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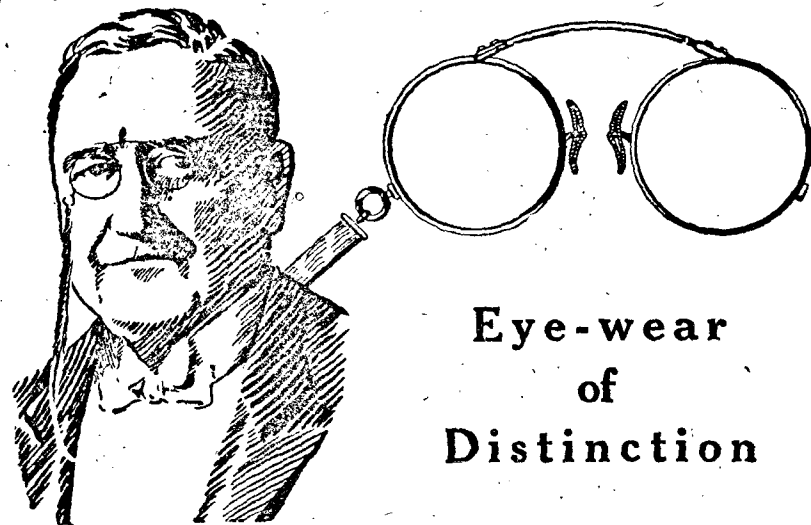
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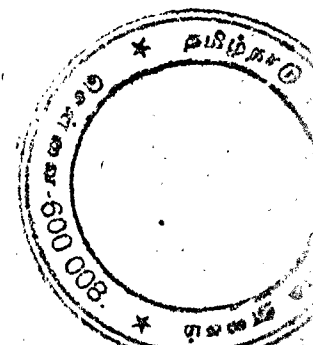
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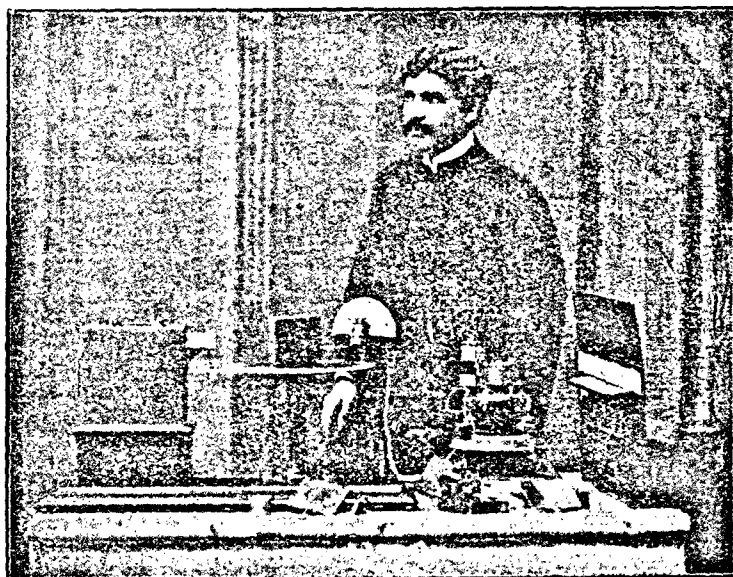
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UNIVERSITY OF PUNJAB—CON- VOCATION ADDRESS

BY

Sir JAGADIS CHUNDER BOSE, Kt.,

M.A., D.Sc., LL.D., F.R.S., C.S.I., C.I.E.,

Founder and Director, Bose Institute, Calcutta.

WHEN I received your kind invitation, I regarded it as a privilege to come and address the young students going out in life's great adventure. For the trust you have reposed on me, I can do nothing less than place before you the highest I know. My appeal will be not to your weakness, but to your strength; I will not set before you what is easy but use all compulsion for your choice of the most difficult. The present crisis in human history is a call for all the idealism and strength of youth for ensuring the continuity and permanence of civilisation. You are seekers after truth; I will tell you of the

discipline through which you must pass for the discovery of truth. In this, the heritage of the past will help you; but you are not to be a mere slave of the past but the true inheritors of its wisdom.

MAN, ARBITER OF HIS DESTINY.

I will not speak of anything that is impossible of attainment or of things that have been accomplished in other countries, but of what can be done, and has been done in India. You would expect me to tell you how discoveries are made; you would also wish to know what it was that led me from investigations of the action of forces on inorganic matter, to the study of the response of living beings.

In regard to the pursuit of research, a complaint is often made that there is no sympathetic atmosphere, and that all activities are paralysed by adverse circumstances. It is

not for man to complain of circumstances but bravely to accept, to confront and dominate over them. You have not forgotten the account given in our great epic, the Mahabharata, of the tournament that was held before the court at Hastinapura more than twenty centuries ago. Karna, the reputed son of a charioteer, had challenged the supremacy of Prince Arjuna. To this challenge Arjuna had returned a scornful answer: a prince could not cross swords with one who could claim no nobility of descent. "I am my own ancestor," replied Karna, "and my deeds shall win the patent of nobility." This is perhaps the earliest assertion of the right of man to choose and determine his own destiny. If you make yourself entirely dependent on others, you will merely lead a parasitic life. Strength comes only out of struggle and it is by your own efforts that you will win that for which you have set out. In the realm of knowledge also, some of the greatest contributions have been made by those who undismayed by difficulties had persisted in spite of repeated failures.

FAILURE AND SUCCESS.

It is no easy life that lies before a scientific investigator. There is to be for him no life of ease but one of unending struggle. He has to cast his life as an offering, regarding gain or loss, success or failure, as one. But the lure that draws a heroic soul is not success which can be easily gained but defeat and tribulation in the pursuit of the unattainable. Where lies the secret of that potency which makes certain efforts apparently doomed to failure rise renewed from beneath the smouldering ashes? When we look deeper we shall find that as certain as is the sequence of cause and effect,

so inevitable must be the sequence of failure and success. We shall find that failure must be the antecedent power to lie dormant for the long subsequent dynamic expression of that we call success.

CONDITIONS FOR SCIENTIFIC DISCOVERY.

Several conditions are however essential for advancing the bounds of knowledge. The first is the possession of a great imaginative faculty; for the real laboratory is one's own mind where every experiment has at first to be visualised in all its details. Aimless experimentation without clear vision is futile. It had been thought that no great contribution to exact knowledge could be made in India, since the Indian temperament was merely speculative and dominated by exuberant imagination. But in India, this burning imagination which can extort new order out of a mass of apparently contradictory facts, can also be held in check by the habit of meditation. If one wishes to find the inner secret of the life of the tree, he has to become one with the tree, and feel the beatings of its throbbing life. This is only the preliminary step; he has next to compare his thoughts with facts to be discovered by following the surer path of rigid scientific demonstration. Imagination, if not thus restrained, will inevitably lead to wildest speculation, which is subversive of all intellectual sanity. What could be more enchanting than to create, in imagination, a mechanical horse which when pressed flies through space! Without facts to guide it, the mind loses its normal balance and succumbs at last, when facts and phantoms become indistinguishable from each other. Our greatest thinkers in the past never claimed infallibility but stood for freedom of thought.

They boldly declared that even the Vedas are to be rejected if they did not conform with truth. To them nothing was extra-physical, but merely mysterious because of the hitherto unascertained cause to be some day discovered by persistent effort. This method of pursuit of knowledge by direct observation had been pursued in your ancient University of Taxila so far back as twenty-five centuries ago, when Jivaka was asked by his preceptor to investigate the medicinal properties of all plants in the neighbourhood. It was action and not mysticism that was glorified in heroic India of the past, and the greatest illumination came even in the field of battle.

POWER OF CONCENTRATION.

The second condition for the discovery of truth is a single-minded pursuit of the object. Those whose minds rush hither and thither, those who hunger for public applause, by them the goal will never be reached. "Shoot that bird on the tree," orders the master to test his disciple; "Do you see the tree and the bird?" "No my master, I see nothing but the eye of the bird at which my aim is centred." The true Sanyasin spirit may be yours, which can pursue the quest endlessly while life remains, never for a moment losing sight of the object, never for a moment let it be obscured by any terrestrial temptation.

And finally, the two other conditions for the successful prosecution of research are the facilities of a well-equipped laboratory, and the invention and construction of new instruments of extreme delicacy and precision. No laboratory, worthy of the name, existed when my investigations were commenced more than thirty years ago. As to the construction of new apparatus, the Indian workmen were

regarded as hopelessly deficient in constructive skill. These difficulties I accepted as a challenge to test my strength. I soon came to realise that there is no difficulty which cannot ultimately be overcome by the power and persistence of will. The closed doors then opened and the seemingly impossible became fully attainable. And it came to pass that even the common workmen were trained to become the finest of mechanicians. They were able to construct apparatus of such marvellous delicacy and sensitiveness that it was found impossible to duplicate them in any other part of the world. India is therefore called upon to supply the necessary instruments for the prosecution of many new lines of investigation initiated in my Institute.

It is more than thirty years ago that some of the most difficult problems on Electric Waves found their solution in my laboratory, and the results were received with much interest and appreciation in all scientific centres. The success of these investigations was greatly due to the invention of my galena receiver which had since been found to be the most sensitive for the reception of wireless messages from the longest distance. You will realise how results of patient investigation carried out in the seclusion of a laboratory, lead to practical applications of most far-reaching consequence.

THE WORLD NOT A CHAOS BUT A COSMOS.

How chaotic appear the happenings in Nature! Science is confronted with no greater difficulty than the chasm which appears to exist between life and non-life, and also between the two types of life, plant and animal. Could any continuity be discovered amidst these diversities? The earth was once a

molten mass in which no life, as we understand it, could have existed. How did Life emerge out of Non-Life? It has been suggested that the seed of life was carried to earth by cosmic dust from other worlds; but that would merely transfer the difficulty backwards.

Is Nature a cosmos in which the human mind is some day to realise the uniform sequence of order and law? India through her habit of mind is peculiarly fitted to realise in the phenomenal world an underlying unity amidst a bewildering diversity. The first glimpse of this continuity I caught when working with a wireless receiver. Its response was found to become feebler and feebler till it died away, and the records showed an astonishing similarity with the fatigue-curve of our own muscle. When a period of rest was given, the response became vigorous once more, to exhibit decline under continuous stimulation. Thinking that rest for several days would make it still more sensitive, I was surprised to find that it had become passive from prolonged idleness; the lethargy could then be removed only by stirring it up by a mechanical or an electric shock. Certain chemical stimulants made the receiver extraordinarily sensitive, while poisons killed all power of response. I was amazed to find boundary lines vanishing and points of contact emerge between the realms of the living and non-living. Inorganic substance was found to be anything but inert, for it was athrill under the action of multitudinous forces that played on it. Matter had thus within itself the promise and potency of life.

THE LIFE OF PLANTS.

Between inorganic matter at one extreme and animal life at the other, there is spread

the vast expanse of vegetable life. All authorities deny that there could be any essential similarity in the life-mechanism of the plant seemingly inert and irresponsible, and that of the restless animal, with its reflex movements and pulsating organs.

There are some, on the other hand, who without any proof, but through mere sentimentality attribute to plants even human qualities. But these imaginings cannot in any way advance exact knowledge. The similarity, if any, between plant and animal-life can only be established by demonstrating the unity of physiological mechanism in all life. The imperfection of our senses is, however, a serious barrier in the advance of knowledge. We can hear but little. Many sound notes are inaudible to us. We see still less; amongst the innumerable octaves of light, there is only one octave with power to excite the human eye. In reality, we stand in the midst of a luminous ocean, almost blind! The little we can see is as nothing compared with the vastness of that which we cannot. But out of the very imperfection of his senses, man has built himself a raft of thought for making daring adventures in seas unknown. The real difficulty that thwarts us at every step arises from the fact that the interplay of life-action is taking place in the dark profundities of the interior of the tree, which our eyes cannot fathom.

PLANT-AUTOGRAPH.

The plant is dumb and we have to discover some compulsive force which would make it give some answering signal; instruments have then to be invented for the automatic conversion of these signals into an intelligent script; and last of all we have ourselves to learn the nature of the hieroglyphic. It can

easily be imagined how extraordinarily delicate these instruments must be to reveal to us the secrets of the unvoiced and hidden life. For this, it is necessary to get access to the smallest unit of life, the "life atom," and record its throbbing pulsation. When microscopic vision fails, we have still to follow the invisible. Every layer in the hidden interior of the tree has to be explored by means of the Electric Probe invented for the purpose. With the help of these and numerous other instruments it had been possible to show that both the animal and the plant exhibit similar contractile twitch when struck, the motile mechanism in both being essentially similar. A very elaborate nervous system in plants has been discovered. Within the placid exterior of the tree throbbing tissues have been found, the pulsation of which is the heart-beat. At the supreme crisis of death, a violent spasm occurs in the plant, which corresponds with the death-throe of the animal. The barriers which separated kindred phenomena are thrown down, and we realise that vast unity in which all living organisms, from the simplest plant to the highest animal, are linked together and made one.

PARABLE OF THE TREE.

Since all life is one, all its diverse manifestations must run on parallel lines. Investigations of the simpler life of plants thus hold out the possibility of explaining the most complex and intricate reaction of animal life. This expectation has been fully justified, for several unexpected phenomena found in the plant have led to the discovery of corresponding phenomena even in human life. Very surprising also are the identical effects of drugs, of stimulants and of poisons on the

two types of life. A particular poison, by itself fatal, has been found to act as an antidote to another poison. These results are regarded by leading physicians as of signal importance in the advance of the Science of Medicine.

