerous to handle and remains unaltered in the presence of moisture, so that planters can use it according to a prescribed formula which need not be varied.

COCONUT SHELL CHARCOAL

At the request of the Government of India the Travancore Government agreed to supply coconut shell charcoal for war purposes. In Travancore coconut shells are plentiful. They are generally wasted in the compounds. The Government, therefore, undertook to supply this charcoal. What was done was that the raw shell was burnt in a pit with a limited supply of air. When the proper

stage is reached, the pit is covered to exclude air and allowed to cool. It is difficult to control the burning in the larger pits and the cooling also takes longer time. And, the raw shell is reduced to less than one-third of its weight during charcoaling, so that in transporting shells to central large pits, more than two-thirds of the material that is carried is dead weight. The Industrial Research Laboratory carried out a project for devising a pit with better control over the firing and a much quicker turn over so that it may be possible for one man to manage the pit and to use it from day to day. One of the charcoal contractors is using this method and the yield and the quality of his product are reported to be very satisfactory. As it is not desirable to give publicity to this under the present conditions of emergent requirements lest people should wrongly conclude that coconut shell charcoal manufacture is an unusually profitable industry—which it is not—and thus begin to hoard stocks in the hope that the price of raw material will go high, the potentialities of the one-man, covered pit, as disclosed by the project, have been noted for further exploitation as a cottage industry under more normal conditions.

MINERAL WEALTH

Travancore has been having in its sea-sands an immense and inexhaustible wealth. These sands have for the past several decades been exported in large quantities. There is a story current as to the discovery of valuable minerals from these sands. It would appear that the Travancore coir goods used to be exported along with some sea-sands to keep weight. Once some one

had the curiosity to take the sands and put them to a chemical test and analysis. It was then discovered that they contained minerals which could be used for commercial purposes. Thus came about the export of sea-sands in large quantities. Monazite and ilmenite were the chief minerals first found out. They yielded a material which was applied for a variety of purposes such as enamels and paints. The radio-active component of *monazite-mesothorium* is required for the manufacture of luminous paints. It has been concentrated at the suggestion of the Chief Inspector of Stores and Clothing, Indian Army Ordinances Corps, and tests conducted for Travancore Government at Cawnpore have been very encouraging to launch upon a project which will combine with this concentration, the possibility of the preparation of thorium nitrate and cerium salts for use in the gas mantle industry and other industries. A scheme for further work in this direction has been placed before the Board of Scientific and Industrial Research in India.

NEW WORK IN SCIENTIFIC AGRICULTURE

Travancore is purely an agricultural country. The age-old methods of cultivation and the traditional agricultural implements are very hard indeed to change at the magician's wand. Any improvement either in the method of farming or use of implement takes time. Long range view and patience are the indispensable factors to be counted. It is something to feel gratified that the Central Research Institute has first turned its attention to the food-crops of the country.

Three important schemes, two for the conservation and the third for the improvement of crops are being sponsored by the Institute. Cardamoms are cultivated as a planting crop and on a large scale. In the use of this spice Travancore stands foremost, for the State supplies 80 per cent. of this article of spice to the world. The Special Officer deputed by the Government of India to study this subject was surprised to find in this country blocks of thousands of acres under this spice. Unfortunately, the cardamom plants have been attacked with a disease called "thrips," an insect pest which has been spreading with alarming speed. There is a research station started at Pampadampara with the active co-operation of the Murphy Estates, Ltd., in the Cardamom Hills, to study the life history of this pest and to discover its vulnerability to insecticides or some hitherto undiscovered predator. A similar research station is to be opened in Kuttanad to deal with the rice swarming caterpillar. It may be mentioned in this connection that Kuttanad is a water-logged area where paddy is cultivated under disabilities unheard of in other parts of India. Here water to a depth of four or five feet has to be baled out to make the land ready for cultivation. The area under paddy is about 60,000 acres. For manuring this area of paddy cultivation the ryot depends upon natural conditions when silt is carried to and fro by flood. It is under such conditions that paddy is cultivated here. What has been done is to reduce these disabilities as far as possible by scientific means. There is a Paddy Station at Kayamkulam where the Economic Botanist is

continuing his work on the selection of the different strains suited for Central Travancore. Another station has been opened at Trivandrum where the plot has been laid out into blocks so as to make use of the statistical method. The results obtained confirmed the work carried out by the Economic Botanist, with his variety, T. E. B. 1 in south Travancore. The second crop is now to be harvested and an enterprising land-owner has offered to cultivate this variety in his fields under the supervision of the University workers so that while the former may convince himself of the quality of the strain, the latter will be able to gather data and verify results under the usual conditions of cultivation. The cytogenical aspect of the work is being examined by a Research Student under the supervision of the Professor of Botany.

CONCLUSION

The above is a brief summary of the work of research conducted last year under the fostering care of the Travancore University which, though the youngest University in India, is taking decidedly long strides in its onward march. There is every promise of this Temple of Learning fulfilling the aims and objects with which it was ushered into existence by His Highness the Maharaja under the inspiring advice of his popular and talented Dewan, Sachivathama Sir C. P. Ramaswami Aiyar.

THE GOLDEN PAST

By MR. JAGAT S. BRIGHT, *Lahore*

My darling friend !

Let us conjure the days
When we zig-zagg'd the silver stream
Below the golden rays.

There tripped 'tween us
A rosy cherub boy,
And danced around us
A dizzy dog with Joy.

With heaving hillocks
We four were all akin ;
The green grass and blue sky
Did soak into our skin.

To-day we tread about
The Vale of Cashmere,
More learned than before
But poorer than we were.

Works by A. Padmanabha Iyer, Journalist,
Karamanai, Trivandrum

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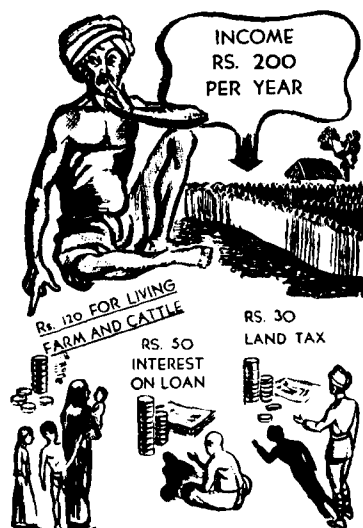
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OUR INDIA

BY

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With 100 illustrations by
C. H. G. MOORHOUSE



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A few opinions :

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—*Sir Akbar Hydari*

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THE EVIL-EYE

BY SRI L. K. BALARATNAM, *Trivandrum*

INTRODUCTION

FOLK-SUPERSTITION provides the enterprising student of Primitive Culture with a fruitful and interesting field for investigation. The study of Primitive Culture which is interesting and instructive arose from the study of the culture of the 'present-day man.' The chief characteristic of primitive man is the habit of mind which is dominated chiefly by tradition and he refers all novel experiences to traditional forms.

The earth is full of spirits of all sorts with varying degrees of power. Everything, living or non-living, is imbued with a soul or spiritual energy. Of these forces, some are active in a high degree. Others are less active. Yet others are dormant or inactive. Man has to consider only with the more active occult influences, of which some are beneficent, while others are maleficent or hurtful.

The Evil-eye is the most terrible and troublesome of these maleficent occult influences. Belief in the Evil-eye and its evil consequences, is world-wide—not pertaining to one country alone. "Sight is a form of contact, both in modern physics, primitive belief, and still to some extent in ordinary civilised ideas." The sense of sight is both active and passive. Mere sight alone can transmit qualities. The power of the human eye is a case of this.

The main idea underlying this superstition consists in the notion that certain

persons are born with an evil potency in their eyes, and that psychical influence is most easily exerted by their look upon the objects they see. It is especially envy that is here transmitted. The oriental belief that food is rendered poisonous and useless by the Evil-eye is an example.

ORIGIN

The origin of this notion is buried in obscurity. It is generally believed that persons "born of mothers whose longings during the period of pregnancy, for certain objects, remain for one reason or other unsatisfied," are as a rule, born with the Evil-eye. Whenever their 'evil eye' falls on other healthy and robust people or their food and drink, danger in some degree or other is sure to overtake them. They are rather particularly opposed to the sight of the "happiness or hilarity or plenty of others." In short, we can find hardly an object which will not affect the eyes of the evil-eyed persons.

