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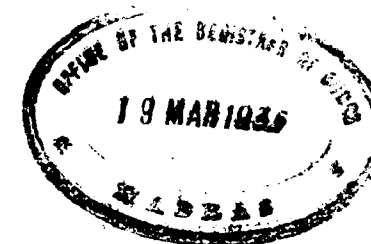
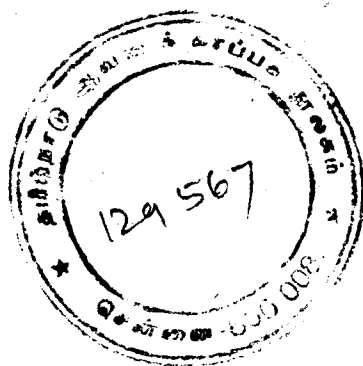
Reg. No. M. 2027.

JANUARY, 1935.

Vol. XI

THE INDIAN EDUCATOR

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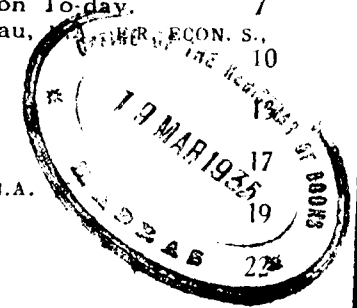
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MR. V. ARAVAMUDA IYENGAR, B.A., L.T.,—*Managing Editor.*

Vol. XI.

MADURA: JANUARY, 1935.

No. 1.

Education in India

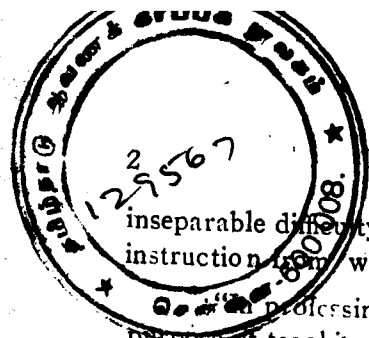
Modern Period

By. MR. K. S. VAKIL, M. Ed., M.R.S.T., F.R.G.S., I.E.S. (RETD.)

(Continued from last issue)

It was not, however, till 1823 that the Parliamentary grant of one lakh of rupees was appropriated for its proper purpose. In that year, the Governor-General appointed a General Committee of Public Instruction for the purpose of devising measures "with a view to the better instruction of the people, to the introduction among them of useful knowledge including the sciences and arts of Europe, and to the improvement of their moral character," and transferred to it the education grant and the management of the whole business of education. The Committee was largely composed of men in favour of oriental learning and had, as its General Secretary, the great Sanskrit scholar Dr. H. H. Wilson. It therefore began with the completion of the organisation of a Sanskrit College at Calcutta, with the opening of new oriental colleges at Agra and Delhi, with the printing of Sanskrit and Arabic books on a large scale, and with the employment of an oriental scholar for translating European scientific works into Arabic. But these measures were strongly disapproved by the Court of Directors in their Despatch dated the 18th February, 1824, in the following terms: "The great end should not have been to teach Hindu learning, but useful learning. No doubt, in teaching useful learning to the Hindoos or Mahomedans, Hindu *media* or Mahomedan *media*, so far as they were found the most effectual, would have been proper to be employed and Hindu and Mahomedan prejudices would have needed to be consulted, while everything which was useful in Hindu or Mahomedan literature it would have been proper to retain; nor would there have been any

* supposed to have been drafted by James Mill, the philosopher, who was then employed in the India Office.



THE INDIAN EDUCATOR

inseparable difficulty in introducing under these reservations a system of instruction which great advantage might have been derived.

On professing, on the other hand, to establish seminaries for the purpose of teaching mere Hindu or mere Mahomedan literature, you bound yourselves to teach a great deal of what was frivolous, not a little of what was purely mischievous, and a small remainder, indeed, in which utility was in any way concerned.*

The Committee defended its action by representing that the actual state of public feeling was still against any general introduction of western literature or science, † although Raja Ram Mohan Roy, the great protagonist of western education, had vigorously protested against the establishment of a Sanskrit College at Calcutta in the preceding year in a memorial addressed to the Governor-General and although public opinion had begun to turn in favour of western learning. In this famous letter he had observed:—

"We find that the Government are establishing a Sanskrit school under Hindu pundits, to impart such knowledge as is already current in India. This seminary (similar in character to those which existed in Europe before the time of Lord Bacon) can only be expected to load the minds of youth with grammatical niceties and metaphysical distinctions of little or no practical use to the possessors or society. The pupils will there acquire what was known two thousand years ago, with the addition of vain and empty subtleties since produced by speculative men, such as is already commonly taught in all parts of India.

"As the sum set apart for the instruction of the natives of India was intended by the Government in England for the improvement of its Indian subjects, I beg leave to state, with due deference to your Lordship's exalted situation, that if the plan now adopted be followed, it will completely defeat the object proposed; since no improvement can be expected from inducing young men to consume a dozen of years of the most valuable period of their lives in acquiring the niceties of Byakaran or Sanskrit Grammar.

"In order to enable your Lordship to appreciate the utility of encouraging such imaginary learning as above characterised, I beg your Lordship will be pleased to compare the state of science and literature in Europe before the time of Lord Bacon with the progress of knowledge made since he wrote.

* Selections from Educational Records, Part I, p. 92

† Ibid, p. 95

EDUCATION IN INDIA

3

"If it had been intended to keep the British nation in ignorance of real knowledge, the Baconian philosophy would not have been allowed to displace the system of schoolmen, which was the best calculated to perpetuate ignorance. In the same manner, the Sanskrit system of education would be the best calculated to keep this country in darkness, if such had been the policy of the British legislature.

"But as the improvement of the native population is the object of the government, it will consequently promote a more liberal and enlightened system of instruction; embracing mathematics, natural philosophy, chemistry, anatomy, with other useful sciences, which may be accomplished with the sum proposed by employing a few gentlemen of talents and learning educated in Europe, and providing a college furnished with necessary books, instruments, and other apparatus."*

This memorial, though it was handed over by the Governor-General to the Committee, was left unanswered and the proposed Sanskrit College was founded in spite of it.

Thus, it will be seen that although the Court of Directors in England as well as the people in Bengal had turned in favour of western learning, the General Committee of Public Instruction was still pleading for oriental learning.

In 1827, in reviewing the early proceedings of the Committee, the Court of Directors urged the Government "to keep utility steadily in view, but not to introduce alterations more rapidly than a regard to the feelings of the natives will prescribe," and concluded their despatch with the following words:— "adverting to the daily increasing demand for the employment of Natives in the business of the country and in important departments of the Government, the first object of the improved education should be to prepare a body of individuals for discharging public duties. It may, we trust, be repeated that the extended course of education will not only produce a higher degree of intellectual fitness but that it will contribute to raise the moral character of those who partake of its advantages, and supply you Civil servants to whose probity you may, with increased confidence, commit offices of trust, the last and highest object of education to which we expect that a large share of your attention will be applied."*

* "On the Education of the People of India" by C. E. Trevelyan, pp. 65-71

* Despatch of the Court of Directors dated the 5th February, 1827 (Howell's "Education in British India" pp. 18-19)

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In 1829, the Court of Directors made a similar communication of their policy to the governments of all the three presidencies (Bengal, Bombay, Madras) in the following terms: "It is our anxious desire to afford to the higher classes of the natives of India the means of instruction in European science and of access to the literature of civilised Europe. The character which may be given to the classes possessed of leisure and natural influence ultimately determines that of the whole people. We are sensible, moreover, that it is our duty to afford the best equivalents in our power to these classes for the advantages of which the introduction of our Government has deprived them; and for this and other reasons, of which you are well aware, we are extremely desirous that their education should be such as to qualify them for higher situations in the civil government of India than any to which natives have hitherto been eligible." †

In the same year, the Government wrote to the General Committee of Public Instruction that it was "the wish and admitted policy of the British Government to render its own language gradually and eventually the language of public business throughout the country" and that it would "omit no opportunity of giving every reasonable and practicable degree of encouragement to the execution of this project."*

The controversy between Anglicists and Orientalists dragged on till 1835, when Macaulay (then Legal Member of the Council of the Governor-General), as the President of the General Committee of Public Instruction, penned his famous minute in favour of adoption of English as the medium of instruction. In this minute, he stated the question at issue as follows:-

'All parties seem to be agreed on one point, that the dialects commonly spoken among the natives of this part of India contain neither literary nor scientific information, and are moreover so poor and rude that, until they are enriched from some other quarter, it will not be easy to translate any valuable work into them. It seems to be admitted on all sides that the intellectual improvement of those classes of the people who have the means of pursuing higher studies can at present be effected only by means of some language not vernacular amongst them.

'What then shall that language be? One half of the Committee maintain that it should be the English. The other half strongly recom-

† The Administration of the East India Company by J. W. Raye, P. 594

* Trevelyan "On the Education of the People of India," p. 146, footnote

mend the Arabic and Sanskrit. The whole question seems to be—which language is the best worth knowing?

'We have to educate a people who cannot at present be educated by means of their mother-tongue. We must teach them some foreign language. The claims our own language it is hardly necessary to recapitulate. It stands pre-eminent even among the languages of the West..... Nor is this all. In India, English is the language spoken by the higher class of natives at the Seats of Government. It is likely to become the language of Commerce throughout the seas of the East.....

'The question now before us is simply whether, when it is in our power to teach this language, we shall teach languages in which, by universal confession, there are no books on any subject which deserve to be compared to our own, whether, when we can teach European Science, we shall teach systems which, by universal confession, wherever they differ from those of Europe, differ for the worse, and whether, when we can patronise sound philosophy and true history, we shall countenance, at the public expense, medical doctrines which would disgrace an English farrier, astronomy which would move laughter in girls at an English boarding school, history abounding with kings thirty feet high and reigns thirty thousand years long, and geography made of seas of treacle and seas of butter.'

And he summed up the discussion in the following terms: 'I think it clear that we are not fettered by the Act of Parliament of 1813, we are not fettered by any pledge, expressed or implied, that we are free to employ our funds as we choose, that we ought to employ them in teaching what is best worth knowing, than Sanskrit or Arabic, that the natives are desirous to be taught English and are not desirous to be taught Sanskrit or Arabic, that neither as the languages of law nor as the languages of religion have the Sanskrit or Arabic any peculiar claim to our encouragement, that it is possible to make natives of this country thoroughly good English scholars, and that to this end, our efforts ought to be directed.

'In one point, I fully agree with the gentlemen to whose general views I am opposed. I feel with them that it is impossible for us, with our limited means, to attempt to educate the body of the people. We must at present do our best to form a class who may be interpreters between us and the millions whom we govern—a class of persons Indian in blood and colour, but English in tastes, in opinions, in morals, and in intellect. To that class we may leave it to refine the vernacular dialects of the country, to enrich those dialects with terms of science borrowed

from the Western nomenclature, and to render them by degrees fit vehicles for conveying knowledge to the great mass of the population.”*

People who see in English education the germs of the present political discontent in this country severely blame Macaulay for the heroic part he thus played in promoting it. They, however, seem to forget that Macaulay did not introduce English education in this country: he merely took the popular tide that had already set in in its favour under the inspiring leadership of David Hare, Raja Ram Mohan Roy, and Dr. Duff at the flood and gave it definite direction. He could not have stemmed it, even if he had tried to do so. The day had dawned; and light could not have been shut out by government refusal to open the window.

Macaulay was not blind to the larger implications of the policy he had advocated. In his speech in the House of Commons in 1853 in connection with the question of admitting Indians to high offices, irrespective of their religion, race, or colour, he had said: “It may be that the public mind of India may expand under our system until it has outgrown that system, that by good government we may educate our subjects into a capacity for better government; that having become instructed in European knowledge, they may in some future age, demand European institutions. Whether such a day will ever come I know not. But never will I attempt to avert or retard it. Whenever it comes, it will be the proudest day in English history.”†

Lord William Bentinck, then Governor-General of India, agreed to Macaulay’s opinion and issued a resolution on the subject, declaring “that the great object of the British Government ought to be the promotion of European literature and science among the natives of India; and that all the funds appropriated for the purpose of education would be employed on English education alone.”‡

* Selections from Educational Records, part I, pp. 107-117

† “India, Old and New” by Sir Valentine Chirol, p. 79

‡ Selections from Educational Records, Part I, p. 130

Some Problems of Indian Education To-day. *

BY PROF. C. A. KRISHNAMURTI RAU, M.A., F.R. ECON. S.,

The problem of the medium of instruction is a very important one and had been agitated for since a long time past. The Department sanctioned the adoption of the vernacular medium some years ago and in many schools where it was tried, it has been attended with a gratifying measure of success. Others point out to the paucity of suitable text-books and the effect on the student’s acquisition of English. The former is not an insuperable difficulty nor is the latter altogether to the point. The vernaculars, taking the first place, have advantages outweighing other considerations. How else is knowledge, both higher and lower, to filter down to the masses? By letting knowledge reach the masses through the vernacular, a thirst for higher education will be created in them, and the general level of intelligence so indispensable to a democracy will be raised; and the charge against vernaculars as being incapable of being the vehicle of modern thought will also disappear.

The question of English, the other, if not the first or second, language, comes next. Let the public once for all set all controversy at rest by making up its mind that the study of English for its international importance shall be compulsory in all educational institutions. It would be still more helpful if a knowledge of work-a-day English in speaking and writing were insisted upon in Secondary schools, the study of English literature being held over to the College classes. The heavy classical passages now in the S. S. L. C. English text-book may give place to easier matter, and the new method of answering questions by single words or short sentences might also be given up. Experiments such as the individual method of teaching had better be tried first in the Teachers’ College, the Pedagogic laboratory, for application in other schools if found successful in the former. The suggestion that the 20th century literature alone may be taught to the students as being the most modern has the defect of its merit, as it would result in the elimination of the best in English literature. The present cry of University domination over the S. S. L. C. would lose most of its force, at any rate so far as English goes, if the S. S. L. C. and the University had two different but not necessarily antagonistic aims.

* Delivered at the Educational Conference during the Golden Jubilee Celebrations of the Maharajah’s College, Pudukottah.

Next, general or literary education has come in for a good deal of criticism. It is said to aggravate the evil of unemployment. Heroic remedies like the closing down of colleges and stopping the annual manufacture of graduates have been proposed. Technical and vocational education are among the positive proposals to take the place of literary education. The present method of imparting such general education may be faulty, and if so, must be rectified. But to attribute unemployment to general education betrays lack of clear thinking. The unemployment cry has become acute only since the days of the depression. Every graduate manufactured before that was not guaranteed employment immediately he graduated. Even the provision of technical or vocational education does not offer a direct or immediate solution of unemployment. Proper search for occupations must be made. There may be lack of government jobs but not occupations. The country's resources must be so developed by the state as to absorb the employable unemployed. But general education must be available to all as being the one thing that will bring out the indefinable but invaluable personality in man and woman which will bring solution or solace for the trials of life. Again, Education has been suffering not a little from a lack of co-ordination between educational administrators and educators. The latter are not consulted in the formulation of schemes which they are called upon to work or subject themselves to. The G. O. revising teachers' salaries down, the Champion scheme controversy, the nature of compulsion contemplated in the new Primary Education Bill are instances where the teachers' brains which ought to be thinking of educational problems are distracted over organising protests against this or that measure of Government. The too frequent changes of the S. S. L. C. leave the minds of teachers and of the taught in a dazed condition. We hear of wastage in education. There cannot be a more tragic and preventable wastage than the one resulting from acts like the above. No wonder the standard of instruction is deteriorating for which it is difficult indeed to locate responsibility.

The way in which vocational instruction has been introduced in schools is an apology for the same and has been too long at the innocent task of still *creating* the vocational bias. To make carpentry or tailoring compulsory for all by giving one or two hours' instruction but barely touches the fringe of the problem and that not quite in the right way. Heredity and aptitude for particular occupations must be ascertained with reference to parentage. There is no use planting cotton in alluvial, or paddy in black cotton soil.

The public mind has been worried over another important question, namely extra reading. The non-detailed text-books have been

abolished and the library hour is to be its substitute. There are practical difficulties in every class (and section) having one or two library hours in the week. All may not be competent to guide the pupils so as to derive the maximum benefit. It might also degenerate into a sort of "created" leisure. Too many books, like too many cooks, might also spoil the broth, particularly in the unformed state of the pupils' minds.

Not the least of problems is that of finding out the right sort of teacher, who must be sought for and encouraged to feel at home in the profession. The trained teacher is not always the one who has spent a year in the Teachers' College. The period of his training may not, and cannot, envisage the advances of a later day in the field of education. He must be ever alive to the new currents; and sympathy for his pupils and enthusiasm for his work alone mark out the right type of teacher from his pseudo-prototype. When the Government is so far concerned as to supply specially good seeds to the agriculturist, what should be the care evinced in the selection of the best type of teachers whose students are to become the teachers of tomorrow and the builders of the nation of the day after that? The bad teacher, like bad money of Gresham's Law, drives out the good in the good teacher. May the latter's tribe increase! Last, but not least, the voice of the educationist who can speak with authority must be heard in the councils of the country, commanding as much regard as that of the Directors of Agriculture, Public Instruction, or Industries. Otherwise, policy will be divorced from practice with no happy result. It is really pathetic, for instance; to hear the University Professor of Economics at Madras bewailing the apathy of the Government of Madras in adopting schemes helpful of a speedy economic recovery. He says, "There cannot be a better opportunity than the present for the Government of Madras to undertake such schemes. Only, the will is wanting." It will be a red-letter day for Indian Education and the people at large if the Government should not merely accept but even go so far as to invite the considered opinions of educationists.

Youth and the Peace Movement

By Lord Allen Of Hurtwood

The Youth Movement is vital to the cause of peace to-day, but it can only play a decisive part if it is prepared honestly to find out what its special job is. Youth as such is no more virtuous than old age. Old men made the war of 1914, young men guard the concentration camps of Germany under one of the youngest Chancellors any country has seen since the time of William Pitt. But Youth has to-day a definite contribution to make.

What then is its peculiar job? It is this, if I may be allowed to offer an opinion. Youth must insist upon making us all realise that the great need of the moment, if statesmen are to solve world problems, is will-power. It is an entire myth to suppose that what is holding up the League of Nations and the Disarmament Conference is the intricacy of the task in hand. That used to be the case, but now the whole thing has become very much more simple. What is needed is a great act of faith and an exercise of will-power by those responsible for leadership at Geneva. Statesmen are allowing themselves to be baffled by a mass of detailed difficulties which need to be cut through. For instance, they prefer to offer Germany a complicated method of reaching equality instead of offering full equality. If that were granted with open hands and hearts, probably none of the evil consequences we fear would in fact arise. If they did, then an equally whole-hearted acceptance of the method of collective security could protect us all from those evil results. But here again statesmen prefer incomplete and complicated half measures. These break down time after time, and only still further complicate the international situation, weaken the machinery of the world government and destroy confidence.

They behave in this fashion because they have developed the habit of believing that you are only realistic when you do the small thing and take short steps. That kind of realistic statesmanship is not real at all, and the state of the world proves it. It is the big proposal in this swiftly moving modern age which alone fits the need of the time and is able to achieve results.

Another reason which makes statesmen miss their chance is an utterly false reading of public opinion, which they think is a eulogy on the wheels of political action instead of being what it could be an enormous asset.

I have suggested that what is needed now — more especially if democracy and liberty are to be preserved — is imagination and will-power, and that this is what Youth can give us. But will-power and imagination are no good unless there is real evidence that there is in fact a state of public opinion upon which they can exercise their beneficent influence. The future of democracy and the attainment of peace depend upon our accepting public opinion as an asset, and this we can only call out by having the courage to believe that it will readily respond if bravely led.

Perhaps it is worth while here just reminding you of the change that has come over the public in its attitude to peace since some of us were young in 1914. In 1914 we young men and women had thought very little about peace and war, and the public still less, so. I sometimes contrast the experience of one terrible day in 1916 with the position which faces youth to-day. Two thousand young men were then assembled in a great hall in London, faced by imprisonment and possible death. Outside the hall the streets were thronged with an angry public struggling to break in. So great was the danger that all applause had to be stopped inside the hall and handkerchiefs silently waved to show agreement, lest the tumult of enthusiasm at the meeting should provoke the crowd outside to serious acts of physical violence. Meantime millions of other young men were bravely risking death in a war to end war which had swept over them because public opinion had not bothered to think about the subject.

How different things are now. To-day other younger generation has at its disposal a public which probably thinks more about war and peace than almost any other political subject, and hardly ever reads a newspaper which has not some headline devoted to it. The public, at the bottom of its heart, is passionately anxious that there should be no more war. What a contrast, and what a chance for leadership!

And yet there is a problem for us all here. That public may be in the mood which I have described, but at the same time it is terribly bewildered as to what is the practical course it ought to take to ensure that its desire shall be satisfied. Youth can tell them. But if you accept this opportunity, I suggest that you too must search into your hearts to make sure that you do it wisely.

The mind of a little child, when it first awakens out of its instinctive passions to the need for applying rational control to those passions, is very sensitive, easily wounded, easily angered. And so it is with the public mind when it is first aroused. Treat the little child with arrogance

and without sensitive understanding, and you may close the intelligence which was just being stirred into life. This is just as true of the public mind. In nation after nation harsh, dogmatic, arrogant and unpractical shouting of new ideas has often caused reaction and frustrated the awakening of the human spirit. I plead with the younger generation in the Peace Movement not to miss its chance in this respect.

I sometimes think it is more important at this moment in history for us to help men to learn how to think than even to make them accept our brand of thought. At such a critical time an unusual responsibility is placed upon those who advocate new ideas. Intellectual ferocity may at this explosive moment be as perilous as physical violence. Old men seem fettered by an inability to lead the public as bravely as it wishes to be led. Young men and women may equally lose their chance unless they speak peace peaceably.

It is will-power, imagination and sympathy which the public needs, and it is the business of youth to urge statesmen to act in that fashion so far as world peace is concerned. To do this it is not necessary for us to be vague or purely emotional. I know nothing more thrilling in human experience than to hear an idea explained which is at one and the same time both brave in quality and concrete in detail.

In the League of Nations Union we have the opportunity of centring public attention on one very practical question: Will our country speak to its sister nations not in favour of some isolated action, but by taking the initiative in submitting workmanlike schemes for joint action? Will it say: We, like you, have renounced war as an instrument of national policy, and are now prepared to amplify that by accepting world law courts by defining the aggressor as a nation which takes the law into its own hands, and by joining in bringing every form of pressure to bear upon the law-breaker, so that order may be maintained? Will our nation declare that, while the world retains armaments these shall in future be used for the purpose of preserving law and not of promoting anarchy? Will it make clear, not after the event but before, that this country will join without qualification in upholding the law? Such a declaration in advance of a crisis will mean that force may rarely if ever have to be used.

If our country would take this initiative the temperature of the world would fall, anxiety would be diminished and reason begin to operate with greater vigour and success. Disarmament will then become a practical proposition and constructive economic policies of mutual aid would have a chance of building the foundation of a just world.

The League of Nations has now a new chance after its first fifteen years of experiment in the art of Government. Russia has come in. America is nearer than ever before. The League has learnt experience. It now starts its next stage of life. Leadership at this moment is vital; and that leadership will not be given unless we who are the advocates of peace, reach right through into the heart of the ordinary man in the street. That we can now do by propaganda which shows that we think it more important to prove our ideas to be right than to prove our opponents to be wrong. Defeatism and intellectual arrogance are equally useless. Courage also is vain unless it is inspired by a respect for those to whom we appeal, even when they are enemies of our own way of thinking. The Youth Movement ought to shake us all up with new hope and leadership.

Ideal of Education.

BY MR. DHAN RAJ SINHA, M.A.

A student of the ancient literature of this hoary land is forcibly reminded of that unique, wonderful and interesting incident in its history when a worn-out Brahman, in a tattered robe with a face beaming with the lustre of profound Brahmanical lore and with a robust well-built physique, significant of his great martial valour, knocked at the royal gate of the king of Panchalas. A ready admittance was accorded to him but when he reminded the king for the fulfilment of his old promise made out to this valiant and scholarly supplicant in the morning of his life, when his bosom was young and full of high and noble aspirations, the royal face sank low and instead of making good his princely words, the king jeered at this incarnation of valour and learning. This terrible blow of refusal did not discomfit or discourage Guru Drona but all at once kindled the martial spirit latent in the deep recesses of his noble soul and his face became all ablaze with wounded pride and just anger and he thundered out those immortal words—"I am both physically and mentally fit to hold my own against any warrior or learned man", which ought to ever resound in the ears of the growing generation of Mother India. It was an open challenge to the royal dignity as well as to the heroes of his court. But not a hand was raised, not a tongue was moved. All remained dumb-founded and wonder-struck and were simply astounded at this unparalleled courage and learning of this sage-warrior. Now one would like to inquire what was that training which gave such courage and strength of mind to Guru Drona?

Which was that training which made Arjun at Indra's Court in the dead of night address the celestial damsel Rambha as his "mother?" when she appeared in all her glory of radiant beauty and full blossomed youth supplicating him to bestow his love on her? What was the ideal of education in those days which inspired the high-souled Ram to forego the pleasures of palace and undergo a life of hardship and privation simply to satisfy the whim and caprice of an old hen-pecked King or which moved the heart of the mighty Bhishma to promise to observe a life-long celibacy in order to satisfy the lust of an old sensuous monarch (as the modern scholars prefer to couch their remark in such phraseology)? What was the system of Education which produced such wonderful combination of mental, physical and moral culture? What was the ideal of education in those days before the teachers and the taught? What was the real prevailing system, it is very difficult to ascertain after a lapse of more than five thousand years, but this much is sure and certain that at present our old Mother India is badly in need of such Education for her promising sons, who after finishing their educational career may proudly and justly say that they are physically, intellectually and morally fit to hold their own in the rank of nations when their time comes to play their part in the battle of life. We do not want that education which turns out intellectual bankrupts and moral and physical pigmies every year to be kicked and spurned at the door of every petty office. That system of Education should be done away with as early as possible which has turned a nation of heroes into a nation of quill-driving men. The ancient noble spirit, the old culture and education should be always presented and ought to be the aim and object of every young Indian—a culture which enabled our warrior ancestors to lay aside in time of peace, their fearfully dreaded spears and sharp-edged swords whose adamant blows were so keenly felt by their antagonists and employ their fiery spirits to the service of Goddess Saraswati and which made our saintly forefathers able to put aside in times of danger, their holy books—repository of divine love and wisdom, whose time-honoured custodians they were, and grasp with a firm grip the martial weapons which created havoc in the enemy's rank, when freely wielded. Such should be the ideal of our education. The education which eats away the vitals of our youths, which makes them bought slaves of passion and fashion, which creates in their mind a scorn and disgust for their noble ancestors—which makes them think that the chaste ideal Sita was the common wife of Ram and Lakshman, and Dasaratha married his sister Kausilya, which impresses upon their tender minds that the Rig Veda is the song of the old Aryan shepherd, should all at once be erased out; the sooner it is done, the better it is for the future of India.

Every fair-minded man must be pleased at heart to see the wonderful physique and stalwart form of English and other European scholars. They also acquire the highest academical degrees and are still hale and hearty, robust and strong, physically and morally fit for any work in practical world. While our students after finishing their college career come out of their Universities, infirm in body, weak in mind and in most cases perfectly shattered in their health—with pale cheeks, shallow chest, sunken eyes and slender feet—a mere ghost of a graduate.