Very significant results are discovered in regard to the activity of growth. The special difficulty encountered in this investigation was from the excessively slow rate of plant-growth, which is a thousand times slower than even the slow pace of the snail. It was therefore necessary to invent a super-magnifying instrument which would visualise growth and measure its rate. The magnification of 50 to 100 million times produced by my Magnetic Crescograph surpasses the wildest flight of imagination. Our mind cannot grasp a magnification so stupendous; we may however obtain some concrete idea of it by finding out what the speed of the proverbial snail becomes when magnified by the Magnetic Crescograph. For this enhanced speed there is no parallel even in modern gunnery, for the snail far outstrips the shot from the most powerful cannon. We have to turn to cosmic events for a closer parallel. A point on the equator whirls round at an incredible speed; but the crescographic snail may well look down on the sluggish earth, for by the time the earth makes one revolution, the snail would have gone round four hundred times.

RENEWAL OF GROWTH.

It is only through appliances of such extraordinary sensitiveness that the laws of growth were discovered, and electrical and chemical stimulants found for enhancing the rate of growth of plants, a vital problem on which the food-supply of the world depends.

The question of dose is of fundamental importance; minute traces of certain substances, not exceeding the critical dose, are found to be extraordinarily effective in the acceleration of growth.

In cases where growth had normally ended, it was often possible to renew it by the action of appropriate stimuli. Here at any rate is some support for the ever-recurrent dream of rejuvenescence. Even in our own experience we find that while stimulus of hope and persistent optimism keep one ever young, pessimism and cynicism bring about premature senility and decadence.

AUTOMATISM.

A puzzling problem in the study of life is the phenomenon of spontaneity or of automatism. It would seem, for instance, that the heart beats of its own accord. Thought and inspiration appear to come spontaneously. Researches on plants throw much light on this very obscure subject. I have been able to discover automatic pulsations even in plants, and trace the laws of their genesis. Investigations clearly show that, strictly speaking, nothing is self-originated. A living organism has, however, the power of slowly accumulating within itself the energies absorbed from outside and holding it latent. It is this stored energy that bubbles over in apparent spontaneity. In order to keep the living machine at work, in all those wonderful and complex ways of which it is capable—from mechanical movement, through throbbing sensation to spontaneous thought—something more than mechanical perfection is necessary. When the organism is kept isolated from its surroundings, it soon ceases its functional activity. In order to maintain it in fulness of life and spontaneous overflow, the inpouring of energy from without is essential. It must therefore stand in constant communion with all the forces of the universe about it.

Is there then anything which I can exclusively claim as mine, which is not also thine? Are we not wholly dependent on each other, and also on the thought and wisdom of the past? How terrible life would be in narrow isolation! Let us therefore learn to think not from the stand-point of "I" but of "We," and uproot that ignorance which regards anything as gain which is to be purchased at others' loss. For infinitely more potent than competition are mutual help and co-operation in the scheme of life.

THE COMMONWEALTH.

The tree may be likened to a State consisting of countless living units, different groups of which are to subserve definite functions for the good of the community. It derives its strength from the soil which nourishes its body. The multitudinous shocks of the environment stir it up from that lethargy which is akin to death. The efflorescence of life is the supreme gift of place and its associations. Many waves of disaster had passed over the tree; they had never been able to overpower it, but merely served to waken up all its nascent powers. The effete and the decaying had been cast off, and changing times had called forth its powers of readjustment.

AN ORGANISED UNITY.

The tree is not a mere congeries of unrelated parts, but is an organised unity. In our world organism, a shock from the most distant corner reaches all the rest and organises them anew. In the life of the tree, there must be means for the conduction of all external stimulation to energise the living cells in the interior, without which they would die of inanition. There must also be mutual adjustment and mutual control among widely separated organs.

All this is secured by the connecting links of the nervous system, which I discovered, and by which every leaf, every twig and every branch of the tree is put in intimate connection with each other. Any shock to any of its members is perceived by the tree as a whole. Very significant results have been obtained in regard to the growth or decay of nervous activity through use and disuse. A plant carefully protected under glass from all outside shocks looks sleek, but in reality is flabby and defective, since its highest nervous function is in a state of atrophy. It is now interesting to watch the gradual growth of normal function under repeated blows. The nerves which had hitherto ceased to function, now become fully efficient. It is not cotton-wool protection but shock of adversity that evolves true manhood. The nerve unstimulated lies inert; it becomes energised only by the action of stimulus. Every moment of our present is enriched by the store of latent memories, which is nothing but the imprint of previous stimulation we call experience. Stimulation by thought actually increases our power of thought, and it is by the accumulation of such stimuli that nervous matter ultimately becomes automatic, a phase which is seen in many steps from the birth of thought to inspiration.

CO-ORDINATION.

Perhaps the most unexpected mechanism in the plant, which I have recently discovered, is that for the co-ordination of various organs for the advantage of the community. Different groups of living cells have thus taken upon themselves specific duties, certain peripheral organs being specialised for perception of external changes which may either be beneficial or inimical to life. A mere

perception would be of little use unless a message was sent and effective action taken without the least delay. I find that an ingoing or sensory impulse is actually sent to certain centres in the interior, which may be regarded as executive in their function. The most astonishing thing now occurs in response to the message. The energy that had been conserved, becomes discharged with almost explosive intensity and rapidity. An outgoing or motor impulse is thus generated for the readjustment of the outlying organs to meet the crisis. There must always be a ceaseless alertness and an immediate action in response to the general need. For any disharmony means the destruction of the commonwealth.

HIGHER EVOLUTION.

A continuity is thus established between the simplest and the most complex type of life, an evolution from rudimentary beginnings towards perfection. There can be no humiliation in our kinship with the lowest of the low. Rather it is a matter of pride for man to have risen through ceaseless efforts from a mass of formless jelly to his present state. In this ascent, the most important factor has been the ever-growing elaboration of the nervous function. And man by opening himself at will to new areas of stimulation is thereby determining his own higher evolution.

The thrill in matter, the throb of life, the pulse of growth, the impulse coursing through the nerve and the resulting sensation, how diverse are these and yet how unified! How strange it is that the tremor of excitation in nervous matter should not merely be transmitted, but transmuted and reflected like the image on a mirror, from a different plane of life, in sensation and in affection, in thought and in

emotion. Of these which is more real, the material body, or the image which is independent of it? Which of these is undecaying and which is beyond the reach of death?

It was a woman in the Vedic times, who when asked to take her choice of the wealth that would be hers for the asking, inquired whether that would win for her deathlessness. Many a nation had risen in the past and won the empire of the world. A few buried fragments are all that remain as memorials of the great dynasties that wielded the temporal

power. There is however, another element which finds its incarnation in matter yet transcends its transmutation and apparent destruction; that is the burning flame born of thought which has been handed down through fleeting generations. Not in matter, but in thought, not in possessions but in ideals, is to be found the seed of immortality. It is not through material acquisition but through active service and through generous diffusion of ideas and ideals that the true empire of humanity will be established.

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INTERMEDIATE EDUCATION IN THE UNITED PROVINCES

By PROF. P. SESHADRI, M. A.,

The Benares Hindu University.

[T must be confessed that the recent Educational reform in the United Provinces of Agra and Oudh, in the shape of the constitution of an Intermediate Board and the separation of the Intermediate classes from the Universities, has not been much of a success. This must not be understood, at the same time, as any expression of disapproval of the essential idea underlying the reform, for the want of success has been due largely as will be shown below to the failure of the authorities concerned to realise the aims with which the reform was effected. Financial limitations, and to some extent, the absence of continued statesmanly vision are responsible for the circumstance that the hopes with which the separation of the Intermediate Colleges was made have not materialised and there is already a growing volume of discontent in the United Provinces over the poor results of the scheme.

The mere separation of the Intermediate classes from the higher stages of instruction in the University cannot obviously be a great achievement in itself. When the members of the Calcutta University Commission recommended such a step, they contemplated the simultaneous introduction of many reforms tending to the improvement of educational conditions, which were to be facilitated by the new arrangement. The students of the Intermediate classes were to receive special attention and be equipped better for admission into Universities; the courses were to be enriched by the addition of a number of new subjects resulting in the twofold work of the

Intermediate Colleges, to prepare the students for higher work at the University and to offer such preliminary training, as may be possible to equip students to some of the professions; the Universities were to be freed from the burden of Intermediate work; the work of schools was to be raised by association with Intermediate education and, generally, a new class of institutions was to be created which may not compare unfavourably with the great Public Schools in England in intellectual efficiency as well as in the best traditions of school-life.

Unfortunately, many of these expectations which were certainly in the minds of the people responsible for the new legislation in these Provinces have not been realised and there is now even the great danger of the essential idea being discredited, by the mixing up by critics, of the excellence of the measure with its incomplete and ineffective execution. The departure from these Provinces of His Excellency Sir Harcourt Butler who was mainly responsible for the reform, and other changes of personnel in the Government have resulted in a serious stagnation at a very early stage of the reform. For reasons into which it is not necessary to enter here, funds are not forthcoming for the completion of the reform of which only the preliminaries have been effected, nor is there evident any desire to work up in that direction.

When the members of the Calcutta University Commission recommended the alternative that some High Schools may be transformed into Intermediate Colleges, by the addition of two classes at the top, they were careful enough to add: "But the utmost care must be taken to ensure that no school is permitted to undertake this work unless it possesses,

or can be provided with adequate buildings, staff, and equipment. *In any case, substantial additional subsidies from public funds would be necessary to enable even the best of schools to undertake this new work.*" In their anxiety to advance the scheme of Intermediate Colleges and to realise the idea of having at least one Intermediate College for each district, the authorities have been rather too liberal, at least in the earlier stages, to grant affiliation to institutions in which the conditions compare very unfavourably indeed with those in which Intermediate students were educated in the old colleges. Poorer equipment, poorer laboratories and very much poorer libraries have been the rule and the staff has also deteriorated considerably, though many of them possess the technical qualification of being Masters of Arts.

Owing probably to want of funds, even the Government Intermediate Colleges are poorly off in this matter and most of them compare unfavourably in point of facilities with those which the Intermediate students had either at the Muir Central College, Allahabad, or at the Queen's College, Benares, as they were in days before the 'reform.' Soon after the introduction of the reform, the authorities even went to the extent of reducing the grades of College teachers engaged for Intermediate work and putting them on a basis very much inferior to that of lecturers engaged for college work in the earlier days. It is significant that a few of the bright young men who entered the Government Intermediate Colleges have resigned their appointments, a very unusual thing in members of such services, and have sought and obtained more attractive careers at the Universities.

The Calcutta Commission observed: "The

High School teacher need not be, and in some ways ought not to be, purely a specialist; in the Intermediate Colleges, some, at any rate, of the teachers must necessarily be specialists." It is no exaggeration to say that they are nowhere to be met with, barring a few exceptions, in the Intermediate Colleges of the United Provinces either in private institutions or even in those maintained by the Government. If all the senior professors of the old first-grade colleges did not actually teach in the Intermediate classes and their teaching was largely left to the Assistants, some of them did, and even otherwise, the students had opportunities of some kind to meet them occasionally. The presence of these senior members also exercised an elevating influence on the junior members of the staff who could always look up to them for instruction and guidance. Unfortunately, all that has ceased to be, because the authorities have not been able to ensure the presence of some of the men of this type in the Intermediate Colleges.

The atmosphere of a college is made up of a large number of useful details which cannot be created at once when starting new institutions. It is possible, that in a few years some of the present Intermediate Colleges may develop a very desirable atmosphere. But at present, they seem to be labouring under very serious handicaps. Some of them are situated in very small towns, where there are barely any facilities for intellectual culture and social life: some of them are deteriorating owing to association with a number of half-educated teachers on the staff though they may be concerned with only the teaching of the lower classes; the strength in the Intermediate Colleges is so poor in some others that hardly any college life, in

the wider sense, is possible with such a handful and the bulk of them have not at their head Principals capable of rousing the imagination of the students and working up to the highest ideals of educational efficiency.

Commenting on the twofold work of the proposed Intermediate Colleges, the Calcutta University Commission wrote: "In the first place it must provide a training such as will qualify its students for admission to the University in all its faculties, or into other institutions for higher technological training. In the second place, it must provide a training suitable for students who after completing their course, will proceed direct into various practical occupations." If there has been no great achievement yet in the direction of the first aim, there has been less in the direction of the second, especially as its realisation is possible only with the "large subsidies from the Government" which the Calcutta University Commission contemplated and which have unfortunately not been forthcoming for the purpose from the Government of the United Provinces. Preliminary training for medicine; a special group of courses designed for students intended to undertake the career of engineering; an introduction to the principles of agriculture sufficient to enable the student to follow with intelligence the work of the research-stations and experimental farms; an introduction not too pretentious in character to the art of education as an alternative to logic and economics; training suitable as a preparation for commercial life including a sound knowledge of commercial geography and some introduction to economics—these are among the directions in which the Commission recommended an improvement of the Intermediate course, to fulfil the second function. It is true a little has been

already attempted in this direction by the new Board by the inclusion of economics and geography as optional subjects in the Intermediate; the recognition of the elements of agriculture as one of the subjects of the High School examination, to lead, as we hope, in course of time to a further course in the same subject in the Intermediate and the bringing in the old Commercial Diploma of these Provinces within the purview of the Board. But very much more remains to be done of which there does not seem to be any immediate prospect. Even when subjects like these have been recognised by the Board for the purpose of examination, there is no guarantee of their being taught even in a small number of colleges in the Provinces owing to the lack of special grants from the Government for the purpose.