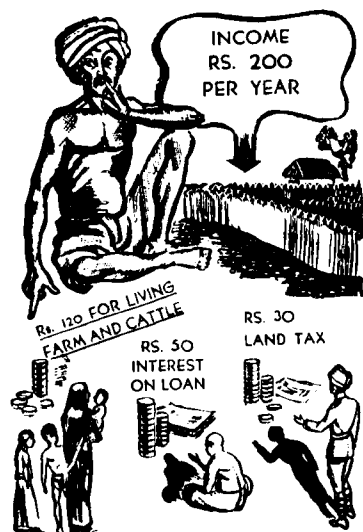
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REMEDIES

To defeat the baneful effects of the Evil-eye many cleverly contrived magical precautions and devices are adopted by Man. Loss of appetite and sudden illness in young children of two or three years are often ascribed to the Evil-eye by their mothers. The measure that is most common and widely adopted by the mothers of Southern India to counteract the Evil-eye in children is to wave three times in front of the baby and throw into the fire a mixture of some chillies with a little quantity of salt. A pungent and strong suffocating smell arises at once from the fire, showing thereby that the Evil-eye has been averted. To divert the attention of the evil-eyed person, from the beautiful and handsome appearance of the child, the Indian mother puts on a black mark on the forehead. Some of the ornaments are undoubtedly supposed to act as charms or amulets, as they are chiefly worn by the women and children, who are especially exposed to the malicious influence of evil spirits. In fact, "the different works of art and modes of decoration, including ornaments, paint, mutilation, scarification, tatto, etc., seem to have had a religious and magical significance rather than a desire to embellish the appearance." The Christians and Hindus of Malabar have many charms against the Evil-eye, such as "jewels and tiger's claws set in silver" and others.

EVIL-EYE IN AFRICA

In Abyssinia, we are told, the doors are closed carefully before meals, to shut out the Evil-eye, and "a fire is lighted, otherwise, 'devils' will enter, and there will be

no 'blessing on the meat'". In Morocco, belief in the Evil-eye is somewhat greater than those of other places. In the presence of strangers, nobody would like to eat or drink. They eat the food entirely concealed from view to prevent the evil spirits from seeing them, or the 'evil eye' from striking them. Some Egyptians, mentions Mr. E. W. Lane, "refuse to buy meat from a well-patronised butcher's shop, because it would be poisonous to eat meat, which had hung in the street before the eyes of the public, so that every beggar who passed envied it." The Nubians carry no food without being carefully covered, for fear of the Evil-eye. It is of great interest to mention here, that a Fhol will even "leave off eating if a man's shadow passes over the dishes."

EVIL-EYE IN INDIA

Again, there is a general feeling that the bride and bridegroom in a marriage are in a state of danger. They are exposed, so to speak, throughout the marriage to other person's "magical tricks, or evil looks, or to the attacks of evil-spirits or to some impersonal mysterious cause of evil." Therefore, they stand in urgent need of protection and also purification from these things. Purificatory as well as protective ceremonies are of frequent occurrence in the South Indian marriages. The common measures adopted by South Indian women are:—

(i) to pass a solution of chunam and turmeric round the bride and bridegroom who are supposed to be under the baleful influence of the 'evil eye,' and

(ii) to wave in front of the bride and bridegroom, in the presence of others, balls

of cooked rice painted red and throw it away into the street.

In South Indian Brahmin villages, the bride and bridegroom are objects of the above-mentioned ceremonies, as they are supposed to be susceptible to all kinds of baneful influences during the marriage days. If these purificatory ceremonies are not performed by the responsible elders of the family, the bride is considered to be not only herself in danger, but also a potential source of danger to others. The bride is supposed to be haunted by evil-spirits and external influences, particularly the Evil-eye, as much as, or even more than, the bridegroom himself. The terrific noise of the music forms a vital part of the marriage ritual, especially in Southern India. The primary object of this is expressly said to prevent the evil influences emanating from the eyes of some envious spectators. The same may be said of the guns that are fired at weddings. Throughout Europe, country marriages are celebrated with gunfire, which is said "to drive away the evil-spirits". In Russia, much care is taken "to shut out evil influences from the place where the marriage is celebrated. All doors, windows, and even the chimneys are closed at a wedding, to prevent malicious witches from flying in and hurting the bride and bridegroom."

Among the Muhammedans, the bride is taken to the house of the bridegroom, with her face covered. The object of this is to protect her from the Evil-eye. This custom "has been common in Europe and the ancient Romans attached much importance to this custom." In Morocco, we find another idea related with the covering of the

face of the bride: "her own glance is considered dangerous to others. Misfortune would befall any person or animal she looked at before she has seen her husband on her arrival at his house. If she looked at anybody on her way to it, there would be fighting and manslaughter at the ceremony."

The practice of dressing boys as girls and *vice versa* to avert the evil-eye not uncommon in Konkan and Oudh, because they are often exposed to supernatural dangers. To make the boy appear a genuine girl, his nose is even bored and a nose ring placed there. The Orāons who stand "in constant dread of the mysterious force or forces residing in the evil-eye (nājar)" possessed by certain people, "put on rings and armlets made of iron, previously exposed to the influence of an eclipse of the Sun", to avert the evil-eye from their own persons.

"It is a common custom among the Slavonic, Teutonic and Romance peoples that when the bridegroom or his representative comes to fetch the bride from her home, a false bride is substituted for the real one, another woman, frequently an ugly old one, or a little girl or even a man being palmed off on him as the bride. In Brittany the substitutes are first a little girl, then the mistress of the house, and lastly, the grandmother. In some parts of Bavaria a bearded man in woman's clothes personates the bride; in Esthonia, the bride's brother or some other young man. It has been said that the false bride is supposed to serve as a dummy to attract the attention of the demons or to attract the envious glance of the evil-eye and so allow the real bride to escape unhurt."

In Egypt, the bridegroom is said to go to the mosque before meeting the bride. At that time, he walks between two of his friends dressed exactly like himself. This is to keep off the evil-eye. When the bride at Fez is taken to her future home, she is followed by some of her female relations dressed similarly, so as to make it impossible for the spectators to distinguish who is who. This is said to protect her from magic and the evil-eye and also to make her sweet to the bridegroom's family. "In some country places in Morocco the bride on her part imitates the appearance of a man by bearing her shawl thrown over her shoulder, or leaving her old home clad in a man's cloak, or having designs resembling whiskers painted on her face." In the north of Morocco, it is said, that the bride is taken to her new home, by shutting her up in a box or cage—in a so-called '*amariya*' on the back of a mule or a horse."

These customs—the above-mentioned ones—may with more reason be supposed to have been intended as an effective method of protection against dangerous spirits, against external influences, especially against the 'evil-eye'.

From the measures adopted to protect the houses, the cultivated fields and gardens from danger, it is quite evident that the influence of the evil-eye extends "in popular imagination" to animate and inanimate Nature also. 'The indecent carvings on temple cars are introduced thereon to avert the evil-eye. The measure adopted usually to protect the house from the evil-eyed persons is to suspend a "doll-like hideous creature," in

some conspicuous position, so as to attract one's attention first on it.

The vegetables in the vegetable garden, the paddy in the paddy-fields, will never come to perfect maturity, because they are also under the continuous evil effects of the evil eyes of the travellers. In South India, pots smeared with "cabalistic signs" can be seen placed on wooden poles in a prominent place, to guard the maturing crop and to catch the evil-eye of the passers-by from the crops. Charms on fruit trees have the object of increasing their yield, and keeping birds, animals and even man from plundering them.

In the cows, sudden decrease in the quantity of milk is ascribed to the 'evil eye'. Hence, in a Brahmin house in South India, strangers, whoever they be, are not allowed to present themselves when the milking of the cows takes place. Round the necks of cows are tied shells and bells with a black string, to keep off the evil-eye.