The other day, a Europe-returned gentleman was expressing his wonder and admiration at the ideal physique and robust health of the German young boys and girls at the University. He says, "We Indian students unfortunately looked like miserable pygmies among those German Patagonians." The German boys and girls with rosy cheeks and flaxen hairs, jumping and frisking like wild doe on the snow-covered summits of the hills were a fair contrast to our sickly appearance with saffron cheeks and sunken eyes. He further says: "It is better to send third class graduates with robust physique than to send first class first with poor health and sickly features only to be laughed and jeered at by the German stalwarts." I personally know of a High Court Chief Judge, who is physically a giant and who used to walk 8 or 10 miles in the morning before beginning his day's work. But look at our Deputy Magistrates, Munsifs and Judges; in majority of cases you will find them airing themselves indolently on their motor cars—a mere mass of flesh rolling from side to side on the downy cushion of their cars or some of them are so lean and thin, pale and distorted that when seen in their morning walks may be mistaken for Hamlet's ghost. They really feel ashamed to walk or do any physical work.

Now one would like to ask what is the fundamental difference in these two types of Educational systems? One develops the mind as well as the body while the other tries to develop the intellectual capacities at the sacrifice of health and body. The European students are also made up of the same elements, not of a bit harder stuff, I believe. Nature is not partial there. It is we who weaken and deteriorate ourselves by disobeying and disregarding her inexorable laws.

It is but true that some evils have crept into our society and are eating its vitals, no doubt, but it is the bounden duty of those who are the promoters and guardians of our education to look to these obstacles however gigantic they may be. Surely, it is an up-hill task but it is to be done by us and us alone.

In my humble opinion, a healthy novel atmosphere should be created in our schools, colleges and hostels and real manly Indian games, not sham ones, should be introduced therein. I do not mean to say that all foreign games should be discouraged and discarded in toto but undue importance should not be attached to these expensive games in a poor country like ours. The old and noble ideal of plain living and high thinking should be practically presented before them. The importance of leading a chaste and celibate life during their educational career should be deeply infused into their minds. The mere ape-like copying of bad habits and foppish manners of the westerns should be strictly avoided. Let us imitate their good qualities of punctuality, cleanliness, dogged perseverance, patriotism and adventurous spirit. In short, the ideal of education should be the harmonious development of mind, body and morals and the educational systems of our country of whatever denomination they may be, whether western or eastern, should aim at the production of physical, intellectual and moral giants, who may be able to keep up the lost dignity and ancient greatness and glory of Mother India, the cradle of the mightiest nations and the most exalted civilization that ever flourished on the surface of the World.

On Female Education.

BY MR. BANKIM CHANDRA RAY, M.A.

However hostile the attitude of Indian public might have been towards female education decades back, the necessity of schooling girls is now-a-days conceded on all hands so much so that it is not necessary for us to labour the point. Upon the exalted and enlightened conditions of motherhood depends the lasting regeneration of Indian national life. The Hartog Committee pertinently observed, "The education of the girl is the education of the mother. The school education of each additional girl counts more towards the future than the school education of an additional boy.....in the interests of advance of Indian education as a whole priority should be given to the claims of girls' education." Hence it is gratifying to note that female education is making rapid strides in the country. Says a Government resolution, "There are indications of a growing interest in the spread of women's education and general appreciation of its importance."

In British India there were in 1929-30 255 girls' H. E. Schools with the enrolment of 70,542 scholars. The number of high schools in the different provinces stood thus:—Madras 61 with 26,266 pupils; Bombay 60 with 14,111; Bengal 57 with 13,387; Punjab 33 with 9292; U. P. 38, with 5171; C. P. 10 with 255 and B & O 6 with 1461. The speedy progress of girls' education in Bengal is betokened by the fact that female candidates in the Matriculation Examination of the Calcutta University rose from 116 in 1920 to 1000 or so in 1934.

The propriety of the present day education imparted to girls is being seriously questioned by a section of people. Mere bookish education which aims at preparation for 'white-collar' employments is not considered suitable for our women folks who are not called upon to pursue careers of service and profession but be 'ministering angels'. The problem of female education cannot, therefore, be tackled by setting up schools of the prevailing type. Not only education but education of the right sort is an imperative necessity.

Investigations and researches conducted by Moore, Burt and Jastrow prove that there are physiological and psychological differences between the sexes. The fair sex cannot undergo the hard toils of life as much as men and are unfitted for works involving strength which have been the lot of the sterner sex. Again, women are naturally more sensitive and more intuitive than men and excel them in works demanding

deftness of the hand. These differences call for differentiation in the content and method of education for men and women.

There are other reasons why women's education should not be a replica of men's. In society the position of woman is quite different. She is expected to be a worthy companion to man and to sweeten like Elizabeth Barrett the paths of her husband's life. Her destiny is to give completeness to the existence of man who is her natural counterpart. "The ultimate aim of the average woman," remarks Mrs. Edison, "should be to fit herself for the home." Hence Hitler's attempt to relegate women to their proper sphere is indeed commendable. Girls' education must, therefore, cater for the needs of home which is their special field of action. As a rule, education imparted to girls should be such as will enable them to discharge their duties as mothers and house-wives in an efficient and intelligent manner.

It becomes abundantly clear that special courses and curricula must be instituted for girls, if they are to receive education on proper lines. Rightly did Dr. Ziauddin Ahmed advocate in the course of his presidential address at the 8th. All India Educational Conference at Lahore the establishment of separate girls' schools with courses of instruction of their own. There are convincing proofs which go to establish that the monasteries of Vikramsila and Mithila made ample provision for the differentiation of curricula between the sexes. In Switzerland there are special schools for girls which impart full instruction in house-keeping. Even in America for women desirous of settling down to married life, there is a differentiated course of study. In the curricula of studies for girls' schools, special prominence should be given to Domestic Science, Cookery, Needle-work, Embroidery, Midwifery, Child-psychology, Hygiene, Music, Drawing and Painting. The inclusion of certain optional subjects like music or domestic science, drawing and painting in the proposed Matriculation Regulations of the Calcutta University or the provision of special subjects e. g. music and domestic economy in the S. S. L. C. syllabus of Madras is insufficient for the requirements of girls.

One must conclude that the time indeed has come when the Universities of India should give a new orientation to the scheme of girls' education by drawing up educational curricula of a distinct and utilitarian character.

Inspection

Suggestions & Improvements

BY MR. S. VASUDEVAN, M.A., B.T.

That an inspecting staff strong in quantity and quality is essential for the real improvement of educational institutions is certain. It should be strong in quantity because their duties are manifold. It should be equally strong in quality, because the responsibilities vested with inspectors demand it. On the protective side, for instance, they should see whether the teachers discharge their duties faithfully, whether they are properly treated by their employers, whether the pupils are fairly regular in attendance, and whether the minimum standards prescribed for the respective grades are kept up. In short, they could see whether there is proportional return for the public money spent on education. On the constructive side, they could give suggestions to teachers as to how to improve their methods of teaching. They could also arrange refresher courses every now and then for the sake of teachers, lest they should become stick-in-the mud. Education is a growing science, and various experiments are being conducted at different centres. And new and better methods of teaching are being suggested as a result thereof. Such being the case, the need for the refresher course cannot be over-emphasised.

The above duties would imply a considerable increase in the inspectorate. With the present insufficient number, we cannot expect them to discharge all the above duties efficiently. As things stand at present, it is just as much as they could do to visit all the schools once a year. One can have an idea of the hugeness of their task, if one sees the average number of schools for which a member of the subordinate inspecting staff, for instance, is responsible. The Hartog Committee report says that in Madras one Deputy Inspector is expected to visit 142 schools on an average in the course of a year. What is worse, some schools are situated in all but inaccessible areas. Hence, what with the bad roads, rendered worse by seasonal conditions, and what with the often inadequate travelling allowance, it is almost impossible for them to do all that could be desired.

Nowhere else is proper inspection more a desideratum than in the education of girls. But unfortunately matters seem to be worse with girls' schools than in the case of the schools for the boys. In Madras the number of institutions to be inspected by an Inspectress is

111 on an average, according to the report of the Hartog Committee. This Committee says "In no province has an inspectress less than an average of 4000 sq. miles to cover.....Even in Madras it is extremely doubtful if the women's inspecting staff can complete the inspection of all the schools once in the year." The difficulty of travelling naturally being more pronounced in the case of ladies, a further increase in the women-inspectorate is much to be desired.

There is need for improvement even in the matter of qualification. A glance at the duties of the inspectorate will suffice to disclose the necessity for trained persons. But as the Hartog Committee regrets to report, "many of the inspectors, particularly the subordinate inspectors, are themselves very poorly qualified for the task allotted to them." For instance, the report reveals the existence in Madras, in the year under review, of one untrained deputy inspector with lower qualification than the matriculation. In short, the Committee refers many times to "the absence of an adequate number of well-qualified and experienced inspectors and inspectresses, and to the waste and ineffectiveness in the system of education" which the Committee believes to be due mostly to that inadequacy. Hence no fair criticism can be levelled against the inspectorate regarding their work, partly because of the pressure of their duties, and partly because of the lack of proper training and qualification.

To add to all this, there is much to complain even in respect of clerical assistance. The deputy inspectors are not provided with proper and sufficient clerks, which fact again is another bar to efficiency.

Such a state of affairs seems to be partly remedied by what is contemplated in "The Champion Report". The policy of consolidation and concentration of schools contributes to more efficient inspection, for the average number of schools to be visited by an inspector will diminish. But on that account, an increase in the staff of inspectors cannot be avoided. It is as a matter of fact indispensable to progress. There are a few things to remember with regard to the recruitment of new inspectors. Choice may be made from the ranks of experienced Headmasters of High Schools for a District Educational Officer's post. Since they know the whole mechanism of the High School, they must be expected to be quite fit for the work. There is another reason why the experienced heads of institutions will do well as inspectors. Having actually handled classes, they know the real difficulties of class-room teaching, and they will be sympathetic while examining teachers. Their instructions will be practicable and not

utopian. Care must be taken, however, to exclude such Headmasters as have got into a rut, are blind and even averse to any other method. Persons with liberal views, and such as can really be said to belong to the type of progressive teachers should be selected. As for Deputy Inspectors, "Educated men of ideas of a high standing and character, familiar with rural problems, learned and skilled in the art and science of pedagogy are necessary to do adequately the work demanded of a deputy inspector." If all these qualifications exist in a headmaster of a middle school, he is the fittest person for a deputy inspector.

But these inspectors must pass before actual recruitment, departmental tests in which they must be examined in the latest methods of teaching and in current educational thought. For they must be in charge of refresher courses, and in order to conduct such courses, they must themselves be in touch with the latest researches in the field of education.

Paradoxical as it may appear, money spent in securing hands of the type detailed above is real economy. For, what is apparently lost in paying them will be gained by their efficient handling of finance, and utilising it so as to have maximum benefit resulting therefrom.

As regards actual inspection, personally I feel that surprise visits are more useful than others, for if the fact of inspection is previously known, loop holes are patched up, things are made up, notes of lessons completed and brought up-to-date, turbans searched and put to wash, literary associations started, and what not. In short, every school will look like a model institution. In the case of elementary schools in rural areas, things are worse. One need not be surprised if the school is not open at all on several days. But everything will be all right on the day of inspection. So it is better to have surprise visits.

It has been the practice of some managers and managing bodies of educational institutions, not to carry out the suggestions of inspectors. Such instructions being given with the best of intentions, with a view to improving the schools concerned, such a neglect is regrettable. It is hoped that they will also encourage the inspectorate by paying heed to their words of advice.

So with the introduction of the consolidation scheme, with improved clerical assistance, with the recruitment of well-qualified inspectors from the ranks of experienced Headmasters, with frequent surprise visits, and with proper encouragement given by the managers of schools inspection is bound to be enlarged and improved.

In Memoriam.

On earth no tomb thy relic holds—
With brine the bay hath bathed thy ashes;
But Love hath built a lovely fane
At my heart such as never perishes.
With my salute I graced the ground
Whereon they lit thy funeral fire,
And shed alone bitter tears that flowed
Like a silent spring in Grief's empire.
And strayed around in hope to see
Of thee some sign, a sigh or a shade;
Shadows the sun in lurid pain
And sighs enough the foliage made!
I turned my path in sullen mood
Homeward with my heart and feet of lead,
And have inward for ever since wept
Till growing gloom marked my very tread.
Thou livest I feel, yet see thee not;
Death screened thee off my sight,
And Life reveals not thy rebirth,
Nor what robes do robe thee, my delight.
Perfect thy course, abide in peace;
And when I gain the light decree
For seeing far beyond the eyes
Can see, be thou the first I see.

P. R. G.

Some Aspects of University Education in India

BY MR. V. P. NATARAJAN, B.A. (HONS.), B.T.

(Continued from the last issue.)

Of profound interest it is to all concerned with university work in India, that the reform of University education followed between 1901-1906, associated with Lord Curzon's name. The rapid rise in the number of high schools and colleges started by private efforts alarmed Lord Curzon, who was afraid lest English education should recoil on the rulers as it began to make people conscious of their degraded state, and as it germinated ideas of responsible government, democracy and independence. He appointed in 1902 the Indian Universities Commission whose recommendations formed the basis of the Indian Universities Act of 1904. Curzon claimed for his reforms which in his view and intention embraced a much wider range than University education that "out of them has been born a new life for higher education in India. It is the setting free of the service of education by placing in authoritative control over education the best intellects and agencies that can be enlisted in the task, and it is the casting away of the miserable gyres and manacles that had been fastened on the limbs of the youths of India, stunting their growth, crippling their faculties and tying them down." Yet the Act was violently criticised by the Indian public which was alarmed at the excessive centralisation and officialisation of the Senate and the costliness of higher education which it entailed. Dr. Besant wrote: "Its results were lamentable: fees were raised so as to make education costly; private efforts were discouraged; Government control was increased; and higher education became a Government machine."

By 1911, too more Universities—Allahabad and Punjab—had been opened to relieve the Calcutta University from its overgrowing size, and the political redistribution of India in 1911 created new provinces necessitating new Universities in accordance with the decision of the Government of India that the territorial jurisdiction of each University was to coincide with the provincial jurisdiction. The overgrowing dimensions of the Universities, the slackness in supervision of instruction and examination, the difficulty of accommodation, and the competition between the University and the Colleges were more marked in Calcutta than elsewhere and led to the appointment of the Calcutta

University Commission, presided over by Sir Michael Sadler, which recommended the gradual replacement of affiliating Universities by unitary teaching and residential Universities with no affiliated colleges. The four teaching Universities—Dacca, Lucknow, Aligarh and Delhi—were established immediately after the publication of the report, and the Allahabad University was reorganised on the lines recommended by the Commission. Although the growth of unitary teaching Universities has been a marked and satisfactory feature of the development of higher education during the past years, there will always be in India a need for Universities of the affiliating type. Of the seventeen Universities in India, eight are of the latter type, while the newly established nine, including the two denominational Universities of Benares and Aligarh, are of the unitary teaching type.

The statement below furnishes the number of educational institutions and the number of students attending them in 1920-21 and 1929-30, reproduced for comparative purposes:—

	NUMBER OF INSTITUTIONS.		Percentage increase.
	1920-21	1929-30	
(1) University colleges	231	313	35.50
(2) Secondary schools	8,987	13,152	46.34
(3) Primary schools	160,072	204,094	27.50

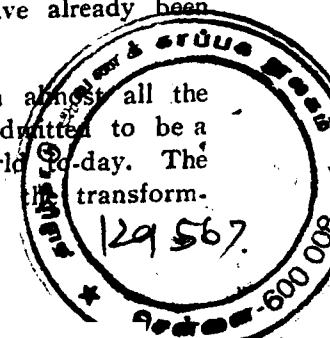
The statement shows a very striking development in all classes of educational institutions. Particularly the percentage of increase is no mean one in the case of University colleges, and will be all the more remarkable if earlier years are also taken into consideration. Similarly, in regard to the number of students in the various institutions.

	NUMBER OF STUDENTS.		Percentage increase
	1920-21	1929-30	
(1) Universities:—			
(a) Boys	58,066	94,025	61.93
(b) Girls	1,529	3,141	105.43
(2) Secondary schools:—			
(a) Boys	1,110,360	2,009,181	80.95
(b) Girls	129,164	237,027	83.51
(3) Primary schools:—			
(a) Boys	5,111,901	7,332,678	43.44
(b) Girls	1,198,550	1,891,406	57.81

Particular attention may be drawn here to the large number of students at the Universities. The figure for 1929-30 was nearly 100,000 and it has considerably increased since then. This figure is of particular interest with a reference to Mr. Churchill's statement that "the proportion of the intelligentsia in India is probably smaller in proportion to the amount of the population than in any other community in the world—far smaller than the proportion in western countries." The Rt. Hon. Sir T. B. Saprú has contended that though the proportion of literates in India is comparatively very small, the number of those who have received higher education is astonishingly large. Though in the absence of accurate statistics as regards University education in the principal countries of Europe it is not possible to judge the validity of Mr. Churchill's statement, yet Sir T. B. Saprú believes that he is correct in stating that the number of students at the Universities in British India is not only absolutely but relatively to the population greater than in many countries of the West.

In their early days, Indian Universities undoubtedly showed a vitality, a brightness, a love of learning which does them the utmost credit. The ideal and purpose of University training was of a higher order and nobler than temporal gain, and a cultured mind stood out, among human values, as the most desirable of acquisitions, character, itself being at its best when built on the bedrock of sound culture. If intellectual culture implies the pursuit of knowledge in its broadest ambit, then one can honestly feel proud that the Indian Universities have done their best in embodying in themselves the solid qualities of the pupil, with unpretentious determination, pursuing a policy of all round development in a manner which, to those who have been able to watch their progress, affords legitimate satisfaction. By an enlightened direction and tactful control, with the ready co-operation of the Government and of private institutions, some of the Universities first created a standard of teaching, the efficiency of which has been proved by its fruits, has been appreciated abroad, and has secured for their alumni an enviable distinction. Pursuing their forward movement, many of them have in more recent years started their own Research departments and from the hearty welcome they have received from all quarters, it is a matter of rejoicing that very appreciable results have already been obtained in these busy hives of intellectual activity.

The recent growth of scientific departments in almost all the Indian Universities need cause no surprise when it is admitted to be a reflection of the rapid progress of science in the world to-day. The object of science being the analysis, the interpretation, the transform-



ation and the presentation of an intelligible picture of Nature, science is essentially a creative activity, deriving its ultimate impulse from the love of Nature, and is the fulfilment of the great aspirations of human mind. Science is as much a creative activity inspired by a fundamental aesthetic impulse as is art. Every great scientific discovery is in itself as beautiful as any picture. No true human spirit in whatever branch it worked could be happy unless the cause for happiness sprang not only from the intellectual side but also from the aesthetic, from the love of beauty, of harmony and of simplicity, whether it was in art, or music, or literature, or science. And the aim of the Universities being essentially cultural and aesthetic, it is impossible to find fault with Sir C. V. Raman's dictum that science was the only thing worth studying in the Universities. The nineteenth century physicist claimed to be a hard hearted matter-of-fact person who inferred scientific laws in a wholly rational and unobjectionable manner from the accurate facts recorded in his laboratory experiments, and disclaimed vehemently any imputation of 'metaphysics'. It is indicative of our deeper insight today that we know that his claim was a mistaken one, that what he really meant was that he objected to any metaphysical attitude opposed to his own unconscious one. The recognition that every scientist is consciously or unconsciously a metaphysician heals the breach between Science and Philosophy, and brings them together as inseparable parts of a unified intellectual discipline. The record-breaking discoveries of the present century have caused scientific thought to break away from the moorings of atomism, mechanism and determinism, and have caused the creation of the beginnings of a new outlook on the universe. Older ideas have to be thrown overboard and the new wine cannot be contained in the old bottles. There is much in the new discoveries which does not hang together, which remains puzzling and incomprehensible; it cannot be claimed as yet that we have clear notions of the ultimate truths to which they point. It is becoming clear today that it is more and more the function of the Universities and Scientific Research Departments all over the world to bring about an understandable, rational co-ordination and advance in thought. Yet a word of caution seems necessary. Science nowadays means research and research adds new wealth to the stores of knowledge. In this sense it is perfectly true to say that research departments are active factors in the spread of intellectual culture, which is the primary aim of a university. However, there is a danger lest the emphasis on the relation between research and culture should lead to blur the very important distinction between the object and the subject of that culture. The question arises, are universities established to extend the field of science or to impart intellectual

culture to their alumni. By serving science, a University no doubt serves the mind of the student, and while serving the mind it promotes discovery, which is both the ambition and the reward of science. The issue confronting us is really: on which of these two aims should the emphasis primarily be laid? Cardinal Newman remarked eighty years ago that a University is a place of teaching and that its object is the diffusion and extension of knowledge rather than its advancement. "If its objects were scientific and philosophical discovery, I do not see why a University should have students." Since his days science has progressed immensely and the Universities have very properly been drawn into the movement. But it is a fact that most of the scientific discoveries in which our modern age takes such pride, were made by individuals or institutions with little or no contact with the Universities. It is therefore apparent that though modern Universities have their share in the advancement of science, this function is by no means a University monopoly. Anyhow the step taken by the Indian Universities in the creation of Research Departments in science is undoubtedly one in the right direction. *(To be continued.)*

Induction and Deduction in Thinking & Teaching.

BY MR. K. N. GUPTA, M.A., HIGHER T.D.

"God made man after His own image." Man is considered the highest animal. Nothing is perfect in this world. Even rose, the king of flowers, has its own thorns. But when its qualities are compared with its defects, it possesses the former in a greater number than the latter. Man has also his own defects but in comparison with other animals he possesses greater number of qualities. The dominating characteristic of his being superior is the capacity to see the qualities and properties of objects, and to discuss them apart from the things. He is capable of reaching that higher stage of the mental process called the reasoning power through which he can formulate general laws by observation of many situations, of applying these general laws to other situations to help in arriving at the proper conclusion.

There are two kinds of reasoning power, inductive and deductive. Deductive reasoning was first formulated and expressed by Aristotle in the *Organon* in the fourth century B. C. He did notable work in organising and codifying Greek scientific knowledge. His writings were the result of a mixture

TWO KINDS OF
REASONING PRO-
PER.

of keen observation and brilliant speculation. They contained many inaccuracies, and in time, due to the reverence accorded to him as an authority by the medieval scholars and the Church authorities, proved serious obstacles to real scientific progress.

In 1543, Copernicus, a Bohemian Church canon and physician, completely upset the old conception of the universe. He wisely refrained from publishing his work until the year of his death to avoid ridicule and punishment for this innovation.

From before Aristotle, thinking and mind had seemed to many to be manifestly superior to sensation and matter. This attitude had later commended itself to the Church fathers and they had in considerable measure identified it with the moral superiority of the spirit to the flesh. From these mingled considerations it was a very great reversal for Galileo to call in the lower matter and sensation to correct the higher mind and spirit.

In 1590, Galileo questioned the authority of Aristotle. He invited the Italian University of Pisa to witness his experiment. The Leaning Tower of Pisa served at once as laboratory and as public demonstration hall, for all could see. Two balls of different weights were weighed, dropped together, and, contrary to Aristotle, they fell together. A new and far more significant procedure in logic was introduced. Some older ones still doubted the experiment and continued faith in the authority of Aristotle. It is this departure from bare discussion to the testing of hypotheses by observable consequences that is the best available key to the interpretation of the modern world.

Seeing clearly the importance of the tested thought and the new knowledge, Bacon, 'the father of modern science', though not a scientist himself, broke entirely with the old scholastic deductive logic and formulated and expressed the method of inductive reasoning in his 'Novum Organum', published in 1620. In this he showed the insufficiency of the method of argumentation and cock fighting with words. By showing how to learn from nature herself, Bacon turned the Renaissance energy into a new direction, and made a revolutionary break with the disputations and deductive logic of the Aristotelian scholastics which had for so long dominated university instruction.

The 'Novum Organum' showed the way to escape from the errors of two thousand years by means of a new method of thinking and work. Bacon did

not invent the new method. It had long been used like the old method before formulation. It was the method by means of which Wycliffe, Luther, Copernicus had worked. But he was the first to formulate it clearly and to point out the vast field of new and useful knowledge. The lid of the universe was taken off.

"Deductive reasoning is a process of going from the general to particulars." It is not true to the letter. Its simplicity is the chief merit. It is the outcome of the attempt to formulate the thinking process in terms of the results of an analysis of the finished product. It is very misleading. Deduction may psychologically begin with a problematic individual. The general notion is not given to begin with. Then the deductive reasoning consists in going from the individual to the general. But the selection of the proper general notion to solve the problematic individual is a very vital point of the thinking process. It is really the dynamic aspect of that process. It is where the whole struggle and tension of mind centres. Then application to the individual is made to solve the difficulty. This aspect is merely half truth. It is after all only the formal part of a thinking process, the essential part of which is already complete.

In deduction start is not necessarily, or even frequently, made by a given general notion. The appropriate general notion is found by active search which is the very vital point of the whole process. However, the significant point in deduction is that there is no question about the validity of the general notion. It is taken for granted in both cases either given or searched out.

"Inductive reasoning is a process of going from particulars to the general." This process does not necessarily start with a group of given particulars. They may have to be sought after very patiently and perseveringly. Induction psychologically and normally starts with something problematic in a concept or law which fails at some points to throw light on the present need. For example, the Ptolemaic system concept was problematic to Copernicus. He turned to the investigation of the individuals which fall, or might possibly fall, under this concept. The vital point in the whole process is the questioning attitude towards the concept. Search for investigation of individuals which are not problematic is carried on for the reconstruction of the concept. The Copernican system was not entirely new.

BOTH PROCESSES START WITH A PROBLEMATIC INDIVIDUALS OR CONCEPT. Necessity is the mother of invention and desire is the father of thought. The deductive movement begins with a problematic individual, the induction with a problematic concept or law. The former is related to finding and

applying the proper accepted concept to interpret the individual and bring it under control; the latter is related to perfecting the problematic concept so that it will adequately control indisputable particulars.

'LOCUS' PRIMARY The locus of the problem is the main thing to start with
'FORM' SECONDARY and the form of the movement of thought is secondary and dependent. There will be a characteristic difference in the form of the movement of thought in deduction and induction because the locus of the problem is different.

TWO WINGS OF A BIRD. In every walk of life, school or practical affair, both processes of reasoning go hand in hand. Two wheels of a cart are necessary to make it run smoothly and in a straight line. Body and soul both are necessary for the right living and action, at least, in this world. Male and female both are essential for the propagation of the race. In the same way "we can no more think inductively or think deductively, than a bird can fly with one wing or a man breathe only by inhaling."

INDUCTION INCLUDES DEDUCTION Complete induction covers deduction. There are certain problems whose solution needs only the application of already unquestioned concepts within a definite organisation of knowledge. For these deduction may be adequate. But induction cannot be isolated. It is always inclusive of deduction. Unless deductively applied, specially in hypothetical cases, the validity of a concept or a law cannot be established on a firmer basis. In such cases deductive process of thinking is inextricably woven into the very fabric of the inductive process.

"THINKING" USED IN VARIOUS SENSES. According to Dewey, the term 'thinking' has been used in various senses. Broadly speaking 'every thing that comes to mind or that goes through our head is called a thought'. 'To think of a thing is just to be conscious of it in any way whatsoever'. Some people think in the form of day dreaming, and in the form of building castles in the air. This type consists in chance and idle thinking.

Secondly, the term is narrowed by excluding whatever is directly presented; we think of only such things as we do not directly see, hear, smell or taste. In this sense perceptual thinking is excluded.

Thirdly, the meaning is further narrowed to beliefs that rest upon some kind of evidence or testimony. In some cases, a belief is accepted with slight or almost no attempt to state the grounds that support it. Fourthly, in other cases, the ground or basis for a belief is deliberately sought and its

REFLECTIVE THOUGHT. adequacy to support the belief examined. This type is called reflective thought. It alone is truly educative in the sense of forming habits of reasoning and scientific mind to arrive at the truth without any prejudice.