The absence of funds has been a serious handicap in many directions, even in the work of efficient control. The Calcutta Commission contemplated the appointment of a superior full-time President of the Board who will be able to advance the scheme and pay his undivided attention to the work not only with reference to its internal efficiency, but also with due regard to its relation to other branches of education in the country. In these Provinces, an over-worked Director of Public Instruction who is also *ex-officio* Deputy Secretary to the Government in the Educational Department is the President of the Intermediate Board and it is unreasonable to expect him to bestow adequate attention on the furtherance and fuller expansion of the reform. Owing to the paucity of funds even for travelling expenses, the meetings of the members of the Board are few and far between in the year. The same cause has also prevented the adequate constitution of

expert committees, with a sufficiently large number of the best men available for each subject. It has not been possible to make a real beginning in the direction of the effective inspection of the Intermediate Colleges, the work being left, at present, to a panel of Honorary Inspectors some of whom are chosen and associated from time to time for the inspection of individual colleges with the Government Inspectors of Schools of the division concerned. Again the Board has not been in a position to offer any grants of public money to the Intermediate Colleges in their charge, for such special purposes as the improvement of libraries, laboratories and general improvement. Want of funds has negated many a useful idea which has been placed before the members of the Board.

Even at the time of the publication of the Calcutta University Commission Report, it was felt in some quarters that the constitution proposed for the new Boards of Intermediate Colleges was somewhat unwieldy and not calculated to ensure the efficient control of the institutions. This writer was among those who expressed grave doubts at the time, of the wisdom of entrusting the control of these institutions to such miscellaneous bodies as these, on which the non-academic elements, usually more vociferous than the academic, would have a large representation. The short experience we have had of the Board in these Provinces confirms these fears and there are already signs that the right academic standards are being diluted and attempts are being made in the name of responsiveness to public opinion, to sacrifice educational efficiency in some directions. Paradoxical as it may seem, side by side with the tendency, mistakes have also occurred in making the course unconsciously difficult

in some details, owing to the absence of the adequate realisation, from the correct pedagogic standpoint, of the responsibilities involved. But a slight revision of the constitution should make it all right for the purpose for which it is intended.

It must therefore be confessed with regret that Intermediate education has not yet shown any appreciable improvement in these Provinces as the result of the operation of the scheme up to the present date. Attention must however be pointedly invited once more to the fact that it is largely due to defects of execution rather than to any essential faults of the scheme. The machinery for advancement is there, as the result of the passing of the Intermediate Education Act and only awaits generous financial support and energetic handling by capable hands for the production of the results expected. Additional centres of Intermediate education have come into existence and should serve as instruments of culture and enlightenment in quarters which have not as yet come within the orbit of such influences. Signs are not wanting that there is already a recognition of the real issues of the problem, of the need for the consolidation of the existing colleges and their improvement in the directions indicated. It is not without significance that the Government of the Provinces replied in the current session of the Legislative Council to a question about the future policy relating to Intermediate education, that it was not proposed to open any more Intermediate Colleges in the near future. There is probably no room for despair regarding the institutions, nor is there any justification for the sweeping condemnation of the reform itself, as has become fashionable in some quarters.

It is hoped that the Provinces will still be able to realise the expectations held forth in the local Legislative Council at the time of the introduction of the Intermediate Education Bill by the Hon. Mr. Chintamani, the Minister of Education. "Its whole aim and purpose is to extend and improve facilities, to bring out better education within the reach of the people, to bring more of it and more various forms of it." For the effective working of the scheme, the Minister himself counted on "the liberal Finance Department giving us the necessary funds in order to help us to realise our aims and the Council itself not hesitating to sanction any demands for expenditure upon the various needs of education which may be placed before them." On the passing of the Bill into law the same Minister expressed the hope in the Council that this great achievement will be tried under favourable conditions, will prove a success and will be beneficial to the cause of education in these Provinces. It has not received the necessary support and has not been given a fair trial and has therefore not yet met with much success.

If there is room for disappointment with regard to the influence of the reform on Intermediate education itself, it would be idle to deny the benefits which it has brought to two different departments of education in these Provinces in a manner contemplated and actively desired by the Calcutta University Commission. The Universities of Allahabad and Lucknow which are the only two out of the four in the Provinces which have been freed from the burden of Intermediate work in consequence of this measure are now free to concentrate attention on the higher stages of University

education. The results are probably not patent to the public yet, but the present writer who is familiar with the atmosphere of both the Universities, being connected with them in several ways, has no hesitation in saying that it is an inestimable advantage and is already making itself felt in some directions. If a more energetic impetus has not been given to higher University life in these two centres, in spite of this great facility, the reasons must be sought for elsewhere.

Another benefit which has accrued from the reform is the undoubted improvement of such High Schools as have now the good fortune to be associated with the Intermediate classes. The students in the highest classes in the High School in such cases have been able to share in the superior equipment and staff provided for the Intermediate Colleges and have entered a more stimulating atmosphere. The outside public have not yet been impressed very much by this improvement, but it is sure to invite public notice in the near future. One need not be surprised if in the years to come the average boy leaving the High School classes attached to Intermediate Colleges shows a decided superiority in intellectual equipment and general culture to those turned out by the mere High School. Attention must however be invited here to the complaint existing in some quarters that even in the case of High Schools attached to Intermediate Colleges, there is a clear demarcation between the staff of the College department and that of the High School and the students of even the higher classes in the school department do not get the benefit of this association with education of a higher grade. This is probably a matter which can be remedied by

proper attention from the authorities concerned.

To sum up, the recent reform of Intermediate education in the United Provinces has not yet resulted in the numerous beneficial results contemplated by the scheme, owing largely to defects of execution and the absence of energetic pursuit of the original policy underlying the measure. It is undoubtedly capable of enriching and advancing Intermediate education in happier circumstances though as yet improved conditions are perceptible in some measure only in University education which has been freed of Intermediate work and in High Schools associated with Intermediate education. If the reform is to be carried out in other provinces in India, it must be done with a full knowledge of the heavy responsibilities involved and with a guarantee of all the facilities necessary for a proper fruition of the scheme.

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THE DALTON LABORATORY PLAN.

IT was Edgar James Swift's book 'Mind in the Making' that made Helen Parkhurst resolve to become a free lance in education and to draft a plan of work to be carried out in her first educational laboratory. Her idea was to substitute for the top-heavy machinery in use a simple re-construction of school procedure that allowed more freedom to the pupils and that provided equal opportunities for advancement to the slow and the bright child. She thought that the time-table was a curse and its banishment was the first step towards the pupils' liberation. The time-table was accordingly done away with in the year 1915. In her opinion education was not the teachers' problem but the pupils'. Pupils should be made responsible for their work and they should grasp the whole scope and nature of work they contract to accomplish. Training in real experience was, according to her, the key-note of success in education and it was her firm conviction that the child was cramped by the rules and regulations of the educational system that can only result in the cultivation of the habits of make-believe, insincerity and slavish regard for authority. "Life needs fearless human beings, the world needs them, because there are never enough to go round." From 1915 to 1918 Helen Parkhurst took part in the application of the Montessori Method in California and during this time she had the satisfaction of making a practical test of her laboratory plan upon a selected group of one hundred children between the ages of nine and twelve. In the year 1919, she applied with the co-operation of her friend, Mrs. W. Murray Crane, her laboratory plan to the Cripple School in Berkshire and found that it bore good fruit and aroused interest in various quarters. Mrs. Crane then applied the plan

in 1920 to the girls and boys of the High School in Dalton in Massachusetts, from which experiment the plan derives its name. Miss Parkhurst decided to call her plan 'THE DALTON LABORATORY PLAN', and advisedly clung to the significant adjective 'LABORATORY', for she was always disposed to think of the school "as a sociological laboratory where the pupils themselves are the experimenters, not the victims of an intricate and crystallised system in the evolution of which they have neither part or lot."

2. The Dalton High School received during that year the visit of Miss Bellie Reunnie who was much impressed with the new plan and who, after her return to England, wrote an article to the *Times* and brought this experiment to the notice of the Britishers. From Dalton, new fields were captured and Miss Rosa Basset and Mr. Eades adapted the plan to the conditions of English Secondary and Elementary Schools. The Dalton Plan assignments in English, Geography and History and in Mathematics and Science compiled by the staff of the Streatham County Secondary School for Girls where the plan was successfully tried are available for sale, along with the Introduction of the Headmistress, Miss Rosa Basset. Miss Parkhurst herself has published a book descriptive of her plan and we are greatly indebted to her for our information.

3. The curriculum in each subject for each Form is divided up into a number of jobs for each month. The successful application of the plan depends on the degree of skill and understanding with which these assignments are prepared. The first condition of a good assignment is that it shall invariably be written, clearly expressed, and designed to show the pupil what it is leading up to. The pupil has a general survey of the whole work for which he will be held responsible.

These monthly jobs which are generally divided into weekly portions are communicated to the pupils. The contract-job is so balanced and correlated that neither too much nor too little is included in it. To suit the disparity in intelligence of the different pupils in each Form, the assignments may be of three categories—minimum, medium, and maximum. Great care should be taken to so plan the assignments as to awaken interest and responsibility in the pupils.

The following items should be kept in mind in preparing them:—

(1) Preface—a simple statement introducing the assignment which is an "interest packet."

(2) Topic—consisting of the central idea in the assignment.

(3) Problems—maps to be drawn, measurements to be taken, theorems to be worked out, translations, designs in art, experiments in science, etc., come under this head.

(4) Written work—to be definitely stated—which tests if the matter is understood and the composition powers of the pupils.

(5) Memory work—poems, rules, lists, dates, etc., to be got by heart.

(6) References—pages of reference books, magazine articles, etc., find place under this.

4. The assignments are prepared for the important subjects or those subjects which are the basis of annual promotions.

5. These contract-jobs are worked out by the pupils in their special laboratories. Each subject has a laboratory for itself, and each laboratory is in charge of a specialist. Each laboratory is stocked with the necessary apparatus, text-books, pictures and appliances. The morning session is generally given for laboratory work in the major subjects. The pupil chooses which laboratory he would enter first and will go into it.

As the interest of the pupil is aroused, good work may naturally be expected. The pupil works out the assignment, studies the references suggested for him, gets the guidance of the expert, writes what is demanded of him, and takes the help of his class-mates whenever needed. This plan therefore places the work-problem squarely before the pupil who tackles it in his own way and at his own speed. Responsibility for the results develops in him not only the latent intellectual powers but also his judgment and reasoning. In this method we place before the pupil a plan for auto-education. When the achievement is completed the pupil feels the splendour of success. "This is real experience which is life itself." In the laboratory period the pupil is not tied down to any rules and regulations but is respected as a human being. As soon as the pupil's interest lags, he leaves that laboratory and goes into that of his next choice and thus he spends his morning session in pursuits that interest him and doing work that he has contracted to accomplish.

6. The evening session is given to conferences of pupils with specialists. At these, the special difficulties of pupils are discussed and some general principles useful to them are explained. Set lessons are discouraged and care is taken to see that the conferences relate to the assignments prescribed for the week. Advantage is also taken to make remarks on the pupils' written work corrected by the teachers.

7. Mention should be made about the graphs that form an integral part of the Dalton plan. The first is the instructor's Laboratory graph which is kept in the laboratory under the direction of the specialist in charge. It has 40 vertical columns or spaces, each week having five spaces indicating five days' work. As many horizontal lines are ruled out as are wanted for the numbers in

the Form. If the week's work in that subject is done by a pupil, then the pupil draws a line opposite to his name through the five spaces under that week, but if he has only done $\frac{2}{5}$ of the work assigned to him, the line passes through two spaces only. With the help of this graph, the instructor can tell at a glance, what progress each pupil has made every week and compare his progress in one subject with that in the other subjects. The pupil also can compare his achievement with that of his fellow-pupils. In graph No. 2, which is called the pupil's contract graph, there are four horizontal partitions for the four weeks of work, and each partition is sub-divided into five horizontal spaces, each space indicating a day's work. As many vertical lines are drawn as there are assignment subjects. If a pupil does on the first working day, in his Science laboratory, $\frac{3}{5}$ of his week's work, he draws an upward line through three of the five upward spaces under 'Science' against that week and notes the figure 1 at the top of his line. Suppose he then goes into the English laboratory and completes his week's work there. He will draw a line under English against that week and notes the figure 1 as already indicated. The lines drawn on successive days are marked by successive numerals. This graph helps pupils to compare their graphs and receive assistance from one another, without the advice of the teacher. Miss Parkhurst asserts that through this graph "Group-control and sentiment of fraternity spread through the school." The 3rd graph is the form or house graph in which the entire number of units of work done by each pupil is indicated. For the details of this graph, the book "Education on the Dalton Plan," by Helen Parkhurst, may be consulted. The 4th graph is merely an attendance-graph in which attendance is marked by the pupils. These graphs help the pupils

to measure their time wisely and to adjust it to the fulfilment of their jobs. Comparisons of graphs have a special value of their own. These are also helpful to the teachers in the choice of the right moment to offer special help or instruction to their pupils.

8. Let me now sum up the advantages claimed for this plan. Pupils become more interested in their subjects and love their work better. An opportunity is given to the pupil to educate himself and to apportion effort to attainment and to budget his time and to spend it according to his need. This plan respects the child and the secret of education, so Emerson tells us, lies in respecting the pupil. Freedom and responsibility given to pupils perform a miracle and the problem of discipline vanishes from the school-room. A spirit of self-reliance is fostered in the child who does not struggle under constant direction and restraint. The co-operative relation between teacher and pupil develops most under this plan and democratic intercourse between the teachers and the taught is established.

9. This plan is a bold and original experiment and it is perhaps desirable that the criticisms levelled at it are enumerated.

10. There is no provision for the revision of old lessons in the Dalton plan. The introduction to each lesson under the class system takes stock of the previous knowledge of the pupils and prepares the ground for the coming lesson. The revision of old work that should not fade from the memory of pupils is a decided advantage in the present system. In the Dalton plan a poem is learnt by heart in the first week and the contract-job is successfully carried out but at the close of the session the pupil, through his weak memory, may fare poorly in the periodical

examination and misquote the passage learnt for recitation. There is no doubt that the pupil's interest in recitation was aroused when the lesson was learnt and that the pupil learnt the lesson by heart when his interest was keenest but his interest cannot always make up for the disadvantages incidental to want of revision.