To speak generally, the evil-eye of an unsatisfied person is regarded a great danger. At times, the influence of the 'evil-eye' is intensified by the man muttering words of intentional or unintentional malice or envy, to himself or herself, "how fine it is!" or some thing of the sort. "It is not the eye alone that commits the mischief, but also the mind and the tongue. Man is said to do good through the mind, word and deed, i.e., *manasā vācha and karmānā*".

Every custom now in vogue among the advanced society of men has its history, short or long, and can be traced back to primitive times, in a manner rather surprising. Many popular beliefs can be recognized in the myths and legends of the rudest tribes of the world. A number of curious customs and superstitions still linger in town and country, and betray on closer scrutiny, their origins from a far more ancient stage of Culture.

PLACES OF EDUCATIONAL INTEREST IN SOUTH INDIA*

A combined party of 94 including teachers from the Tirukoyilur and Panruti High Schools toured from 28-9-40 to 8-10-40, covering a distance of nearly a thousand miles in South India. The chief places visited by the party in the course of their tour were Madurai, Tinnevely, Tiruchendur, Ambasamudram, Trivandrum, Cape Comorin, Varkala, Quilon, Punalur, Courtallam, Srivilliputtur and Trichinopoly. Thanks to the facilities afforded by the South Indian Railway Company, the programme, though rather heavy, was carried out successfully.

With the usual reservation of carriages and the grant of concessions in the railway fare, we were able to secure from the railway authorities one of their own men to accompany us throughout the trip. This representative was of very great use to us, for with his help we were not only able to have minor alterations effected in the programme in the course of our tour, without much trouble but we were also enabled to arrange through him for our boarding at out of the way places like Varkala and Punalur. We would have been glad if the Railway had undertaken to give us boarding at a concession rate at the places of halt. I am sure that if a proper representation is made to the Railway Authorities they will not grudge granting this obligation to intending excursionists.

At Madurai, the first place of halt, the members visited the Thirumal Naick

Palace and the sacred Temple. The Palace is indeed a wonderful structure supported by arches with not a beam or rafter anywhere. It is certainly a great engineering feat, and it is no surprise if we are told that it attracts a large number of visitors, year after year. The Temple, with its historical associations and fine sculptural beauties, is bound to attract pilgrims from all parts of India for all time to come.

Our next place of halt was Tiruchendur. Here the temple dedicated to God Subramanya is situated on an eminence against which the waves of the sea are incessantly beating. It has been recently renovated and its sacredness combined with its command of the sea cannot but evoke a feeling of awe and reverence in the minds of the worshippers. The festival in the month of Panguni attracts thousands of devotees to this place.

Next we came to Tinnevely where we saw the spacious temple dedicated to Lord Nelliappar. It is one of the biggest temples which we saw in our tour and the one similarity that we noticed between this and the temple at Tiruchendur was that in both the temples we saw the shrines of Vishnu and Siva located side by side. The existence of both the shrines in one and the same temple is perhaps intended to strengthen the belief that after all Siva and Vishnu represent only the different manifestations of one and the same God.

* A brief account of the excursion trip undertaken by the Tirukoyilur and Panruti High Schools during the last Dasara Holidays.

The next place, where we halted was Ambasamudram. Driving up the Papanasam hill by means of fine motor road which has been recently constructed, we saw the Hydro-Electric Works under construction. Two dams, one being the Upper and the other being the Lower Dam, are being constructed across the River Tambraparni for the purpose of storing up its waters. This storage appears to have a two-fold object. It will not only facilitate a regular supply of water for irrigation purposes but will also ensure a steady supply for the working of the turbines which are to generate electric energy. A trip to the works will certainly be of great educative value and anyone who looks at these works will naturally be reminded of the Mettur Dam across the Cauvery.

The next place of halt was Trivandrum. It is certainly a beautiful city with its fine palaces and bungalows and well kept roads. The Zoo and the Museum at this place are the best in South India, for one can find here animals, birds, and reptiles not easily to be seen in any other place and the collections in the Museum are also rare and well-chosen. The Picture Gallery where there is a good collection of South Indian paintings is well worth a visit. The paintings of the late Raja Ravi Varma form a separate section and they are the finest specimens of the Indian paintings, ever to be seen. The Water Works of Trivandrum have always received the admiration of the visitors for it is said that the water supplied from these works is the purest possible. The Ivory Works are a special feature of Trivandrum and they testify to the great

skill of the Indian carvers. The Temple of Sri Padmanabhaswami is of ancient origin and is a fine model of Kerala architecture. As the towers are generally made of wood, they are covered over with copper plates to prevent fire accidents. Even to-day hundreds of people are fed at the Padmanabhaswami temple, and it is a sight to see the way in which preparations are made in the temple kitchen for feeding such a large number of people.

The next place that we saw was Cape Comorin where meet the Bay of Bengal and the Arabian Sea. It is the southernmost point of India and is a fine sanatorium often resorted to by people during the summer months. It is indeed a pleasant thing to observe the sun rise and the sun set at the Cape. The rising of the Sun from out of the sea in the morning and his sinking into it at the time of setting are indeed a natural beauty anybody will admire.

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God Vishnu who had come to test him. So he fell down and bowed to him. The image of Lord Janardhana serves to illustrate the legend, and tourists coming to Trivandrum never fail to drop in at Varkala to see the famous temple.

The next place of visit was Quilon. Here the party visited a cotton mill, a coir factory, and a tile factory. The weaving of coir mats exactly resembles the ordinary weaving of cloths, the only difference being that coir fibre is being used for cotton.

The next place where the party halted was Punalur. Here there is a paper mill where paper is manufactured not only out of the waste paper which is generally being done but also out of a certain kind of reed belonging to the bamboo species. In the case of the reeds they are first crushed in a crushmill and then cut into pieces in a cutting machine. Then they are winnowed in a metal winnow. The bigger pieces are left above, the refuse passing down through the bores of the winnow. The winnowed pieces are then collected and put into a boiler and soaked in a solution of caustic soda and sodium bisulphate. The whole solution is then boiled for some hours and then undergoes certain purifying processes in the course of which the pieces of reeds become white and soft, and are converted into a solid mass. This mass is then mixed with water in a tank and made into a solution. Then this solution is made to pass through a complicated machine, in the form of thin liquid sheets. As these sheets pass through the machinery, the water drops off and the solid layers are then left behind. These are again passed through steam which

sucks up any moisture that may be left in them. The solid layers which have become sufficiently dry are then rolled up by means of a roller. These rolls of paper are then taken to the binding section where they are cut into pieces of the required length. Brown and yellow paper are at present being manufactured at this place and preparations for the making of white paper are, I understand, in progress.

Besides the Paper Mill we saw a Suspension Bridge across the Kallada river closeby. This bridge is suspended by means of iron chains fastened securely to masonry piers on either side of the river. The chains, besides being securely fastened to the piers, pass over and under the bridge, so much so there is no fear of its giving way. It is being used for all traffic. It is several years old and appears to have been constructed in this manner for the purpose of facilitating the boat navigation along the river.

The next place of visit was Courtallem. The Courtallem hill is very close to the town and Courtallem Fall, which is more or less within the limits of the town, is generally used for bathing by tourists. At this fall there is proper protection for the intending bathers in the shape of iron railings and a masonry arch. There is a temple close to this fall, the presiding deity of which goes by the name of Kuttalanathar. Up above the hill there are three more falls which are called the Honey Falls, the Shembagadevi Fall and the 'Five Falls.' Of these, the Honey Fall is the highest, and the ascent to it is steep and risky. However, it is a grand sight to see the water falling from a

The next place, where we halted was Ambasamudram. Driving up the Papanasam hill by means of fine motor road which has been recently constructed, we saw the Hydro-Electric Works under construction. Two dams, one being the Upper and the other being the Lower Dam, are being constructed across the River Tambraparni for the purpose of storing up its waters. This storage appears to have a two-fold object. It will not only facilitate a regular supply of water for irrigation purposes but will also ensure a steady supply for the working of the turbines which are to generate electric energy. A trip to the works will certainly be of great educative value and anyone who looks at these works will naturally be reminded of the Mettur Dam across the Cauvery.