NO WATER TIGHT COMPARTMENT DIVISIONS. No sharp lines of demarcation can be drawn in these divisions. So it is a difficult task to attain correct habits of reflection. To stimulate men to the discussing and the discovering of useful truth, and to turn the energies of mankind from assumption and disputation to patient experiments, and to give an impression to human thinking which it has retained for centuries is the rare prerogative of a few imperial spirits. Reflective thinking means judgment suspended during further inquiry; and suspense is likely to be somewhat painful to maintain the state of doubt and to carry on systematic and prolonged inquiry are the essentials of thinking.

HIGHEST TYPE OF THINKING. EUCLEID, NEWTONS COUNTED ON FINGERS.

(To be continued.)

Notes.

We cordially greet all our enlightened readers, contributors and advertisers, and wish them a very Happy and Prosperous New Year.

Dr. Cousins' Presidential Address.

BY PROF. C. A. KRISHNAMURTHI RAO, M.A., F.R. ECON. S.,
Associate Editor.

Dr. Cousins' Presidential Address at the last Provincial Conference of Teachers at Anantapur in December last deserves more than a mere perusal even at the hands of those who may not be directly connected with Education. Every page of the address bears the clear impress of the personality of the great poet, teacher, educationist, artist and refined critic and humanist that Dr. Cousins, as is so well and widely known, is. He is one of that small but gallant band of foreigners who have thrown themselves heart and soul into the noble work of moulding the destinies of a regenerated India. He is a practical idealist and his address is a very substantial contribution to educational thought in India to-day.

His survey of our problems is masterly and his suggestions most helpful in that he is instinctively unerring in his approach of the details. The chief merit of his synthetic analysis of educational problems is that he is at no time or stage of his discussion away from his idea of the goal of education which is to make of the individual the best and the highest that

he can be and find his true place in a society which is to be a whole composed of such parts. Every problem is approached for solution against this background and in the glow of this light. The first feature Dr. Cousins notes in our Educational world is the general cry for improvement which is however piece-meal and to which he has no objection provided it is *real* improvement. He is surprised at the huge mass of confused talk regarding education but comparatively little mention made of the student who ought to be the central figure in this drama, but who is left "to blossom like a modest violet growing in a shady dell" and wondering, if that instinct is left surviving the various attempts at "educating" as we know it,—wondering wherein, if at all, he comes in, in this huge scheme of things.

What Dr. Cousins would like to see is not the formulation of educational theories but the understanding of educational ultimates and a persistent alertness against fossilisation which would overtake us as poison would gradually creep into even the purest of foods. Among a bewildering variety of educational accessories the teacher's duty is clear, plain and simple, to correlate the individual to society and to help to unravel "the mystery of the buried seed of human capacity attain the maturity of the full-grown tree of human power". For doing this, the teacher cannot afford to be a mere pedagogue, nor merely teach, but he must be keenly sensitive as much to the events of the world as to the growth of individuals; and what he has to do is to make the pupils think, feel and act freely at every one of the stages of education. Education becomes cultural when it is concerned with individual development and vocational in social interaction. This is giving a clearer and newer significance to expressions which had become almost stale and no more than mere catch words.

After this illuminating definition of cultural and vocational education, other problems become simpler. The time-table, equipments and text-books, many of which are outrages on good taste to-day, can and ought to be formed in happy adjustment to the mental, physical and temperamental conditions of the pupils and in accordance with the seasonal conditions. From the text-book to the class-room, everything must be so arrang-

ed as to rouse in the young minds an appreciation of beauty which is the foundation of individual, communal, national and international concord. Beauty is a thing that must be worked for and preserved, as otherwise it is a sure invitation to ugliness, which is responsible for so much of the dislocation of the world to-day.

Dr. Cousins then points out how our education must be not a system but an organism deriving its life-breath from the laws not of books but of life itself, and giving the proper impetus to the development of aspiration and creative expression. As for the problem of language the learned Doctor would terminate the present anomalous position of English which had both spoiled and been spoiled. It had dried up indigenous enterprise and owing to wrong methods of teaching and student-irresponsiveness, English had become gibberish. The remedy lay in a wholesale vernacularisation of our education and making English an optional. The mugging-up tendency would then disappear.

For everything, the most important factor is the teacher whose status and salary are too poor for his work. His mental condition owing to his poverty is anything but fitted for the task of handling a delicate matter like the young human brain. But his complete freedom from such worries is indispensable for a task much of which has to be a crusade against the sensualising and mechanising of life to-day which is threatening to devour us all since flesh is the determining factor in our weighing of the values of life to-day. Humanity must be saved from itself, and education alone can achieve this. There can be no better handmaid for this than art whose object should be not to turn out artists but to make every body artistic just as the study of science is not exactly to turn out Scientists but to inculcate the scientific attitude and habit.

Two other problems of education are finance and unemployment. Large sums could be spared for education if the demands of other items could be reduced as, for instance, a happier understanding between communities and nations in the Empire would obviate the need for a large police and military force. Dr. Cousins points out that "Governments which are

so anxious to press every man and woman into service during wars is indifferent to their fate in times of peace. It is the right and duty of every teacher, according to him, to demand that people who have received the necessary education and training shall be given the opportunity to serve society and thus themselves. There can be no nobler or fitting appeal than that made by Dr. Cousins in his own inimitable way to the teachers there and outside that they should make a fresh dedication of their lives to this noble calling irrespective of the difficulties. A teacher *who loves his work* with the devotion of a living faith will find his heart vibrate in response to this call which gives such clear guidance to the teacher

"Whose way is long, the wind all cold,
Himself infirm and though young, yet old".

The address deserves to be treasured up in the mind of every real lover of education in India.

Extracts of the Presidential Address will appear in the February issue.
Ed. I. E.

Reviews.

1. **Readings in Literature: Part I:** Edited by K. Srinivas Kini, B.A., L.T., Headmaster, Board High School, Kasargod; Published by Basel Mission Book Depot, Mangalore, S. Kanara. Price: As. 12. (1935)

The latest circular of the Madras S. S. L. C. Board desires that English text-books prescribed for study in the higher forms should contain living prose. In conformity with this, the experienced author has compiled the book under review. The prose selections are mostly from modern writers and eschew hackneyed matter. The contents make refreshing reading and offer a rich variety. The verses chosen are of simple literary charm and speak of themes appealing to young minds. Brief notes have been appended at the end of each lesson, followed by questions of the new type. Some of the questions under each verse aim at developing powers of appreciation and enjoyment of poetry. Section III of the book gives elaborate suggestions for answering questions on reproduction of story poems, letter-writing, precis-writing and paraphrasing, with exercises bearing on the text. The compilation as a whole reveals a judicious care and clear grasp of the requirements of the standard for which it is intended. The few apt illustrations and the neat get-up add to the value of the book.

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2. **The Scholar's Library:** Published by Messrs. Macmillan & Co., Ltd. General Editor; Guy Boas. Each volume Price: Rs. 1-11-6.

Paradise Lost, Books I and II by Milton;
Northanger Abbey: By Jane Austen;
A Tale of Two Cities: By Charles Dickens;
Sybil: By Benjamin Disraeli;
Bothen: By Kinglake;
Mayor of Casterbridge: By Thomas Hardy;
Dr. Johnson: By M. A. Pink;
An Anthology of Wit: By Guy Boas;
A Punch Anthology: By Guy Boas;
Stories and Poems: By Thomas Hardy.

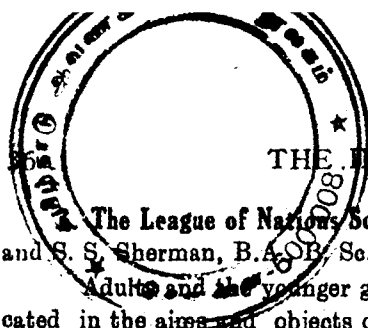
The above ten volumes are beautifully got-up books which should find a place in every library. Each has a brief introduction, useful notes and questions at the end. The first six are only reprints of popular classics, and the last four are highly edifying and interesting compilations, fine companions for leisure hours.

Dr. Johnson: This is an abridgment of Boswell's '*Life of Johnson*' with the continuity of the narrative kept up and the spelling modernised. Macaulay had maligned Boswell, but the present Editor does justice to him and his greatness and literary achievement. Rapidly reading through, one will not miss the real Johnson as portrayed in the original classic. It is a good book for non-detailed study in colleges.

An Anthology of Wit: This is composed of a rich variety of extracts from great authors, old and new, highly entertaining and instructive. The Editor in his introduction leads a discussion on the accurate definition of Wit and Humour. The passages, he says, are not without humour, though their predominant characteristic is Wit. The extracts are grouped under four headings, People, Thoughts, Occasions and Adventures. Exquisite delight and wisdom should be the share of those who happen to read through such pieces as '*Literature*' by Lord Hewart, '*Modernising Shakespeare*' by John Ervine and the like.

A Punch Anthology: This is a fine nosegay of satires, parodies and humorous pieces in verse and prose culled from the Immortal Punch. Besides affording a genuine pleasure and diversion for the happy, the contents would prove an effective antidote to diseased and moody brains. A few of the pieces are from the pen of Hilton Brown familiar to Indian readers.

Stories and Poems of Thomas Hardy: Hardy is better known to the world as a novelist than as a poet. Here are some of his short stories and poems. The introduction gives an estimate of the literary merits and a short life sketch of Hardy, which will be found very valuable.



THE INDIAN EDUCATOR

The League of Nations School Book: By Robert Jones, D. Sc. Econ., and S. S. Sherman, B.A., B.Sc.

Adults and the younger generation will, by studying this book, be educated in the aims and objects of the League of Nations and how it has been endeavouring to achieve international peace and goodwill. The subject matter is interesting and, besides widening outlook on things, will impress how far the League has come to be an agency for good in various directions. The diagrams and other illustrations are highly informing. Pupils should be encouraged to study this book.

4. English Prose and Verse: By S. Panandikar, M.A., M. Litt. (Cantab).

This has been designed as a text-book for Indian pupils of Bombay A.V. Schools. The author's aim is to develop their knowledge of the language and create in them a taste for English literature. Keeping this in view, he has introduced plenty of variety in form and matter. Conversational pieces, short stories, descriptive and biographical passages have been included. The verse selections are mostly from modern poets, the beauty, music and literary flavour of which may perhaps be difficult of comprehension by average pupils. The teacher is offered a wide choice out of which he may select those suitable to his wards. Brief textual notes and questions have been added at the end, which will be found of value. The author's introductory notes at the beginning of each lesson are illuminating.

5. A Book of Verse. Edited by W. S. Lambay, M. A. Price: As. 8

The selections have been chosen more with a view to appeal to the emotional sense of students and enable them to enjoy the real poetic pleasure. The verses are musical, interesting and edifying in tone. The matter may not suit those whose aim is to prepare pupils for mere examinations. The brief introductory notes and annotations at the end will be found useful.

6 A Text-Book of Elementary Mathematics: By S. Doraiswami, B.A., L.T., Mathematics Assistant, Union Xian High School, Madura. Price: Re. 1/-.

This is a welcome addition to the list of useful books on the subject, adapted to meet the requirements of the revised syllabus. The author here has brought to bear his long class-room experience, which has enabled him to acquire a correct grasp of the limitations of present-day Fourth Form pupils and present the matter in simple and lucid language, developing each topic in natural and easy steps to be within the span of comprehension of the pupils. The book has been divided into three parts, Algebra, Arithmetic and Geometry. The topics under each have been divided into separate study units with necessary examples and graded exercises. Problems in most cases have been drawn from everyday life, and the harder and more complicated have been avoided. Special attention has been paid to the principles of the theory of the subject, questions on which seem to be a new fad of the present-day examiners. The treatment of Geometry, the simple constructions and theorems, will be very helpful to backward pupils. The book will be found to be a good teacher both in and outside the class-room, and deserves to be introduced to all who wish to acquire a decent grounding in the subject.

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Vol. XI.

MADURA: FEBRUARY, 1935.

No. 2.

Presidential Address.

BY DR. JAMES H. COUSINS, D. LITT.

(At the XXVI Provincial Educational Conference, Anantapur.)

Extracts.

FELLOW TEACHERS:

I esteem it a high privilege and an equally high responsibility to have the opportunity of expressing from your presidential chair some convictions on certain aspects of education.

There is a universal demand for the improvement of education in India. But while committees and unions are busy on sectional matters, the student—who is a compendium of simultaneous subjective needs, not a debatable objective topic on an agenda, looks on and wonders, "Where do I come in?" While fragmentary improvements are being effected, (I do not say they should not be), there is need for the constant influence on them of a clear understanding of educational ultimates, as such knowledge will subtly work against the crystallising tendency that lurks in all human effort as poison lurks in the purest foods.

Real Education.

We need true educational generalizations, of course, as law arising out of life, not theories concocted in a laboratory. Such life is an energy that expresses itself through forms, and with special qualities and characteristics through the interfused human forms of body, mind, feeling and intuition. In getting at the root of the individual we are getting also at the root of humanity: for the essential needs of one human being are the essential needs of all human beings.

This may sound high philosophy instead of educational common-sense. In effect it comes to this: that the centre of education is the

student. I am sometimes alarmed at the jungle of educational accessories and the comparative infrequency with which one comes on a hint of the student blooming like a modest violet in some shady dell.

The job of the teacher (he may say *dharma* if he feels like it) is to help to draw out the faculties of the student in order that they may be put to service in daily life to the mutual advantage of the individual and the group.

That simple declaration is, of course, only the beginning of educational principles and practice:—I avoid the term educational *theories*, for theories are merely speculations, but principles are laws of life not made the playthings of research. With a sure grip on the validity and sufficiency of that simple credo we can move with confidence towards the great work of helping the mystery of the buried seed of human capacity into the equal mystery of the full-grown tree of human power whose leaves may be “for the healing of the nations” as its blossoms may be for their beautification, its fruit for their sustenance, its timber for their sheltering. The individual demands education in order to experience the full use and joy of his and her powers. To help the student towards that experience is the purpose of education and the work of the teacher from the point of view of the individual. In this respect education becomes a social responsibility to be fostered and supported by Government as the executives of the needs of the nation or province, supported completely and according to educational necessity; and the teacher is called upon to be no mere pedagogue, but an informed alert, intelligent human being, sensitive to the events and trends in the life of the world.

Education, Cultural and Vocational.

In the sense of individual development education is cultural. In the sense of social interaction education is always vocational. But while education is essentially vocational in this general way, it has to be localised and focussed in accordance with the choice of temperament or necessity or both. The general process of *culture* has to have within itself, not apart from itself, a *cult* for the intense worship of Devi Saraswathi.

The organization and paraphernalia of education are therefore the instruments by means of which the individual life finds its place in the group life. *The time-table and equipment of a school* are the two fundamental *tanmatras*, so to speak, the *kala* and *desa* (the space—substance and time—organisation) of education. I doubt if we fully

realise how educationally effective they might become. School text-books, many of them in India are outrages on good taste, perform the subtle left-handed operation of educating the child in slatternliness and ugliness.

Dr. Montessori has shown us how the apparatus of education can be made an active and beneficent partner in the educating process. But this need not be limited to sense-training or stopped at six years of age. An artistically furnished class-room will take up the much needed work of educating the aesthetical responsiveness of the individual, which is one of the fundamental needs of every normal human being and of the nations of the world today; because the absence of beauty invites ugliness leading to disharmony and strife.

A time-table and a curriculum of school studies planned not to “teach” but to encourage and assist the student to feel and think freely and well through a healthy body and sensorium and to direct his and her faculties towards their finest exercise in life, would themselves become active participants in the educational process, providing both the “didactic material” of Dr. Montessori and didactic opportunity to both student and teacher. Such an educational *organism*, as distinct from an educational *system*, would provide for universal obligatory cultural education, including aspiration and creative expression. And all through the school and college career of the student there would proceed an education in individual rectitude and integrity, which is character, and in social helpfulness and considerateness, which is good manners.

I must renounce the temptation to try to be original in a Presidential Address, except in so far as dealing with simple fundamentals is original, and remind ourselves of the verities out of which true education can only arise. And even in proceeding now to touch on specific matters concerning education in South India to day I cannot put anything before you that you have not heard before. I can only add my own conviction to yours.

The Problem of Language.

One of the first essentials of individual education, is a command of language which must naturally be that into which the individual has been born. The problem of the medium of instruction only arises out of mixed circumstances in which one culture tries to impress its stamp on another as it has happened in India. Education in India is dominated by a language which, aside from its own unique qualities and immortal achievements, has little or no affinity with the vocal physiology, the temperament, the tradition or the attitude to life of any of the peo—

ples of India. In the century of its domination, English has ruined the indigenous education and debased the traditional culture of India, by diverting the stream of creative literary energy into foreign channels, and has held back even the development of westernized education by reason of its unsuitability and difficulty, by reason also of the wrong methods of its teaching. And now nemesis is reducing English to gibberish even among students in the higher college classes.

The situation calls for two reforms: the complete vernacularization of Indian Education from Montessori to M.A., and drastic change in the teaching of English as a cultural accessory in Indian education if it is to be saved in India from the fate that overtook it on the coast of China where it degenerated into pidgin English.

The Place and Teaching of English.

In the matter of the teaching of English there is now, happily, a movement towards improvement in the University consciousness, anticipated by modifications in English teaching in the schools. A working knowledge of English should be made compulsory in all classes and English Literature should be an optional, on the same level as the philosophical or scientific subjects. But it looks as if, with the beginning of the academic year of 1936-1937, six years after the query of the Inter-University Board, the emphasis in English studies in P.A., college courses will be moved from textual knowledge to expressional accomplishment.

The improvements will shift emphasis from knowledge to usage in both the P.A. and Intermediate classes. But this will not materially reduce the mugging-up madness, with all the dishonesty that it tends to engender in both student and teacher. The text-books are to remain as before. The schools are to be asked to raise the standard of the teaching of English, and to ease the burden of the University by raising the pass-percentage to forty and eliminating moderation.

The only way out of an impossible situation, to the mutual good of Indian education and the English language, is the placing of English literature (with drastic improvements in its present teaching in materials and chronology) on the same level as any other optional subject; and, so long as India may feel the need of the English language as an inter-Indian and inter-human means of communication, the providing of an obligatory school and college course in the English language (aided, of course, by wisely chosen exemplary literature) and its expression in choice speech and at least legible hand-writing.

The Teacher's Work and Restriction.

So much for one necessary improvement in the education of the individual which is now in process.

Let us turn to the social necessity in education, to the co-ordination of individual power with group life.

Here, the chief needed improvement is in the capacity of the teacher to be the student's guide to the worthy things in life, and an interpreter of the obscure. Something more than the impartation of book knowledge is here required—confidence and respect are called for, and personal experience is essential to these.

But such necessary extra-curricular activity involves access to sources of information, occasions, persons, places and materials outside the usual equipment of a school, and beyond the personal reach of a University graduate untrained, and with his officially fixed twentyfive rupees a month—an amount for thirty days of living that would not give him a decent one-day funeral.

Next to the heart-breaking poverty of the vast mass of the people of India, the position of financial anxiety and social humiliation through indebtedness of the majority of teachers of India is highly tragic. How can a teacher give the necessary attention to preparation and the necessary enthusiasm to exposition if his mind is confused and he has not the mental clarity and emotional creativeness that are so dreadfully necessary today if the next generation of citizens is to be saved from the moral, mental and social disintegration with which the sensualising and mechanising of life now threatens it?

On all sides of life humanity today is being tested as to whether its claims to have achieved civilization in the occident or to have preserved spirituality in the orient are not empty pretensions.

India is not outside the range of this test and choice. The concerted advance of "big business" in the stimulation of unnecessary and habit-forming demands, for the sole sake of making profits, and with no regard for economic patriotism, still less for spiritual values, has reached India. Salacious entertainment and sensual inducements are permitted to be flaunted in the faces of the young as well as the grown-up. The enslavement of youth to the nicotine habit is obvious: a recently published estimate avers that the number of smokers in India is ten times what it was ten years ago—and this in a period of financial depression when every pie is wanted for the real necessities of life.

I trust I shall not be regarded as a mere pessimist when I express my belief that the falling away from the ideals and discipline of the Vedic *dharma* which is observable in India to day will not be stopped by either precept or example. It is easier, at the present stage of human evolution, for an individual to run downhill than to climb uphill. The scale of values is still weighted on the side of the flesh.

As I see it, the only available normal agency for saving humanity from itself is education. And when I say *education* I am well aware of the fact that it is from the countries that are supposed to be the most highly educated that the sensualising influences of today emanate. What I mean by education is, a full development of all the capacities of the individual, including the at present neglected capacities of aspiration and creative expression through which come the only true controls of conduct in reverence that exalts life and aesthetical sensitiveness that liberates and purifies it.

The Problem of Finance.

India needs universal and free mass education. She needs good education, "even bad education" until better became available. But whatever be the quality of the education available, India needs teachers whose minds and hearts are free from limitation or distortion by external circumstances, free to be true links between the individual life of the student and both the inner and outer life in which they are both immersed.

This ultimately means money, a vast increase in the amount now contributed to education from public funds whose administration is in the hands of the various Governments. The official answer to increased demands for educational purposes is that other needs have first to be satisfied. But education is life's primary necessity. "Military services" asks for, and gets, fifty-eight crores in a year. Education gets fifteen and a half crores. An amicable adjustment of relationships between India and Britain and between Indians and Indians would set free for educational purposes some at least of the immense sums of money now wasted through human folly.

Much also could be done for education in India by private help. Princely benefactions of a number of Indians to education look like fractions beside the colossal amounts contributed yearly to education by private trusts in America. Holders of wealth in India do not take full advantage of the existing circumstances. Scholarships for needy students would constitute creative philanthropy by simultaneously

relieving the distress of a number of parents and helping to evolve a number of good citizens. I recently heard of a gift of a piece of craftsmanship to a prince, already rich, the cost of which, invested, would secure the management of a High School in which I am concerned from financial difficulty for all time.

Art in Education.

Another point is, the provision of adequate help by the teacher in putting the student in fruitful relationship with the life of the group which implies "improvement of status and emoluments" and "security of tenure" which are just now receiving much attention in educational polemics as they gyrate around a Government Order and Draft Act of Parliament.

I turn now for a few minutes to a matter which deeply concerns the individual both as individual and social unit, and which is in the list of topics for discussion in this Conference, I mean art in education.

If art in education is looked on merely as an "accomplishment" or as an apprenticeship to a vocation, it will go nowhere in education and will take education nowhere.

The question "Is there any faculty-impulse in the human individual for which art-activity is the natural means of development?" The only answer I have been able to find in thirty years and more of observation, thought, experiment and experience is, Yes.

Human emotion is an expansive impulse which, if it does not find release in high expression, will seek it in low expression. That is to say, if the creative ferment in young life is not released into art-activity, it will release itself through sense-activity. The difference is just the difference between sensuousness as Milton thought of it, and sensuality as we have it to day in the world-wide orgy of physical gratification in unnecessary stimulants to artificially created or inordinately exaggerated appetites, and in the spurious entertainments that force sensual gratification into the realm of the imagination where it becomes an infinitely intensified means of human degradation.

World order, while it may be approached by pacts and by social economic system, can never, as far as I can see, become an established human habit until an education including art on the same level as the Three R's has helped into existence a generation of young men and women so artistically minded that they will turn from the ugly things of life as naturally as their ancestors turn to them with increasing menace to day.

In any case, what I am out for is not just the education of artists, but the bringing into education of all that true art expresses—unity, balance, harmony, intelligence, exaltation, rhythm, liberation, joy, peace. The drawing out of these qualities and the participation in these experiences will incidentally give those who are born to be art-specialists a better start than they now have; but the real purpose of art in education is not, to produce artists, but to give every human being the chance of becoming artistic; and of knowing the *ananda* (joy in creation) that accompanies them, and of carrying them by infection and contagion beneficently into group-life and world-life. The matter of art in education is a very real problem in education in India when the sciences threaten the humanities in college optionals with disinheritance. Treat scientific study not as intended to produce a number of scientists but to help every student to be scientifically minded, and you will incalculably influence the general life for good.

Examination, True and False.

I shall now deal briefly with a crucial point in educational technique, that is, the generally condemned examination.

I do not myself condemn examination as such. But I do most heartily condemn examination as we have it in Indian education today, because it is not a true *reading of a balance*, which is the real meaning of the word.

In my college experience in Madanapalle from 1916 to 1918 I had to combat the vicious habit of dictating notes to students in anticipation of possible questions. This however disappeared during the time when the college was constituent of the National University from 1918 to 1921 because the examinations of that body were planned with the intention of giving the maximum opportunity of disclosing his knowledge of his subjects and his personal expression regarding them.

In my own college teaching work I give the very best that is in me to the students in a systematic effort to lift their English out of the degradation into which it has so steeply fallen in recent years.

All the same, we cannot get away from the tendency in life to assess values. Every action we take and decision we make rests upon an instinctive scrutiny of things, not always a mind-scrutiny, almost always a feeling scrutiny or a desire-scrutiny. And the passing of time brings occasions for balancing-up in order that we may realise our measure of progress from what we were towards what we wish to be, to do, or to have—and the greatest of these is *to be*.

Such periodical balancings-up are specially necessary during the rapid growth of the early years of life. At this stage mere knowledge-tests are unnecessary, even dangerous in their tendency to the mere storage of other people's mental *samans*.

Indeed, I question if knowledge-tests have any place at any time in real cultural progress. It is as false a measure of the student's quality and capacity, not to mention character and address, as would be the measure of an athlete's strength, agility and skill, based on written answers to questions about the apparatus that he had used.

A further questionable element in official examinations is the length of study-time that they cover. Where examination is only as to textual knowledge in which memory plays the chief part, it postpones interest in work to the last term of the academical year, and encourages educationally and spiritually demoralising short cuts to spurious success. Examination evil can only be extirpated by its being made continuous; integral to the process of education, not imposed from outside; based on synthetical life-evaluations concurrently with short-term subject tests. This calls for trust on the part of the educational authorities and impeccable probity on the part of managers, teachers and students. True education demands both.

Educated Unemployment.

It is not possible, in an address on education, to escape the topic of the destiny of the student. The responsibility for educated unemployment rests on the employer who fails to employ available human power, not on the unwanted employee or his education good or bad. In India, vast multitudes of so-called uneducated but exceedingly useful human beings have no settled work to do; and here we are on the edge of large economic and social problems beyond the allowed "terms of reference" of a teachers' conference and must concede a certain amount of abstract blame for the present idiotic world-situation. But the verdict, I submit, should be that attributed to an Irish jury who tried a case of retrospective offence—"Not guilty, but don't do it again".

The preparation of the individual for the service of life is in the hands of the teacher but the utilisation of the prepared individual is in other hands. When the Governments of the world become as keen, prompt and drastic on the employment of their man and woman power in times of peace as they are in times of threatened or actual war, the problem of unemployment, educated or uneducated, will cease to exist. Meanwhile we teachers have a right and duty to press on all concerned

the urgent necessity of an intimate co-ordination of education and employment. The unintelligent practice of making education a department of state and leaving its conscious and potent products to the hazard of commercial fluctuations and depressions, entrenchments and consequent retrenchments is only asking for trouble.