11. It is contended that the Dalton plan is a real preparation for life. Life is one of conflicts and consists of no smooth sailing. How can pupils who are given freedom of action during the impressionable periods of their youth—freedom to enter classes when they like and withdraw from them when they please—get hold of that grit which is absolutely necessary for successful living? Those who learn to obey will alone learn to command and if the virtue of obedience is not ingrained into pupils during their early years, how can we expect them to discharge with satisfaction the duties of citizenship and social service that devolve on them when they grow old?

12. Shirkers are apt to lead a happy life under this plan. Idle pupils appear to browse and waste their time in the different laboratories. Freedom adds to their pride and the bad correction of their written work gives wings to their freedom. Unless checked by the teachers, they might be a sort of drudge on the bright boys and a source of indiscipline.

13. Some critics suggest that pupils may become over-fond of their favourite subjects and may spend too much time on them to the detriment of the subjects for which they may have no interest. They may also flock to those teachers who are popular with them, and who show great enthusiasm in answering their questions and shun those for whom

they develop animosity and who are apt to criticise their work and greet them with reproofs. In these cases the backward boys suffer most and one of the aims of the plan is frustrated.

14. Class lessons under enthusiastic teachers are a source of inspiration to pupils. I do not here refer to prepared lectures given by expert novices, for I am one of those who like to see lecturing proscribed from Secondary Schools altogether. The value of lessons, interspersed with intelligent questions, by enthusiastic teachers who prepare their topics beforehand and who have studied the capacities of pupils, cannot be denied and I, for one, deplore, on behalf of the bright pupils in schools, any reduction in the present number of intelligent class lessons, owing to the Dalton system. Stray class lessons on isolated topics, as under the Dalton plan, lose their interest and continuity. Intelligent and well-prepared class lessons cannot but develop the corporate feeling for which the new plan aims so forcibly.

15. Another danger in this plan is that it throws too much work on the teacher. We all know that the Indian teacher is already overburdened and what with the apathy of the parents and the poor salaries vouchsafed to the profession he has really become an object of pity. In this pitiable plight teachers who have already enough work to do and enough cares to worry them should not be saddled with additional duties and responsibilities. The correction of pupils' exercises is the most burdensome of tasks, and the Dalton plan adds to this worry. If in addition to the liberty given to the pupils, no care is bestowed on the written work done by them, the Dalton plan may, in no way, better the present educational system. Even

in the laboratory, the teacher should be all activity and sympathy towards the pupils. The successful working of this plan depends upon the individual attention paid by the teacher to the pupils and the hearty co-operation that exists between the teacher and the taught.

16. Of late, lecturing has ceased to have a place in good schools and prominence has been given to oral composition. Several hours are now allotted to the subject of oral composition and care is taken in class lessons to make the pupils talk freely and to correct their faults. This practice to talk correctly in the public class not only improves the pupils' powers of written composition but gives them courage, develops their self-reliance and fosters the habit of right thinking. These advantages may, to some extent, be lost or minimised under the new scheme.

17. In spite of the abovementioned disadvantages the plan has much to commend it. The teacher comes down to the level of the pupils and realises that he is no longer a tyrant and that no rules and regulations help him to wield his arbitrary influences over them. The pupil feels that he has to seek his own salvation and to work for himself. The plan pays proper attention to the equipment of schools and attaches much importance to education through environment. Lastly, this plan conserves the pupils' time and eliminates much educational waste by training them in the art of study.

18. Teachers who are not quite satisfied with the present system of education will look forward with pleasure to the results of the working of this plan in the Government Model High School at Rajahmundry.

M. SUBRAHMANYAM.

AUTO-BIOGRAPHY OF SODIUM.

By Mr. P. A. NARAYANA AIYAR, M.A., L.T.

Asst. Professor, Presidency College, Madras.

BRAVO! I intend to speak out to you a little about me. Perhaps you may think I am blowing my own trumpet. But I daresay you will excuse me if I do so.

I was in the earth's womb for a considerable period until I was delivered out of darkness to the dawn of a new day of usefulness and service. Ever since my birth, I have been regarded as rather mischievous and uncontrolled. The fact is that I have been taxing scientists who have fathomed deep to elucidate the mysteries of my nature. At last they christened me Sodium, yet not knowing what I am. Even this name was ponderously long for me and I was symbolised 'Na' from Latin Natrium. They made many guesses, many theories and several hypotheses of which I shall only mention one or two—such ones as have swayed and will continue to sway the scientists—the atom of Democritus and Dalton and the electron of Sir J. Thomson, Soddy, Aston and other modern physicists. But every time they try to understand me closer and propound a theory I merely burst into laughter and exclaim: "Are you right or shall I say?"

I am wedded unto several husbands, all of great affinity and live in peace and comfort, my house being scattered all over the world. But my attachment for chlorine is so great that I prefer to live with him inside the earth, in the sea-water and probably where not. Apart from man's use for the table, I have for ages lay hidden till many an intruder has poked his nose into my mansion and disturbed my peace by an effort to rupture my comradeship with chlorine.

In a way, I felt overjoyed at this disturbance, for my existence with chlorine spelled monotony and I was always longing for the day when I shall be free from the company of chlorine and be intimated with another to be of service to man. But shall I allow to be swayed by an ordinary individual? It required a Nicholas Le Blanc to set me at liberty but even he paid a heavy price for it. This remarkable man was born at Indre in 1742. He was by profession a doctor. Owing to the difficulty of obtaining regular supplies of soda during the Napoleonic wars, the French Academy offered in 1791 a prize of about £100 for the discovery of a suitable method for converting sodium chloride into the carbonate. Le Blanc won the prize. The process was worked on a commercial scale with £8,000 lent him by his wealthy patient, the Duke of Orleans. Then came the French Revolution and the Duke was guillotined in 1793. Le Blanc was ordered to make his process public. He was reduced to utmost poverty and with advanced age, full of despair and sorrows, he resorted to a work-house where in 1806 he committed suicide.

Before the time of Le Blanc, soda was exclusively obtained by burning wood and treating the wood-ash with lime. Now salt is treated with sulphuric acid and the sodium sulphate formed is heated with coke and limestone and lixiviated. This liquor, all free from blackash, is allowed to crystallise at about 34—35° as at this temperature sodium carbonate has its maximum solubility.

What shall I say of poor chlorine? I thought he will be left all alone but he preferred to make company with hydrogen to form hydrochloric acid gas—a terrible combination indeed. People cursed it. Oh! the havoc of that gas, the devastating nature

of it! Agriculturists made a hue and cry; cemented buildings, bowed before its feet. Tall chimneys will not carry away the noxious fumes, and the soda industry would have collapsed, had it not been for a timely suggestion put forward in 1836 to drown the gas by the erection of coke-tower condensers with trickling water. But alas! A riverful of water will not suffice for this tremendous couple; and note the fury of it. The absorbed liquid, after use to the possible extent was thrown back into the river to create only fresh troubles. The boatmen found their rivets dropping from their barges with the resultant sinking of them. It was discovered only later that chlorine formed with hydrogen a dangerous combination and the problem was to separate the two.

This received a satisfactory solution at the hands of Deacon in his so-called Deacon process. This consists in oxidising hydrochloric acid gas by the oxygen of the air in the presence of a catalytic agent which is found in copper chloride. The chlorine which is now free is turned into use, though by nature he is very irritable. Several tons are produced every year, compressed into liquid in cast-iron cylinders and exported to various industrial centres. Most of it is used for the manufacture of bleaching powder. Without him, how shall we chlorinate our water supply, how shall doctors obtain their chloroform for their surgical operations, how shall dyers continue their profession and how shall we expect paper to write on? Such is, in short, the life-history of my comrade ever since I left him.

Is it all? Ever since the first rupture was made successfully by Le Blanc, hosts of chemists have worried themselves to make

me serviceable and I have in many cases yielded, so much so I stand to-day as an integral part of every industry. Had it not been for my philanthropy, my earnest desire to do service to man, you cannot expect a Germany or an America or an England of to-day. Leather could not have been tanned without me in sodium sulphide; Photos will be in the Fairy-land without the hypo; Glass will be only a dream without sodium sulphate and carbonate; soaps, confections, dyes, and a host of other useful articles require me in one form or other.

But the latest achievement is that of electricity, the hand-maid of all modern industries. What with his vast energy and what with his adventurous spirit he has tantalised me in cells filled with bribe, driving me to the negative electrode. It is not my nature to be free unless constrained to do so by a Davy's inspiration or a Castner's process who screened me from my companions. Left to myself I prefer to seek union with them and I did so with hydroxyl to form caustic soda in which form I am finally packed in bottles with a red label.

Shall I enumerate my further usefulness to mankind? Perhaps not, lest you should mistake me for being egoistic. I shall therefore leave you alone to meditate upon me, giving however a hint: "There are yet uncharted seas to explore, and discoveries reserved for thy seeking. The voyage ahead is full of hope and promises to be yet more glorious than the past. Therefore, sail on, on and on to fill the pages of history with the joys and comforts that have come to the human race" through the medium of sodium atom.

THE LATE LORD PENTLAND— A FRIEND OF EDUCATION AND LETTERS.

By Mr. P. R. KRISHNASWAMI, M.A., L.T.

Govt. College, Kumbakonam.

THE news of the death of Lord Pentland comes as a shock to those who have not lost touch with him, after he left Madras nearly six years ago. Only a few days ago I was privileged to receive a printed New Year Greeting from Lord and Lady Pentland. This annual greeting usually culls together some appropriate words from the great poets, and this time the first quotation shows the large heart of the sender of the greeting. It is from Shakespeare:

I count myself in nothing else so happy

As in the soul remembering my good friends.

The second quotation which is from Kingsley reflects the austere ideals and virtues which Lord Pentland practised:

Blest day which aye reminds us, year by year,

What 'tis to be a Man; to curb and spurn

The tyrant in us; that ignobler self

Which owns no good save ease, no ill save pain,

No purpose, save its share in that wild war

In which through countless ages living things

Compete in internecine greed!

While ever out of the eternal heavens

Looks patient down the great magnanimous God,

Who, Maker of all worlds, did sacrifice—

All to Himself? Nay, but Himself to one;

Who taught mankind on that first Christmas day

What 'twas to be a Man; to give, not take;

To serve, not rule; to nourish, not devour;

To help, not crush; if need, to die, not live.

When the news of the appointment of Lord Pentland to the Madras Governorship had been first known, a friend wrote to me from Edinburgh referring to him as a very familiar figure there driving about the streets without any ostentation, performing his duties as

Secretary for Scotland and doing his best for education. Education was his life-interest and he worked for it with unabated zeal during his tenure of office as Governor of Madras. He began his term with incessant visits to schools, accompanied by the Inspector of Schools stationed in the city. The question of providing adequate play-grounds for schools attracted his attention early, and where it was not possible to get sufficient grounds he was anxious to suggest the pursuit of such games by school-children as might not involve large accommodation. "A Physical Adviser" to the Department of Education was appointed and all educational institutions received a new impetus to improve the physical well-being of pupils in them.

Lord Pentland's sympathy and imagination in the interests of students were nowhere so well displayed as in his measures to afford them positive occupations preventing them from straying into undesirable channels. The cause of education was endowed with a new dignity when the Governor summoned Conferences of Principals and Headmasters over which he himself presided. Students were prohibited from attending political meetings but they were fully permitted to discuss the most exciting political topics within the four walls of the college. The credit of founding a University Club belongs to Lord Pentland. It is an institution with vast possibilities to be availed of in making University life in Madras far more happy and useful than at present. If unfortunately, after its inauguration, it has not been developed and utilised to the full possibility, small blame attaches itself to the founder.

The cause of women's education made a signal advance under the kind solicitude of Lord Pentland. The splendid manner in

which Queen Mary's College for Women was founded, will be a standing monument of his wisdom which embodied for women, in the practical working of a college, educational principles far ahead of what have been realised in men's colleges. His tender solicitude for Queen Mary's College was so pronounced that jokes were indulged in about the frequency of telephoning to the Government House by the Head of the College about some one or other matter connected with the new College. Realizing that one can never have too much of mere educational facilities, Lord Pentland founded a College for Muhammadans. The same consideration saw the birth of a College at Anantapur which has already done a good deal to spread enlightenment in the Ceded Districts.

There was something strikingly simple and human about Lord Pentland. One recalls the very sweet picture of his two little children accompanied often with one or both of the parents driving to the Teachers' College at Saidapet, from their Guindy residence, to receive instruction in manual training. The Governor was present at many an educational function which took place at Saidapet, and his familiarity with the educational officers present, served to upset all previous notions of the vast gulf lying between everyday education and the ruler of a Province.

Lord Pentland's interest in the work of the Madras Literary Society was another benefit conferred on Madras. He was anxious that the Society should rise superior to being vulgarised as a mere circulating library. Various lectures were organised under its auspices and the Governor himself took the chair on the occasions. It is again regrettable that his example has not been followed after his time.

Lord Pentland's interest in this Province did not end with his departure from here. In a letter dated 18th April 1923 he writes to me: "It is my constant endeavour and interest to keep more or less in touch with affairs in India and especially Madras." Not very long ago was Lord Pentland appointed to the Standing Parliamentary Committee on Indian affairs.

During his term of office, Lord Pentland set the example of a high sense of duty. His worst critics could not deny the profound earnestness with which he followed his ideals. His was not a life of pleasure but one of self-sacrifice. Frugality and not vanity was his principle in daily life, but he had a truly generous heart when serious occasions demanded it. His work for the Hospital Ship *Madras* is too well-known to be mentioned here. I remember well his appearance at an auction sale at Ootacamund in 1916 in aid of the war. He had stuffed his trousers-pocket with currency notes and he gave absurdly high prices for the articles put for sale. He added to the enjoyment of the occasion by solemnly presenting away to his Indian colleague on the Council the trivial articles he purchased.