The next place of halt was Trivandrum. It is certainly a beautiful city with its fine palaces and bungalows and well kept roads. The Zoo and the Museum at this place are the best in South India, for one can find here animals, birds, and reptiles not easily to be seen in any other place and the collections in the Museum are also rare and well-chosen. The Picture Gallery where there is a good collection of South Indian paintings is well worth a visit. The paintings of the late Raja Ravi Varma form a separate section and they are the finest specimens of the Indian paintings, ever to be seen. The Water Works of Trivandrum have always received the admiration of the visitors for it is said that the water supplied from these works is the purest possible. The Ivory Works are a special feature of Trivandrum and they testify to the great

skill of the Indian carvers. The Temple of Sri Padmanabhaswami is of ancient origin and is a fine model of Kerala architecture. As the towers are generally made of wood, they are covered over with copper plates to prevent fire accidents. Even to-day hundreds of people are fed at the Padmanabhaswami temple, and it is a sight to see the way in which preparations are made in the temple kitchen for feeding such a large number of people.

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height of nearly a hundred feet at this place. The Shembagadevi Fall is on the way to the Honey Fall and may be about 20 ft. high. "The Five Falls" is so called because it consists of five falls which are to be found very close to each other. Each of the falls may be about 20 to 25 ft. high. There is a good road leading up to the Five Falls. There is a spacious District Board Choultry at the place, where intending tourists may halt. The place is about four miles from Tenkasi railway station.

The next place of visit was Srivilliputtur. Here there is a big Vishnu Temple, the presiding deity of which goes by the name of Vatapatrasyee. The story goes that the image of God once lay concealed in an anthill under a banyan tree, and that God appeared before a hunter king of the place in his dream and asked him to build a temple for him. It appears that the King immediately built a temple at the place and it is believed that the present shrine of God Vatapatrasyee was the one built by him. There is yet another shrine close to this which is dedicated to Goddess Andal. The legend says that Andal was the daughter of the Vaishnava Saint, Periyalwar, who flourished at this place. Touched by her devotion Lord Ranganatha himself, it is said, married her. The shrine of Goddess Andal is the more important of the two shrines and attracts a very large number of pilgrims. On the walls surrounding the shrine of Andal are found beautiful paintings which depict scenes from the various Avatars of Vishnu.

There is an old palace at this place built by Thirumal Naick of Madura. Though it

has been built after the model of the Palace at Madura, yet it bears no comparison with the original. It is a small building wherein are located some of the main offices of the place.

Our next place of halt was Trichinopoly. The Rock Fort in the city will continue to evoke the admiration of tourists for all time to come. The Vigneswara shrine at the top of the rock gives one a commanding view of the entire city with its banana plantations and coconut groves. The Thayumanavar shrine just below it has an interesting legend about it. God Thayumanavar is so called because, at one time he played the role of a mother to a devoted woman of the Chetti community during the period of her confinement. The lady's mother could not come in time on account of the floods in the river. So God appeared before the woman in the form of her mother and gave her all help in her confinement. Soon after the floods subsided, the real mother came, and at her sight the God mother disappeared. The lady, her mother and her husband soon realised that it was God who had helped them in their hour of need. Touched by their devotion, God appeared before them seated on His Bull, and they bowed to Him in awe and reverence.

To the north of Trichy lies the town of Srirangam with its sacred temple dedicated to Lord Ranganatha. It is a temple frequented by pilgrims all the year round. It is associated with the name of Vibhishana, one of the greatest of Vaishnava saints. It is believed that Vibhishana goes to Srirangam every night from his island home of

Lanka and worships Lord Ranganatha. To the people of now-a-days no trace of his worship is visible, but the belief in the legend seems to be as strong as ever. The temple is one of the most richly endowed temples of South India and its jewels baffle all computation.

Thiruvanaikoil lying to the east of Srirangam is important on account of the famous Siva temple dedicated to Lord Jambukeswara. This God represents one of the five important Lingams which have been named after the five elements, namely fire, air, earth, water and ether. The Lingam at Thiruvanaikoil is called Appulingam and in consonance with its name the idol is found immersed in water for a greater part of the year. The temple has been recently renovated and the five prakaras surrounding it are broad and spacious. Annually there is a festival held in the temple which goes by the name of the *Panchaprakaram*. In it, the idol is taken around all the five Prakaras and hundreds of people attend it from the surrounding villages.

About eight miles to the west of Trichy there is the Upper Anicut where the Cauvery delta begins. At this place, the Coleroon branches off from the main river. About ten miles to the east of Trichy, there is the Grand Anicut where the Vennar and the Mettur Canal branch off from the Cauvery. The city of Trichy may be supposed to be

situated, more or less, at the head of the Cauvery delta.

Besides being a great educational centre, the city gets its added importance from the Head Offices and the Work-hops of the South Indian Railway which are located in it.

To conclude, I may say that the excursion trip was interesting and educative in view of the varied places of importance covered by it.

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Sri R. Kalyanasundaram Iyer, Headmaster, extended a cordial welcome to the gentlemen present and eulogised the services of Sri C. V. Srinivasachariar to the school in various capacities. He was particularly happy that Prof. C. S. Srinivasachariar, a veteran educationist, was there to participate in the celebrations and to give the benefit of his guidance to the teachers. In the course of his welcome, he referred to the problems that agitated the minds of the teaching profession and said that a satisfactory solution could be arrived at only after the great cataclysm that threatened to destroy the world ended. He felt that the time was not propitious for the introduction of the Reorganised Scheme of Secondary Education and that it might be deferred.

The President in inaugurating the week deplored the apathy of parents towards the celebrations and stressed the need for co-operation among the teachers, the parents and the management. The teachers were doing their work in an unostentatious and efficient manner and if the system was at fault the teachers were certainly not to blame.

Rao Sahib C. S. Srinivasachariar of the Annamalai University gave a brief review of what the ancient Greeks and Romans

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With a vote of thanks proposed by Sri M. Gopala Iyengar, the function came to a close.

The next day was the Children's Day. There was a gathering of pupils and masters and a programme of physical activities was gone through.

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The function commenced on Monday, the 21st, with a lecture on "The Defective Children and the Problem Child" by Sri K. R. Srinivasa Iyengar, B.A., L.T., Headmaster, K. A. V. School, with Sri Rajaram Bharathi in the chair, at the Cowrava Elementary School. The several kinds of defective children and the methods of their improvement were fully explained by the lecturer and the President. The lecturer said that the causes of those defects should be studied first and then try to rectify them without curbing the enthusiasm of the pupils. The President explained how medical inspection of pupils in schools helped to remove the defects of the children and the need for riviving it.

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On Wednesday, 23-10-'40, Sri K. Doraisamy Pillay, B.A., L.T., in the course of his lecture in the K. A. V. School, observed that only those who are physically efficient and mentally healthy can fully reap the benefits of education that is imparted to them and added that the teachers, parents, and doctors should co-operate with one another to raise the imbecile and the physically defective to the standard of the strong and the healthy by giving them the advantages of the balanced diet, medical inspection and sufficient playground to provide play for all. Rev. J. T. Jayaseelan, Pastor, American Mission, Kamuthy, the President of the evening, wound up the meeting by explaining the maxim 'Learn, live and labour'.

Sundarapuram Muslim Elementary School undertook to celebrate the third day's function on 24-10-'40, when Sri A. Subramania Pillai, B.A., L.T., Headmaster, Board High School, Kamuthy, presided. Sri Andrews Ramalingam, Headmaster, Cowrava Boys' Elementary School, Kamuthy, explained that the present system of education is not sound and that the boys should have one which will help them to earn their bread and to serve the society in their future life. He observed that the boys should be taken to available workshops and business centres if they are to have a real vocational education. Madam Greta John, the Swedish Missionary, said how the system of compulsory education in Sweden was successful and how one and all of us should strive hard to enforce the system of compulsory education to remove mass illiteracy.

The last day of the celebration was on Friday, 25-10-'40. An interesting programme of comic acting, recitation and songs by the

pupils was gone through. Miss Greta John presided over this function held in the premises of the Board High School, Kamuthy. All the local elementary schools took an active part in the celebrations. Sweets were distributed to the children. The public also encouraged the education week celebration by attending the meeting on all the days.