In conclusion, I would ask my sister and brother teachers who share with me the sense of the sacred responsibility of our calling, to take the opportunity of this conference to make a fresh dedication of themselves, as I do of myself, to the service of education. Man cannot live without bread. But neither can man "live by bread alone". The hunger for the infinite is, I am convinced, a much more deeply rooted human hunger than the hungers of the body or the mind, and much more clamant and insistent than we generally recognise. Every word we utter is full of something beyond the uttering or the utterance. Every gesture we make is a breaking of verbal bounds towards larger significance. Every step we move is a synthesis of incalculable forces and laws. "Heaven lies about us" not only in our infancy but all through life. To reach it we have only to ascend. The humblest teacher in a remote village school, with a few of God's children darkly seeking their own divinity through education, is as near it as the professor in the city college. True eminence, spiritual eminence, is not to be reckoned in numbers or areas or surface movement. Mountains did not become mountains by running about seeking extensions to their bases, but by staying where they were—and rising, or being sculptured into eminence by the fires and the winds of life.

Education in India

Modern Period.

BY MR. K. S. VAKIL, M. Ed., M.R.S.T., F.R.G.S., I.E.S. (RETD.)

(Continued from last issue)

The favour thus shown by the Government to English education was in some quarters represented as an attempt on their part to undermine the religions of India and gradually to convert Indians to Christianity. In reply to this insinuation Lord Bentinck declared: "Such motives never have influenced, never can influence the Counsels of the Government.

"The fundamental principle of British Rule, the compact to which the Government stands solemnly pledged, is strict neutrality. To this important maxim, policy as well as good faith have enjoined upon me the most scrupulous observance. The same maxim is applicable to general education. In all schools and colleges supported by Government, the principle cannot be too strongly enforced, all interference and injudicious tampering with the religious belief of the students, all mingling direct or indirect teaching of Christianity with the system of instruction, ought to be positively forbidden."

In spite of the definite Government declaration in favour of English education, the controversy between Anglicists and Orientalists did not cease until Lord Auckland who succeeded Lord Bentinck reiterated it in 1839. He adopted an attitude which pacified the feelings of both the parties. He observed: "One mode which has been ably contended for is that of engrafting European knowledge on studies of the existing learned classes, of the Moulvees and Pundits of India. I confess that from such means I anticipate only very partial and imperfect results.

"I would, in the strictest good faith, and to the fullest extent, make good the promise of upholding, while the people resort to them, our established institutions of Oriental learning. I would make those institutions share with others in any general advantages or encouragements which we are satisfied ought to be afforded with a view to the promotion of due efficiency in study. I would then make it my principal aim to communicate, through the means of the English language, a complete education in European Literature, Philosophy, and Science to the greatest number of students who may be found ready to accept it at our hands and for whose instructions our funds will admit of our providing. All our experience proves that, by such a method, a real and powerful stimulus is given to the native mind. We have seen

that in Bombay, as at Calcutta, from the time at which arrangements have been made for the higher branches of instruction in English, the understandings of the students have been thoroughly interested and aroused, and that the consequences have wonderfully, to use the words of the Calcutta Committee of Public Instruction in 1831, 'surpassed expectation'.

In spite of this decision, the controversy continued till it was set at rest in 1841 by the receipt of a Despatch of the Court of Directors on the subject, "very generally" * approving of the policy adopted by Lords Bentinck and Auckland.

The movement in favour of English education was considerably strengthened by the dethronement of Persian as the court language in 1837 by Lord Auckland in the following terms: "His Lordship in Council strongly feels it to be just and reasonable that those Judicial and Fiscal Proceedings, on which the dearest interests of the Indian people depend, should be conducted in a language which they understand. His Lordship is, therefore, disposed to empower the Supreme Executive Government of India and such subordinate authorities as may be thereunto appointed by the Supreme Government, to substitute the vernacular language of the country for the Persian in legal proceedings and in proceedings relating to the Revenue." †

The movement was further reinforced by Lord Hardinge's Resolution of 1844, enjoining that "in every possible case a preference shall be given, in the selection of candidates for public employment, to those who have been educated in the institutions thus established, and especially to those who have distinguished themselves therein by a more than ordinary degree of merit and attainment."*

On the question of medium of instruction which was thus being hotly discussed in Bengal, Bombay had already adopted a clear-cut policy. From the very beginning of its operations, the Bombay Edu-

* Though not decisively, as will appear from the following extract from the same Despatch: "We forbear at present from expressing an opinion regarding the most efficient mode of communicating and disseminating European knowledge. Experience indeed does not yet warrant the adoption of any exclusive system. We wish a fair trial to be given to an experiment of engrafting European knowledge on the studies of the existing learned classes; encouraged as it will be by giving to the seminaries in which those studies are prosecuted, the aid of able and efficient European Superintendence."- Selections from Educational Records, Part II, p. 4, para 9

† Howell's "Education in British India." p 40.

* Selections from Educational Records, Part II, pp. 90-91.

cation Society had expressed itself clearly on the subject. In its report for 1821, it had observed: "In imparting to the natives useful knowledge to any extent, and with the hope of any good and permanent effect, it is evident that the language of the country must be the chief and proper vehicle.....It is impossible to look, with any hope of success, to imparting knowledge generally and usefully in a language which must remain to the greater portion a foreign one." In its report for 1825-26, it had observed that the moral and intellectual culture of the native mind was most successfully effected by employing the native languages as the medium of instruction and that, therefore, it considered the teaching of the English language as of secondary importance."

Mountstuart Elphinstone who agreed fully with the Society in this opinion wrote in his famous Education Minute on this question as follows:—

"It would be surely a preposterous way of adding to the intellectual treasures of a nation to begin by the destruction of its indigenous literature; and I cannot but think that the future attainments of the native will be increased in extent as well as in variety by being, as it were, engrafted on their previous knowledge and imbued with their own original and peculiar character." †

Captain Candy, Superintendent of the Poona Sanskrit College, whose views on the subject were invited by Lord Auckland wrote as follows:—

"It seems to me that too much encouragement cannot be given to the study of English, nor too much value put upon it, *in its proper place and connection*, in a plan for the intellectual and moral improvement of India. This place I conceive to be that of *supplying ideas and the matter of instruction*, not that of being the medium of instruction. The medium through which the mass of population must be instructed I humbly conceive must be their Vernacular Tongues, and neither English nor Sanskrit. Sanskrit I conceive to be the grand store-house from which strength and beauty may be drawn for the Vernacular languages, and it is therefore highly deserving of cultivation, but it cannot furnish from its stores the matter of instruction, nor can it ever be the medium of instruction to more than a few. In a word, knowledge, must be drawn from the stores of the English language, the Vernaculars must be employed as the media of communicating it, and Sanskrit must be largely

† Selections from the Minutes and other official Writings of the Honourable Mountstuart Elphinstone, Governor of Bombay by G. W. Forest pp. 110-111.

used to improve the Vernaculars and make them suitable for the purpose. I look on every native who possesses a good knowledge of his own mother tongue, of Sanskrit, and of English, to possess the power of rendering incalculable benefit to his countrymen."*

But soon after Sir Erskine Perry became President of the Bombay Board of Education (1843), the policy as regards the medium of instruction changed and more attention came to be directed to education through the English language. This change of policy gave rise to long and heated controversy between different members of the Board, necessitating reference of the point at issue to the Government of India, who decided it in terms of the policy enunciated by Lord Bentinck.

From the above, it will be seen that while the controversy in Bengal was between Anglicists and Orientalists, that in Bombay was between Anglicists and Vernacularists—between those who advocated education through English and those who advocated it through the Vernaculars.

It is interesting to note in connection with these controversies how gradually, as government gained firmer and firmer footing in the country, it veered round from its original policy of giving education through oriental or vernacular languages to the policy of giving it through English—how it was guided in its educational policy from time to time by changing administrative needs of the times more than by anything else.

The Government policy as regards the medium of instruction being practically settled, steps were taken to devise efficient machinery for the conduct of educational administration. The General Committee of Public Instruction which was appointed in Bengal in 1823 had been finding it difficult to manage its business which had enormously increased since that date. It was therefore replaced by a Council of Education for Bengal in 1842. In Bombay, a Board of Education was formed in 1840; and a similar Board was appointed also in Madras about the same time.

Nothing, however, in the nature of a comprehensive programme or policy was promulgated till 1854, when, soon after the renewal of the Company's Charter, Sir Charles Wood (afterwards Lord Halifax, President of the Board of Control) issued an epoch-making Despatch on "General Education in India" rightly termed the Magna Charta of Indian Education.

(To be Continued)

* Selections from Educational Records, Part II, P. 2

Mental Testing & Statistics in Education

BY MR. B. B. SAMANT, B.A. (Hons.), B.T.

MENTAL TESTS

INTRODUCTION

THE first quarter of this century has been a most fruitful period in the experimental investigation of educational problems. Education has developed, not only in its methods of teaching, but also in the study of problems of education in general. The science of Experimental education has rapidly grown. Experimental psychology is woven out of the strands of philosophy, metaphysics, psychology, physics and mathematics. In it the rigid coarseness of mathematics has been interwined with the subtle complicated behaviour of the body-mind. Owing to the extreme mobility of the mind, it is not so easy to undertake the measurement of the mind, still psychologists have tried to arrive at certain quantitative measurements (though they may not be quite perfect). The learning process has been investigated, that is, attempts have been made to determine the individual ability and to measure the attainment in the subjects of study. Standardised Tests have been formulated for measuring intelligence and individual differences. This measurement of intelligence is a thoroughly practical contribution, to the efficient discharge of our duty to children, that are entrusted to us at the best period of their mental and physical growth. Do we exactly know their capabilities? Can we exactly measure their intelligence and defects without the knowledge of this new science? To answer this, let us examine the present situation.

THE PRESENT SITUATION.

Our examinations are faulty. We promote the children at the end of every term or a year, on the result of examinations. But our examinations are not good guides. The paper that is easy according to one examiner may perhaps be considered as the most difficult one by another. Sometimes the questions are set in haste. The standard of attainment from year to year is again not the same. Again how much exactly is expected of an average boy in a particular class is not fixed and sometimes may not be known too. As a result there is the subjective standard of examination. The work of each boy is compared and that too inaccurately with his class-mates. It is not known as to what

can be expected of children of that age. It is not known what children of a particular age can do, do do and ought to do. One teacher expects a very high standard while another may think it to be far beyond their capacity. Sometimes, the paper of the so called best boy in the class is examined first and is assigned a particular number of marks. Then the rest of the boys are judged with this temporary, empirical and unjustifiable scale. The scale not being standardised, it varies from day to day, from teacher to teacher, from school to school, and no wonder, from province to province. According to this measuring against one another, the boy who is declared passable by one teacher today, may be declared to be far below the average by another the next day.

Moreover, the essay form in which the answers are generally expected is very faulty for purpose of measurement. It is not so easy to devise composition scales. Many experiments in this direction have failed. Sometimes too much matter is badly compressed in a short form while sometimes there may be answers full of pages where nothing substantial may be found.

The essay form of answers has another defect. Many times, the examinee cannot write all he knows because it takes a great deal of time to do justice to it. It becomes a bulky work to examine and it may not be always possible for a human being to mark like a machine. Fatigue is sure to interfere with the work. As a result, marking may be generally stiff in the beginning and lenient afterwards; and over and above these causes of inaccuracy, there is sufficient scope for corruption. It is better not to discuss what corruption can do. Sometimes the result of the examination may have no validity. If the boy fails, his parents may doubt the validity of the examination. The teacher's judges, the parents and his superiors, may not concur with him in his verdict.

Another defect of the present system of examination is that the question paper once set is no longer useful. So the approach of the examination is a source of anxiety to the teacher. Over and above all these the present form of the examination is largely responsible for the cramming done by most of the pupils. They do not learn, they do not understand, they do not grasp the spirit of it, but they simply cram.

Starch and Elliot * (1912-13) made a series of investigations for finding the variation among teachers in the evaluation of the same answer papers. The variations found out are astounding. The marks

* Reliability of grading work in Eng. Math. & Hist. School Review.

of an English paper examined by 142 teachers, range from 50 to 98 and that of a Geometry paper examined by 114 teachers run all the way from 28 to 92. Many other experiments of the same nature have proved beyond doubt the inaccuracy of our assignment of marks, upon which the whole scholastic machinery hinges.

Another problem, allied to examination, that generally confronts the teacher is that of classification of children. In every school we find some 'problem children'. Owing to ignorance of scientific diagnosis and grading of the feeble-minded, we can not separate those children from the rest, and even if we segregate them and put them in a special class it will be of no practical use unless the defect of each child is properly diagnosed. Our present system of examination does not help us in the least in this matter.

Owing to ignorance of identification and grading of the feeble-minded (and there is convincing testimony as to the close relation between feeble-mindedness and criminal tendency) crime and pauperism is increasing. Most of the criminals are mentally weak. 'There is no investigator who denies the fearful role played by mental deficiency in the production of sin, crime, and delinquency.' Many illustrations can be given in support of this. Here is one: 'At the state Reformatory, Jeffersonville, Indiana, Dr. Von Klein-Schmid, in an unusually thorough psychological study of 1000 young adult prisoners, finds the proportion of feeble-mindedness not far from 50 per cent.' Moreover, the heredity studies of some families in America, such as the Kalikak family, the Jukes, the Zeros, Nams, &c., have given testimony to the fact that feeble-minded parents produce feeble-minded children. H. H. Goddard in his book, the Kalikak Family (pp. 141), gives the following:

'Martin Kalikak was a youthful soldier in the Revolutionary war. At a tavern frequented by the militia he met a feeble-minded girl, by whom he became the father of a feeble-minded son. In 1912 there were 480 known direct descendants of this temporary union. It is known that 36 of these were illegitimates, that 33 were sexually immoral, that 24 were confirmed alcoholics, and that 8 kept houses for ill-fame. The explanation of so much immorality will be obvious when it is stated that of the 480 descendants, 143 were known to be feeble-minded and many of the others were of questionable mentality.

'A few years after returning from the war this same Martin Kalikak married a respectable girl of a good family. From this union 496 individuals have been traced in direct descent, and in this branch of the

family there were no illegitimate children, no immoral women, and only one man who was sexually loose. There were no criminals, no keepers of houses for ill-fame, and only two confirmed alcoholics. Again the explanation is clear when it is stated that this branch of the family did not contain a single feeble-minded individual. It was made up of doctors, lawyers, judges, educators, traders, and landholders.'

Owing to want of proper diagnosis, the reproduction of feeble-mindedness cannot be curtailed and as a result crime, pauperism and industrial inefficiency can not be completely eliminated. Feeble-minded people are sure to be potential criminals, as they lack normal judgment which is a function of intelligence. The mentally defectives have criminal tendency because they are unable to foresee the consequences of their actions and because they cannot exercise self-restraint.

Not only do we want some fixed authoritative tests for ascertaining the degree and nature of the feeble-mindedness or the backwardness but we also want tests for knowing the superior children, for there are perhaps as many superior children as there are inferior ones. The superior children are the pillars of the society and for their proper mental and physical development, they must be properly educated, and for that they must be correctly detected and given either extra promotions or must be transferred to a special class. Otherwise even genius would languish when kept over long at tasks that are too easy.

We are also not in a position to state correctly which boys are fit for vocational training. So we must know some reliable method for the classification of children.

Moreover, it is generally noted that children that were working quite satisfactorily, fail to progress after a particular age limit. We have no means to find out the exact cause for a particular child. Improved methods of promotion, attention to child's health, individualization of instruction and reforms in the school administration, may do some good to the child. Our present rigid class system is also to be blamed for the retardation. There is difference in the endowments of different children and so they do not fall in regular water-tight groups.

There are moron children as well as very bright children. The course ought to be differentiated according to the capacities of the slow, the normal and the rapid children. If the slow are made to study with the normal, they fail, and failure destroys the spirit to work in future. "The retardation problem is reverse of what it is properly supposed to be." The following results from Terman's investigations will make the point clear:

"A boy, A: age 14 years 3 months. His intelligence was found to be of a normal child of 8 years 6 months. He was for $7\frac{1}{2}$ years in school. His school work was found to be very inferior. He was in the fifth grade, that means he was retarded by 3 years because an average boy of 14 years will be in the eighth grade. But really speaking he is fit for no grade higher than the third."

"A girl, B: age 9 years 8 months. Her intelligence was that of an average child of 13 years, 1 month. She was in school for only 3 years. She was considered very superior by her teacher. She was in the fifth grade though according to her age, she ought to have been in the third grade. But she was really quite fit for the seventh grade."

So pupils of the type of child A are kept at tasks that are hopelessly beyond their capacity while those of the type of B do not get the proper mental stimulus by employing their abilities to higher tasks.

In addition to this, we must be able to find out causes that help or retard the mental development. We frame judgments for our use but owing to want of precise tool for measurement we have no confidence in them. Our verdict is not reliable.

The remedy for all this is to measure out work to each child in proportion to his mental capacity. We must have some mental tests. We must have some diagnostic tests. We must have educational tests for measuring the results of teaching process in its different phases and we must have mental tests by which we can find the general intelligence and special characteristics of the child. So there is need of some mental tests—tests that would give us some measurement of the intelligence, tests that would tell us about the aptitudes of the pupils and tests that would show the psychologists the causes of the backwardness in a particular child.

(To be Continued)

New Year Time.

When new year day greets us in the east,
We welcome it with a delightful feast
Made of rich and rare vegetable dishes,
And pork and mutton and various fishes;
Funny odes from fantastic pens,
Of visions distorted by ludicrous lens;
Fairs, picture cards, pyrotechnics;
Exhibition of arts in all their antics;
Radio and other music; galloping races,
Leaving in our finance their speed traces;
Anniversaries and sermons in churches;
Party speeches in which malice lurches;
Social squabbles reformatory,
Unrefined but not quite defamatory;
Movies, talkies, circus pavilions,
And trains and trams packed with millions
Of pilgrims to metropolitan charms;
Place or grace hunters up in arms,
Bearing fancy garlands to respective gods,
And fruits befitting their blessed nods;
The new year day, lovely in the east,
Makes a beauty of even the beast,
In many-coloured pomp and parade.
And all this for a day, to welcome it, is made—
Oh a fiction or fact brings these glories
Making us forget—at least for a day—all our worries!
Christmas ahead recalled the birth of the God-sent;
Our own Pongal, following, proclaims a solar event.

P. R. G.

Gleanings from Tamil Literature.

BY THE LATE MR. T. R. RANGASWAMY AYYANGAR, M.A., L.T.

(Continued from Vol. X. No. 10)

One Mathava Sivagnana Munivar has written a commentary on Tamil grammar and translated in Tamil the Sanscrit Logic of Anambhattiyam. Besides, he has also written an elaborate commentary on Sivagnanabotham. He is also the translator of Kanchi Puranam, Haradatha Sivacharyar's five slokas, which establish the supremacy of God Siva and Appaya Dikshadar's Siva Tathva Vivekam. He was a prolific writer and was the author of several books such as Somesarmuthumozhi Venmba (சோமேசர்முதுமொழி வெண்பா), Tiruvekambar Antadi (திருவேகம்பர் அந்தாதி) Tirumullaivayil Antadi (திருமுல்லை வாயில் அந்தாதி), Kulathur patipatru Antadi (குளத்தூர் பதிப்பற்று அந்தாதி), Kala-saipatitruppatru Antadi (கலசைபதிற்று பற்று அந்தாதி), (Katchiyandar Rudraserpatisamam. (கச்சியாண்டாரருத்திரேசபதிகம்). Tiruvekambaranandak-kalippu (திருவேகம்பர் ஆந்தக்கனிப்பு), Sengazhuni Vinayagar Pillai Tamil (செங்கழுநீர் விநாயகர் பின்னேத்தமிழ்), Agilandeswari patigam (அகிலாண்டேச்சுவரி பதிகம்), Amritambikai Pillai Tamil (அமிர்தாம்பிகைப்பின்னேத்தமிழ்), Tiruthondar Thirunamakkovai (திருத்தொண்டர் திருநாமக்கோவை), and Namasivaya Desigamurthi Malai (நமசிவாயதேசிக மூர்த்திமலை). He was good at dilectics and had twelve disciples.

Sivagnana Munivar was the propounder of the Dravida commentary of Saivite philosophy and his name was honoured even as that of Namasivaya Desigar, the first head of this Mutt. This Sivagnana Munivar had twelve disciples who brought their own works towards the uplift of Saivite worship. Kachiyappa Munivar, one of the twelve disciples, has written Pavalar Puranam (பாவலர் புராணம்), Perur Puranam (பேரூர் புராணம்), Tiruvanaikka Puranam (திருவானைக்காபுராணம்), Vinayagar Puranam (விநாயகர் புராணம்), Sennai Vinayagar Pillai Tamil (சென்னை விநாயகர் பின்னேத்தமிழ்), Yamaka Antadi (யகம அந்தாதி) etc. etc. This devotee is said to have worked some miracles and cured many diseases. He was given the proud title of Kavichakravarthi. He was a staunch adherent of Namasivaya Desigar.

Tottiyakkalai Subhramaniya Munivar, an adherent of this Mutt, has written Turaisaikkovai (துறைசைக்கோவை), Kalasai kovai (கலசைக்கோவை), Kalasai sladai Venmba (கலசைச்சிலேட வெண்பா), Chidambarasar Vannam (சிதம்பரசர் வண்ணம்), Tirukuthala vritham (திருக்குற்றல விருத்தம்), Pancharathna malai in praise of the god of Palni, Subhra-

maniyar Tiruviruttam, Tiruttanikai Tiruviruttam, Tiruchitrumbala Desigar Sindu.

Chidambaranathi Munivar has sung the Tiruppapuliur puranam.

Masilamoni Desigar once convinced the King of Tanjore that Maheswara Puja was much better than feeding the Brahmins and got a rich reward from the Kingdom of the Mutt.

Subramania Desigar, the 16th incumbent on the gadi of this Mutt, was a great patron of Tamil and Saiva literature. He has made his own contributions to literature. His works are:—

Nagaikka ogana Puranam, Mayura Puranam, Kudanthai Puranam, Shiyali Kovai, Tiruvidaimarutur Ula. Woriyur Kantimadi amman Pillai Tihil. etc. etc Ambalavanadesigar Kalambakam.

Dharmapuram Mutt. Kumaraguruparer was a native of Sri Vaikuntam in Tinnevely District. He lived in the days of Tirumal Nayak of Madura i. e. about three centuries ago. He became the disciple of Masilamuni Desigar of Dharmapuram Mutt and was a poet by nature. His early works are: Kandar Kali Venmba, Meenatchi Pillai Tamil, Minatchi Kuram, Meenakshi Irattaimani Malai, and Pandara Mummanikkovai. He knew Sanscrit and Hindi and travelled to the north. He founded a mutt at Benares. The most popular of his later works are:—

Nidhi neri villakam, Mathurai Kalambakam, Kasikkalambakam, Muthukumarasami Pillai Tamil, Chidambara Mummanikkovai and Chidambara Seyyul Kovai.

Velli Ambala Tambiran is a poet of mediocre abilities.

Sambanda sarana-laya Swami has given an abridged rendering of Kanda Puranam.

Vaidhyanatha Navalar has rendered into Tamil Krishna Misra's Prabodha Chandrodayam, in Sanscrit.

Arumuga Tambiran, an adherent of this Mutt, became a Christian convert and has sung Agnana Kummi.

One Namasivayar, a retired vedantin living in Tiruvannamalai, has written a poem in 100 stanzas known as Arunagiri Antadi.

Arumuga Swami, a disciple of the former poet, brought out a Tamil rendering of Nishtanuthuthi in 90 stanzas.

Sivagnana Swami was a native of Jaffna. He was a good Sanscrit scholar as well. His two Sanscrit works are:—Siddhanta Sikkamoni, and Pramana Depika. In Tamil he wrote a commentary on Sivagnana Siddhar, Supaksham.

Three brothers of Conjeevaram settled in Madura District and became great poets. There were all staunch Saivites. The eldest Sivaprakasara is a prolific writer and has written more than twenty-three books. He lived at Tirumangalam at the request of one Annamalai Reddy. Of his numerous works Prabhulinga Leelai, Nanneri, Navalar, Nanmani Kovai are the most important. Karunai Prakasar, his brother who was cut off in his youth, wrote Ishtalinga Agaval and began a purana called Kalathi Puranam. His two brothers took it up and finished it. Velappa Desigar, the second brother, was a disciple of Velli Ambala Tambiran. Besides completing his brother's works he has written six other poems:—

Nallur Puranam, Virasingadhana Puranam, Ishtalinga-Kaithalinga Malai, Namasivaya Malai, Mailathu Irattimani Malai and Parisatha lila.

The three brothers in all have written 40 books.

Some Aspects of University Education in India

BY MR. V. P. NATARAJAN, B.A. (HONS.), B.T.

(Continued from the last issue.)

The question has been frequently raised in recent times whether in view of the large number of Universities in India, excessive duplication of staff and equipment could not be avoided by each University undertaking to specialise in one subject or a few subjects. There is the danger of the disease of megalomania. The tendency is for each university (and universities have been increasing rapidly in number and are likely to increase in the near future too) to provide for higher studies and research in almost every conceivable subject. Apparently each university is to be self contained, regardless of what is being attempted in other universities. There is a two fold result—each university (and the Government which supports it) is fast heading towards bankruptcy while the money sorely needed for general training is being used as ammunition

for this break-neck competition. It is rare again for a university having taken stock of its resources to think out a few directions in which it can make its most effective contribution towards the enrichment of Indian scholarship. There is undoubtedly room for differentiation and co-ordination of work among the universities, but there are insuperable difficulties in outlining a policy of distribution of subjects. There are some subjects which ought to be taught in every university worthy of the name. We cannot imagine a fairly well developed university without a chair of literature, or history or the main science. A great deal of the value of university education lies in the association of studies, in the bringing together of a body of teachers and students who are following different intellectual pursuits. The remarkable advance of science has naturally led to its being assigned a prominent place in the university curriculum, and our universities have made notable progress in recent years in regard to the higher teaching of science and the training of men in the methods of scientific research. While science, however, may give its prestige to the universities, let us not forget that science alone cannot be an adequate foundation for educating the whole man. University education would be entirely lopsided and limited in horizon if it should exclude the humanistic studies—the study of literature and history, philosophy, politics and social economics. Man has not only to understand his physical environment, but also his social environment so that he may find his way through the tangle of human affairs which is even more perplexing than the realm of material things. It has been pointed out that the main danger to man and to human civilization comes now not from nature, but from his own warring passions and ideals, and that therefore his most urgent study is not nature, but himself. The social and economic antagonisms and moral confusion of the present day bring us directly into contact with many problems which vitally concern us as individuals and citizens. A proper understanding of the laws which bind men together and govern their relations as economic and political units, and even more important than knowledge to cope with these social problems the right outlook, an enlightened judgment and sound character, are necessary for every citizen who is conscious of his social duty. A consideration of all these surely goes to prove the conclusion that the universities as training grounds for citizenship should be all round in their curriculum.

Regarding the common allegation that the whole of the Indian educational system, especially the university system, was a misfit and was not doing the country any good, involving it in colossal expenditure, it is Dr. Urquhart who observed, "I may say in passing, that the colos-

sal character of this expenditure is often grossly exaggerated as it is immediately obvious when it is compared with other forms of public expenditure at the present time which I need not particularise."