It is melancholy to think that the dignified and clear-ringing, but a little gruff perhaps, voice which ruled over the august Assemblies of this Province so recently should be so soon stilled for ever. A prominent statesman and a sincere friend of the cause of education and letters has passed away in Lord Pentland. A sorrowing province will offer its sympathy to Lady Pentland in her bereavement.

"THE PURPOSE OF EDUCATION—AN EXAMINATION OF EDUCATIONAL PROBLEMS IN THE LIGHT OF RECENT SCIENTIFIC RESEARCH."*

A REVIEW

By PROF. S. K. YEGNANARAYANA AYYAR, M.A.
Pachaiyappa's College, Madras.

IT is a significant sign of the times that books on education are going to the root of the matter and deal with the problem from the view-point of life and its purpose. The tradition of correlating psychology to education has become well-established, and no wonder that the present author tries to build his theory about the purpose of education on the latest researches of psychology.

The aim of the book is expressed in the following sentences collected together from various portions of the book:—

"The remedy for our ills is to be found, and found solely, in sound educational methods and this is not possible without a knowledge of the composition and working of the human mind."

"Education in essence and purpose becomes a individualized process of discovery of the laws regarding the awakening of our higher powers of synthetic understanding, of finding their proper interpretation in the art of life, and giving them synthetic expression in the growth of character."

"If instead of postulating the incongruity that we are meant to be happy we were to say that we all should, as in duty bound, learn how to become truly happy, we would be nearer the mark, and indeed, this amended

postulate supplies us in a nut-shell with a serviceable formula for the purpose of education."

The author wants to combat such erroneous notions which unfortunately are current in modern times that education is the art of making people at home in their environment, which, translated into current phraseology, would mean, to enable people to make money, which, again, would imply the exercise of the capacity of working selfishly. The fundamental basic conception of human society as consisting of so many independent units, whose individuality should be fully developed at whatever cost, and of social organism based upon competition and struggle, the author wants to see replaced by the more scientifically accurate conception of inter-dependence and co-operation.

The book is divided into nine short chapters of very suggestive and thought-provoking matter written in a simple style ringing the true note of sincerity. It is almost a treatise on psychology in the earlier portions, especially the chapter dealing with "Human Personality." But we would advise the reader who is likely to be scared away by the term psychology, especially modern experimental psychology, to start reading the very interesting fourth chapter entitled "The Incentives to Effort, Economics," which would form an excellent introduction to the basic principles of the book. It is in that chapter that the author bemoans the feeling of separateness that underlies all our conceptions of society, the exaggerated importance we attach to money, which unfortunately has come to be regarded as an end in itself instead of a means to a higher end, the deplorable condition of modern society where groups are at war with other groups, and so on.

* By St. George Lane Fox Pitt. (Published by the Cambridge University Press). Price, 4s. net.

His chapter upon "Personality" is highly interesting even to lay readers. He discusses the two views of personality, the psycho-physical dualistic conception and monistic materialistic behaviouristic conception. He gives his own definition of Complex, which is sufficiently technical even for a psychologist, describes the three main types of complexes, their origin and growth, the four-fold laws governing their emergence and the manner of emergence, describes emotion, instinct and other psychological entities, and incidentally states that the supreme aim of education is the advancement or the awakening of high character, and that the right process of such awakening is harmonious development of various minor complexes in co-ordination with and in subordination to the intermediate complexes in the first place, and then finally with the Grand Complex in so far as its awakening may be rendered possible.

The other chapters on "Character *versus* Reputation," on "Specialization" and on "Multiplex Environment," are equally interesting.

In the chapter on "Religions, Ideals and the Twice-Born," he examines the psychology of conversion familiar to all students of psychology from James' well-known classic, 'The Varieties of Religious Experience.'

Lastly he holds up perfection as the ideal, perfection, which is incompatible with untruthfulness, and which implies unlimited patience, absolute kindness, wisdom and understanding. The pursuit of perfection requires the tentative formulation of noble ideals, and self-conquest, whereby there is developed in the mind the powers of clear insight and true understanding.

It is interesting to find that so many ideas here are common with the basic ideas of

another interesting book recently published: "The Triumph of Ugliness," by A. Brodrick Bullock. Both condemn the Separatist conception that has been the bane of modern civilization, and hark us back to the fundamental unity of Mankind so much emphasised upon by all the great books of religion, in the Sermon on the Mount as well as in the Upanishads. Only Mr. Bullock specifically mentions the Upanishads and the teachings of the Buddha as the great mainspring of such ideas rationally and systematically expounded. Mr. Fox Pitt also shows his acquaintance with Buddhist writings. In fact the term Great Complex, which he uses, he has borrowed from Prof. Rhys Davids' translation of Maha Sudassana Sutta.

We shall conclude this short study of this highly suggestive book with this quotation:

"Is it too much to hope that some day in the distant future the properly qualified doctor, surgeon, lawyer and teacher may each and all of them combine in themselves the highest functions of both Priest and Healer?"

We commend this book to all teachers and to all interested in sociological problems.

THE SCHOOL ARITHMETIC BEING SOLUTIONS OF THE QUESTION PAPERS SET FOR THE LOWER SECONDARY EXAMINATION FOR THE YEARS 1880 TO 1904

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ART IN FUTURE EDUCATION.

By MR. B. PATTABHIRAMAIYA, B.A., L.T.
Headmaster, Municipal High School, Anakapalle.
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II.

(Continued from p. 439, Vol. XXX, 1924.)

COMING now to the idealists, this school is best represented by the Calcutta painters, Tagore and others, and by old Indian paintings.

Shakespeare says that the poet, the artist, the lover and the lunatic have similar mentality. They only differ in modes of expression. If expressed in words and song it is poetry; if through the medium of the canvas, it is art (leaving sculpture out for the present), if, one sees Helen's beauty in a brow of Egypt and expresses his feelings by way of amorous gestures and the like, it is the lover. If the man's expression cannot be understood by others, he is called mad. Some of the greatest sages have been put down for mad men by their contemporaries. The chief faculty at work is the creative faculty or imagination, the power to 'give to airy nothing a local habitation and a name.' Hence the artist who really deserves the name should have this creative faculty or imagination. Art is soulless without it.

The very name "idealism" takes one far from realism. One cannot hope to see here accuracy of detail, and perfect finish such as are seen in the paintings of the realists. But the artist has lofty imagination, far above the generality of people and what he paints is drawn from this mental image, not from a subject nor from nature. The ideal artist, like the poet, should be an elevating influence and should present to the public, ideas which their less-gifted brains are not capable of. Hence this type of art has had wonderful development in our land—a land of grand

imagination. This aspect of Eastern imaginative art has been ably expounded by Prof. Havell and Dr. A. Kumaraswamy. For painting classical pictures, for conjuring up scenes, historical or legendary, for producing the maximum of effect with a minimum of line and shading, this type of art is unparalleled.

This development of the imaginative faculty is responsible for the rapid advance 'design' has made in our country, especially in architecture. For, when natural forms or forms drawn from nature are subjected to the artificial limitations of space and symmetry, imagination has to come into play. But this is by the way.

It is possible to overdo a good thing, while every credit is due to the transcendent imagination of an artist, it should also be his lookout to see that his pieces are within the grasp of the generality of the people. A painting of this type recently came in for official censorship till its beauties were explained by Dr. Cousins.

To summarise the relative merits of the two divergent schools of art:—

Realistic.	Idealistic.
1. Is the result of observation.	1. Is the result of imagination.
2. Develops observation in pupils.	2. Develops imagination.
3. Is useful for accurate scientific illustration.	3. Is useful for classical, mythical and other forms of illustration.
4. Can be appreciated by the masses.	4. Can be appreciated only by the cultured few.

It would be good to have a regular Chair of Art in our reorganised University of Madras, and in the Andhra University that is soon to come into existence. Experts in Art-lore should be placed at the head of this faculty, so that the future sons of Southern India may keep up the traditional eminence of their motherland in this field of Art.

III.

A special study of Art is certainly the province of institutions specially staffed and equipped for the purpose. It is inadvisable to attempt such courses in institutions for Secondary Education without detriment to other subjects.

What then is the place of art in the school-room? This question has to be considered from two aspects: (i) with reference to the pupils, (ii) with reference to the teacher.

With reference to the pupils it is a useful subject to co-ordinate with (a) science, (b) history, and (c) literature. Accuracy of detail—the result of close observation—should be insisted on in the case of sketches made in connection with the sciences—Physics or Chemistry, Zoology or Botany, Physiography or Physiology. A pupil who makes a sketch of a scorpion, for instance, should carefully note the chelate arrangement of the pincer-claws, the number of segments in the so-called 'tail' &c., and bring out these accurately in his sketch. Should he put down a fork or a crescent for each claw and numberless segments in the 'tail,' (as in some advertisements of cures for scorpion-sting), the sketch will represent something unknown to Zoology, and the object of drawing as a useful hand-maid to the sciences would be defeated. If done on good lines, it is a valuable eye-trainer.

Scope should also be given to the pupils to exercise their imagination in subjects like History and Literature. The scenes and incidents described, if visualised in pictures, would tend in no small measure to make real artists—possessing the creative faculty. The teacher, if an artist himself, may give pupils who have the bent preliminary hints as to details and may correct faults in execution,—proportion, perspective, light and shade and the like.

So far as the teacher is concerned, art is a great help to him, inasmuch as it conveys impressions much more definite than verbal ones, and saves a good deal of lung energy. If he is not an artist himself he may keep an album of pictures culled from various sources and filed under assorted heads. If he is an artist, he may prepare at home illustrations of what is to be taught (*vide* 'The Tyrol Maid,' in a previous issue) or rapid sketches on the black-board. A good deal of practice on the black-board alone is necessary to develop skill that would enable him to produce the maximum of effect with a minimum of lines—for it should be borne in mind that sketching on the black-board is but an aid to teaching and should not be allowed to take up much time. By such sketches he educates the boys in art, for it requires this sort of eye-training to make the boys 'read a picture,' i.e., note its details and appreciate all that it seeks to express. Pupils having a special turn for art may, even in schools for general education, be coached up for the Government Technical Examinations at least.

Two types of art have not developed much in our country, though they are very paying, viz., (a) *Caricature*, (b) *Commercial Art*. It requires a real gift to be an able cartoonist, for he has to give his subjects an allegorical setting, and at the same time bring out the resemblance by a few deft strokes, which cannot be mistaken. Perhaps the liberty of the press in the West has fostered caricatures to a greater extent than is possible here. *Commercial art*, i.e., art by way of advertisement. Look at advertisement pictures, Indian and English. The former lack the telling effect of the latter. Being commercially a backward nation, we cannot realise the value of this. Very few of us can realise why fabulous sums are shelled out for this purpose in the West. 'Bubbles' by Sir E. Millais, for instance, was not only the making of the artist, but of the Pears' Soap Company, as is well-known.

GEOGRAPHY IN THE INTERMEDIATE STAGE.

By Mr. P. C. R. PETER, M.A.,

St. Joseph's College, Trichinopoly.

THE pupil has already received certain impressions with reference to the people of other countries, their occupation and their peculiarities, has learnt a few facts about agriculture and manufacture, water, steam and electricity, has taken pleasure in keeping a record of what he has seen about him, has been introduced to observation and experiment relating to physical phenomena and above all, has studied his locality from the social and economic points of view and is now in readiness to receive more impression about the world and its physical phenomena.

From the locality we take him on to the well-marked regions of our own land and later on to the regions of this wide, wide world. He is, in turn, introduced to the cold, temperate and hot regions of the world, to the forests, grass lands, fertile river basins, and barren desert areas. He sees their life in all its varieties, the life of the pigmy, the shepherd, the agriculturist and the caravan trader, their habits and customs, their wealth and poverty, their dress and mode of living, their houses, huts and tents, all adapted to the environment of man.

The types are all seen and studied. The rubber-collector, the fisher and the hunter of the equatorial forests, the shepherd, the cattle-rancher and the horseman of the grass lands, the farmer with his paddy, sugar and tobacco in the monsoon regions, with his wheat and barley in the temperate regions and his fruit-gardens in the Mediterranean regions, all afford instructive study; and whoever has not learnt the geography of the land in its relation to the people thereof has learnt, to say the least,

next to nothing and it is the duty of the teacher to associate the life of the people with the environment, and help the pupils to understand how man's life in each region is adapted to his environment, for it is in this stage and after, that the why's of geography are of increased significance.

Further, the pupil must be introduced to certain facts about climate and vegetation. Why it is cold about the Poles, hot about the equator and why temperate in the middle latitudes, how these affect the growth of plants and how these in turn affect the life of man, must be clearly shown. The general facts about the distribution of rainfall must be introduced. Why rice should grow here and wheat there, why tea here and coffee there, why maize here and barley there, why sugar-cane here and beet-root there must be brought home to the mind of the pupils in outline, if not in all its details. Moreover, why certain regions are agricultural while some are manufacturing and some others pastoral should be explained. Differences in occupation and industries and international and commercial activities must be illustrated and their causes shown.

A clear knowledge of the climatic conditions is rendered easy and interesting by a careful training in keeping records of actual phenomena observed about us. The position of the sun in different periods, its relation to heat and cold, its relation to the dry and wet seasons, to the movement of the clouds and the winds, all these need careful consideration. This should be rendered easy by experiments with reference to heat and cold, air pressure and movement and the two instruments, the barometer and the thermometer, should be brought in, in all their varieties, to subserve this end. Weather

charts and the observations of meteorologists must be studied and interpreted and correct predictions of weather conditions encouraged.

This study must be substantially assisted by map-reading and map-drawing. From the plans of the school premises, and the town, pupils must proceed to the mapping of their district and the country leading on to the map of the world. The animal and the vegetable life of the zones and later that of separate regions must be illustrated through maps. Rainfall maps should follow and pupils must be trained to read maps relating to Isotherms and Isobars and climate and rainfall must be deduced therefrom.