KURNOOL

The managing council of the Kurnool District Teachers' Guild appointed a committee to make arrangements for observing the week at Kurnool. A six-day programme was drawn up.

I Day: Sri P. Rajagopalan, I.C.S., District Judge, presided at a public meeting held in the Coles High School on 21-10-40, and inaugurated the week. He exhorted the teachers to encourage rational and independent thinking in school children.

Sri K. N. Pasupathi, Guild Secretary, read a message from Sri A. Padmanabha Reddi, D.E.O., Kurnool, who was away on camp, wishing the week's celebrations success. Rev. B. J. Rockwood, Guild President, speaking on "Parental Co-operation with schools," appealed to the public to show an active interest in their children's progress by learning to esteem and honour the teachers by feeling proud of the achievements of schools and making generous contributions to them. Sri T. H. M. Sadasivayya, District Munsiff, delivered an instructive lecture on "Education for a Purposeful Life," in which he explained how all the unrest and turmoil in the world to-day was chiefly due to the neglect of the spiritual side of education. If education was to become the "elixir of life", and if it was to civilise man and not barbarise

him, the spiritual aims in education must receive greater attention in schools.

Sri K. N. Pasupathi spoke on "Schools and the Promotion of World Goodwill." He said that the cry everywhere was for a cosmopolitan outlook, and national egoism was hardly conducive to national progress. The nations of the world, linked as they were by economic, social and political bonds, could not achieve their destiny in a state of isolation; they had no salvation for the future unless they learnt to live in peace with, and goodwill for, one another. It rested on teachers to cultivate the great truths and ideals of toleration, peace and international goodwill among school children, the future citizens. Sri G. Siva Rao proposed a vote of thanks.

II Day: Two essay contests were held, one in English and the other in Telugu, for pupils of the local High and middle schools. The subjects chosen for seniors were, "Two short life-stories of eminent men of modern times who have contributed to World-peace" and "The choice of a Profession." Those for juniors were "Which of the school subjects do you like best and why?" and "The wise use of your leisure." Five medals, ten certificates of merit and several prize-books were awarded to successful competitors.

III Day: An interesting programme of physical activities was gone through in the Municipal High School, thanks to the co-operation of Messrs. E. Subbanacharlu and S. Mohideen Sahib, the Physical Instructors of the school, who organised them. Sri P. Raju, B.A., L.T., presided at a meeting when Sri P. Venkataramana Rao, B.A., B.Ed.,

delivered a lecture in Telugu on "The Playground, the lung of school." Sri K. Nilakanta Rao proposed a vote of thanks.

IV Day: Khan Bahadur Muhammad Humayun, District Collector, presided at a public meeting in the Coles Hall and distributed prizes to the pupils who were successful in the essay contests. He gave a clear and homely exposition in Telugu of the physical, mental and moral values of education. Sri K. Sethu Rao, District Board Educational Officer, lectured on "The Child's Interests and the Teacher." Sri P. Raju spoke on "Education and the Challenge of the Present Crisis." Sri K. N. Pasupathi thanked the Collector for associating himself with the Week's functions, the lecturers for their theses and those who donated medals and books.

V Day—Ladies' Day: This was arranged in the Government Girls' Middle School. A largely attended public meeting took place, presided over by Mrs. W. J. Longley, B.A. A variety entertainment by the pupil of girls' schools, instrumental music by Mrs. S. Kamalamma and Mrs. Saraswathamma, teachers of the school, and lectures on "The Importance of the Education of Girls" by Mrs. Janaki Edward, B.A., L.T., and Mrs. A. Rajalakshamma—these formed the chief items of the programme. Mrs. Longley spoke on the importance of parental co-operation in education. Mrs. P. Raju, B.A., L.T., Headmistress, proposed a vote of thanks.

VI Day—Excursion to Sunkesula: A party of 35 members of the Guild went on a pleasant excursion to Sunkesula, about 18 miles from Kurnool, one of the beauty spots of this District. After tea Sri K. Nilakanta

Rao, B.A., B.Ed, read an instructive paper on "The Sunkesula Project." A group photo was taken. Sri K. N. Pasupathi thanked all the members for joining the excursion and contributing to an interesting and successful end of the Week.

TIRUPPATTUR (Ramnad)

Under the auspices of the N. M. Board High School Teachers' Association, a meeting of the general public was held on 16-10-40 when the Education Week Celebration Committee was constituted.

The committee met on 18-10-40 and drafted the programme for the celebration of the Education Week on four days, the 21st, 23rd, 25th and 27th October.

Most of the Members of the Committee and the Pupils' Literary Association contributed towards the expenses of the celebration.

The first day of the Week was celebrated in the N. M. Board High School, Tiruppattur. The programme began at 4 P.M. with a grand procession of pupils, parents and teachers in which about 1000 in all took part. The procession was headed by the local temple elephant and Nathaswara Vadyam. A public meeting was held in the school hall under the presidentship of Sri S. V. Mahadeva Sastri, B.A., L.T., Headmaster. Dr. H. Erikson, M.L. (Sweden), Lady Doctor of the local S. M. Hospital, addressed the large audience of parents, teachers and other ladies and gentlemen of the locality on 'Education and the Challenge of the Child.' The lecturer stressed on the importance of the co-ordination of the Home and the School. With a vote of thanks proposed by the convenor, Sri S. Panchapagesan, the meeting concluded.

The second day's programme was gone through on the 23rd when a public meeting was held in the school hall at 6 P.M. presided over by Sri V. R. Subbayya Pillai. Sri R. Srinivasa Ayyangar, B.A., B.L., Advocate, addressed the gathering on "Education and Society."

On Friday, the 25th, the pupils of the school entertained the large audience assembled in the school play-ground, for about an hour, from 6 P. M., with music, fancy dress competitions, comic scenes, dialogues, magic, etc., which were highly appreciated. At the public meeting held later, presided over by Sri K. S. Venkatasubramania Ayyar, B.A., L.T., First Assistant of the school, an interesting lecture on "Education for a Purposeful Life" was delivered by Sri Sundaram, Secretary of the local Y. M. C. A.

The last day's function on Sunday, the 27th, also began with a variety entertainment by the pupils of the school. Sri A. Ramachandran Pillai, B. A., B. L., gave a delightful discourse on "Education and Citizenship" under the presidency of Dr. D. Athisayam of the local Swedish Mission Hospital.

After an exhortation of the public to take some lively interest in the education of their children by the Headmaster of the school, and a hearty vote of thanks proposed by the convener, the meeting came to a close.

WANDIWASH

The celebration of the Tenth Education Week in the Board High School by the Teachers' Association was a revelation of the wonderful possibilities of student life and its wealth and variety of achievements.

The Week began with the Children's Day on Monday, the 21st of October. There was a relay of the Torch of Learning, an *Akandam* and a burning camphor and incense plate carried from the IV Class upwards to the VI Form. The honour was reserved to the first three in rank in the recent Quarterly Examination. These leaders then led their classes in single file in a procession to the open air meeting with the three-fold illumination at the head and a metal oil lamp carried in front of each class and section. The arrangement looked inspiring and should have aroused many pupils to a healthy sense of emulation. The pupils were judged in class choral prayer competition in the meeting where memorial verses in Sanskrit and Tamil were sung by the Pandits concerned. The week was inaugurated by Sri N. Krishnaswami Iyer, L.M.P., the local Doctor, when Sri S. Natesa Aiyar, B.A., L.T., the Headmaster, exhorted the pupils to speed on and speed well along the lines of the Week's programme which is a course of practical education. The meeting ended with the distribution of soya bean payasam to pre-school and out station school children. Coconut, camphor, sugar, scented sticks and wafers being then distributed by the Secretary of the Teachers' Association, parties formed themselves to visit temples, mosques and churches in the town. The Bhajana with musical accompaniments and the *archanas* where well attended.