Far more important than an addition to the number of universities is the improvement in the quality and efficiency of the universities. It was the opinion of the Lytton Committee that students should be able to obtain in this country the best education that any Indian can require and that no Government, whatever its constitution, should be satisfied until the universities of India are staffed with the teachers and equipped with the material necessary to ensure such a high standard of education. The fictitious value attached by the Government to foreign degrees as a professional passport to employment has too often induced numbers of young Indian students to flock to the universities in Britain and waste the substance of their family means. The extension of knowledge by means of original research is a most important function of the universities. It was pointed out by the Calcutta University Commission that the functions of teaching and research should not be separated, that the great majority of the teachers of the university should be men engaged in the conduct of research and that the students must also be researchers in the wide sense of men using all their powers in the search for truth, and should be inspired to use their powers in this way and receive training in the use of them. The business of the university teacher is to show them how to acquire knowledge for themselves and do independent work. No doubt the lecture system that prevails in most of the Indian universities today gives an appearance of work, but if the student is himself willing to utilise his time, he would in most cases find that he gets through more work by absenting himself from these compulsory lectures. Adopting as his text the wise dictum of Carlyle that the modern university is a university of books, Mr. H. G. Wells says: "Now the frank recognition of the book and not the lecture as the substantial basis of instruction open up a large and interesting range of possibilities. It releases the process of learning from its old servitude to place and time. It is no longer necessary for the student to go to a particular room, at a particular hour, to hear the golden words drop from the lips of a particular teacher. The young man who reads at eleven o'clock in the morning in the luxurious rooms in Trinity College, Cambridge, will have no very marked advantage over another young man, employed during the day, who reads at eleven o'clock at night in a bed-sitting room in Glasgow." Harold J. Laski observes: "I have no use for the lecture that is a mere substitute for books. The university has failed when its students are not aroused to passionate discussions

among themselves or when the work they do fails to awaken them to the study of great books. The student who is satisfied with pemmicanized knowledge has gone through the university with his mind closed: he has eaten facts, but not digested them."

While the research function of the universities should be regarded as vital in the interests of the country, it is not possible to expect the generality of the university graduates to devote themselves to research work in after life. All that can be, and should be, expected is that they should acquire the rudiments of liberal culture, the desire and capacity to add to their stock of knowledge and a lively sense of their responsibility as citizens. Economic conditions have undergone a great change and the poverty of Indian students and their bewildering struggle for mere existence prevent them from pursuing knowledge solely for its own sake and with disinterested ardour. There is no good in blaming them for having an eye on the worldly advantages of education. The Rt. Hon. Sir T. B. Sapru presents the case for the new attitude pertinently thus: "Let us assume that one university produces every year a hundred brilliant graduates who know everything in English literature from Chaucer to Bernard Shaw and Galsworthy. Let us again assume that there is every year an equal number of excellent graduates in pure physics, chemistry, biology and every other 'ology'. Let us also assume that there is every year a fair number of graduates produced, steeped in all the wisdom and philosophy of ancient times and modern, in all the doctrines of social reconstruction beginning with Plato and ending with Karl Marx and Lenin, and that we produce every year at least a hundred graduates in Law crowding the corridors of the High Court and the district courts and waiting for their talents to be recognised. When we have made all these assumptions, we must answer the question which is bound to be put to us more and more emphatically as time goes on. What good does it do to the nation, to society and to India at large to produce year in and year out these fine cultured gentlemen who after they have left the portals of the university wake up to the reality of the situation to find that the call of hunger is more insistent than the call of culture and that the fine maxims of morality which they imbibed in their class rooms are more in the nature of impediments than a help in the struggle for existence? These very young men will put us that question; their disillusioned and disappointed parents will also put us that question. It can be assumed that we can afford to turn a deaf ear to impudences and irrelevancies of this character and comfort ourselves with the virtuous and self-righteous conviction that we have at last brought light where there was darkness, we have extended the

bounds of knowledge and endowed the young men with noble ideals and elevated principles. But it is to be feared the universities cannot for long ignore or refuse to answer the very same question when it will be put to them by the representatives of the taxpayer to whose long suffering generosity they owe their very being and continued existence. The time may not be distant when the serenity of their detached and cloistered life will be disturbed by the irrepressible questioning of the taxpayer. It is time that the universities take note of the signs of the times and readjust themselves before it is too late". (To be continued)

Ethics of Ignorance

BY MR. P. R. GOPALAKRISHNA AYYAR, B.A.

"It is ignorance that makes a barren waste of all beyond itself", said Keats. A Tamil proverb says that "the opposite bank is always greener to the look". Between these two points of the broken arc ("on Earth the broken Arc") is the soul of the man oscillating. Between blissful ignorance and bold discontent, is a range vast as all human progress.

Are we ignorant because we are unenlightened or because we are ethically unripe or immature? Is ignorance a mere negation of knowledge or is it also a condition of karma, a consequence of right or wrong conduct? Right knowledge leads to right action which leads to eventual emancipation; the blind lane of ignorance to births; and births are however necessary to knowledge in the ascent, or to re-incarnations in the descent. So that if we shape our conduct to ethical values, we can avoid ignorance, just as certainly as we will court and cover ourselves with it by a contrary course. To one who has eyes to see, darkness means the negation of Sun, Moon and Stars; to one who is blind, even the three illuminators can shed no ray of light—his own actions, having led him to lose the vision and the faculty divine. It is not therefore a mere negation. It is a positive acquisition also. In its merely negative aspect, it can be met by our Educational Institutions. On the positive side something more is required. The Abcedarian must be disabused of his vicious outlook. He requires a preceptor of a far different kind from the one required for learning the 3 R's and its 30 and odd correlatives.

Ignorance is illusion, the mirage that misleads us from the well of knowledge undefiled to the insubstantial and the inane. The more

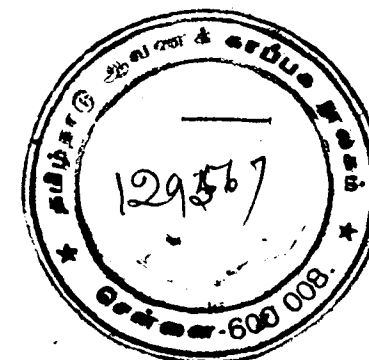
illusory, the more real it appears. We are all steeped in ignorance. It is the very sheath of the soul. He who dispels it, is the Guru; and not the ignorance of the 3 R's without which one may walk through life in shining armour or splendid sagacity, but the ignorance that leads us to ignore the transcendental soul.

Is there any place for this kind of Guru in our rational institutions? The Xian Missionaries indeed in this country in a way seated the Preacher in the Professorial chair. But religion soon was lost in literature. If the Bible was read more frequently, it was read less fervently too, I fear, or with little knowledge of its true religious import. A spirit of impatient proselytism interfered with its easy reception or understanding. The mistake lay also in another quarter. In India religion to day is absolutely a domestic concern; no matter what happens to a man outside his home, he returns to it and to his time-honoured ablutions and habitual prayers, to the costumes of his country and the conscience of his household deities. He may lecture grandiloquently on the social reform forum, but in practice he follows his wife's predilections. He may cry himself hoarse on the problem and the necessity of birth control, but at home he must praise the Lord who has heard his prayer, 'May my tribe increase'. But how did this severance of practice from precept originate? I believe it arose out of political hypocrisy. Dr. Johnson, the Boswellian hero, seems to have been a good prophet after all. Did he not define a patriot in rather unambiguously endearing terms? Well, it may not be unprofitable research work to enquire if there was ever a patriot of any other kind in this country for the past 2 or 3 or 4 or even 7 centuries. The back-bone of a nation is its truthfulness, in fact and in other words, its religion. If you cannot practise it in public, you lose that back-bone and you are no longer 'a man or a woman either'.

Religion is all-life. It is not a set of dogmas or rituals, credited or discredited; it is the perception of the right path to perfect conduct in this mundane existence, leading further on to the abode of perfected souls, in other words, to the bliss of enlightened existence. It involves the word, thought, and deed which go to build up the Kingdom of God; and therefore governs the three realms of the righteous thought, the rectified word and the regulated deed. A balanced blend of these marks a man of merit and his mission in life. It cannot be segregated in or abrogated to Temples, which creates the naughty problem of Temple-entry, but must be made to permeate everything in the make up of the social man. It cannot therefore be boycotted from the Educational institutions.

The other day I met a bright graduate of the Madras U(niversity)-mark, (not an Ayyangar,) who has besides taken an additional diploma in some science, who on entering my room saw a picture of a boy with a spear in his hand, leaning on a peacock. Well, who is there in India, Muslim, Christian, Buddhist or Parsee who will not easily recognise in it the Divine son of Siva, the young Lord Subramanya? But my graduate friend, the scion of a scholar family and of an Orthodox Hindu Stock, pleaded in excuse of his ignorance that he was long a Hostel resident and had not seen a picture of the kind. This ignorance in a Hindu is the high-water-mark of the decadence of Hindu Society and Religion. It is a sure indication that Hiranyakasipu has entered our homes.

Religious instruction in this country has necessarily to be a comparative study. But comparison is impossible, if one does not learn to value the bird on hand is worth two in the bush. 'Better is one's own Dharma though destitute of merits, than the well executed Dharma of another'. (Gita). The fathers of the present generation are unfit from their past indifference or wilful neglect, to do the needful in the matter. The Mothers are fast becoming mimics and maniacs of foreign manners and customs and civilizations. Vivekananda vivified the awakening that followed the sturdy battles of Ram-Mohan Roy. But a dark age has again clouded the land. Tagore and a few scientists of eminence have rehabilitated the intellectual status of the country. Gandhi elevated it in other directions but has aroused—antagonism—. But who will come to dispel the darkness that shadows the heart of man in its endeavour to realise itself, and regain its pristine and prenatal freedom, who will link together all the awakened interests, who will devise a system of imparting lessons on the national and ancient religion which will not beget begotry, but the beautiful vision of ultimate oneness! and who will say "Sorrow not, I will liberate thee from all sins"—Gita.



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Who is a Teacher?

BY MR. BEPÍN BEHARI BANERJĪ, B.A., B.T.

If a house be suddenly on fire, what superhuman energy will men put forth at the time to quickly remove bedsteads, almirahs, and other articles weighing several maunds from the consuming fire! Not to speak of men or adults, even little boys will take out heavy articles from the fire which at other times several grown up men cannot even move. Lastly the women folk whom we formerly recognised as the embodiment of Sakti but whom we now give, thanks to our education, the appellation of "weaker vessels" will jump into the raging flames to rescue their babies, while men, the "stronger vessels" (readers' pardon for the expression) will remain fast at their moorings and keep looking on.

Whence comes his signal outburst of energy? How can men, women and even children exhibit such a marvellous strength of both body and mind? One thing that is patent in this miracle is this that the energy is there, it resides in the human soul. Only it is in the latent state and an occasion like a house-on-fire brings it up to the surface and enables it to make a display that staggers understanding. It is stimulus that makes all that is beautiful and glorious in this world. Stir up the sleeping lion in man, and he will work wonders. "Whatever man has done man can do" provided the energy latent in his veins can be roused to activity. And the man who can create suitable occasion for the manifestation of this unexplored vein of energy appears to us to be the man who eminently deserves the title of teacher or preceptor. The true teacher is not the man who keeps his pupils confined for a number of hours in a room and stuffs their little brains with scraps of "grammar, nonsense and learning": it is the man who can transform every atom of potential energy in his pupils into a kinetic force and thus enable them to show the divine in man. The momentum that they will receive from such a "Guru" (I deliberately refrain from using its poorer English equivalent-preceptor) will burst all barriers and lead to what is so beautifully expressed as "self-realisation".

Of course the stimulus we are speaking of must be of the right sort. All the murders and other diabolical crimes are due to the display of fiendish energy under a wrong stimulus. While if the call be from heaven, a rickety man with a frail frame can electrify a vast continent from one end to the other. "When the hog is brought to bay it turns upon the hunter". When a nation is brought to the verge of destruction or annihi-

lation, even children raise their fists to strike. Under the stimulus of desperation men can do things which at other times they cannot even dream of doing. When a country passes through the throes of evolution or is faced with pillage and oppression, the giant in men, women and children shakes off its age-long slumber and stalks the lands with mighty strides. An educator must take note of this psychological phenomenon of the under-current of human energy. He must know how to kindle into a flame the fire that is smouldering in the veins of his pupils.

"Occasion makes the man". This is a trite saying. Given an opportunity or position, any man will be found not to be quite unworthy of the trust reposed in him. Instances of this are not rare in this workaday world of ours. "How to create interest in studies" was a question put to the writer by an eminent man. "Hold out to an Indian boy the avenues to wealth and fame which an English or American lad has and he will run on like an Australian waler" was our humble reply. This is artificial interest no doubt. But this sort of stimulus, artificial as it is, seems to be necessary to break up the lethargy of a nation that attributes everything to luck. A teacher properly so called will however have recourse to such other stimuli as will impart in his pupils a "go" or create in him an urge for the making of a future poet, historian, lexicographer, philosopher and patriot. If a Wellington is made on the fields of Eton, a Nobel prize winner is made in the midst of the beautiful surroundings of an ideal home. It is said of Dr. Arnold of Rugby that the stamp of his genius can be traced on the forehead of his pupils even if they be working in the jungles of Africa. And Dr. Arnold is a prince of schoolmasters.

All the communal frenzy, all the love episodes, all the murders of the world and other heinous crimes are the outcome of so many wrong stimuli. Appeal to the right sort and the earth will be turned into a paradise fit for the habitation not of man but of angels, and the man who can stir up to the utmost limit the vast wealth of energy latent in the veins of his pupils and can harness it to the good of the world is a teacher properly so called or a "Guru" as we Indians understand the term.

Induction and Deduction in Thinking & Teaching.

BY MR. K. N. GUPTA, M.A., HIGHER T.D.

(Continued from the last issue.)

'GROWTH OUT OF ONE ANOTHER' IS THE CHIEF CHARACTERISTIC OF REFLECTIVE THOUGHT.

'Reflective thought is consecutive, not merely a sequence. The successive portions of the reflective thought grow out of one another and support one another; they do not come and go in a medley. Each phase is a step from something to something—technically speaking, it is a term of thought. Each term leaves a deposit which is utilised in the next term. The stream or flow becomes a train, chain, or thread.'

DEMOCRATIC AGE NOT SUBJECTS BUT CITIZENS.

This type of thinking is very necessary in this democratic age. The Government of the people by the people and for the people expects every one to fulfil one's duty as a citizen.

NECESSARY TO THINK FOR THEMSELVES.

He should be able to think pros and cons of every topic and to give his own independent judgment without any prejudice to the welfare of himself and to the state.

RAPID MOVING STABILITY DUE TO THE INDUSTRIAL REVOLUTION AND SCIENTIFIC INVESTIGATION.

Moreover, on account of the industrial revolution and scientific investigation the environment—social, moral and political, is getting more and more complex. Life is too short to learn all vast fields of knowledge. But if any body wants to succeed he must keep pace with the progressive age by cultivating the power of reflective thinking according to his ability. In the new situation of ever increasing change no body can foretell what he will need to do. His duty is so to prepare himself to think that he can and will think for himself. When the future is uncertain he will have to stand on his own legs when the occasions arise. He must prepare himself for the moving stability of the spinning top type to guide his efforts.

SELF CONFIDENCE NOT IN A BEGGAR.

A beggar wanders from door to door and gets relief from charitable men. But he is not freed from begging. The real charity lies in making him independent by teaching him some trade. In the like manner a subject becomes a citizen when he learns the art of thinking.

INDUCTION AND DEDUCTION IN THINKING & TEACHING 69

IGNITING CAUSE OF THINKING LIES IN SOME PROBLEM.

The origin of thinking lies in some trouble, doubt, perplexity, or confusion. We become conscious of head when there is headache, of stomach when there is stomachache, and of the shoe when it pinches. Thinking is not a case of spontaneous combustion. When a piece of steel is struck against a piece of flint we get a spark. Adversity makes man perfect. The more and more gold is heated to a certain limit the more and more purified it becomes. Akbar, one of the Moghal Emperors, was not born with a golden spoon in his mouth. Practically he had to make his own way to the throne of Delhi. He had to think for himself and to meet and subside oppositions hovering round his newly secured crown. Thus he became a prominent and successful ruler.

AKBAR'S ADVERSE CIRCUMSTANCES MADE HIS CHARACTER.

Thinking does not occur on 'general principles'. There is something specific which occasions and evokes it. Tetzel began the sale of indulgences to raise money for the building of the church of St. Peters at Rome in 1516. The sale irritated Luther. He at first intended no revolt from the Church. But he was gradually led into open rebellion from one step to another. Finally he expressed his defiance by publicly burning the bull of excommunication issued against him by the Pope.

ILLUSTRATION OF A PROBLEMATIC INDIVIDUAL SOLVED BY INDUCTION.

Supposing a person hears a sound which is very loud and roaring. At first as a shock it comes. The individual is problematic. Perhaps it is the sound of a motor-car. He observes the individual if it has the characteristic marks of a motor car sound. It is not so. Perhaps it is an aeroplane sound. He again looks for its characteristic marks in the individual. It is so. The application of this concept has interpreted the individual. It is no longer a problem for thought. It is solved by deductive thinking. The concepts that he employed were all definite as to their meaning, the problem was in the individual. When he applied the right concept to individual it no longer remained problematic. The concept 'aeroplane sound' interpreted it. It brought meaning from itself over into the 'loud roaring sound'. There was no problem as to what a motor-car sound is or of what an aeroplane sound is. The question was wholly, 'what is the individual thing?' And that question was decided by the application of an already accepted concept.

INDIVIDUAL MENTALLY PROBLEMATICALLY.

It occasionally happens that the deductive movement is a case of the unfolding or development of the general notion to see its application. But even here

**MATIC IN CASE THE
GENERAL NOTION IS
ACTUALLY IN HAND.**

EXAMPLE.

**ILLUSTRATION OF
A PROBLEMATIC CON-
CEPT SOLVED BY
INDUCTION.**

A man, who does not know all kinds of rose flowers except red ones, comes across a yellow rose flower. His difficulty is further aggravated when he also sees a white rose flower. He wonders what 'rose' means. His concept of red rose proves inadequate. So he tries to find out all he could about each kind of rose flower. He finds by comparison that the petals of all rose flowers resemble one another. It does not matter if they differ in size or colour. He reconstructs his concept of 'rose' in harmony with the result of his investigation through inductive process. This reconstructed concept he applies deductively to other rose flowers. Now he finds it adequate to explain all kinds of rose flowers. Here the problem was not in the individual but in the concept.

**ANALYSIS OF RE-
FLECTIVE THINKING.
FIVE STEPS.**

The process of reflective thinking has been analysed by Dewey into five distinct steps. A difficulty is felt, it is localised, some suggestion is made of its possible solution, the bearings of the suggestion are developed by reasoning, further observation and experiment are made leading to its acceptance or rejection. These elementary constituents have been illustrated in the previous two examples.

**FUSION OF FIRST
TWO STEPS.**

The first and second steps frequently fuse into one. The difficulty may be felt with sufficient definiteness as to set the mind at once speculating upon its probable solution, or an undefined uneasiness and shock may come first, leading only later to definite attempt to find out what is the matter.

**A TRYING SHOCK
AND SUPPORT SECURED
BY FAITH IN
GOD OR BY CONVIC-
TION IN ANY CAUSE.**

**AURANGZEB'S GREAT
SHOCK AT SAMU-
GARH.**

But the shock should not be too great for the man, otherwise he may be frightened to the extent that any reflective thinking is hopeless. Faith in God and belief in any virtue or any cause sustain the man under adverse circumstances. Aurangzeb received a great shock when he found his followers being defeated and scattered by the followers of his elder brother Dara in the battle of Samugarh for the Delhi crown. He recollected himself and in the name of God persuaded his men to stand and give a joint attack. The result was that the conquered became the conqueror. Dara was lost and Aurangzeb got the throne.

**MORAL VALUE OF
A CAUSE DURING
THE GREAT WAR.**

During the Great War both sides were trying to prove to their men that their cause was right. When the man is convinced that he is fighting or struggling for a cause he continues on his operations in the face of hardships and perplexities without perceptible loss to his reflective thinking. Even more, he begins to think more profusely in proportion to the force of obstacles to be faced on.

**FIVE STEPS IN
THINKING AND FIVE
STEPS IN HERBART'S
METHOD OF TEACH-
ING ALMOST TALLY
WITH ONE EXCEP-
TION.**

**HERBART'S FIVE
STEPS.**

**EITHER THOUGHT OR
INFORMATION INCI-
DENT?**

When we compare the analysis of a complete operation of thinking with the account of Herbart's method of teaching, we find an obvious resemblance in them. His method consists in preparation, presentation, comparison, generalisation, and application of the generalisation to specific and new instances. His method makes no reference to a difficulty as the starting point and the locus and stimulus of the whole process. It deals with thought only as an incident in the process of gaining information, instead of treating the latter as an incident in the process of developing thought which is like touchstone to transmute baser metals into gold.

**EFFECTIVE RECI-
TATION WHEN IN-
DUCTION AND DE-
DUCTION BOTH ARE
EMPLOYED IN A PRO-
PER MANNER.**

The recitation, in which lies the prominence of instruction by rehearsing of second hand information, is a place and time for stimulating and directing reflection, and that recapitulating matter is only an incident in the process of cultivating a thoughtful attitude. This method of recitation has originated from school work. It is designed to be a practical application of the principles of method to the various problems of class room instruction. It is an attempt to bring together and to systematise the various principles that guide skilful and effective teaching. It is chiefly based upon the inductive-deductive thought movement in acquiring and using knowledge.

**RACE PROGRESS
BASED ON INDUC-
TION. THE CHILD IS
AN IMITATOR OF THE
RACE.**

The progress of the human race has been necessarily experimental and inductive. It has reached the abstraction or general through the concrete or individual. The child is an imitator of the race in many respects. The child passes through the same great cultural stages as his ancestors.

**GENERAL TRUTHS
AFTER INDIVIDUALS.**

General truths are not ready made products that can be passed on from person to person, examined and traced to their origin. Concepts should follow percepts at an early age. Seed is first sown and then tree ap-

pears. In both cases growth is involved. General truths should be taught after individuals. That is the proper sequence.

CONCEPT IS A MEANS AND NOT AN END IN ITSELF. The aim of instruction to acquire a concept lies in its use. A concept is a means to an end and not an end in itself. Concepts are necessary elements of technique in the thinking process. The function of education insists that the child must also be trained to an appreciation and understanding of their use, and that he must have some practice in applying them. Thus both processes of thinking—inductive and deductive—are involved in teaching. Application of concepts is equally important a phase of teaching as their acquisition. The concepts of various school subjects are not like those sovereigns of a miser who keeps them concealed under ground. They are like those sovereigns in the hand of an entrepreneur who uses them for his own benefit and for the benefit of his community.

ILLUSTRATED BY A MISER AND AN ENTREPRENEUR. Concepts grow from an indefinite background of experience into more and more definite form as the result of a process of reconstruction. A child of two has not the same concept of a dog as an adult has. The aim of instruction is the development of concepts which should culminate in well defined and logical concepts. With first class bricks and mortar a skilful and capable architect can build a fine building to win the admiration generation after generation. It is essential that the child be provided with situations which make the reflective reconstruction of his concepts necessary. So the persistent business of the school is to build up a rich background of concepts by both methods in the child's mind in accordance with the law of mental growth.

A small lump of gold ore gradually becomes a sovereign by manufacturing processes. So a concept is perfected by induction. Application of the concept is deduction. The phase of the thinking process is turned induction when the movement of thought is in the direction of perfecting and sharpening its tools. It is termed deduction when the movement of thought is concerned primarily with the application of its tools. So in real teaching both phases are essential and are functionally and intricately related with in the complete movement of the thinking process. It is just possible that they may be for some particular interval of time separated, attention falling chiefly on one phase or the other according to the present interest and need.

(To be concluded.)

Notes.

BY PROF. C. A. KRISHNAMURTHI RAU, M.A., F. R. ECON. S.,
Associate Editor.

Indian Education At The Cross-Roads.

There had been a feeling that the number of Educational Conferences and University Convocations was unduly on the increase without any perceptible effect or improvement in the system of education in our country; and the more they talked, the keener became the disappointment at the results of education, especially in the face of the increasing unemployment among the educated. But the speeches made at the recent All-India Educational Conference at Delhi would considerably help to modify such a view. It has not been mere talk leading nowhere. It will certainly not be suggested that there shall be all action and no talk at all. Speaking, of the right type, helps to clarify many a knotty problem; and where problems are country-wide and highly complicated in a land like ours with its bewildering variety of religions, communities and tongues, conferences and convocations seem to be the only means of educators taking the public into their confidence and establishing a healthy and mutually uplifting contact. The speeches at the recent All-India Educational Conference have done just this thing.

INAUGURAL ADDRESS.

The Hon'ble Sir Fazli Hussain, Education Member to the Government of India, in delivering the inaugural address stressed the need for our schools and colleges developing in a much greater measure initiation and leadership in the future citizens of India. He regretted that primary education had not yet reduced the wide-spread illiteracy in the land. Communal and international harmony should be inculcated in our educational institutions. He admitted the validity of the general criticism that our educational system had not reduced unemployment.

WELCOME ADDRESS.

The welcome speech of Dr. Zakir Husain Khan, Principal, Jama Milia, Delhi, was in a more expansive vein. He wel-

comed the delegates to the ancient city which was at once "the challenge and the opportunity of India". He defined education as "individualised revivification of objective culture and stressed the need for teachers studying individual differences of students and adapting their teaching accordingly. In his opinion, high schools should be of three kinds, one for languages and sciences, another for Mathematics and Natural Sciences and a third for technical work. His view that pupils must pass from vocational to general education and not the other way, deserves careful consideration. His definition of general education as the culture of the whole man avoids many of the needless and fruitless controversies over its nature. His advocacy of a general "transformation of the whole aim of education from being merely theoretical, literary and one-sided into one of practical manysidedness, from centres of mere acquisition of knowledge to those of its right use" would command wide acceptance. For this he would first Indianise the whole educational system from bottom to top and secondly make the school an instrument of character-formation. To his own question as to who is to do this, he brings his own answer that the people and the Government must gird themselves up for this very urgent and important task. The speech was a welcome to the delegates not only to Delhi but to the proper avenue of approach for the solution of the various educational problems confronting them.

PRESIDENTIAL ADDRESS.

The Presidential Address by Rao Bahadur Thakur Chain Singh, Senior Minister of Jodhpur State, was a comprehensive survey guiding the audience along truly practical paths. He pointed out first how education, a transferred subject, must be looked at from the point of view of India as a whole. He said that he expected the schools and colleges should be the nurseries of statesmen and men of character and culture. Educational problems should be matter for joint deliberation of India as a whole. He pleaded for Universities being the proper place for instruction in breadwinning and they should be so far self-sufficient as to obviate the need for sending our young men abroad for higher studies. As regards Secondary education, he was rightly of opinion that without its laying a

proper foundation, the ill-equipped student in colleges was becoming a problem and a menace to himself and to University education. Lastly, if primary education is to serve its true purpose i. e. the spread of literacy among the masses, we must be prepared to tax ourselves further if need be. Above all, education, if it was to serve its highest ends, must have a spiritual basis. Education according to the Rao Bahadur must not rest content with these alone. The levelling up of the sexes in the interest of national regeneration, instruction in personal and social hygiene, improved training of teachers for the delicate task of teaching in spite of the well-known saying that teachers are born and not made, the bringing of the blessings of education to the door of those too old to go to the school and the solid contribution by teachers in India to pedagogic culture instead of being eternally indebted to others for their ideas, are suggestions too urgent and needed to escape the shrewd Presidential vision, and those interested in education in our land must feel particularly grateful to him for having pointed out so clearly and effectively points which require adept handling in singling out the most essential ones out of a tangled maze of incoherently diffused facts. He exhorted the audience finally to remember that examinations, however necessary, are, after all, inefficient tests of learning and culture and carry with them a sting of injustice in their attempt to submit work of 2 or 3 years to a test of a few hours prescribed with no reference to any clear principle. Education, he concluded, could be easily an instrument of establishing a better international-mindedness.

Mr. Champion on Quality of Education.