The Geography laboratory or museum, whatever it is, must be full of records made by each individual, maps drawn by them and pictures of 'types' collected by the whole class—types of men dwelling in various regions studied, types of occupations, types of the modes of living, types of houses and streets, types of means of conveyance, types of products, agricultural and manufactured, types and not promiscuous collections—types that would impress the pupils with the realities of the life in different regions.

The correspondence section of the museum,

I consider, is the most important of all. Pupils must be encouraged to correspond with pupils of other lands, especially, with pupils of typical regions and whenever it is found impossible, correspond with pupils of an adjacent region on the regions required. Letters from Canada, South Africa and Australia will bring interesting information on how the British Colonies get on, letters from the U. S. A., the U. K., Germany and France will certainly contain interesting details as to how these thriving nations are getting along. Children in China can tell us best how they rear silk-worms; children in Holland, how they make cheese; children in Switzerland, how they spend their winter; children in Italy, how they enjoy the summer—these letters will be still more interesting when they bring with them not only written descriptions but photos and pictures of the country they hail from.

If the primary stage is one of description, this stage is certainly one of inquiry and investigation and as such this stage is dominated by why's and wherefore's and no teacher is worthy of his wages, who does not create in his pupils this spirit of inquiry and investigation.

THE GROWTH OF INDIAN CONSTITUTION AND ADMINISTRATION

By B. G. SAPRE, M.A.,

Professor of History, Willingdon College, Sangli.

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SOME PRESS OPINIONS.

1. "Mr. Sapre is a master of his intricate subject and of the English language. He writes with a clarity and conciseness that are worthy of high praise."—*The New Statesman*, London, 11-10-24.
2. "While there are matters on which difference of view is possible, I consider that the standard of accuracy is in every way satisfactory, having regard to the great difficulty of the task."—*Dr. Berridale Keith*, University of Edinburgh, Scotland.

UNIVERSITY REFORM—VI:

THE CONSCIENCE CLAUSE.

By MR. S. SANKARANARAYANA, M.A., B.L.,
Tinnevely.

(Continued from the previous issue).

FIRST we shall consider the arguments in favour of the introduction of the Conscience Clause.

THE EXAMPLE OF ENGLAND.

In England the Conscience Clause has been definitely recognised. Section 4 of Mr. Forster's Bill of 1870 embodies this clause: "No scholar shall be required, as a condition of being admitted into, or of enjoying all the benefits of, the school, to attend or to abstain from attending, any Sunday School, or any place of religious worship, or to learn any such catechism or religious formulary, or to be present at any such lesson or instruction or observance as may have been objected to on religious grounds by the parent of the scholar sending his objection in writing to the managers or principal teachers of the school or one of them." Why then should it not be introduced into India? Have we lost our conscience if we are a subject race? When after a long history of events, of a series of failures, it has been found to be necessary that a Conscience Clause should be conceded to the Europeans in public schools, the logic of it is apparent, and the Clause may be granted as a concession to us before we begin to demand it as a right.

STATE AID.

It is unfair that the Missionary institutions should be given grants by the Government whose resources are merely the collections of taxes from the people. It then indirectly comes to be that the people aid the very institutions that they hate, the very institu-

tions which work against their own creed and religion. That is, they aid their own destruction. This view has been strongly urged by many English politicians. Sir Harcourt Butler said: "The rice-eating Hindu paid for the butcher's shop and for the beef he could not eat because the dominant Englishmen preferred meat to rice. (It) proposes to establish out of the rates a religious education which everybody is to pay for, and only a portion to use." Mr. Forster said, "In taking money from the tax-payer to give his children secular education, we have no right to interfere with the feelings as a parent or to oblige him to accept for his children religious education to which he objects."

RELIGIOUS NEUTRALITY.

It was definitely stated in the Proclamation that the Government will preserve strict neutrality in religious matters. The Christian Missionaries put forward this plea and said that the Government should not put any check on the Missionaries in their work of teaching the Bible, nor with their own regulations as regards the attendance of non-Christians in religious classes and so forth. But neutrality is intelligible to us only when the followers of the various religions are treated alike, and the various dissensions among them carbed down. Rather to preserve neutrality it is the business of the Government to interfere with the Christian institutions which in the guise of giving secular education administer their own nostrums, and leave the poor parents with no alternative but to gulp them down in order to imbibe the other culture which is put down as their indispensable adjunct. Lord Ellenborough wrote: "I must express my doubt whether to aid by Government funds the imparting even of purely secular education

in a Missionary school is consistent with the promises so often made to the people, and till now so scrupulously kept, of perfect neutrality in matters of religion."

COMPULSORY AND UNAUTHORIZED INSTRUCTION.

The religious instruction is not authorized by the University to which the colleges are affiliated. The Christian institution is inducing a young man to submit to dogmatic instruction in a religion which he avowedly does not believe. The main object of the institution is proselytization. This was a point stressed by even Lord Ellenborough. The secular instruction is merely secondary, and so there is much more reason to interfere and make attendance voluntary in classes imparting religious instruction.

ENCOURAGES HYPOCRISY.

The present system of education in Christian schools and colleges encourages hypocrisy, for, it is impossible to expect sincerity to grow up when the majority of the students participate at the beginning of their class work in a religion in which they have no faith and which they hate from the bottom of their heart. Dr. Duncan said: "Were attendance on religious exercises optional, there would probably grow more reverence for those exercises, while the young would be less exposed to temptation from the besetting sin of insincerity."

BLUNTS MORAL AND INTELLECTUAL SENSE.

The present system of education in Christian schools and colleges blunts the moral and intellectual sense of the students. When attendance is made compulsory, a lurking suspicion is created in their minds, and in some colleges a pass in the Bible examination

is practically a condition precedent for a pass in the other subjects. So, even mere bodily presence in the Bible classes is discounted and one is forced to imbibe a culture which is of no use to him otherwise. To learn a thing against his will, to profess to imbibe a culture which it is his interest in his heart of hearts to expunge out of his mind, and above all, to read a history with the primary intention of forgetting it,—these qualities which are ingrained in the plastic minds of the students are destined in the long run to create a habit of mind disposed to be sceptical in all of what they read and what they hear. Byron's experience with Horace applies to them with added force on account of the denominational character of the Bible:

"I abhorred

Too much to conquer for the poet's sake,
The drill'd dull lesson, forced down word by word
In my repugnant youth, with pleasure to record
Aught that recalls the daily drug which turn'd
My sickening memory: and, though Time hath taught
My mind to mediate what then it learn'd,
Yet such the fix'd inveteracy of my early thought,

That with the freshness wearing out before
My mind could relish what it might have sought,
If free to choose, I cannot now restore
Its health: but what it then detested, still abhor."

(To be continued.)

A PLEA FOR A REFORM IN THE ORGANISATION OF SMALL SECONDARY SCHOOLS.*

MUCH is being said concerning the rights of the teacher, his right to be treated well in point of pay, position, status, etc. I hope you will not mistake me, if I respectfully ask you to look the other way and recognise his obligations and to attempt to visualise what might be and to realize a portion of these possibilities. One of these possibilities, I have taken up as the subject of my talk to you this afternoon, viz., that which concerns the organization of work in the school.

At the very outset, I must remark, that the plan I am going to indicate has been conceived with reference to a particular school. I have brought it up before you so that I may acquaint you with it and that I may, in the light of the criticisms you will pass upon it, clarify my own ideas in regard to its suitability. For this purpose it will be well if, during this talk, you will kindly ask me to 'hold on' whenever I fail to make any point clear or attempt to slur over obvious difficulties.

I have told you already that the plan has been thought out with reference to the

practical conditions existing in my school. You will therefore have to forget the stately and beautifully decorated buildings around you now and think of a wee out-of-the-way school with eight handy classes of 30 pupils in each on an average. If you think of these proposals in terms of any other school, therefore, I would request you to do so with alterations according to the necessities of the case. The proposals are as follows:—

THE SCHEME.

(1) *Change in days and hours of work:* Converting five-day weeks of 5 hours (including games and drill) to six-day weeks of 3 hours per day (excluding games and drill).

(2) *Alternating work and rest:* Having four periods in the morning and four periods in the afternoon of 45' each and giving for each class, instruction for only two non-consecutive periods each morning and evening so that class-teaching may alternate with either rest or voluntary work on the part of the pupils.

(3) *Time-Table:* So arranging class periods that whenever and only when a class has rest, the one next above and the one next below may have work. Classes for this purpose may be divided into two batches and work arranged as shown under:

Batch

4th Class }
I Form } A
III Form }
V Form }

5th Class }
II Form } B
IV Form }
VI Form }

9-30—12-30				12-30 to 1-30	1-30—4-30			
1	2	3	4		5	6	7	8
x	—	x	\$...	Tiffin Interval	x	—	x	\$...
...\$	x	—	x		...\$	x	—	x

x indicates work.

— indicates rest.

\$... indicates end-periods when no teacher or pupil belonging to the batch is obliged to stay in the school.

* A Paper read at the first annual Conference of the Tinnevely District Teachers' Guild, by MR. P. S. PATTABHIRAMA AYYAR, Headmaster, Board High School, Kadiyallur.

(4) *Provision of Subject-Libraries*: As at any time not more than one batch will be at work, four rooms will be enough for regular classes. The other rooms may be set apart one for each subject, *e. g.*, Literature, Drawing, Geography, etc., and well-equipped with books and appliances in that subject. Into any of these as suits their taste, pupils may, during their leisure periods, go and engage themselves in silent reading of books stocked in them or copying maps hung upon the walls or doing sums in Mathematics, in consultation, if necessary, with masters who will always be available as nearly 50 per cent. of them will be free from class work at any given time. The subject libraries with open shelves may be made accessible to every boy in the school from early morning till night and for every day in the year (vacations not excepted). The safe keeping of the volumes here is a matter of detail and can easily be secured by keeping a watchman with pigeon holes and token coins at the gate and furnishing the windows with wire netting in the case of existing buildings, and in the case of school-houses, newly being built, designing a block of communicating rooms with the roof supported on masonry pillars and provided with verandahs on all sides, the portion above the dwarf walls 3½ high all round being enclosed with expanded metal or stout wire-netting. Any pupil will be allowed to take in only a standardized memorandum-book leaving his other things in one of the holes and take a token coin bearing its number. On coming out he can present this and have his things back again.

FINANCIAL ASPECT.

1. *Accommodation*: No additional rooms will be necessary (as shown above.) Only the

subject rooms will have to be intelligently and carefully equipped and maintained.

2. *Equipment*: This can almost be done out of the special fee collection for Library and Games supplemented by an equivalent amount that can be got from the Government for the purpose.

3. *Staff*: No additional staff will be required.

EDUCATIONAL ADVANTAGES.

1. *Less strain for teacher and pupil*: Pupils and masters will feel less of the strain of work owing to their not being obliged under normal conditions to do even two periods of class work at a stretch or more than three hours of such work on the whole on any day. As, instead of the 28 periods of work per week (excluding 2 periods of drill,) only 24 periods of class teaching (also excluding drill which will be done during the free periods) are provided under the scheme, each teacher and pupil will have only about 7/8 of his present total class work together with the added advantage of having this work coming between intervals of rest.

2. *Better organization or work possible*: It will be easy so to arrange the time-table as to render it possible for any boy to take more than the usual two optional subjects, *e. g.*, Shorthand and Type-writing, may be taken in addition to knowledge subjects. Also subjects like Type-writing can be taught within school hours. This is not now possible as several boys have to practise on one machine and that is not possible within any single school period inside working hours. Again double periods for Science, etc., will be easier to arrange than now.

3. *Provision for different pace*: As the time-table will make it possible for a defective child to be sent down to the lower class for

extra work in defective subjects, pupils who are weak in one subject need not be detained at the end of the year in all the other subjects as well as they are now, but may be promoted on condition that, in addition to the work of that class, they attend to the work of the lower class for the defective subject until they come up to the mark. Also clever boys or those who are grown up and enter the school comparatively late may be permitted to attend the lessons of the next higher class in subjects in which they are in advance. The latter may even be given double promotion if they complete two years' work in one year. Thus, gifted boys will have scope to attain to a higher proficiency; backward boys can, within limits, be helped to keep up with their class-mates, and those who are weakly and unable to work for consecutive periods will have a fighting chance.

4. *Provision for different tastes*: The provision of subject rooms and compulsory leisure within school hours for boys will lead to the development of individual taste in addition to laying a good foundation of common knowledge in all the essential subjects in the class room. Those boys, who do not avail themselves of these subject libraries, may either review work done, prepare for the next lesson or if they are weak and disinclined to work, enjoy rest in one of the rooms.

5. *Scholarship*: The provision of subject libraries with open shelves made available every day in the year from morning until night into which a good portion of the school life of the pupil could and would be spent will conduce to the cultivation of that indefinable atmosphere of scholarship and refinement which the contact with books and book-lovers always ensures, and give him

an amount of self-reliance and self-confidence which would prove to be of inestimable value in later collegiate life and future career.

6. *Better School Influence*: The increased contact of boys with boys and masters will raise the moral tone of the school and encourage the *esprit-de-corps* which is so necessary to produce good statesmen and citizens.

7. *Miscellaneous*: Endless also seem to be the other possibilities. To be only illustrative:

(a) Constant contact with good models is the main lever for achieving proficiency in a foreign language. Cannot this be secured by the boys of the second and third forms being asked in small batches to be visitors by turns when English lessons in the V and VI Forms are going on—where they can silently listen to a stream of good talk such as practically very few lower class-masters are capable of indulging in?