The second day was the Health and Sanitation Day. All the pupils were judged in their class-rooms at personal cleanliness and Doctor examined in detail the teeth, tongue, nostrils, ears, finger nails and dress and phy-

sique of the pupils. Two prize winners were selected for each class and section. In the course of the day, eye test cards were used in the class-rooms and a list of children with defective sight was prepared and class room seating was suitably altered. The classes acted as units to clean, level and beautify particular sites fixed for them. Of these parties the two senior forms performed by collective endeavour the uphill work of cleaning the entire precincts of the local Hanuman Temple, a place of popular visit by Sunday crowds and all the walls befouled by charcoal writing were cleanly white washed. Sri D. Ramalinga Reddiar, M.A., B.L., M. L. A., of this division, presented at the day's meeting a medical chest, a toilet box and a health tray with medical and sanitary outfit. The gift of medicines by Sri S. Rajam Aiyer, B.A., the Revenue Divisional Officer of Cheyyar, was thankfully acknowledged. Early at night, in spite of the ugly drizzle, teachers went round to examine the tidiness of pupils and their study and pupils' kit at home. The partitioned hut of an Adi-Dravida pupil in the local Cheri was reported to be among the best.

The events of the social welfare day were the effective drive by different batches of pupils at book collection and issue, the running of time-table periods in two of the local elementary schools by the High School pupils and clean-up campaign of the streets of the local Cheri. A street Bhajana in Kottai Cheri and road-making to a length of 100 feet with side drains on either side had substantial impression on the minds of the Cheri folk whose tender children received gifts of a pie each. Sri P. R. Ramanujalu Reddiar, the

local Congress Leader, took the lead in the Bhajana and cleaning groups.

The fourth day events were mainly literary competitions. Committees of Teachers Judges had a very strenuous time of it at two consecutive sessions that evening and the next morning. A wide range of pupils had their part in the Drama, Elocution, Prayer and Impromptu speeches in English, Tamil, Sanskrit and Hindustani. The laurel in the Music Competition was won by the tender child Raja in Class IV. He did the *Ketharagowla alapana* and *Kirtan* wonderfully well. A competition in painting in Japan and enamel lettering of the name plates in tin for each class room was also held.

The fifth day formed the peak of collective activities of each class competitively with other classes at class room educational exhibition-cum-decoration. White and colour washing, colour bordering and designing, motto writing, map and exhibits preparation, paper flower and green leaf decoration, all absorbed the attention of whole classes which kept the vigil the previous night till the small hours. A Committee of Judges led by Sri R. Balakrishna Mudaliar, B.A., L.T., the Senior Deputy Inspector of Schools, went round accompanied by Sri Rangasami Chettiar, B.A., L.T., the Dy. Inspector of Schools, Cheyyar Range, and Sri Ramachandra Reddiar, District Board Member. The classes were specially illuminated. The rooms were judged in detail from five aspects of which the whole class handicraft work was one. The Physical

Science Exhibition and two tape looms were opened by the Committee at the end of the day's function.

The School Sports run in two shifts from 7.30 to 12 and from 3 to 4 had 34 events. Sri S. Rajam Iyer, B.A., the Revenue Divisional Officer, Cheyyar, was kind enough to open the newly acquired Games Maidan and the day's Sports events. The Week terminated at 7 P.M. with the Fancy Dress Competition and Prize Distribution. Sri T. Srinivasaraghavachariar, B.A., Sub-Registrar, presided and gave away the prizes.

The Week thrilled the pupils so much with the joy of competitive performance and collective planning that the percentage of absentees was the minimum during the week.

(In the Press)

The Tamil Edition of

ELEMENTS OF ALGEBRA

Popularly known as

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Translated

BY

SRI S. BALAKRISHNA AIYAR, B.A., L.T.,

Retired Lecturer, Teachers' College, Saidapet

SRINIVASA VARADACHARI & Co.
PUBLISHERS, 2/16, MOUNT ROAD, MADRAS.

OUR CONTEMPORARIES

DEMOCRACY, EDUCATION, AND RESEARCH

Carter V. Good writes editorially in the *Journal of Educational Research* :—

DEVELOPMENTS of the past decade—military, political, economic, social, and educational—especially the repercussions of the past year and the present world scene, cause educational workers to wonder what the future holds for the school. Some fear that billions spent for preparedness will mean curtailment of school budgets and consequent impairment of educational opportunity, while others characterize school programs properly adjusted to the individual as the bulwark of democracy and of national defense, and therefore meriting even increased financial and social support in such times as these. Major research projects and national educational commissions of the past few years, particularly those still in operation in 1940, present evidence that the latter point of view, as expressed in the preceding sentence, is a quite defensible one. Selected illustrations may be cited.

The inter-dependence of democracy and public education has been admirably expressed through the publications of the Educational Policies Commission, concerned with the unique function, purposes, administration, economic basis, and civic responsibility of education in American democracy. The reports are brilliant expositions of the central place which organized education must hold in any program for the defense and advance of democracy. Another challen-

ging illustration of the exercise of leadership in education, with the retention of democratic processes, is the discussion group project of the National Association of Secondary School Principals. In the majority of the states, high school principals in regional groups and local faculties under their principals' leadership are carrying on systematic discussion of the larger problems of secondary education.

Democratic processes are conditioned by the extent and distribution of educational opportunity. A major force in promoting a more equitable distribution of educational opportunity among the states and localities, through federal and state efforts to equalize financial support, is the work of the Advisory Committee on Education.

The specific task of the schools of a democracy is above all else the adjustment of youth to the social order. For this purpose the findings of the American Youth Commission, concerned with the education, recreation, health, and employment of youth, are especially significant. Adequate social adjustment means a curriculum centered in areas of living and in controls of conduct, as emphasized in the work of the Commissions on the Relation of School and College and on the Secondary School Curriculum of the Progressive Education Association, and in the publications of the Regents' Inquiry in New York State. Emphasis on such values requires new methods of appraisal, qualitative criteria, and the development of adequate implementation

THE EDUCATIONAL REVIEW

procedures, as illustrated by the previously mentioned projects of the Progressive Education Association, the Cooperative Study of Secondary School Standards, and the Commission on Teacher Education of the American Council on Education.

The present scene and the outlook for the future of society and of education are grave. Depression, war, military dictatorship, and intolerance have delivered death-dealing blows to democracy and to untrammelled education. Yet, substantial progress toward the objective of the democratic way of life and of schools for a free people has been summarized above. There are both temperate encouragement and a ringing challenge in these prophetic words of three years ago: "The lamps of learning were kindled long ago. They have burned in caves and log cabins, as well as in great buildings erected by wealth and power. We may be sure that no barbarism, new or old, can extinguish them forever. Should society enter upon an age of scorn and neglect, even should the wrath of men tear down the very walls of school buildings, as it burned the library of Alexandria, should one or all these lamps be put out, some hands will rekindle them, and will defend them for a better day."

MODERN EDUCATION AND NATIONAL PURPOSE

Prof. M.S. Srinivasa Sarma writes in the *South Indian Teacher* :

India is overwhelmingly agricultural; our civilisation is a product of the village, not of the town, of the forest and not of the city. Yet our education is developed more with a view to meet the urban needs than the rural. The great curse of the existing system is the tendency to deplete villages

of all their intellects. The student coming from village parts and getting acclimatised to the luxuries of city life hate to return to the villages, and give the country folk the benefits of their superior knowledge; and this has resulted in divorcing the literary classes from the illiterate masses.

Our Education has been cut off from the roots of national life. We must remember that no nation can grow into greatness by accepting and following an ideal which is not essentially indigenous. Our national life must be cultivated by drawing its vital energy from its own roots. The saving of great legacy of culture, the maintenance of the best traditions of our country, and the welfare of the future is the main task of education.