Speaking on Secondary Education and how to improve its quality, Mr. Champion observed that critics of our education had pointed out that a large number of unfit students in our Secondary Schools were indication of two things—first, they were unfit for such education, and secondly, they were an impediment to progress in the various classes. The Report on material and moral progress for 1932-'33 had also pointed out that the progress was more in quantity than quality. Mr. Champion takes this to mean that the number educated was far more than the number that could really derive benefit. The other feature of the problem was that parents here were more anxious

that their children should earn a living and that a decent one than that they should have education for education's sake. But this was not the peculiar fault of the Indian parent. It was even more conspicuous in the West. In England the rush for Matriculation and the University had assumed the proportion of a major problem. But they must try to find out a remedy.

Mr. Champion's solution of the problem is to have "large well-staffed elementary schools educating both the sexes and fitting them up for life and a living". The old system of private schools imparting sound elementary education was perhaps a thing of the past. The best thing would be to test the fitness of pupils entering Secondary Schools by means of an examination at the close of the elementary stage. This would serve the interests of both Elementary and Secondary education. But one might point out at last that Mr. Champion's suggestion, which is certainly very sound, amounts to adding one more examination at an early stage in the career of a student while all along the cry has been loud against the evils of the examination system itself. The history of notes-dictation, text-examiners, mugging up and slaughter of the innocent must, however, be prevented from repeating itself. The other question is the mental development of the young shows strange vacillations and extraordinary behaviour disclosing amazing results, the early fit becoming later unfits, the early unfit later turning out to be most agreeable disappointments. Then again, would we be fair to a section of society whose children are slow or backward but who are entitled to be made better by education than what they were? Would they not become positive dangers to society if uncared for? Mr. Champion's valuable suggestion deserves most careful thought.

Reviews

1. **General Science** (in English) for Form IV: By S. Natarajan, B.A., L.T., Published by the Madras Premier Co., 26, Periana Maistry St., Madras. Price: Rs. 12.

The new departmental syllabus in Elementary Science for Form IV emphasises the teaching of every-day and humanistic aspects of science. The teacher should have in view the present interest of the pupils, and elaborate the topics only so far as the powers of comprehension of the latter would demand. Interest is to be induced and kept up by reference to biographies of great scientists and histories of scientific discoveries, and to the practical uses to which these have been put. The author with his experience of teaching the subject and correct grasp of these requirements has compiled this book with intelligence and care. Profusely illustrated, each topic is presented with freshness and clearness in a language fairly comprehensible to the readers. Teachers in most schools who have inadequate facilities for reference will

find this book quite helpful to themselves and their pupils. Another recommendation in its favour is the promise of the publishers to devote 5% of the proceeds to the S. I. T. U. Defence Fund, which, we hope, will prove an impetus for its adoption in schools which have a warm corner for the S.I.T.U.

2. **A Hand-Book of Physics:** By R. Sankara Ayyar, B.A., L.T., and V. Srinivasa Ayyar, B.A., L.T. Published by R. Thirumalai & Co., Madras. Price: Rs. 2/8.

This is another compilation of the enterprising authors designed to suit the requirements of the S. S. L. C. pupils bringing up Physics as an optional subject. The treatment is elaborate, the volume covering about 480 pages neatly printed and got up. Both the theoretical and practical sides have been attended to. Experimental details include precautions and principles involved. Practical applications of the principles and laws have been dealt with in detail. Important laws and definitions appear in bold print. Tabular statements with specimen readings and calculation steps have also been given to help pupils. The authors could have included with advantage, under some experiments, the details of procedure to calculate results using algebraic expressions and explaining the principles involved. A useful index has also been added at the end. The special features of the book are its copious new model questions, examples, diagrams and graphs.

3. **Le Premier Shampoing D'Absalon**-Edited by N. W. H. Scott, M.A., Macmillan & Co., Ltd. (In French)

It is a series of three stories adapted from well known French authors. First comes the story of *Absalon*, a villager named after the son of David, on account of his luxuriant growth of hair. He goes to a shaving saloon of Paris and, on seeing the heavy bill he is asked to pay, he refuses to pay it. He is thus drawn into a quarrel, and brought before the Inspector of Police. A hint about some relationship with a Minister of the day makes the Police sympathetic to his case and he is freed from the clutches of that barber.

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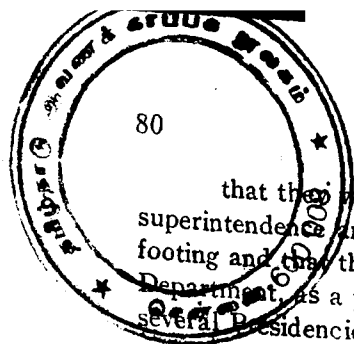
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that they were of opinion that it was advisable to place the superintendence and direction of education upon a more systematic footing and that they had therefore determined to create an Educational Department, as a portion of the machinery of the government in the several Presidencies of India, with an officer specially charged with the management of the business connected with education and immediately responsible to the Government for its conduct;

that they had come to the conclusion that the time had arrived for the establishment of universities in India, which might encourage a regular and liberal course of education, by conferring academic degrees as evidences of attainment in the different branches of art and science, and by adding marks of honour for those who might desire to compete for honorary distinction;

that they thought that the wise abandonment of the early views with respect to native education, which erroneously pointed to the classical languages of the East as the media for imparting European knowledge had led to too exclusive a direction of the efforts of Government towards providing the means of acquiring a very high degree of education for a small number of natives of India drawn, for the most part, from...the higher classes; that their attention should now be directed to a consideration, if possible, still more important, and one which had been hitherto.....too much neglected, namely, how useful and practical knowledge, suited to every station of life, might be best conveyed to the great mass of the people, who were utterly incapable of obtaining any education worthy of the name by their own unaided efforts and that they desired to see the active measures of Government more specially directed, for the future, to this object, for the attainment of which they were ready to sanction a considerable increase of expenditure;

that schools whose objects should be not to train highly a few youths but to provide more opportunities than now exist for the acquisition of such an improved education as would make those who possess it more useful members of society in every condition of life should exist in every district in India;

that indigenous schools should, by wise encouragement,...be made capable of imparting correct elementary knowledge to the great mass of the people;

that they had resolved to adopt in India the system of Grant-in-aid which had been carried out in this country with great success,.....

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based on the entire abstinence from interference with the religious instruction conveyed in the schools assisted:

that they desired to see the establishment, with as little delay as possible, of training schools and classes for masters in each Presidency in India;

that their wish was that the profession of school master should afford inducements to the natives of India, such as were held out in other branches of the public service;

that they desired that, where the other qualifications of the candidates for appointments under government were equal, a person who had received a good education, irrespective of the place and manner in which it might have been acquired—should be preferred to one who had not;

that they had always regarded with special interest those educational institutions which had been directed towards training up the natives of India for particular professions, e. g., Medical Colleges, Engineering Colleges, Schools of Industry and Design;

that they concurred in the view of the Governor General that the Government ought to give to native female education in India its frank and cordial support;

that Government institutions being founded for the benefit of the whole population, the education conveyed in them should be exclusively secular, etc. etc.

The Despatch was, indeed, epoch-making. It ended all the controversies of the past as regards the aim of Indian education, the Government attitude towards religious education, and the medium of instruction; and began a new era of organised educational administration, mass education, university education, and private effort in education. It was indeed, the climax in the history of Indian education: what went before led up to it; what followed flowed from it.*

The receipt of the despatch was soon followed by considerable educational activity all over India. Departments of Public Instruction were organised in all the Provinces in 1855; the universities of Calcutta, Madras, and Bombay were created in 1857 after the model of the University of London for examining students and granting degrees in Arts, Law, Medicine, and Civil Engineering; and a system of Grant-in-aid to schools and colleges under private management was introduced in all

* "Education and Statesmanship in India" by James, p. 42.

the Provinces. The despatch thus gave birth to the present system of Indian Education.

It is worthy of note that some of the glaring defects which developed in course of time in the system of education thus instituted are traceable to disregard of some of the detailed instructions conveyed in the despatch, e. g., those regarding provision of honours courses in the universities; institution of university professorship, including those for vernacular languages; adequate representation of affiliated colleges on the University Senate; periodical inspection of affiliated colleges; extension of "useful and practical knowledge suited to every station of life" to the mass of the people; institution of special tests qualifying for ...admission to the different branches of the public service, apart from university examinations; etc. Had these instructions been carefully worked up to, the university system which the despatch brought into being would not have become liable to much of the adverse criticism which caused the...appointment of the Indian Universities Commission of 1904. University education also would, perhaps, have been sought more for its cultural value than for the value attached to it as passport to Government service, had special departmental entrance tests been instituted independently of university examinations. The system of primary education, too, would have developed on more practical lines and escaped the criticism of being too literary and unpractical that is now generally applied to it.

The progress made under the system thus established was very rapid. It was accelerated by the transfer of control of education to Provincial Governments in 1871 and by the introduction of the Local Board and Municipal systems providing for local taxation for local purposes including education.

The progress thus made in India since 1854 was brought under careful and detailed review in 1882-83 by the Indian Education Commission appointed by Lord Ripon and presided over by Sir William Hunter.

The Commission recommended:

That while every branch of education can justly claim the fostering care of the State, it is desirable, in the present circumstances of the country, to declare the elementary education of the masses, its provision, extension, and improvement to be that part of the educational system to which the strenuous efforts of the State should be directed in a still larger measure than heretofore and that primary education be

declared to be that part of the whole system of Public Instruction which possesses an almost exclusive claim on local funds set apart for education, and a large claim on provincial revenues;

That it be distinctly laid down that the relation of the State to secondary is different from its relation to primary education, in that the means of primary education may be provided without regard to the existence of local co-operation, while it is not inexpedient to provide the means of secondary education only where adequate local co-operation is forthcoming;

That in all ordinary cases, secondary schools for instruction in English be hereafter established by the State preferably on the footing of the system of grant-in-aid;

That all Directors of Public Instruction aim at the gradual transfer to local native management of Government schools of secondary education (including schools attached to the first and second grade colleges) in every case in which the transfer can be effected without lowering the standard or diminishing the supply of education, and without endangering the permanence of the institution transferred.

That, in ordinary circumstances, the further extension of secondary education in any district be left to the operation of the grant-in-aid system, as soon as that district is provided with an efficient high school, Government or other, along with its necessary feeders;

That in order to evoke and stimulate local co-operation in the transfer to private management of Government institutions for collegiate or secondary education, aid at specially liberal rates be offered for a term of years, wherever necessary, to any local body willing to undertake the management of any such institution under adequate guarantees of permanence and efficiency;

That in order to encourage the establishment of aided schools, managers be not required to charge fees as high as those of a neighbouring Government school of the same class;

That while it is desirable to affirm that fees at the highest rate consistent with the undiminished spread of education should be levied in every college aided by the State, no aided college should be required to levy fees at the same rate as that charged in a neighbouring Government college.*

* Report of the Indian Education Commission, pp. 112-150, 247, 254, 308, 414, 465, 467.

The practical results of these recommendations were (1) increased attention to and wide extension of primary education all over the country; (2) definite restriction of Government activity in the field of secondary education; and (3) great encouragement to private enterprise in education.

As regard curricula and standards of examination of primary and secondary schools, the Commission recommended:

That the standard of primary examination in each province be revised with a view to simplification and with large introduction of practical subjects, such as native methods of arithmetic, accounts, and mensuration, the elements of natural and physical science, and their application to agriculture, health and the industrial arts, but that no attempt be made to secure uniformity throughout India;

That care be taken not to interfere with the freedom of managers in the choice of text-books:

That promotion from class to class be not made to depend necessarily on the results of one fixed standard of examinations throughout the province;

That in the upper classes of high schools there should be two divisions—one leading to the entrance examinations of the universities: the other of a more practical character, intended to fit youths for commercial or other non-literary pursuits; and that when the proposed bifurcation in secondary schools is carried out, the certificate of having passed by the final standard, or, if necessary, by any lower standard, of either of the proposed alternative courses, be accepted as a sufficient general test of fitness for the public service.*

While making their recommendations regarding secondary school curricula, the Commission observed: "It has been felt that the attention of students is too exclusively directed to university studies and that no opportunity is offered for the development of what corresponds to the "modern side" of schools in Europe. It is believed that there is a real need in India of some corresponding course which shall fit boys for industrial or commercial pursuits, at the age when they commonly matriculate, more directly than is effected by the present system. The University looks upon the Entrance Examination, not as a test of fitness for the duties of daily life but rather as a means of ascertaining whether the candidate has acquired that amount of general information and that degree of mental discipline which will enable him to profit by

* Report of the Indian Education Commission, pp. 221-223

a course of liberal and professional instruction. In these circumstances, it appears to be the unquestionable duty of the Department of the State which has undertaken the control of education to recognise the present demand for educated labour in all branches of commerce and industrial activity, and to meet it, so far as may be possible, with the means at its disposal."†

The recommendations of the Commission which were generally accepted by the Government, coupled with the creation of Municipal and District Boards and transfer thereto of primary school administration, led to great improvement and extension of primary education and to spread of the grant-in-aid system.

The progress in Education came again under a comprehensive review during the Viceroyalty of Lord Curzon, extending to all kinds and grades of institutions, from universities to primary schools, and including in its scope the methods, organisation, tendencies, and results of Indian Education taken as whole. He made a searching inquiry into the educational position as it existed in 1901 and convened in September of that year a conference of provincial Directors of Public Instruction to discuss the whole subject of education in all its aspects. The deliberations of the Conference resulted in several important measures, the most important among them being the reconstitution of all existing universities, the imposition of regular university inspection on affiliated colleges, the framing of stricter regulations regarding grant of recognition and financial aid to primary and secondary schools, and the revision of primary, secondary, and university courses and curricula.

The conclusions arrived at by the Conference on various educational matters matured into a Government of India Resolution on "Indian Educational Policy". In this resolution, the Government of India fully accepted the recommendation of the Indian Education Commission of 1882 that the active extension of primary education should be one of the most important duties of the State, and regarded it as a matter of the greatest importance to provide a simple, suitable, and useful type of school for the agriculturist. They indicated the conditions of recognition of secondary schools by Government Departments of Public Instruction, and considered it essential that "no institution which failed to conform to the elementary principles of sound education should be permitted to present pupils for the University examinations."*

(To be continued)

† Ibid., 220

* "Indian Educational Policy," paras: 14, 21 and 22.

Mental Testing & Statistics in Education

BY MR. B. B. SAMANT, B.A. (HONS.), B.T.

A SHORT HISTORY OF MENTAL TESTING.

Since schools have existed, educational authorities have attempted to measure the abilities or progress of their pupils. This was done either by an examination or by a sort of rough estimation of the daily recitation work. It is said that mental tests are as old as the human race. In the Pouranic literature we find ample illustrations of the same. We have, for example, the conversation between Yaksha and Yudhis-thira, the conversation between Uma and Mahesh, and many other legends and riddles, that figure so prominently as stumbling blocks to the learning of the learned. Not only these but in addition we find a pretty good number of completion tests and puzzles. The story of Nachiketas and the conversation between Brihaspati and Indra from the Upanishads may be quoted in this connection.

Competitive examinations are said to have begun in China, nearly 4000 years ago and they must have begun very early in any civilised country. It is said: 'A man never consciously and deliberately learns anything without testing himself, he never teaches anything without testing his pupils.'

Although the idea of measurement of the results of instruction is not new, it should be noted that the construction and interpretation of scientific tests and standards is entirely a recent development. The problem of mental measurement is not an easy one. One can say that physical objects can be measured but not ideas, emotions, intelligence &c. The opinion of the other side can be very well put in Prof. Thorndyke's words: 'Everything that exists, exists in some amount and if it exists in some amount, it can be measured.'

The earliest investigators tried to measure the intelligence by indirect means. Just as temperature is measured by noting the expansion of mercury column in a thermometer, in the same way attempts were made to find some vicarious manner of measuring the mind.

Lavater, for example, published his essay on the doctrine of Physiognomy in 1772. His method was of judging the mind by the features and expressions of the face. A Roman nose—the one protruding near the root, was supposed to denote an aggressive attitude. Bell

(1806) discarded Osteology and accepted Sarcology i. e. he concentrated his attention on the Study of the fleshy part of the face as an indication of emotions. In the year 1807, Gall, a Frenchman, and his disciple Spurzheim, advocated Phrenology—the science of the shape and size of the head as an index of mental ability. In 1876, we find quite a new turn given to this idea of measurement of mind by Lombroso, who followed the method of stigmata. He stated that the criminal tendency can be judged by noting some visible marks or malformations of the body.

Darwin advocated Phrenology, the science of the flesh on the face rather than the bony structure of the face. Sir Francis Galton, an anthropologist, tried to measure intelligence with the help of certain bodily traits, such as the character of the finger prints etc. In addition to this, Galton gave the first ideas of 'correlation' (1886) but it was Karl Pearson, who actually made use of the mathematical principle of correlation to give a deathblow to all the attempts to measure intelligence by some physical criteria.

Still it was believed that mental powers can be measured by the powers of the body. As a result, emphasis was placed on the nervous system rather than on physique. It was held by this new group of psychologists that as the actions of the body are due to orders of the brain, a dynamic measurement was thought to be of some use, in preference to the static measurements so far used. The following are a few of the attempts in this direction:—

- (1) Dynamometer—for measuring the strength of one's grip.
- (2) Ergograph—for measuring the power of endurance of the middle finger.
- (3) Tapping tests and other Sensory motor tests—for noting the time passed between the signal and the response.
- (4) Weber—Fechner law—(1860-80) which showed that an increase in the intensity of the stimulus is accompanied by an increase in the intensity of sensation.
- (5) Aesthesiometer—for noting the sensitiveness of the skin with the help of two sharp points adjusted at a very small variable distance. The distance between the two points was slowly increased till they were felt by the subject to be two distinct points.

After this we find a new tendency again. Scientific study of memory was begun. Ebbinghaus tried to measure memory 'in the form of retaining and reproducing nonsense syllables—sounds devoid of sense

and all associations.' MacDougall's dotting machine may also be remembered as a very useful piece of apparatus in the psychological laboratory for measuring fatigue, attention, accuracy of aim etc. In this test circles arranged in a zigzag manner are exposed one after another and the subject is to put a dot at the centre of each circle.

These were after all devices to measure a particular mental function only. Many attempts were made to carry out such specific mental tests to perfection. The brain was supposed by these investigators to be made up of so many faculties, each independent of the other.

BINET'S TESTS—HIS EARLY EXPERIMENTS.

Early in the twentieth century, a group of several psychologists was busy in studying the structure of the mind, while child study or inquiry into the actual content of the child-mind was pursued on altogether a new line by a group of several psychologists in different places—Thorndyke in America, Binet in France, Winch in England and Meumann in Germany, may be noted in this connection. The main aim of investigation was 'clearly to solve certain fundamental problems that perplexed the administrator in his office and the teacher in his class room.' These two schools treated the results of one another with such a distrust, that it was practically impossible to solve any problem of practical importance. Their experiments failed to a large extent. To quote Ballard, 'Experimental pedagogy broke down, not in its pedagogy but in its mathematics.' They tried to improve the means of research. They had the tests but no scale.

It was to the credit of the French psychologist, Binet, that he realized the necessity of combining the science of the laboratory of the experimental psychologist with the knowledge based on the child study or the life history of the child as observed in its behaviour. 'He set before himself a severely practical problem—how, namely, to use the new psychology (of behaviourism) so as to enable a practitioner, whether a teacher or a physician to diagnose the mental condition of a child and to measure changes in this condition at intervals of a year or less.' It should be noted that the practical character of his aims and interest, and in some measure in the character of the mental processes which he was trying to measure and which were represented in the tests of his later scale, were responsible for his success.

Herbart, the pioneer research worker in the problems for the scientific psychologist and for the teacher, had shown the possibility of making exact observations of the qualities and processes of the mind

but nearly a century had passed before Binet could produce any workable scheme for the measurement of intelligence.

Binet was carrying on many experiments of this nature in Paris since about 1890. His earlier experiments were certainly wanting in productiveness. He continued his efforts. He was in search of tests that would measure 'a representative and all inclusive function of intelligence.' 'In 1895 in his article entitled 'Measurement in Individual Psychology'* he poses the question: "How can we measure richness of inspiration, accuracy of judgment and the general ability of the mind?" He did not thereafter march straight to the goal of scale construction but loitered on his way in the attractive side-paths of nutrition and anthropology. He thought he had found one directional road to intelligence by measuring attention and adaptation.†

In 1895 Binet proposed a list of tests but he neither gave the result nor the method of scoring. One thing was clear that they were not sensory-motor tests. There were tests for memory, so also tests to measure mental images, attention, comprehension, suggestibility, aesthetic feeling and moral sentiment. But it appears that he did not develop the technique to measure the functions listed above.

He found out that those tests in which more complex mental processes were involved could differentiate the bright children from the dull ones better than those in which simpler mental processes were involved. As a result he equated intelligence with higher mental powers.** He made many experiments in this direction. His two daughters, Armande and Marguerite, were his principal subjects for experiments. He also examined the work of other psychologists of the day—collaborated with some and criticised the rest. Henry and Simon were his two chief collaborators. With the help of tests involving more complex mental functions, they wanted to segregate the mentally defectives. They set themselves to the practical problem of finding out tests that would point out the defectives. As a result of this, most of their contributions centred round the abnormal psychology. The final outcome of this was the publication of the 1905 scale.†

* *Revue Philosophique*.

† *Attention et adaptation in Année psychologique*, t. 6 pp. 248-404 (1899)

** *L'Etude Experimentale de l'Intelligence* (1903).

† A. Binet et T. Simon, 'Méthodes nouvelles pour le diagnostic du niveau intellectuel des anormaux' in *Année psychologique*, t. 11 pp. 191-244 (1905).

BINET'S SCALE.

Binet's 1905 scale consisted of 30 tests. Some of the tests were composed of many parts. The multiplicity of the topics chosen, was largely responsible for the success of these tests as the first of the type of the intelligence tests. This group of tests had greater validity and reliability too. The tests were arranged in the ascending order of difficulty. The first one was the simplest wherein the child was supposed to follow a lighted match with his eye. One of the tests wanted the child to take out and eat a piece of candy wrapped in a piece of paper in his presence. The tests at the end were certainly more difficult.

The whole business of testing was based on the fact that 'individuals of different degrees of intelligence at the same level of maturity are distinguished by the number of tests they can pass. Binet only gives a rough estimate for diagnosis, for example, according to him an 'Idiot', can pass not more than the first six tests and the 'Imbecile', not more than fifteen, and a feeble-minded a few more. In Binet's comments on this scale, we also find the germ of the age-scale, which he developed in the 1908 scale.

BINET'S 1908 SCALE.

Binet himself does not state anywhere how exactly the idea of so simple a device of age-grade-scale came to him. However, it seems that the data collected by him with the 1905 scale, must have suggested this original and ingenious method of using age-scale or age-norms. In the concept of mental age we find the plan of making use of the intellectual growth of a child as a scale for the purpose of measuring difference in brightness. So far the psychologists only knew what kind of tests to apply but they had no scale to measure. It was to the crowning glory of Binet that he completely developed the age-grade in his 1908 scale, which he prepared in collaboration with Dr. T. Simon.* In this scale each test is classified under some fixed age.

BINET'S 1911 SCALE.

Binet's new innovation caused a lot of controversy amongst the psychologists of the day. Many of them actually used them and reported the results. Amongst them, Decroly and Degend of Belgium, Bobertag of Germany and Goddard from U. S. A. are worthy of note. Their criticism mainly pointed out that the individual tests were not properly

* A Binet et. T. Simon. 'De Developpement de l' intelligence chez les enfants, in 'Annee psychologique' t. 14 pp. 1-96 (1908).

placed, for example, the tests for the lower ages were very easy, while those for the higher ages were too difficult. Binet revised his 1908 scale in 1911, in response to the criticisms by others.** He put an equal number of tests for each age, namely, five. The second change was transposition of some of the tests to different ages.

It is doubtful whether the 1911 scale is an improvement on the 1908 scale. It seems that Binet himself wanted to make another revision but owing to his untimely death in 1915, we have missed that revision for ever.

DIFFERENT REVISIONS OF THE BINET-SIMON TESTS.

The progress in this direction, however, did not stop. His line of research was taken up by several psychologists, who were experimenting with his scale. The earliest among those was H. H. Goddard in U. S. A. He adapted it to the American conditions. This scale was largely used in America, till it was replaced by the Stanford Revision made by Lewis Terman and his collaborators. This scale was extensively used before the World War and is being used even to this day. Terman determined the location of each test by applying it to nearly 1000 children. Out of the 90 items in his revised scale, 36 are new and 54 are from Binet's.

The other revision of note in America was the Yerkes' point-scale revision, where the marking system was improved. Even the American Army tests were partly based on Binet's. Many other revisions took place but in all these revisions the alterations were only in details and not in the principal. Moreover, these tests are for measuring intelligence and not the acquired knowledge. *(To be continued)*

** A Binet. 'Nouvelles recherches sur la mesure du niveau intellectuel chez les enfants d'école' in 'Annee psy.' t, 17 pp. 145-201 (1911).

Some Aspects of University Education in India

BY MR. V. P. NATARAJAN, B.A. (HONS.), B.T.

(Continued from the last issue.)

Much as one values the benefits of academic learning which rises superior to considerations of a utilitarian character, much as one would like some of the youths of India to live dedicated lives in the service of culture, to enrich their minds and the minds of their countrymen with the treasures of thought inherited from ages, one feels that the interests of our country will be better served if we lay greater emphasis on and make better provision for practical scientific education—an education which will enable us to stand the stress of modern competitive life. Good as university education may be for some, it is not good for all and sundry. From a purely cultural point of view, it does not seem desirable that Indian Universities should consciously or unconsciously allow themselves to be used as so many factories for manufacturing candidates for Deputy Collectorships, Tahsildarships and Munsifships or at least clerkships, not all of whom can fulfil their aspirations. One inevitable consequence of this indiscriminate multiplication of graduates must be the lowering of the standard of education and also of conduct under the stress of competition. The Hartog Committee attached to the Simon Commission or Indian Constitutional Reforms lays stress on the fact that “the Indian Universities are overcrowded with men who are not profiting either intellectually or materially by their University training. Lives which might be more usefully and honourably spent in other spheres are thus wasted in disappointment, discontent and despair. The laws of Nemesis are inexorable, and the Universities cannot escape them. Indeed they are already in operation, and while the builders of the future constitution of India may be putting stone upon stone and the wreckers, posing as saviours, may be equally busy in holding out threats to them, the hungry crowd of the middle class graduates, disowned alike by Government who look upon them as the source of all trouble, and by patriots who have a horror of the university-bred bourgeoisie, goes on increasing apace complicating the situation for both. “From the top to the bottom of the social pyramid, from the humblest clerk to the professor and the prefect, the immense mass of persons boasting of diplomas besiege the professions. The number of the chosen being restricted, that of the discontented is perforce immense. The latter are ready for any revolu-

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tion, whoever be its chiefs and whatever the goal they aim at. The acquisition of knowledge for which no use can be found is a sure method of driving a man to revolt. It is evidently too late to retrace our steps. Experience alone, that supreme educator of peoples, will be at pains to show us our mistake. It alone will be powerful enough to prove the necessity of replacing our odious text books and our pitiable examinations by industrial instruction capable of inducing our young men to return to the fields, to the workshop, and to the colonial enterprise which they avoid today at all costs” (Le Bon).