(b) Again those who have tried and watched carefully, as I have done, the result of boys forming study groups to work together (one of them reading while the others are lying down or lounging, all of them discussing, criticising, commenting, or joking about the portion read) will bear testimony to its immense potentiality for securing high proficiency and at the same time of transforming the drudgery of work into a pleasant pastime—all without adding to the work of the teacher or the financial burden of the school. One wonders if these groups could not be formed and tried during the free periods when boys will be together.

(c) In connection with the spread of the Library movement it has been observed that libraries are of no use if people cannot use

them, and they won't use them unless they are taught it in early life. Are there not exceptional opportunities for this in school? Cannot instruction and demonstration in the right use of books be usefully given in the subject libraries every now and then? Given a good reference library, it would be interesting to know how many of us can lay hands unerringly on the right book for an information or an explanation.

(d) Cannot boys be made to take an interest in the world about us—the broad movements and big events of current life? *e.g.*, the recent earthquake in Japan, the first Labour Ministry in England, the flood damage in North and South India, and the Unity Conference. The illustrations regarding current events in the *London Times* or the *Graphic*, etc., put up on the wall, or the big head-lines written on a black-board in one of the subject rooms will keep almost every boy in the school up-to-date in a sense.

(e) Will not again Scouting and other communal activities be more easily possible when boys and teachers feel fresh at the end of a day's work rather than jaded and tired as they are now? You can easily understand the slow spread of this very useful movement and the half-hearted way in which this work is undertaken by people engaged in it, when you remember how very weak and physically unfit the teachers and the taught come out after being done to death by the present grind in the school.

As I have no intention to be exhaustive, let me leave the long list here.

POSSIBLE CRITICISMS.

1. *No original scheme*: I have been told that this plan is identical with many others—the Dalton Plan etc. I am not sure if,

under the latter, we depend mainly on class teaching without giving assignments, or again whether the accommodation economy is a feature of that plan. I do not lay claim to originality or novelty for these proposals, as I am not writing a thesis to claim a medal or a degree. The only object of this paper is to evolve a set of conditions that will work well, that will produce better results than now without increased educational effort, that will be a first useful step in the right direction. Let us judge them from the standpoint of valid objectives and valid means and from no other.

2. *Enthusiasts necessary*. I am told again that for this change we want enthusiasts. While certainly recognizing the exceptional opportunities of enthusiasts under the scheme, I must say that the basic idea is rather that, given the same teacher and the same boys—clever or dull, either or both—24 periods of fresh work before and after rest will secure increased efficiency and at least as much quantity as 28 periods of continuous tiring work. Add to this 12 free periods which may be spent in the library or in other classes, the result will be out of all proportion to the effort.

3. *No economy of educational effort*: If the end-periods are discounted, the teacher will have 24/28 or 6/7 of his present total class work and a stay in school of $4\frac{1}{2} \times 6$ or 27 hours per week, a total not in excess of his present stay in some cases.

CONCLUSION.

Gentlemen, the parting words, during the last lecture for the year, of my Professor still ring in my ears. He said in effect, though in terms far more touching and eloquent, that the man who has to talk much has also need for hours of silence for vigorous introspection.

THE INDIAN HISTORICAL RECORDS COMMISSION. POONA SESSION.

He has to ask himself whether, measured by the highest standards, his work will not stand condemned. If it will not, let him go forth into the world to continue the good work he has so nobly and so well been doing. But if the work that he has done has not won the applause of his own conscience, let him firmly resolve to make such amends and do such work in the future as will stand all tests. It is in the spirit of this advice that to questions to my own self in silent moments of heart-searching, I have repeatedly got as answer: "There is awful waste of educational effort well worth avoiding. There are ways in which work may be reduced and made easier and pleasanter both for teacher and for pupil. Avoid the path of convenience and even safety, that of marking time, for it is barren of results. Choose that of high hope, for the childhood of a nation cries to you for help and there is something sad and pathetic in the boundless faith it has in the education you can impart."

Gentlemen, I have done. In spite of what I have said, there may be those who think that the teacher under the scheme will be harder worked than now. Though I don't concede the point, to them I will only say: "After all you are working only for your own children, for the children of your motherland. Can the man-maker of a nation have ideals too high? Can he make sacrifices too great?"

THE seventh session of the Indian Historical Records Commission was held in the Council Chamber at Poona, the historical capital of the Maratha Empire of the Peishwas and intimately associated with the great traditions of Sivaji's splendid achievements. It was held on the 12th January under the presidency of the Hon. Sir Evan Cotton, Kt., C.I. E., President of the Bengal Legislative Council; the opening ceremony was done by the Hon. Mr. Jadhav, Minister for Education, Bombay, on behalf of H. E. Sir Leslie Wilson, Governor of Bombay, whose speech was read. The speech detailed that measures were being vigorously taken by the Bombay Government to arrange for the calendaring, the preservation and the publication of the necessary parts of the great quantity of valuable records lying in the Peishwa's Daftar which is now housed in the Land Alienation Office. It also traced the progress of modern historical research going on in the Western Presidency since the times of Captain Grant Duff through the days of A. K. Forbes, Dr. Bhau Daji, Bhagavan Lal Indraj, to the present time when increased attention is being paid to the resuscitation of old Maratha records, historical, literary and otherwise. On the first day eleven papers were read in the public session. These were:—

1. Some Notes on the records in the Pom Daftar, by Principal H. G. Rawlinson, author of "Bactria," "Sivaji," etc.
2. Present condition and distribution of historical records relating to Northern India, by Professor J. N. Sarkar.
3. The Peishwa's Records and their historical value with a few extracts from

the Chitnishi Records, by Rao Bahadur D. B. Parasnis of Satara, the well-known author of "A History of the Maratha People."

4. Suggestions for Stabilising the Settlement of the Land Revenue in Bengal previous to 1786, by Mr. R. M. Ramsbotham.

5. Maharaja Yeshwant Rao's Critics, by Mr. N. V. Phadke of Indore.

6. The Bakhair of Ram Raja and the Battle of Talikot, by Dr. S. Krishnaswami Aiyangar, Madras.

7. Bussy's Letter to Marechal de Castries, dated 3rd March 1784, by Mr. M. Singaravelu Pillai, Curator of the Pondicherry Records.

8. The Settlement of Baramahal and Salem from the records, by Prof. C. S. Srinivasachari, Madras.

9. The Magna Charta of English Trade and After, by Prof. Bal Krishna of Kolhapur.

10. The Four Gentlemen from Madras and Clive's Second Governorship of Bengal, by Sir Evan Cotton.

11. The Silk Industry in Bengal in the Company's Days, by Mr. A. F. M. Abdul Ali, Secretary to the Commission, and Keeper of the Imperial Records.

On the second day, the Commission paid a visit of inspection to the Peishwa's Daftar which is in the course of being recalendared and reclassified, to the Bharat Itihas Samshodak Mandal which is under the guidance of Sirdar Saheb G. Mehendale and Prof. Potdar of the New College, Poona, and where a very large and varied collection of valuable manuscripts, paintings, coins and other antiquities have been accumulated, and to the Bhandarkar Memorial Research Institute in which is housed the large collection of Sanskrit and Pahlavi manuscripts belonging to the Bombay Government and other bodies. The Commission as usual made several recommendations and suggestions for the better preservation and calendaring of historical records in the possession of the various Provincial Governments and the Native States and of the Imperial Government.

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THE DALTON LABORATORY PLAN.

By Mr. M. R. PARANJPE, M.A., B.Sc.,
Poona City.

"We have been viewing things through the wrong end of the telescope. What should be taught and how this ought to be ushered in, should not be the most important problem in school improvement. We want teachers with original ways sufficient to answer the needs of each individual. Let us free them from the yoke of method and system and make it possible for them to use their own good judgment."—Miss PARKHURST.

Miss Parkhurst, a teacher in the high school at Dalton—an American town—is the originator of the now famous experiment in school organization, known as the Dalton Laboratory Plan. She had tried it herself for children between the ages of eight and twelve and being convinced of its merits, recommended it to the Principal, Dalton High School, for general adoption. "The Principal saw in Miss Parkhurst's plan an opportunity to re-organise the school work on a basis that would enormously increase the value of his courses. He gained the permission of the school authorities to try the plan for part of the school-day. A number of school meetings were held to explain the plan to parents and pupils. Finally the conservative village promised a rather half-hearted co-operation. The community was frankly suspicious." This was in 1920. The results obtained at the Dalton High School, and later at the Children's University School founded for the purpose of exhibiting the plan at work under the direction of Miss Parkhurst have been so encouraging that Miss Parkhurst is now recognised as an innovator as great as Pestalozzi, Froebel or Montessori.

Secondary Education in India is handicapped by numerous local difficulties, such as the use of a foreign medium and the intermixture of the socially most advanced and most backward communities in the same school. But even when these are absent there are a few other common to all schools and are by no means less important.

(a) The rigid time card forces pupils to attend to a subject for which they may or may not be prepared. The English lesson begins at 11 A. M., and at 11-45 A. M. in walks the Mathematics master. To a few who did not like the lesson and were already fatigued the change is welcome. To others who got interested and would have willingly continued a little longer the abrupt change comes as a shock. Every class receives these shocks five times a day and intellectual development is certainly interrupted if not actually arrested.

(b) Even with the greatest possible care, a class will always contain pupils with varied preparation and ability. A knows how to find his words in a dictionary and has learnt to concentrate his mind on a problem; he reads his lessons at home and requires but little explanation from the master. B, though clever, was absent for a week and has to make up his lessons done in his absence as also to keep pace with the rest of the class. C is rather dull and requires to be helped at each stage. An ordinary teacher finds it hard to teach all these three together. A's time is mostly wasted and C finds the master going at a very rapid rate.

(c) In class-teaching there is a lot of spoon-feeding. From 11 to 5 P. M. the teacher helps the pupils at each stage. They are forced to use the crutches whether they need them or don't. Some of the boys in the class need them and the class discipline requires that all students receive the same treatment.

(d) It often happens that a class has a pupil of a calibre superior to that of his master. Allowed to use the school library and apparatus with a certain amount of freedom he takes high flights. Tied to the inferior intellect of the master, he has to crawl on the ground.

(e) When the school is closed at 5 P. M. the pupils are fatigued, not by work but by spoon-feeding. They run to the play-ground, or help their mothers or attend a public function. When refreshed they have to write their home exercises. Even when they have no such distraction and can

spare some time for extra work they have not the reference books or the apparatus; or if some be fortunate enough to get these there is none to help them over a difficulty.

The Dalton Laboratory Plan proposes to remove all these defects. In this plan class teaching is abolished or at least reduced to the minimum. The boys are classed into different grades as usual, but the boys of the same grade do not sit in a class and learn at the feet of the master as they do at present. They work in big rooms called the laboratories which are equipped for different subjects. The English Laboratory will contain a number of dictionaries and reference books, selections and works of classical writers, pictures of the men of letters, etc. The History Laboratory will have a shelf with numerous history books, sketches of plans, atlases, maps, original documents, history pictures, etc. Boys of different grades who wish to read English will sit in the English Laboratory; those who wish to read History will go to the other. The Laboratory is presided over by a teacher—a specialist in the subject—but he occupies a quiet place in a corner and will help only those who need his help. The boys are free to go to one or the other laboratory where they are inclined to work. They will, if they choose, sit in the same laboratory for full three hours, or change every half hour. Each boy is given a contract; he has to finish a set of lessons in a month. He is supplied with directions and advised to read and consult certain books. He is asked to note his weekly progress on a graph and if the progress be slow he may be mildly asked to put in more work. But it is open to the student to accept the suggestion or to reject it. He may finish his contract in the first fortnight and then enjoy a well-earned rest; or he may idle away his time in the beginning and rush up his work at the last moment; or he may be 'slow and sure' and do a bit every day. The only check on him is that unless he completes his first contract and satisfactorily answers certain questions set to him, he is not allowed to take the second contract.

This means that the pupil must plan his distribution of time, and there is necessarily some confusion in the beginning. A is clever in Sanskrit, History and Mathematics but weak in English. He devotes his time whole-heartedly to the first three subjects and puts off English to the end of the month. He has ample time on hand—a week or more—but discovers that he cannot work at this subject (English) for more than an hour each day. His mind is fatigued sooner now than it did when reading Sanskrit or History. In spite of hard work the contract remains incomplete; but a valuable lesson is learnt. During the next month he takes care to read a bit of English each day. "Ability to fit a definite job into a definite time, to plan a coming day, and to improve in the ability to organise one's work are large factors in adult success. Like all habits, they cannot be established without practice."

"Horace Marshall is a pupil in a fifth grade. The school hours are from 8-45 A.M. to 4 P.M. with an intermission from 1 P.M. to 2 P.M. From 8-45 A.M. to 12 noon is considered free time. *It belongs wholly to the pupil and it is his responsibility to organise it to suit his needs.* The half hour between 12 and 12-30 is taken up with pupils' assembly, special work or committee meetings. During this time the academic instructors meet for faculty conferences. The following half hour is devoted to group conferences. All the pupils of a grade report to an academic instructor at this time but they report to a different teacher each day, so there is a weekly report for each grade in each subject. The remainder of the day may be used for work in art, for manual training, recreations, athletics, any work which can be readily handled in grade groups.

"The school year is ten months. Horace studies five academic subjects—History, Mathematics, Geography, English Literature and some form of Science. Therefore Horace has five contract jobs a month, or fifty during a school year. Besides this, he will have a certain amount of work in spe-

cial subjects—Gymnasium, Carpentry, Art. As far as the school staff permits, this work should also be managed by contract jobs in the subject laboratories. Where such instructors are on part time only, these subjects may be conveniently handled in groups in the afternoon or at the close of the morning's socialised time. Horace works in all of these subject laboratories instead of in the fifth grade room. He has a locker for his personal school belongings instead of a desk. His group is under the special care of some one teacher, and will meet in the laboratory for a short period each day, usually at the beginning of the morning. Horace's adviser talks over class plans and problems with children, makes announcements, and suggestions to help groups and individuals in planning their day's work. Then Horace and his class-mates get out their assignment cards. On these cards they have copied in detail the work of the monthly contract in each subject.