To build a new India, we must think deeply and plan wisely. India should have a national system of education. There must be a definite national purpose which would make education worthwhile for our young men and women. Every nation has its own personality. The set of institutions, virtues, rights and duties peculiar to it constitute its individuality—its unique personality. Our present education is alien, and divorced from our cultural background. This cultural dualism has severed the intellectual element from its historic traditions, and made the irrigation of culture impossible. To be Indian in character, our education must bear close relation to the cultural and economic life of the people. As a fundamental factor in national cohesion, education should be definitely used as a unifying agency, rousing national conscious-

ness, stimulating a healthy patriotism, and fostering a sense of national unity. If we are to build a new and free India, we must look far into our own background, and find out the spirit of our country, those intangible forces and invisible values coming down the centuries. We must saturate our schools and colleges with our indigenous culture, and make each child an incarnation of the spirit of the race. We must provide our children with the culture which is the product of India's thought and creative activity. The Romans spoke of "*Communio Sacrorum*"; the common memories, traditions, aspirations and ideals sacred to the group are the qualities which bind a nation together. It is common culture that forms the basis of social solidarity. Heroic achievements, and agonies heroically endured—these are the sublime food by which the spirit of nationhood is nourished; from these are born the sacred and imperishable traditions that make the soul of nations. Thus a nation is a psychic entity brought into being by ideas and ideals transmitted from generation to generation. Nationalism means that we should do everything in our power to preserve our soul, our honour and integrity and maintain our individual style of dealing with problems. A nation lives to the extent that it is able to preserve itself, and make its distinctive contribution to the progress of the world. Every Indian must think and feel in terms of national pride and self-respect, and realise the shame of subjection.

History reveals that nations have organised and reorganised their education as a means for the attainment of the things they

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valued most. Educational reorganisation must first meet the immediate need of providing the children of India with a culture which is the product of India's thought and creation. *What we need is a revolution in Education.* We must have a national language. We must study in our mother-tongue; we must make our boys and girls strong and fearless; equal attention must be paid to the efficiency of hands and literacy of mind. Arts, handicrafts and a spirit of service must have their rightful places in the curriculum. There must be a fusion of cultural and vocational intentions.

VOCATIONAL EDUCATION

Dr. Ralf E. Pickett, Associate Dean, School of Education, New York University, writes in the *New York Times*.

The history of education is replete with illustrations of good movements that have been injured by the extremes to which they have been carried by well-meaning but not too wise enthusiasts. Steps should be taken to prevent this from happening to the vocational education movement.

Some of the enthusiastic proponents of vocational education maintain that it is a panacea for all of our educational ills. It is not. Neither is it a substitute for general education. Nor is it the answer to all of the economic, industrial, political or social problems with which our country is beset. Extremism has seldom done any movement any good, and we in the field of vocational education must be on our guard lest our movement suffer a similar damage and a similar fate from the actions of extremists.

There must be no conflict between vocational education and general education. Indeed, one of the fundamental principles of vocational education is that it shall be given to those who need it, who want it and who can profit by it, but only after they have had laid for themselves as broad a foundation of general education as is consonant with their ability and their needs.

Different vocations require differing amounts of general education for background purposes, but even after the requisite background of general education has been obtained we do not exclude further general education, but rather encourage it. We believe firmly that every person who expects to work for a living, and most of us do, should have an opportunity to acquire a training for that work; but we do not believe that such vocational education should be at the expense of general education.

We believe that an educated citizenry is an asset to any country, but we recognise that there are many kinds of education possible. We would encourage everyone to acquire as much of the cultural heritage of the race as is possible, and we appreciate the leisure time and recreational possibilities in purely intellectual pursuits. However, we would ask that the same consideration be shown to the leisure time and recreational possibilities inherent in pursuits other than purely intellectual.

As an illustration of the latter, note the objectives that are claimed for industrial arts activities as a portion of the general education programme. Industrial arts

education is not vocational education, even though those taking work in industrial arts shops often use materials and tools and machines similar to those used by those following the vocational industrial programme.

It is interesting to note that many of our high school youngsters, who have had the benefit of industrial arts activities, as well as those who have followed a vocational programme, have been able to use the knowledge and skills obtained for later recreational and hobby purposes with a consequent improvement of mental and physical health.

But while we speak of the many advantages of a properly organised vocational programme given to properly selected students, let us not delude ourselves that unemployment would cease overnight were there enough vocational schools erected overnight to take care of all our students. Unemployment could be decreased to the extent that jobs at present unfilled because of inability to employ the right individuals properly trained would then be filled, but if there are more people available than there are jobs the difference will represent unemployment.

That condition will continue until we learn how to adjust production and consumption, how to iron out the cyclical curves of depression and prosperity, how to anticipate the need for products and for men and women to produce them, to mention just a few of the problems which have been with us for ages and which have not yet been solved.

WARDHA SCHEME OF BASIC EDUCATION

Mr. Moti Prasad Sinha writes in the *Hindustan Review*:

In plain words what I mean is that the Basic school teacher should not keep the self-supporting idea, as such, in the very centre of his activities but he should exploit all opportunities presented before him in realising his educational aims. He should not devise educational methods and practice to realise any monetary aim, which must ever remain subordinated to the primary and main aim of making education meet the requirements of the developing child so as to ensure the development of his complete individuality. The self-supporting theory can only be realised as an incidental bi-product of education.

INDIA AND TECHNICAL EDUCATION

Dr. G. S. Kasbekar writes in the *Indian Textile Journal*:—

As remarked earlier, development of heavy industries, exploration for new enterprises, and a genuine effort to employ modern ideas to all types of agricultural and farm produce is essential to ameliorate the condition of the masses. It is only scientifically trained men and women fitted with technical education appropriate to their profession who can be of any value in educating the masses in their respective occupations and in furthering any industrial programme. To-day it is they and they alone, who will constitute the back-bone of India in her struggle for industrial and economic emancipation.

There is yet another field where the scientifically and technically trained person

proves invaluable. Research work either to improve the existing processes or to discover new ones is of prime importance. Nothing in this world is perfect, and there is always plenty of scope for improvement. It is competition which makes the drive towards perfection of cheaper production inevitable. Competition is never absent from the world market. It is the research worker who is responsible for progress in every branch and has often saved an industry from utter collapse. Take the Indian indigo plantations as an example. They flourished in all their glory until 1897 when Dr. Bayer produced artificial indigo, and as a result the natural indigo was thrown out of the market overnight. There was nothing but misery and unemployment for the Indian peasant who could not compete with the artificial dye. But it is important to realize that the Germans had made the discovery at an enormous cost and it is quite possible that had this same or similar sum been spent on improving the cultivation of the Indigo plant, natural indigo might still have kept the synthetic product from coming into the market.

If the natural rubber to-day has any claim to be on the market and to compete successfully with synthetic rubber, it is because of the researches that were and still are carried out to improve the production of natural rubber when it was suspected that an artificial product was likely to invade the market. In modern times where every nation is running a race of progress, it is only those nations with a well-trained army of scientists and technicians that will stand any chance of winning.

The future of India and the happiness of her people rests chiefly on the improvement of her agricultural and farm produce on the one hand and on the development of her industries on the other. Whether this economic programme preceeds her political freedom or follows it or progresses side by side with it is a matter which will be decided by politicians and circumstances. The chances of a simultaneous progress are numerous provided every effort is made to afford facilities on an extensive scale for imparting technical education so that a genuine effort can be made to secure the economic independence of India and restore her ancient glory and prosperity.

EXPERIMENT IN EDUCATION

C. W. HOLDAR writes in the *Indian Journal of Education* :—

Education is not the handmaid of the state or of industry or of the future. Education is the art of living. It should concern itself with trying to show how to live in the present in the best possible manner. When educa-

tion was the privilege of a few, as in the time of the Renaissance or in the old Greek states something like this was attempted. Education was then a matter of culture. Culture has been forgotten today. It is not revolutionary, it is not practical. We look upon the past as dead, as a record of mistakes. The great writers and artists are nothing to us. This is terribly true. We must experiment with culture again. What is culture? It is briefly all the learning, all the wisdom, all the beauty, all the skill and all the idealism, that humanity has yet produced. We must introduce these things in their universality to the young. This, if any, should be the aim of education. We must ourselves understand and enjoy these things. Culture is the enjoyment of all the created things of mankind. It is sympathy, appreciation, love. The greatest experiment in education yet to be attempted is to turn our teachers into lovers of culture, lovers of the created things of mankind, lovers of humanity and of life itself. Then only can we hope for our children.