The problem of over-production of unemployed and perhaps unemployable graduates is a very serious one, not peculiar to India alone. The various Universities, the Government and Indian society must all combine to attack the problem. The universities and the Government can combine each within its sphere in providing for the diversion of a large number of our young men into schools and institutions where they can be made to learn something that may enable them to earn a decent living by following some useful vocation or occupation, or by setting them on land where land is available. This will necessarily involve the overhauling and readjustment of the entire educational machinery. In order to relieve the pressure on the university and at the same time to make university education more efficient from a practical point of view, it seems to be necessary to provide more and better-equipped secondary and vocational schools, so that after the completion of the school education, it may be possible for the vast majority in whose case the earning of a livelihood is a necessity and the pursuit of culture at a university a luxury, to settle down in career and trade, business or industries, and thus save that wastage of the youth which is one of the most alarming signs of the times. Further, the state must take a more active and a more sustained interest in giving the young men a start in the various departments of life and lines of business or enterprise. The state should then assume a further financial responsibility for the better equipment of the universities which may be expected to produce leaders of community and in the fields of action and thought.

The world's figures for unemployment have assumed staggering proportions, and in the midst of the present economic chaos, all the leading nations are groping in the dark, “only developing the new spectacular industries of international economic and political conferences which pay very poor dividends.” The problem of unemployment in India is predominantly one of rural unemployment and under-employment and poverty of the most acute degree. No ready-made remedies are available, no panacea has been deliberately adopted for the econo-

mic maladies which have been laying waste the fruits of industry and enterprise. In any genuine and sustained attempt that the state may make in this direction it will clearly be entitled to the support and co-operation of not only all the universities in the country but also of the general public. The same problem of unemployment of the educated youths is present in a marked manner in the United States of America too. College graduates just entering life outside add a new reinforcement to the unemployed. "No satisfactory answer to the question of the number of these who will be earning a living by the end of the year is possible while business remains in an uncertain state, while Government action affecting all industry remains ineffective." Yet a remedy has been effected and the National Student Federation, examining reports from ninety-three institutions of higher learning, is able to base its figures on data from every State and from colleges and universities with a total enrolment of approximately two millions and finds that, counted as one group, sixty-three per cent of the graduates of 1930, 1931 and 1932 are now gainfully employed." The University of Minnesota has confined itself to the problem of unemployment. Its study of the problem is the most thorough-going of any that has yet been undertaken in the United States. With its Employment Stabilisation Research Institute and its personal selection service, which is the most soundly scientific service ever created in the United States, the University has been placing through public employment agencies between 600 and 1000 unemployed persons every month in the various offices and factories of the neighbouring cities. The enterprise of the University is divided into three projects: the first, a scientific study of the economic aspects of unemployment; the second, a careful diagnosis of individual unemployed; and the third, the development and organisation of public employment agencies on sound and useful lines. Similar efforts are being made in other university centres also in the United States. One cannot but be impressed with the serious and earnest efforts put forth by the American colleges and universities to combat the destructive and morale-breaking effects of idleness caused by unemployment, and one cannot but ardently wish that the Indian Universities would emulate the splendid example set by the United States.

In function, the universities of the twentieth century, (and Indian Universities are no exception), have degenerated into something little short of educational sausage machines. Adolescents from all manner of schools, and in all stages of confused ignorance are lured to them by scholarships, and grants and subsidised advertisements in the shape of sporting contests, and after varying periods are ejected from them recognisably shaped and shaped alike. The universities themselves have

suffered in the process, and are now endeavouring to lift themselves up. The province of Bengal affords a typical instance. It is now nearly fifteen years since the Calcutta University Commission reported on the condition of Secondary and Higher education in that province and though since then its report has had considerable influence on university education in other provinces, the Calcutta University alone for various reasons has practically remained unaffected. There has been in recent years an insistent demand for stricter methods of control and scrutiny into the report of the Commission. It is pretty obvious that all over the cry of deterioration is heard and in Bengal in particular where much the same conditions prevail as a decade and a half ago, the necessity for reform of Secondary and Higher education is again being anxiously considered. His Excellency the Chancellor of the Calcutta University presented two notes prepared by the Government to serve as the basis for discussion in the recent conference of the representatives of the Bengal Government and the Calcutta and Dacca Universities. The first note dealt with the weakness of the present system and the second gave an outline of a possible educational policy.

The weakness of the present system may be judged by the difficulties experienced in removing admitted defects, many of them being directly due to the system itself. The main points are:—

(1) (a) University standards (b) More effective co-operation between the different institutions responsible for university teaching. (c) Financial instability of colleges.

(2) (a) More effective control of secondary education. (b) Domination of secondary education by Matriculation Examination. (c) Low standard of teaching and work in secondary schools. (d) Financial instability of schools.

(3) Inefficiency of primary school work and teaching due to (a) inability to obtain satisfactory teachers, and (b) unsatisfactory scheme of studies.

(4) The absence of any correlated system of education from the elementary stage to the post graduate, making possible efficient work in each stage.

(To be continued)

Resurrection.

Not only in winter or wayside manger,
 Not only to Mary the Virgin and old world danger,
 But in every clime, to every one and every morn,
 When a holy thought, a noble hope, or a sane ideal rises,
 A new light, a new love, a new Christ is born,
 To suffer in joy and share our pain and praises.
 Happy the one whom such a morning-star beckons
 From all his rest, and all his labours reckons,
 By a heart pure and hands consecrated, and clean!
 What needs he to measure Time by sun or star-sheen,
 Whose march or miles a noble deed alone marks?
 In a life like that there is no April or June,
 Where every day and hour is a spring-boon—
 The new hope, thought and ideal do then sprout
 Each in order yielding place to one that lived out,
 By a human right, a right of lawful succession—
 To it, in East or West, is there a daily resurrection!

P. R. G.

Gleanings from Tamil Literature.

BY THE LATE MR. T. R. RANGASWAMY AYYANGAR, M.A., I.L.T.

(Concluded from the last issue.)

CHAPTER III

Sethupathi Literature.

The land of the Sethupathis of Ramnad has always been famous for its literature in Tamil. After the establishment of a kingdom there in 1605 the kings of Ramnad have always been warm patrons of Tamil learning and the name of Regunatha Sethupathi has been handed down to posterity as a munificent supporter of Tamil Poets. Sethakka Maraikaiyar of Kulasekari in this part of the country has been sung as a Karna in his liberality towards poets and scholars by many a poet.

This land has been the home of many a great poet all basking under the sunshine of Sethupathi generosity.

Even some poets of the Sangam age were natives of this soil. Nallandaiyar who has sung the 211th stanza in Natrinai was a native of Tirukottiyur now in Sivaganga Zamindary. Allur Nalmullaiyar sang the 32nd stanza in Kurunthokai and the 46th stanza in Nedunthokai. Vallaikkudinathanar sang the 158th stanza in Natrinai. Masalthiyar, a native of Okkur, has contributed largely to Kurunthokai and Nedunthokai. Pullankadar, a native of Tiruppullani, was a Sangam poet who sang Kainnilai. Hence this land was famous for its literature even in pre-historic times. One Muthunayaka Pulavar in his poem known as Kannudaya Ammai Pattu has sung a stanza in praise of this land.

Later on, a famous author of this country Paripperumal wrote a learned commentary on Tirukkural. The village of Vembattur in the Sethupathi country was famous for its poets for a long time. Sevvaicchudavar has sung Bhagavatham in Tamil in verse. Alavandar brought out his famous translations of Vasishtam and Bhagavadgita. Mathava Battar, otherwise known as Perumpatrappuliyur Nambi, sang the famous Tiruvilayadal Puranam. Kaviraja Pandithar has translated in Tamil Sri Sankara's Soundaryalahiri. One Perumal Ayyar sang Nellikkovai. Sami Kavikalarudirar sang altogether Alagar Pillai Tamil. Kavi Kunjara Bharathi, a famous poet, sang Alagar Kalambakam, a work well known for its diction and excellence. A native of Sannasi village by name Pahazhi kuthar wrote Tirucchendur Pillai Tamil and an abridged rendering of Jivakachintamani.

The greatest poet of this land is Vira Kavi, a native of Nallur. He has sung his famous Harishchandra Puranam, a treatise full of erudition, grand imagery and moving pathos. Sarkkarai Pulavar has sung Tirucchendur Kovai, and Vedanta Chudamani.

This land is famous for its Musalman poets. Umaru Pulavar, a native of Kilakkarai, has sung Sirappuranam about the great prophet. This was sung before the famous Seethakkotta Marakayar. It contains 12,000 stanzas. One Meesalavanam nnakkalnjiya Pulavar, a native of Pannaikkulam, has sung many vannams. His real name was Mahmud Ibrahim. He is the author of Muhadin Puranam. He settled in Nagore and died there. Savathu Pulavar has sung Andavar Pillai Tamil on Mohmet the Prophet. At the request of the Sethupathi he sang Raja Rajaswari Pancharathnam. In this connection we may make mention of some other Musalman poets who have contributed to Tamil literature. One Aliyar Pulavar has written Indirayan Padaippore and Iponi Anthan

Padaipore. Mahamud Hussain wrote Pen Budhi Malai in 258 couplets. Nanjina Mahmud Pulavar wrote a work known as Munkrin Malai. Mathura Sahib Pulavar is known as the Mithirusei nama. The great Mussalman philosopher Mustan Sahib, a native of Trichinopoly, is a mystic Siddha and his songs are as good as Tayumanavar's. He has sung Agastiyar Satagam and Nandisar Satagam. Mathura Kavi, a native of Kottankacchiyur hamlet, has sung Alagar Kura Vanchi and Kanda-purana Kirtanams. A native of Perumakari named Kavikunjaramayyar is famous for his songs. Talaimalikanda Tevar, a native of Kattarutakudi, has written Marutur Antadi. Perunkaranai Muthazhagar has sung Tirukkotiyyur Kalambakam. *Mambhazhakkavirayar* has sung his vanams on the Sethupathi. A native of Ramnathapuram by name Somasundara Guru has sung a Kovai called Tirukkazhukkunra Kovai. Periyasavara Kavirayar has written a funny poem called the Message of money. He was a native of Mudukalathur. *Siriya Saravana Kavirayar*, a native of the same place, has sung Kunrai Silaidai Venba, Tirucchuzhi Antadi and Mathurai Yamaga Antadi. One Subramania Kavirayar living near Sivaganga sang Tirumankkuravanchi on Kottai Tevar. *Sinna Sarkkarai Pulavar* wrote Mizhalai Satagam, Vanduvanapperumal Usal, Tiruvadanai, Chitrakavi manjari. One Sini-Pulavar wrote Tiruchendur Parani and Turasai Kalambakam. *Sarkkari Arunachala Pulavar* sang Ponpatricchuelvi yammanai Usal. *Sarkkarai Muthukaruppa Pulavar* has sung a pathigam on God Vairava. The famous Tholasinga Malai was sung by a native of Mithilai patti known as Alagia Chitrambala Kavirayar. He has also written Kodunkunra Pura-nam.

Amuda Kavirayar was a poet of a high order. He has sung a Kovai of 400 stanzas in a single figure of speech known as Oruthurak-kovai, in praise of Raghunatha Sethupathi, probably the famous Kilavan Sethupathi. Gayakarai, a native of Rameswaram, has written a grammar known as Gayaka Nigandu and Rameswara Kovai. Palapat-tadai Chokkanatha Pulavar wrote Tevai Ula and Vinjaikkovai on a Sethupathi minister. Mangaibhakka kavirayar has written Kodunkunra Puranam. Krishna Ayyangar was well versed both in Tamil and in Sanscrit. He could perform wonderful feats of memory, besides being a poet. Muthusami Ayyangar was a versatile genius and has written Chandra-lokam, Manavalamamuni Antadi, Kurukkaikkalambakam, etc. etc.

In addition to these there have been numerous poets in the Sethupathi country, who were patronised by the Sethupatis. Thus it will be seen that after the extinction of the three great Tamil royal dynasties the honour of patronising Tamil literature came to the Sethu-

patis, but for whose munificence the language would have considerably languished. There are still many living authors in that land whose names we purposely omit to make mention of.

(We regret the author did not live to complete the manuscript after this. Ed. I. E.)

Teaching, A Pleasure.

BY MR. P. R. GOPALAKRISHNA AYYAR, B.A.

Teaching as a profession at present, seems to be rather discouraging, but this is mainly due to Economic causes, though there are dangers in it of the kind so lucidly described by Mrs. L. K. Fearon in her article in the Hindu Supplement, calling it a dangerous profession. She has drawn attention mainly to the danger arising from the wrong diagnosis by teachers of the intellectual needs of the taught. This danger is serious enough and ought to be sufficient to discourage any but the man or woman with a distinct power or purpose, with a distinct vision or mission for teaching. For the problem of un-employment in general has so disturbed the whole world and all our avocations that we now find everywhere more square persons in round chairs than we ever did before. We don't find the fittest alone in the field. Many young men enter an educational career, not because of a distinct call, not from choice or aptitude, but because there is a gap which they can as well fill up as not. Nor do we find both intellectual asset and aptitude co-existing in all. Born teachers are few, and a few more may cultivate qualities which will be eminently satisfactory in a teacher and which will take the place of the element which makes teaching the holiest of professions. But indiscriminate recruitment is a dreadful evil. The training undergone is not perhaps the best. Undergoing training itself or the course of training, under certain conditions, leads to making it a cut and dry profession. Professionalism has invaded every sphere of life. Even on the playground nowadays they want professionalism. Tennis, Football, Cricket, cannot get over it. Professionalism imposes a hard crustation over the spirit. The inner, innate vitality is cramped in the frame work. The personality is lost in the robe of the professor. The Soul-touch gives place to the School-touch which polishes, not perfects, the man. The method gains, the matter loses. The truth is lost in the tone, the access of thought in the accent. In short, the man is lost in the manner. The mistake of the professional lies in his consi-

dering that he has the monopoly of intellectual spoon-feeding and in jealously guarding it from encroachments. Intuition and sympathy are thus excluded from the profession. No doubt it is this mistake that has led to the formation of Parents Associations and their welcome criticisms of professional tyranny. And from the point of view of the Management, it results in false returns for their investments; for the School produce can be justified only by the richness of the harvest, by the richness and propriety of the equipment of the students who go out of their institutions to engage in the struggle for existence.

We have no doubt out-grown the simple days when the teacher exercised his personal magnetism and shaped the supple sense of the growing child. He can no longer remember the faces of his students even with a photograph to aid remembrance. A man of towering soul-force perhaps may still hypnotise a class of 200 or 300 students, but he won't long remain within the four walls of a class room. He is soon called away to other spheres of work, like the Rt. Honourable Sastri or his Great master Gokhale, to school the grownups to sense, not the students to their lessons. But the average teacher is neither a tower of intellect, nor a tower of personality. Teaching by such men must fall far short of any standard. Professionalism no doubt tries to establish a standard, but in doing so, it tends to Queering it like the professor in Laputa who attempted to standardise the brain-case and brain-matter too. The established curriculum only serves such a purpose. But the rub is you cannot avoid it either.

One may compare the present system of education to the study of horsemanship and draw a conclusion. Suppose one had to teach the art of riding, you may give a person either a wild horse or mild; the result will be something lively. But if you give him a wooden horse, the result will be vastly safer to the student, but he can never master a horse or learn horsemanship. Should that be the end of teaching?

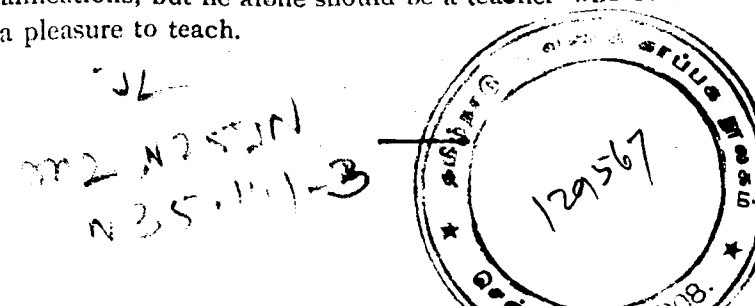
Professor Kellett of the Xian College gave a lead in his time to approach the heart and head of his students. One cannot do so only in the school room. He met them on the playground and in the libraries. He endeavoured to understand the student's mind. But alas, how few Kelletts are there in the profession! When I was quite a child—pardon a bit of auto-biography; example is better than precept—I met a young man, now a brilliant lawyer, who predicted a great future for me as a mathematician! But when I left college, I could quite well realise Macaulay's abhorrence of the subject, for I was made to abhor it equally violently. And why? Because, in the plastic age,

in the prematriculation period. I was rough-handled by a well meaning teacher or two. In those years I never was industrious and yet they thought I was only industrious in vain. I never sat at the lamp light except for half-an-hour and never touched a book except at school and just about the time when the bell rang for it to open. One of them—(may peace be with him)—loved me well enough, and I remember with gratitude, his praise in which he exhausted every adjective—except when he came to Mathematics. Poor soul, he never knew why I couldn't follow him, and he invariably followed me with his cane! It was a thrilling end to the day when he used to come round like a Pailwan displaying his weapon and apply it to my palm, tender and soft and guiltless as it was, at the end of the class room, remarking how bad a figure I cut in figure work! What a tragedy lay not there in such schooling! There was another, of a different type, who did not love me, but who thought that "my elder brother's younger brother could not be good at Mathematics" and with that rank pre-conceived notion, was very rough and ungentle, and used to make me stand upon the bench! May peace be with him too. He knew not my mind; he never cared to enter into the life of the pupil. He had his manner and method. He felt justified in his theory of heredity in the matter.

I must not omit to mention another, (May peace be with him too), who was intelligent enough to see what was needed. He found a companion for me who worked out sums on the black board while I stood watching. This attention to the method of working out a sum, was all that was needed and I remember that year I passed out creditably.

These examples will show to those in the profession who care to know what they should do to make their calling a call really to create intelligent citizens, not wooden lamp posts for fixing their intellectual bulbs on.

To conclude. The teacher should be inspired with love for his profession, and teaching ought to be a pleasure at all times, not pain—to the teacher as well as to the taught. The pleasure of the pupil is directly proportionate to the pleasure of the professor, and it will be reflected in every branch of activity in life, making it vastly more enjoyable. Not every one who is trained, not every one with merely academic qualifications, but he alone should be a teacher who considers and feels it a pleasure to teach.



Convocation Address (Agra.)

BY A. H. MACKENZIE, ESQ., M. A.

The following are extracts from the address of Mr. A. H. Mackenzie M. A., C.S.I., C.I.E., Pro-Vice-Chancellor of the Osmania University, delivered at the annual Convocation of the Agra University.

"The work in a university must be exacting and strenuous. Its class-rooms must be places where thought is active and is applied to use, where self-reliance is developed, where the creative faculties are strengthened and where balanced minds are formed."

"What is the reality? The prevailing method is for teachers to do the thinking for the students. The most popular lecturer is he who confines himself strictly to the course and whose summaries are so skillfully made that the students need not even read the prescribed text-books. In post-graduate classes, in which smaller numbers make it possible to preserve human contact between teacher and taught, self-reliance and wide reading are encouraged and in some colleges and teaching universities an effort is being made by means of tutorial classes to develop powers of independent thought and criticism. But usually university lectures do not stimulate thought; they are substitutes for thought. Through the study of English literature there is an opportunity for developing the love of reading for its own sake and thus giving all students on the Arts side a pure and abiding pleasure. Yet the prevailing method of teaching is to convert a master-piece of literature into a horrible mess of synonyms and paraphrases, of which the permanent effect may be judged from the fact that in this province of five universities, there is not a sufficient demand for literature to support a single book-shop, as the term is understood in university towns of the West. The end of the study of literature at our universities is for most students a release from it. The study of Science involves independent practical work and therefore demands self-effort, but even in our laboratories it is common to find students carrying out experiments mechanically according to directions which select the subjects for investigation, give detailed instructions regarding the method of work and leave the students nothing to do besides the taking of observations.

"The fault lies in our system of education. We have provided in our secondary institutions a predominantly literary Dry and dusty. education which can lead only to more literary education. Accordingly many students drift into uni-

versity courses for which they are unfitted because there is no other type of higher education open to them. The colleges have to take the best of conditions as they find them—classes clogged with students who have no aptitude for higher literary and scientific study. The lecturer cannot give of his best or stimulate the interest and curiosity of his students; he rightly thinks it unfair to leave half of his class behind. He must keep to the dry and dusty road which leads to success in examinations. Attempts by students of more than average ability to find pleasure and delight by exploring the country on either side must be discouraged; these excursions hamper the teacher's efforts to help the duller ones to reach the journey's end. Thus the teacher is compelled by force of circumstances to adopt the only method of instruction that will meet the case—to do the thinking for his students and present the subject of study in the form of dictated notes.

"These criticisms apply, though to a lesser degree, to some universities in the West also. The first remedy suggested is a drastic selection of students. But the process of elimination involves the overhauling and reconstruction of our system of secondary education. We cannot adopt the easy remedy of stiffening the standards of university admission examinations. It is not equitable that those who desire to receive education beyond the secondary school stage should be denied facilities for higher education merely because they are unfit for university studies. Many of them have other aptitudes for which scope must be found by providing for them training which will equip them for useful and honourable careers in the industrial, commercial and agricultural life of the country.

"The elimination of the unfit will not in itself be a reform of university education. It is only one of the essential conditions of reform.

Reform is possible only if we are clear about our aims and constantly bring our methods to the test whether or not they help us to achieve our purpose.

There are many definitions of university aims, but all may be summed up in these words—the search for truth. A university at its best expresses in its administration, curriculum, methods of teaching and in all its activities the desire of men to pursue the truth for truth's sake.

"It seems to be assumed that there must and can be only one form of curriculum—a list of subjects from which the student may, with some slight restriction, choose any three. Such a curriculum is without design or coherence and is based on no intelligible principle. If there is an underlying theory, it is the false one that it does not matter what

subjects the undergraduate studies as long he studies three, however grotesquely unrelated they may be. If we wish university education to train for citizenship, the curriculum must be carefully designed for that purpose. But our present curriculum is a preparation not for life but for examinations controlled by the Public Service Commission and other external examining bodies. Therefore the graduates who are being sent forth to enrich the public life of the country are being trained along lines of narrow specialism—Science graduates who are wholly ignorant of the record of human thought and feeling, and Arts graduates who have not the most elementary equipment to enable them to understand the wonder and meaning of life. These defects are not peculiar to the Agra University or even to Indian universities in general. Complaint is made that in universities of the West also subjects are treated as ends in themselves.

"A well informed critic of Western universities says that in some universities of the West there is no unifying aim, that 'in the true sense of the word there is no curriculum', there is just 'an assortment of educationally purposeless courses based on specialised work in single subjects.' He has, therefore, suggested that the rigid demarcation between Arts and Science should be broken down and that the curriculum should consist not of alternative subjects but of alternative groups of correlated studies bearing on the needs of society and aiming at initiating young people into what is vital in the knowledge and thought of our time and thus equipping them for the social leadership for which their abilities fit them.

"There is the problem of teaching technique. In recent years there has been considerable improvement in methods of teaching in schools. But university professors have curiously a scorn of discussion regarding the methods by which they should do their daily work. Alone amongst professional men they give no sustained thought to the technique of their craft. I confess that the pedagogue is the bore of all bores; and I admit that he makes up a large part of my own composition. I shall not, however, abuse my present position by permitting him to speak. I would only indicate some of the questions which are of vital importance to university teachers and which, as a body, they have never answered because they have never asked them. How can literature be taught as a study of life, as cultivation of the imagination and as revelation of the beauty of form, fitness of phrase and music of language? How can knowledge—the meanings of words and sentences and the relations of parts to each other and to the whole—be imparted without

destroying pleasure and beauty, which are evanescent under analysis? By what methods can the student of History be trained to investigate causes and measure effects, analyse motives, deduce influences from established data and distinguish between the essential and the accidental? How can the teacher of economics make the study more real by building a bridge between the theory of the class-room and practical life? How can staff and students render through this subject a service to the community by applying to Indian needs? How should Mathematics be taught so that apart from its value as an instrument for use it may be a training in intellectual precision and self-reliance? Why with all our expenditure on university and college departments of Science, do we not produce more graduates with scientific minds—men who think for themselves, who weigh evidence, who, in Faraday's phrase, are not biased by appearance, have no favourite hypotheses, are of no school and in doctrine have no master? In a word, by what methods of teaching can we in every subject fulfil the aim of the university, by training students to search for the truth, hold it in their hearts, discern it in their thoughts and live it in their lives?

Induction and Deduction in Thinking & Teaching.

BY MR. K. N. GUPTA, M.A., HIGHER T.D.

(Concluded from the last issue.)

TO ACQUIRE LOGICAL POWER THE CHILD SHOULD FEEL THE PROBLEM.

VALUE OF VITALISING THE SCHOOL CURRICULUM.

THE CHILD'S PREVIOUS KNOWLEDGE

Spiritual power cannot be developed by merely undergoing the ceremonies. They are useful in their proper places. In the same way logical power cannot be acquired merely by going through the forms of induction and deduction. Unless the problem is felt by the child none of them can give any real motivation. That is why Dewey is impressing the need of vitalising the school curriculum by bringing the school and society into closer contact. In genuine, lively and complete inductive and deductive processes, the conception of the real intrinsic value of the problem is more vital than any idea of the formal order of steps in the thinking process.

The mind that really penetrates into the problem will necessarily hit upon the order and nature of the steps in the thinking process pertinent to the type of

UGHT TO BE
RECOGNISED.

problem. The child's system of already organised knowledge should be recognised as a determining factor in his thinking process. His system of knowledge is vaguer and less logical than that of the adult or of the trained thinker. The teacher's standard of deduction or of induction should not be applied to the thinking of the child. What seems unsatisfactory to him is quite satisfactory from the child's point of view.

UNSATISFACTORY IN
THE LOGICAL SENSE
BUT SATISFACTORY
IN THE PSYCHO-
LOGICAL SENSE.

Every time the child is asked a reason for a statement which he makes, and is able to base it upon something else in harmony with his experiences, he has been going through a true process of deduction. His reason may be very unsatisfactory in the light of our knowledge; but if it is a reason which is consonant with his system of knowledge and experience, then the thinking process is satisfactory.

EXAMPLES.

A girl of three plucks fresh a rose flower in her garden and offers it to her uncle. When asked whose flower it is, she replies, 'It is that plant's.' The same girl, when offered a new kind of sweet fruit called *Lichi* which when peeled looks like an oval shaped potato, while tasting, is asked what it is. She replies 'It is a boiled sweet potato.' In both cases thinking process is satisfactory in the light of her own experiences.

In these days there is a very strong tendency to make the work of the lower classes less formal and less specialized. The aim of education through things and learning by doing is to build the background of first hand experiences with the things which will be more systematically studied later on in the higher classes. Experiences with number, language, geography, and nature in concrete first, technique later on, that is the guiding star. Let the child drink in, through senses under the guidance and direction of the sympathetic teacher, an abundance of concrete impressions. He will form his own ideas. Here lies the teacher's task to explicitly work them over into a more logical form later on. Concrete experiences through domestic science and manual training will facilitate the study of chemistry and physics in higher classes.

HIGHER CLASSES
WORK IS BENEFI-
CIALLY MORE FOR-
MAL AND MORE
SPECIALISED.

The ordinary inductive and deductive process of reasoning are comparatively not very difficult affairs to understand. They are commonly used correctly by all average diligent children. The difficulty in reasoning arises in the degree of abstraction and complexity of abstruse subjects. In mathematics, perhaps more

VERY DISTINCT.

than in some other subjects, the skilful teacher comes into very close contact with the actual mental processes involved in thinking as they go on in specific concrete cases.

YOUNG CHILDREN
NOT BOTHER MUCH
ABOUT THE REASON-
ING OF RULES IN
ARITHMETIC.

In actual life we find that the children do not reason to the extent we think them doing. If they know how to perform a subtraction correctly they do not worry about the 'borrowing' reasoning. They cheerfully accept the rules without giving any trouble to the tutor for its proof.

SOMETIMES VERY
SIMPLE TRUTHS ARE
BEYOND THEIR
UNDERSTANDING
TILL 6 or 7.

'To a young child the very simplest axiom is not self evident.' An ordinary child when he becomes 6 or 7 years old is really capable to grasp intellectually the truth that 'Two things which are equal to the same third thing are equal to one another.' So reasons should not be thrust on him prematurely.

HABITS PLAY A
VERY IMPORTANT
PART IN OUR LIVES
OTHERWISE LIFE
WOULD BECOME
MISERABLE.

Nearly all children work the common rules in arithmetic by habit according to the fixed system. Even adults work square root by the given method in the text book. Every body uses reason when he is required to, but he does not use it unnecessarily. When a mathematical problem is being solved we generally pay attention to the higher process of reasoning. Addition, subtraction, multiplication, division and formula are being used habitually. It is of not much use to transform mathematical reasoning at every time into a syllogism.

REASON WHEN
FACED TO DO SO.

BOTH PROCESSES
ARE NECESSARY.

The modern world is convinced that deductive logic is only part of the process by which we arrive at truth. The larger process is inductive logic. Both educative processes pervade the whole of our thinking. Either of them taken separately is no better than to walk on one leg. Thorndike says, "Most of our pupils learn arithmetic by inductive method; that the reasoning they use is the least that will serve their purpose; and that they get little profit from deductive logic." But inductive reasoning is itself incomplete without deductive reasoning which must come in the form of application to verify the hypothesis. The acquisition of skill in the ready use of principles is extremely difficult art. Good study like good eating is marked by relish and appetite for assimilation. Application enlarges the scope of principles. Moreover, child's activity demands application which is the final step.

THORNDIKE GIVES
PROMINENT PLACE
TO INDUCTION IN
ARITHMETIC.

SKILL IN THE READY
USE OF PRINCIPLES
THROUGH APPLICA-
tion.

REASONING POWER INCREASES WITH THE GROWTH OF CHILDREN. DEDUCTION NECESSARY. The interest in rigid reasoning also increases as the children grow older. Their capacity to reason in general grows with their growth. At the same time their capacity to reason in Arithmetic also grows with their practical knowledge of Arithmetic. At a proper stage they are capable to find out and comprehend under guidance the basic principles of the rules. By doing so they do not grow better fitted to perform subtraction or multiplication. When they learn the borrowing business underlying subtraction they feel a great joy in the necessary process. Their knowledge is still more confirmed and their respect for Arithmetic as a logical science is enhanced.

BERTRAND RUSSELL'S PLEASURE IN REASONING WHEN A STUDENT. Bertrand Russell says, "I remember a sense of intoxication when I first read Newton's deduction of Kepler's second law from the law of gravitation..... Rules must be learnt, but at some stage the reason for them must be made clear; if this is not done, Mathematics has a little educative value."

BOTH PROCESSES SHOULD BE USED IN TEACHING AT THEIR RESPECTIVE PSYCHOLOGICAL STAGES The wise and practical teacher should not make a clear cut choice between deduction and induction. He should use both. As a good general he should change his tactics according to the immediate need. The inductive method is his main stand-by, but he should also employ deductive explanations for those who can follow them and ask for them. A child of fourteen can understand arguments which were of no meaning and therefore burdensome to him at seven. An observant teacher can reckon the ability of a child to understand such explanations, and even without his asking they can be given.

EXAMPLE FROM GEOMETRY. In these days, geometry has been made experimental in the lower classes. For example, 'Three angles of a triangle are equal to two right angles'. Children cut out of a thin piece of card-board equilateral, isosceles, obtuse angled triangles. They already know that at any point of a straight line on one side there are two right angles. They start first by cutting out all the three angles of the equilateral triangle. They arrange them at a point of a straight line on one side of it. They find that all the three angles together are exactly arranged. In the like manner they do with other two triangles. They find inductively that in every case three angles are equal to two right angles. Later on, they can prove the same deductively as reasoned out in Euclid.

EXAMPLES FROM GEOMETRY. In the same way they can proceed inductively and deductively to arrive at the conclusion 'That the square on the hypotenuse of a right angled triangle is equal to the sum of the squares on the other two sides.'

EXAMPLE FROM ALGEBRA. Supposing they want to reach the result of $(a+b)^2$ They know multiplication and they can find out $a^2 + 2ab + b^2$ by multiplying $(a+b)(a+b)$. To make it still more clear let them draw a line representing ' $a+b$ ' on a piece of paper. They draw a square on this line and complete the figure by joining the lengths of ' a ' and ' b ' separately. They actually see that the figure is divided into four figures, two unequal squares (a^2 & b^2) and two equal rectangles ($a \times b$ & $a \times b$). Wherever possible a formula should be made concretely clear and specially to the children of an elementary school in order that they may be able to have the full grasp of the formula.

'TYPE' SUGGESTED AND DEVELOPED BY MC MURRY. In other subjects like history and geography, the 'type' as a representative object suggested by Mc Murry furnishes as a centre around which to collect the material for induction in the first four steps. The type is dominantly concrete while strikingly characteristic in its exhibition of generic qualities. By careful selection of material in which both positive and negative aspects of the problem are emphasised, the possibility of arriving at the general principle within reasonable time is assured. Still there is left a pretty wide field for the child's mind activity and initiative to arrive at conclusions through a graded series of inductive steps.

'TYPE' ILLUSTRATION IN GEOGRAPHY. Supposing the children are to learn the definition of a river. Definition means essentially the growth of a meaning out of Vagueness into definiteness. Then the Ganges, the Narbada, the Luni are the types which will give a clear idea of 'a river'. Their thought is stimulated by these somewhat known rivers. The Ganges has fertile fields in abundance along its banks and flows through plains, but the Narbada has very few fertile fields and flows through hilly tracts. These two flow throughout the year but the Luni dries in summer. By the teacher the children's thought is stimulated to observe and compare and to drop out unessentials. They reach some hypothesis and when they find it to be inadequate by application, they reconstruct it by further observation. Thus they get a clear idea of a river by their own efforts.

IN TEACHING THE FIRST PREPARATORY STAGE IS VERY IMPORTANT. But before starting actual teaching, the way for rapid and efficient assimilation of the present lesson should be prepared by reviving their past knowledge pertinent to the subject in hand. It is no good to sow the seed unless the soil is well prepared by ploughing. At the preparatory stage it is not beneficial to teach. Laying the foundation and constructing the building both can not go on together. The arrangement of other three steps depends on the capacity of the children and the nature of the lesson and the tact of the teacher. The last step of application is also very important.

EXAMPLES OF 'TYPE' FROM DIFFERENT SUBJECTS.

i. To teach the characteristics of a Rajput and a Maratha, Rana Pratap Singh and Shivaji respectively will prove good types. ii. The position of Vindhya and Satpura hills can be the centre of several important topics, for example, the causes of Rajaputana being a desert, effect on the Arabian sea monsoon, the causes of the failure of the Muhammeden rulers to rule over the Deccan portion of India. iii. The principles on which a ship is built, any typical S. S. such as 'Macedonia' will gather important points for example-saltish water as a boon to keep the ship afloat owing to its density; illustration of a toy on which it is written 'you can not pull me down'; the effects of waves and storm; rocks under water. iv. To teach the effects of a volcanic area, Japan will be a good type to bring out in an interesting manner these points; the relation of the depth of a sea and the internal heat of the earth; causes of earthquakes; the use of bamboos for building purposes.

CONCLUSION. To learn is to acquire a way of behaving. When a thing has been learned at the appropriate time, that kind of conduct can and will take place. There is an inner dynamic to learning which can be achieved according to individual's ability by employing inductive and deductive process of thinking psychologically in teaching school subjects in relation to society.

Notes

By Prof. C. A. Krishnamurthi Rau, M.A., F.R. Econ. S.,
Associate Editor.

Sir George Anderson's Address

One of the many important and instructive addresses at the last All-India Educational Conference at Delhi was the speech of Sir George Anderson, Educational Commissioner with the Government of India, reviewing our achievements and shortcomings in the field of education. It is a very accurate and, at the same time, an essentially human estimate of human efforts in a wide field with relatively limited resources. He begins by referring to the progress made in girls' education which is shown not only in larger attendance and greater number of girls' schools but in the strides that co-education is making and contributing to efficiency and economy which are

no mere slogans. Greater education of girls might raise problems of its own, but that must make us think not of giving it up but placing it on an improved basis. He is gratified to find that depressed classes do find admissions in our schools on the only criterion of reasonable cleanliness. He draws pointed attention to the anomalous luxury of having 5 separate kinds of schools in a single place—Board schools for boys, for girls, a patasala, a makteb and a school for depressed classes. The atmosphere in these would be narrow and did not provide the wider life or the bracing comradeship with boys of other communities which larger common schools would possess.

His observation regarding rural education is particularly valuable. Rural schools should harmonise their work to rural environments, in which case the process of sucking up the life of the villages would stop, thus relieving the congestion in the colleges. He felt glad that the schools were now brighter places and that games are now encouraged. The Boy Scouts and Girl Guides would make any one optimistic about the future of India.

Sir George Anderson is not the man to present "an all-round improvement and great strides of progress" as many of our School and College Day Celebrations would make out in their annual reports. While he has mentioned some of our achievements, he cannot be blind to the existence of "some causes for disquietude". The foremost of them is the lack of the "gift to use our gifts". The results of primary education are disappointing in spite of the great expenditure of money and energy which has not lessened to any appreciable extent the appalling illiteracy in the land. One half of the number of candidates appearing for the S. S. L. C. are unsuccessful; many in the higher forms of High Schools are unfit to sit for the Public Examination. The presence of a large number in the University classes not fitted to benefit by University teaching produces congestion; and Unemployment is a problem by itself. The proposal to stiffen the standards of examinations would, according to him, only accentuate the wastage prolonging the unsuccessful labours of the unfit or denying educational facilities to a large number.

The remedy lies, according to the Punjab University Commission, not in mere university reform but in a drastic reconstruction of the school system directing students at an earlier stage to occupations or vocational training in separate institutions, thus removing the present assumption that the goal of every student is the University. Separate stages of education with well-defined objectives realised at the end of each particular stage would be the solution.

The proposals made by Sir George Anderson are very practical and beneficial. He would like the Primary stage to extend to five years with one teacher for each class, well trained. He would like to have inspection both critical and helpful. Rural education should serve rural requirements. Life can be entered at this stage.

Secondary education should give a sound general education untrammelled by university requirements, to the age of 15. Here three lines must branch out—one leading to absorptions in humbler occupations of life; another to receive vocational training after a suitable general education; the third to lead to the University. Such a scheme would leave the universities free to raise their standard of teaching and examination. Sir George Anderson pleads for greater freedom for schools and colleges, suggesting a three year course for the degree and the abolition of the system of biennial examinations which are a bug-bear. Every one of the suggestions made deserves the closest attention of all lovers of education and adoption without the delay which characterises most of our actions or reform lest the very proposals become belated if not obsolete owing to the creation of ever new problems resulting from the stress of modern life and requiring quite a different handling.

Education Report — C. P. & Berar.

The Report on Education in the Central Provinces and Berar for the year ending 31st March, 1934, has just been received, and extending over the usual number of pages contains the usual features of a report of this kind. But certain parts of this valuable document deserve more than passing attention.

In the first place, there was, during the year under review, an increase in the number of educational institutions as well as in the number of pupils. Expansion was most noticeable in the Primary stage and wastage here was much less than in other provinces though it must continue to demand the anxious attention of all concerned. The percentage of Government contribution rose by 0.53 per cent but from other sources declined by 1.63 per cent. The average cost of educating a pupil rose from Rs. 21-6-9 to Rs. 21-9-10. Judged from the increase of figures, it must be set down as an indication of progress.

Under University education, the points to be noted are an increase in examination fees by eight annas, the provision of instruction and examination through the medium of vernacular as an alternative to English at the discretion of the colleges and the exemption of the depressed or aboriginal classes from payment of examination fees till 1940. The substitution of a scheme of broadcasting for the one of Extension Lectures as adopted by the Allahabad University is under consideration. This is a device that is full of possibilities within limits. The Laxminarayan Bequest is bearing fruit in details as worked out by a select committee. A foreign scholarship for training in oil technology for three years has been provided and a University journal is to be published annually. The Government contributed Rs. 42,500 towards University expenditure. A particular feature in college life and discipline to be widely imitated in these days of socials and tea-parties given by students and teachers is the example set by students of Science and Morris Colleges who dropped the expensive item of social gathering dinner to aid the C. P. Flood Relief fund. There are organised societies for village uplift work among them and night schools for adults in Hindi and Marathi. Where general information on present day problems is given, a steady growth in the spirit of research is recorded. Certain colleges are struggling owing to dependence on fee income alone. Here is an excellent opportunity for philanthropists to bring into existence endowment funds. The average cost of educating a student was Rs. 265—14—0.

Coming to Secondary education, the total cost of educating a student rose from Rs. 55—4—8 to Rs. 55—15—6. There is inadequacy of building, equipment of apparatus and trained teachers. The supply of the latter takes time owing to restriction of admissions. Manual training is given a place in the High School Certificate Examination. The nearly 80% of the private candidates failing in the Public Examination is accounted for by their having attended inefficient coaching classes and unrecognised schools.

A decrease in the number of Vernacular Middle schools is recorded as being due to economic depression. The Hostels attached to these in most cases "lack in life and cheer". The teaching of English in these schools is said to form depressing reading, the teachers being untrained and feeling little enthusiasm for their work.

The teaching of agriculture in these schools, however, is satisfactory and created a demand for it. But in certain cases, District Councils were unable to maintain a small plot and in one instance, no substitute could be found when a teacher happened to fall ill. Village libraries seem to have a promising future.

An experimental syllabus adopted in the Mission Vernacular Middle school seeks to create a vocational bias along with subjects of liberal education. Carpentry, blacksmithy, tailoring, agriculture and masonry are the subjects taught, in one of which specialisation has got to be done in the final year.

The report on Primary education is interesting for the observations on the use of compulsion. Evidently it has not worked satisfactorily owing to the indifference, according to the Inspectors of schools, of the attendance authorities who do not enforce the provisions of the Act. But the Quinquennial Report of the Government of India has characterised the average enrolment of Primary Schools in the Province as "very creditable".

The remarks on the pay of teachers is melancholy reading. There are teachers getting in certain schools "less than the school peon". One Deputy Inspector rightly remarks,

"the dignity of the profession is thus lowered; such a master can not do anything like real teaching". Coming to the "transfer of teachers", which is so peculiar to this province, one has, indeed, to wonder why it is so chronic there. The restriction by Government to 25% regarding this evil is even more amusing, since the propensity seems to claim a statutory recognition. Transfers on *reasonable* grounds cannot be fixed at a percentage being beyond human calculation.

Corresponding to experiments in individual methods of teaching to which we in this province are accustomed, an experiment is being carried on in the C. P. in the "sentence method" of teaching Hindi and "standardising hand-writing". Attention to handwriting was given up more than two decades ago in our Presidency when Grammar and Translation, followed later by Composition, made an almost simultaneous exit. Is C. P. old-fashioned or instinctively clinging to old though right values?

The disinterested advice of Deputy Inspectors of Schools has been beneficial where local bodies have acted up to it. It is pointed out that this may be increasingly followed. The consciousness has not yet dawned that the levying of special school rates for augmenting income is good for the people. Possible unpopularity makes the Councils hesitant in levying the rates.

In the education of girls, the same marked increase is seen in all stages but guardians are yet reluctant to send their girls to schools. The remarks on the tenure and efficiency of woman's services in girls' schools form interesting reading. "They, after leaving the Normal Schools, take the Rs. 15 posts, and after a year or so start quarrelling, get slack in their work, believe they are badly treated and work suffers in consequence. Some have not received any increment for eight years." Again, "the type of teacher improves every year at any rate so far as outward appearances are concerned. Breadth of mind and reception of new ideas there are; but the old-fashioned teacher developed a strength of character and singleness of purpose that is lacking in the modern mistress." The remarks are by the Inspectress of Schools, Jubbulpore.

Among Mohammadans, we are told no girl has reached the High School or Collegiate stage. The view of the Inspector of Schools is that consolidation rather than expansion is more necessary among this class. Special schools for Depressed classes are felt to be hardly necessary and the need for such has almost disappeared.

A Training School experiment carried out in Berar is interesting. Those who have passed the High School Certificate Examination are admitted directly to the 2nd year course, resulting in economy in the payment of stipends and a greater supply of teachers; and only those are selected who come from villages and who are likely to settle down there and become centres of village uplift activities. It is noteworthy that agricultural education given in Vernacular Middle Schools is popular alike with the sons of landlords and the cultivators. Industrial schools impart instruction in carpentry, smithy and boot-making. The mining class which had been closed in 1928 was revived in the year under review. There is some frank talk regarding handi-crafts by the Boy Scout Association whose report says that the teaching of handi-crafts is only educational in view and the economic aspect is only secondary. "It will never reach the stage of a village industry or even of a cottage industry." This is certainly thought-provoking. So, we may conclude as we began that the report has much in it that will set the mind thinking in a variety of directions.

Reviews

1. Simple Lessons in Practical Hygiene: For Standard III: By M. S. Subramanian, Asst., Hindu Secondary School, Viravanallur. Price As. 3.

Elementary rules of health in simple Tamil are taught here to little children. Printed in bold type, the matter is presented in 14 lessons, illustrated by apt pictures. Young readers will easily grasp the principles of personal hygiene set out in homely style in these pages. The book carries with it hearty appreciations of eminent Doctors, which should be sufficient recommendation to teachers to give their support to it. The publication has been approved by the Text-Book Committee.

2. A History of India: in Tamil. For Form IV: By G. V. Rama Ayyar, B.A., L.T., Town High School, Kumbakonam: Published by the Popular Publishing House, Kumbakonam. Price: As. 10.

This new publication of the enterprising author conforms to the latest syllabus of the Department. The topics are all presented in clear Tamil, illustrated by maps and pictures. A few of the maps are coloured. Useful appendices have been added at the end. Pupils could easily cover the book in the year, obtaining a clear grasp of the essentials of the subject. The requirements of the class have been kept in view. Schools adopting Tamil medium will find the book useful.

3. History of England: By V. Rajagopala Ayyar, M.A., L.T., Headmaster, B. H. School, Erode: Published by V. S. Venkataraman & Co., Kumbakonam. Price: Re. 1/—

Pupils of the Fourth Form will find this book useful for learning the story of England and the growth of the English nation. Conforming to the syllabus and written in easy Tamil devoid of pedantry, the matter makes interesting reading. Connection between Indian and English History has been shown where necessary, and pains have been taken to bring home to pupils fundamental notions of History and Civics. The author has adopted Tamil equivalents published by the Government and the corresponding English terms have been given side by side in brackets. Useful maps and pictures have been included. Appendices dealing briefly with the growth of the Parliament and the English constitution and some important documents have been added at the end, which will be of value to pupils. The publication appears neat and handy, and will prove a good text-book for schools teaching the subject in Tamil.

4. History of India: (in English): By K. Vedanta Desikan, B.A., L.T. Published by P. R. Rama Ayyar & Co., Madras. Price: As. 10.

This is a worthy attempt at presenting a short, readable and interesting account of Indian History from the beginnings of British power in our land. Written in simple English to be within the easy comprehension of the pupils of Form IV, the book lends itself to the actual needs of the class, giving scope to teachers to amplify portions to suit local conditions. The treatment is mostly topical. Maps and pictures have been neatly done and the execution of the book is good. Pupils who use the publication will have a clear grasp of the subject. A list of the chief events and their dates is given at the end. We commend this to the notice of all teachers of History.

5. Children's Everyday Science: For Form I: By M. S. Subramanian, Asst., Hindu Secondary School, Viravanallur. Price: As. 12.

The author has been widely known for his Tamil Science books for the lower forms. The present one under review according to the revised syllabus is a praiseworthy performance. The contents are full of life and reveal the

confident and comprehensive touch of a teacher actually handling the subject in the classroom. A dispassionate reader will not fail to observe the charming flowing Tamil the author has been gifted with throughout. The book comprises fifty six lessons corresponding to the fifty six topics of the syllabus. It is provided with rare photographs and pictures in profusion obtained evidently with much trouble and expense. The development of each topic is simple and natural, and the matter reads like a novel of absorbing interest. Lesson 9 on the life history of man will be found an instance in point. Important ideas and terms have been printed in bold type to arrest the young minds. The chart showing the twenty seven constellations of stars is highly instructive along with the explanation. Printed in the new 13 pt. Tamil types and neatly got up, the publication presents a very attractive appearance and deserves to be introduced to the pupils for whom it is intended.

6. Rapid Reading Series: Reader VI: By Llewelyn Tipping, M.A. Published by Macmillan & Co., Ltd. Price: Re. 1/— . Pages 246.

This is the last of the 'Rapid Reading Series' written by the author. We had had occasion to review its companions and speak of their plan and merits. The present volume follows the same principles. The lessons are progressive and built upon the vocabulary acquired in previous lessons. About 1000 new words have been introduced in this book. Each new word or phrase is in bold print and repeated in different contexts to make it impressive. Reading has been emphasised. Revision lessons appear at intervals, though somewhat fewer. The brief notes at the end of each lesson including those on pronunciation will be found useful. Shorter, simpler poems could have been substituted for 'Mazeppa', with advantage to pupils. Now that new type questions have become popular, an attempt could have been made in this direction also. Some of the prose pieces like the 'Cinema', the 'Newspaper Industry' and the 'Iron and Steel Industry of India' are enlightening. A few apt pictures add to the attractiveness of the book.

7. Decisive British Battles: with introduction, notes, diagrams, etc. By N. B. McKellar, M.A., Published by Macmillan & Co., Ltd. Price: 1 sh. 9 d.

This is a selection from the well-known "*Fifteen Decisive British Battles of the World*" by Sir Edward S. Creasy who as professor of Ancient and Modern History in London University delivered learned lectures on this subject. It treats of the battles of Hastings, Orleans, the Armada, Blenheim, Waterloo and Saratoga. The author has got into the heart of the conflict and depicted the crisis of each of these vital issues, without entering into much of the preliminary and incidental matter. The book is a piece of literature and forms No. 134 of the 'English Literature Series'. There are twelve diagrams and useful notes and questions at the end.

8. General Science: For Form IV in English: By T. Doraiswami Pillai, B.A., L.T., Published by T. V. Chellappa Sastri & Sons, Madras. Price: As. 14.

This is another welcome addition to the list of Science books for Form IV according to the revised syllabus. The author with his experience of writing similar books has clearly understood the scope of the syllabus and the needs of the pupils. There are 68 lessons, each dealing with a topic, with necessary illustrations. The matter of each lesson is analysed into clear-cut items written in simple language capable of being easily understood. The utilitarian and practical aspect of each topic has been emphasised before its theory is explained. Teachers and pupils will find the book useful as a text. It is neatly got up.

9. The Continent of Asia: By Lionel W. Lyde: Published by Macmillan & Co., Ltd. Price: 16 sh.

This volume is a detailed and exhaustive treatment of the geography of Asia. As suggested by the title, the author has conceived vividly the continentality of Asia in its various aspects, such as the immensity of its extent, the stupendousness of its physical features, the extreme nature of its climate, the variety of its flora and fauna, and the historical complexity of its various parts. In this respect it marks a clear and original departure from the traditional political conception of geography. The author's preface shows that this book is the result of twenty years of research work, careful thinking and organisation. True to the modern conception of geography, the human element is given sufficient prominence throughout the book. For example the historical approach given to the geography of China and Japan is unique and extremely interesting. With its innumerable illustrative diagrams, rarely to be found in any other treatise on geography, and its wealth of comparative statistical references, the volume is a veritable mine of information. It is sure to serve a very useful purpose in the hands of masters handling the subject in colleges and high schools where geography is offered as an optional subject.

D. Manuel, B. A., L. T.

10. New India English Primer I, II and Reader I: By E. E. Ward, M.A. (Cantab), Dip. in Edn. (Cantab), and A. M. Ward, M.A., (Cantab): Published by the Teachers' Publishing House, Coral Merchant St., Madras.

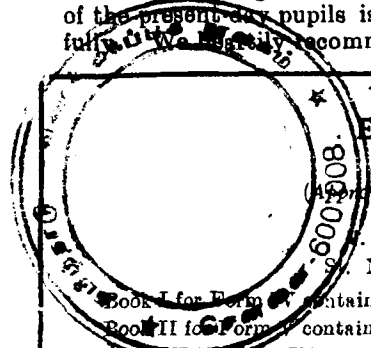
This is a series of English Readers designed to suit Indian conditions, treated on original lines.

In Primer I, the scheme of lessons has been arranged with a view to ensuring correct pronunciation by pupils. This, of course, pre-supposes a certain patience and ability on the part of the teacher to pronounce his words correctly. It is expected that an English atmosphere should prevail in the class, the vernacular being used only when making necessary explanations. Important words learnt in each lesson are in bold print and grouped at the end for recapitulation.

Primer II aims at not only teaching correct pronunciation but also enriching pupils' vocabulary and knowledge of formal grammar. The lessons on the silent consonants the tenses, the degrees of comparison, to take a few, show a resourcefulness on the part of the author and his grasp of the difficulties of Indian children in mastering a foreign language. The exercises at the end of each lesson will tend to impress the principles learnt.

Reader I provides a suitable medium for the acquisition of vocabulary and ideas and also the learning of the forms and constructions of the language. The particular grammatical principle on which each lesson is based is stated in a short note at the end. The subject matter is varied and interesting. Conversation also is emphasised. A few nursery rhymes have been included and the method of teaching them is indicated.

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It is with a view to prove to the public the potency and marvellous result of the system of Ayurvedic pharmacopoeia and thereby make them appreciate its value, that we have quoted the lowest price in the market. Besides, we could convince patients of the economic value of adopting the holy and antique-oriental system of treatment for which we have special facilities in the collection of herbacious medicines: And hence it is possible to sell medicines at such low rates.

Medicines are despatched by V. P. system on application.

	Rs. As.		Rs. As.
Asoko Ghrita per lb.	3 8	Adhayaishtha per 24 oz.	
Indu Kanta Gritha "	3 0	Bottle	1 0
Kalsana Gritha "	3 0	Dasamoolarishta "	2 0
Saraswatha Gritha "	4 0	Drakshasava "	1 4
Sukumara Gritha "	5 0	Lohasava "	1 0
Schagaladya Gritha "	7 8	Kasthuryadi Pills per 100	3 0
Thithaka Gritha "	3 0	Nasikachurna Vataka per Doz.	0 6
Agasthya Rasayana "	0 12	Virechana Pills per Doz.	0 6
Ajamansa Rasayana "	2 0	Rasa Bhasma per Tola.	2 0
Chyavana Prasa "	1 8	Asana Vilvadi Thaila 24 oz.	1 8
Kankayana Modaka "	3 0	Pinda Thaila (ointment)	1 8
Kasthuryadi Leha "	10 0	Balaguluchyadi Thaila "	1 8
Mahat Chinchadi Leha "	2 0	Balaswagandhadi Thaila "	2 8
Maha Vilvadi Leha "	2 0	Sahacharadi Thaila "	2 8
Madhusnuhi Rasayana "	3 0	Dhanwantari Thaila medicated	
Musalyadi Rasayana "	7 8	101 times per oz. "	3 0
Narasimha Rasayana "	3 0	Ksheerabala Thaila medicated	
Patavaladi Leha "	1 0	101 times per oz. "	2 8

For further Particulars write to:-

Telegrams:-

"SWARAJYA"
ALWAYE.

THE MANAGER,
SWARAJYA PHARMACY,
ALWAYE, (Travancore.)