REVIEWS AND NOTICES

THE COMPLETE GEOGRAPHY SERIES BY ALYS MAMOUR. (1) THE WORLD; (2) THE AMERICAS. MACMILLAN & CO., LTD., 8vo. 290 AND 316 PAGES; Price 3s. 6d. AND 4s. RESPECTIVELY.

Readers of the Complete English series by Alys Mamour can never expect anything dull or uninspiring from the author. The present series not only lives up to but also enhances the reputation of the author for a

careful and methodical presentation of every topic based in most cases on the language of acknowledged authorities on the topic concerned. This series has been "designed to provide a complete course in Geography for pupils aged over eleven." The Keynote of the series may be summed up in the words "reliability and readability". Some note worthy features have been introduced in the book—short excerpts from travel

books, exercises at the end of each chapter, maps, numerous reliable illustrations, the suggestions of geography, games and hand work.

The volume on the World is divided into ten chapters. There are chapters on (1) The universe, (2) The Earth (3) and (4) Land: its composition and surface; (5) Water; (6) Air, Vegetation and Animals; 7, 8 & 9 deal with Tropical, Temperate and Polar regions. The last chapter deals about the Trade and Transport. The exercises are of a very suggestive character. Not only are there usual types of subject matter questions but there are questions requiring the giving of causes, e.g., Reasons for wheat milling in Canada, filling missing words, exercises in local study based on some topics learnt—Select one of your nearest manufacturing establishments (factory, builder, shoemaker, baker, etc.) and write an account of the work carried on there, the people employed, the raw materials used, from where they are obtained, etc., Page 267, Book I. The following game is suggested at the end of the chapter on the Temperate Lands. "A description of the Vegetation of any place in world is given, and the one who guesses correctly the area indicated provides the next description. The descriptions may be criticised by members of the class." (Page 238 Book I.) There is an appendix giving details of areas of different countries and 3 maps giving the political divisions of the world. There is a full bibliography and an index.

After an introductory chapter dealing with the discovery and description of modern America, six chapters deal with North America, two with Central America

and West Indies and six with South America. All the good features of the first book are found here. One is struck by the remarkable number of very fine illustrations. A population chart of the Americas is found as an appendix. This is a very welcome series and we look forward with great eagerness to the publication of Vols. 3 and 4 of this series. Any school library and geography teacher without this series will really be the poorer for it.

THE OXFORD GEOGRAPHICAL NOTE BOOKS FOR SECONDARY SCHOOLS. BY JASPER HENDLY STEMBRIDE. NO. X. INDIA AND BURMA. OXFORD UNIVERSITY PRESS. 11" x 8.5" 32 PAGES. Price, 8s. 8.

This series of Geographical exercise note books is intended to be used along with a text-book. There are a number of maps in which particulars are to be filled up by pupils. There are also questions intended to be answered after a careful study of the maps in this book. Space is also left blank in the body of the note book itself for drawing sketches, e.g., the formation of a fold mountain, a region high pressure, sketch map to show the importance of the site of towns like Peshawar. There are a number of exercises on relief and climate. Each major climatic region has been specially dealt with. Topics 15, 16 and 17—Railways and air routes, Distribution of Population and Trade are in the nature of a general revision. The typical examination paper is very suggestive.

It is hoped that teachers of Geography will take advantage of this very thoughtful and instructive series to make their work in

the classroom effective. Bringing out Tamil and Telugu editions of this book will enable high school pupils reading Geography in those languages to work out the exercises with great ease.

A FIRST HISTORY OF ENGLISH LIFE. BY AMABEL WILLIAM-ELLIS AND F.J. FISHER, VOLUME I. METHUEN & CO., LTD., 145 pp. Price, 2 s.

In the preface for teachers the authors say, "It has been our aim simply to lay a foundation and, if possible, to rouse the child's appetite, first by making events which are far away in time seem to have happened to real men, women and children and second to show that they have a relation both to the private world of the child's imaginative life and to the world of today which surrounds it." The aim is sought to be achieved by presenting facts of condition of the people in ancient days, *i.e.*, the degree to which any particular advance in comfort, freedom or prosperity, affected the majority of the people living in each epoch. An effort is made to show a thread running through the whole story—how science, technics, art, ways of thinking are conditioned by the needs and circumstances of their own particular period and in turn affect or completely change a succeeding age. Thus it is shown that the present has grown out of the past. Stress has been laid on sources of information and the use of 'picture-graphs'.

The volume under review carries the history of England to about 1100. It is not a narrative of the social history of England

but of English life in a European or world setting. The following are the chapter headings:—Little men in Britain, Bronze Tools, Swallows in Egypt, Iron Swords and Romans, Roman Britain, The 'Dark Ages' begin, Outer Barbarians and King Arthur, Saxons in England, Charlemagne and the Saracens, Why do Laws matter? Dragon Ships, Foreign Kings in England, England when William conquered it. In several of the chapters in addition to the simple narration of facts there are other sections—'How do we know?' 'Things we still don't know,' 'Things to do.' These comment or amplify and illustrate the text. These sections the authors say have been included in order to provide matter for thought for children having various types of memory—visual, verbal, disputative or narrative. The section on 'To this day' will rouse in children the continuity of interest between the past and the present.

A word of special mention is due to the illustrations of Wilma Hickson who has avoided fancy historical scenes and whenever possible has adapted actual groups and figures from mediaeval pictures. There is a chronological table of chief events and a select Bibliography for further study and reference. History study will never be dull if a series like this is basis for daily work. This is a thought provoking series.

DESK WORK. BOOK VI. BY J. P. ROSE, M.A., B.L., [INDIAN EDITION]. MACMILLAN AND CO. LTD. 8½" × 6½". 80 pp. ANNAS 8.

The earlier volumes of this useful series have been reviewed in these columns. In

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The Christian Literature Society for India, Park Town, Madras.

a prefatory note the author says "This book confines itself to *Precis Writing, Essay Writing, Substance Writing and Paraphrasing*. Full explanations are given on all these subjects in order to make the students understand what each of these is. The passages chosen for *Precis* and *Substance Writing* are given in order of difficulty, starting with the more easy pieces and going on to the more difficult ones. Model *precis* are similarly graded." In addition to the above there are also chapters on *Verb Forms, Foreign Words and Phrases and Idioms*. Many of the poems and passages included are from recent authors of eminence and that adds to the value of the book.

The use of this series will stimulate individual effort on the part of pupils and so will improve their understanding of English.

NEW USES FOR SHELLAC—PRACTICAL APPLICATION OF RECENT RESEARCH

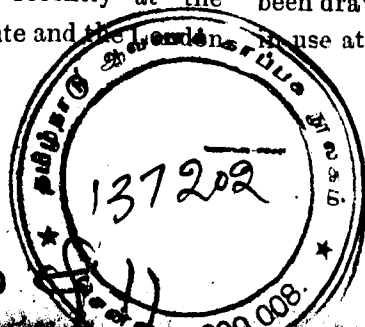
Methods of applying the results of recent research to new industries based on shellac are described in *Practical Applications of Recent Lac Research* (price Re. 1-8-0) just published by the Indian Lac Research Institute at Namkum (Ranchi).

Researches undertaken recently at the Indian Lac Research Institute and the

Shellac Research Bureau have shown that there are many avenues for the application of Shellac to new industries, and tests with pilot plant have proved the commercial practicability of new processes described in this book, which gives detailed working methods with illustrations of the equipment required and detailed costing data.

The book describes the processing of lac to provide cleaner, standardised raw material the manufacture of moulded articles, specially for electrical goods; adhesives for glass sealing wax, oil varnishes, baking varnishes, lacquers and spirit varnishes. The newly discovered method of applying a shellac coating by hot spraying is described at length and there are chapters on miscellaneous use of shellac and improvements in the cultivation of lac disclosed by researches at the Institute.

The preparation in India of certain chemicals for the large scale development of shellac plastics is described in appendices and there is a comprehensive bibliography for those interested in studying the research publications based on which the practical methods have been formulated. The equipment necessary for the various industries is illustrated by 22 figures most of which have been drawn from or are photographs of plant in use at the Institute.





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