"There is no time-schedule, no bell to summon Horace from one room to another. He determines to work on his Geography this morning and so goes to the Geography Laboratory. His work may be reading references, questions to be answered, maps to be drawn or other pertinent matter. He carries on his work independently, entering and leaving the room when and as he pleases. The time he spends there is determined entirely by his interest-span and his fatigue. If other fifth-grade pupils are in the laboratory at the same time he may join them. The group is allowed to talk, help each other, exchange books and papers, in fact they should be encouraged to work together. As they work they take notes on questions they cannot answer among themselves or on any point where the teacher's advice is needed. She is in the laboratory during the whole morning helping groups or individuals; so Horace is free to go to her as he requires her assistance. Or she may call his group to her to see what they are doing, discuss difficult questions or make suggestions about better ways of working.

"Before leaving the laboratory, Horace indicates on the instructor's subject graph the amount of work completed. If he is in doubt as to the amount of work covered, he may ask the instructor to assist him in this. He also indicates the amount he has done by a line on his own contract card. If he leaves before the end of the free laboratory work time, he will select another subject, go to that laboratory and work there as he did in the Geography room.

"Horace will have an hour at the end of the morning for group work with his own grade. The first part of this he will spend in assembly, in work for the school activities he is interested in, or in having a special lesson, or giving a group report with all or part of his grade. The last half hour he spends in regular form or group meeting. Since he has only one of these a week in each subject, it will not pass as the daily recitation does. Miss Parkhurst calls this group-work "class meetings or conferences" in order to distinguish it from the ordinary recitation or oral lesson period. Enough time should be given to these class conferences to enable the teacher to present things relating to the subject outside the pupil's experience, things impossible for him to discover with his limited time and equipment; to guide real discussions of the subject by the pupils and to review and round up the assignment.

"In the afternoon, Horace's grade will probably have a more regular time-table. Gymnasium, recreation, music, and certain kinds of shop-work, depend upon organised groups for their value and their success. Part of the afternoon may be spent on a time-table and part in the free study for art and carpentry, or all of it may be given over to classes and time found for more than one recitation a week of academic subjects. Recitations in American schools correspond to what are known as oral lessons in English schools."

The above is rather a long extract but it gives such a vivid idea of a pupil working under the Dalton Plan that no apologies need be made for

quoting it in full. It was with a certain amount of prejudice that I began reading a book on Dalton Plan. For the last forty years the tendencies of educational writers have been to state their views as dogmas and put their notions on method in a cast-iron frame. The fact that the pivot of all successful educational experiments is the teacher is studiously ignored and every village school-master is expected to do what Pestalozzi, Froebel or Montessori did in their schools. It is forgotten that the spirit of Montessorian teaching does not consist in the numerous blocks and pictures but in the personality of Dr. Montessori and a teacher devoid of the calibre of Dr. Montessori can show no results, whatever be the amount of apparatus supplied to him. It is common experience that the kindergarten gifts supplied to normal schools serve little useful purpose and that the teaching there will be as good or as bad in their absence. In the Dalton Plan I have expected to find new fad, and fresh opportunity for a few wiseacres to exhibit their ignorance before school-masters who are not allowed to contradict them.

Often I said to myself "There is again time for a Rousseau to advise us to go back to the good old days when the so-called modern methods and notes on lessons and class-drill and all the spoon-feeding did not exist. Let us return to nature." It was a happy surprise to discover in Miss Parkhurst a rebel against the rigid, hide-bound class work, a rebel as assertive as Rousseau but much more sensible and tactful. Modern educationists have made the teacher the centre of power and attraction in the class; Miss Parkhurst puts him again into the background and restores the pupils to their legitimate position. At present the pupils are forced to take the help of the teacher whether they want it or don't. In the Dalton Plan if he is confident enough, the pupil is free to do his work without even once consulting the master. In the class-work the teacher is forced to give his time equally to all. Those who do not want the teacher's attention feel bored; those who need it

most feel aggrieved. In the Dalton Plan, Miss Parkhurst removes this great defect in our school organisation.

It is generally admitted that the pupils of this generation often exhibit colossal ignorance about out-of-school affairs. Even the boys in the Matric class cannot give the names of the Viceroy, the Governor of the Presidency, the Commander-in-Chief. Not one in a hundred will be able to give the names of the Ministers and the Executive Councillors, the Presidents of the Council of State, the Legislative Assembly or the Legislative Council, or even to say who are the representatives sent by their districts, etc., to these bodies. The chief reason for this in my opinion is that the student is taught from the first standard to lean so much on the teacher that he will not himself try to enrich the stock of his knowledge. He makes no effort to gauge the extent of his advance and has little interest in anything but what would be required by the master in the class. It is said the teachers are inefficient; they are certainly not more inefficient than the teachers of twenty years ago. Before 1900 the student prepared his lessons almost unaided. Since 1900 the teacher cooks for him everything, even what the student can swallow uncooked.

The Dalton Plan recommends reversion to the old days but suggests an improvement. In our old schools the teacher made assignments for the next day and the pupils were expected to complete these contracts at home. A few who had books to read and a father or brother to help fared well. The many, less fortunate, suffered. Miss Parkhurst offers equal facilities to all; she puts them in well-equipped laboratories and sits there to help those who need her help.

Our secondary schools have a twofold defect—over-equipment and under-equipment. The school libraries are stocked with valuable books which nobody reads. The students can spare no time for it. A few clever boys would like to read them while their master is explaining some silly difficulties to the dullards; but who will allow them to do

it? In the laboratory they must and will make full use of all the extra books supplied. The equipment as regards maps, globes, charts, blackboard instruments is always inadequate. Ten different classes require them simultaneously and there are only two or three sets. But two laboratories each containing one or two of the sets will be enough for a large school of 700 pupils. If all the three can be put in one laboratory they will be more than what can ever be required.

Pupils often learn better with the help of their friends than with the help of their master. They can cross-question their friends with greater freedom. But speaking to each other in a class is strictly prohibited. In the laboratory not only is it allowed but encouraged.

It will thus be seen that the Dalton Plan is a valuable experiment in school organization and deserves to be studied by all headmasters with great care and in all its details. It will of course have to be modified considerably before it is adopted in India. Miss Parkhurst recommends it for all schools—Primary, Middle, Secondary. I am inclined to exclude the middle schools for the present. Again in the lowest classes, considerable class-work will have to be retained for the teaching of reading, practice in conversation and mental arithmetic. These things, however, can be best decided by an experiment. The scheme has already got into the hands of the so-called experts and they are endeavouring their best to supply it a skeleton and deprive it of its soul. When it comes to India we shall probably get it in that form and it will prove as great a failure, or as poor a success, as the kindergarten, the direct method or the visual instruction. In order that a method or a scheme may succeed there must be a demand for it from the teachers. It must fail if an attempt is made to force it on schools. It is most necessary to create this internal demand and the best method to do it is to organise a few schools on this Plan. A school with about 500 pupils—and most Government and Aided schools fall in this class—can be conveniently transformed into a Dalton school. If it is inconvenient to transform the whole school at once the Plan may be tried in two grades only—fifth

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and sixth—and extended to other classes as convenient.

The Educational Department can probably circulate information about the Dalton Plan by publishing pamphlets giving the history of the Plan, suggestions for its adoption in this Presidency, specimens of assignments and progress graphs, equipment for different laboratories, etc. They can also find some headmaster of a Government school willing to adopt the Plan in his school and help him to make the experiment a success.

For more information readers are requested to consult—

1. 'Education and the Dalton Plan,' by Parkhurst. (G. Bell & Sons.)
2. 'The Dalton Laboratory Plan,' by Evelyn Dewey. (Dent & Sons.)
3. 'Individual Work and the Dalton Plan,' by A. J. Lynch (George Philip and Sons.)
—*The Progress of Education*, Poona.

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FREE SECONDARY EDUCATION IN ENGLAND AND AMERICA.

BY MR. HAROLD T. WILKINS.*

"Your English system of secondary education is a scandal, I reckon," said a young Canadian from New Brunswick to me a few days ago. "In Canada and in the United States our public secondary and our 'common' or primary schools are free to all."

At a time when our whole education system may go into the melting-pot, it may be instructive to compare the relative position attained in England and the United States. An examination of the Board of Education's Statistical Tables for 1919-20 (the latest accessible at the time of writing) shows that the supply of secondary education in England is inadequate. Between 7 and 21 in England and Wales are about 10,000,000 persons, and between 6 or 7 and 18, there are 8,500,000. Only 331,000 are in State secondary schools. Again, about 150,000 children between 14 and 18 are in State secondary schools out of a total of 3,600,000 of the same age in the country. In other words, not more than 4 per cent. of the boy and girl population are in State secondary schools. "The total number of children in the secondary schools, in October 1923, was about 359,000..... and the schools are mostly full," said Mr. Trevelyan in the House of Commons, on the 12th March 1924.

The Departmental Committee on Scholarships and Free Places in Secondary Schools reported, in 1920, that there were in 1913, 49,120 free scholars (ex-elementary school pupils) out of a total of 151,045 pupils then in 885 grant-aided schools. This Committee recommended that the number of free places in the secondary schools be increased to 40 per cent., but the wave of economy which swept over England in the years 1920-22 engulfed all such proposals until Mr. Trevelyan, as he said, "reversed the engines," in March 1924.

* Through the courtesy of *Education Outlook*.

In the same month, the Minister told Mr. Lowth, M.P., in the House, that in 1920-21 less than 10 per cent. of the total number of ex-elementary school pupils passed on to secondary schools, whilst only 4.2 per cent. reached the Universities. Comment, in face of these official figures, is superfluous, and as to the demand for secondary education in England, one need only draw attention to Mr. Trevelyan's remark already quoted: "The secondary schools are mostly full."

Now what of the position of democratic secondary education in U. S. A. Mr. Charles H. Judd, Director of Education in the University of Chicago, says that, from 1890 up to 1915, the population of the U. S. A. increased 60 per cent. and in the same period the number of pupils in the high schools increased 300 per cent.†

Universal free secondary education in the U. S. A. dates in principle from 1850, though it was not until about 1890 that a system of State education stretching from primary or common school to University was firmly established. America has never instituted the centralized scheme of education, in our English sense of the term, whereby a Department of State co-ordinates and aids the work of local education authorities. Education in all grades is a matter for the various States of the Union, as it is of the provinces in the Dominion of Canada. The Federal Government may pay the piper by appropriations in aid of individual States, but the latter, impatient of any interference from Federal authority, will call the tune. It may be noted that since the foundation of the Union, grants of Federal domain land equal in all to nearly twice the area of Great Britain have been made to 28 States for the endowment of "common" schools and colleges, and up to date £30,000,000 have been obtained from the sale of such lands by common schools (with a further £90,000,000 in prospect); and £10,000,000 (with £30,000,000 in prospect) for Universities and colleges. Only 8 per cent. of U. S. high schools

† University of Chicago War Papers, No. 7, 1918.

are privately owned, and they have 8.3 per cent. of the total of secondary school pupils.

Another striking divergence between British and American present conceptions of secondary education is that whereas, in this country, secondary education has been officially defined as "one which offers to each of its pupils (from 12 to 17 years of age) a progressive course of instruction . . . in subjects necessary to a good general education," in the United States all grades corresponding to English higher elementary, technical and continuation school education would be reckoned as secondary.

"But," says Mr. James W. Norman, Professor of Education in the University of Florida, "the most fundamental point of difference between the English and American systems of secondary education is undoubtedly that of universal free secondary education. This is the foundation-stone of the whole system of American secondary education in its every phase. On nothing is there such complete accord."*

"This Commission holds," says the U. S. Commission on the Re-organization of Secondary Education in 1918, "that secondary education

* A comparison of Tendencies in Secondary Education in England and the U. S., published in 1922, by Teachers' College, University of Columbia.

should be so re-organized that every normal boy or girl will be encouraged to remain in school to the age of 18, on full time if possible."

Federal returns are quoted by the Commission showing that one in every 73 of the estimated total population obtained secondary education in 1914-15, whilst about one-third of the pupils who enter on the first year of the elementary school, reach the four-year high school, and about one in nine is graduated.

But in the U. S. A. tuition is free to all and entrance is "free to all adolescents adequately prepared, yet no maintenance grants are given to the poor in America, for fear of charity, or because of the spirit and custom of working one's way through."

We may end with a quotation from Mr. C. H. Judd's "Democracy and American Schools" (1918, Chicago): "The high schools are exclusive in the first place because the common family does not always find it possible to afford the time for its sons and daughters to continue their schooling. There is, therefore, in some measure, the exclusiveness of wealth even in the free high schools. This departure from complete democracy is disappearing as the economic conditions of the average family improve."—*The Mysore Economic Journal*: November 1924.

THE HISTORY OF EDUCATION IN THE MADRAS PRESIDENCY

By Dr. S. SATTHIANADHAN, M.A., LL.M.

Board, Rs. 3.

(Published with the sanction of the Director of Public Instruction, Madras.)

"The Director welcomes the appearance of this much-needed volume, the publication of which was sanctioned in Proceedings No. 609, dated 26th January 1894. Mr. Sathianadhan has spared no pains to get at facts, and having got them, he has presented them in an orderly arrangement and in clear, well-chosen language. The book deserves to be in the hands of every one engaged in educational work in this Presidency."—*Proceedings of the Director of Public Instruction, No. 11817, dated 6th December 1892.*

"This is a most useful and valuable book and well deserves the high praise the Director of Public Instruction has given it. The information is very complete, well-arranged and well-written."—*The Madras Mail*.

SRINIVASA VARADACHARI & CO., TRIPLOANE, MADRAS.

Reviews and Notices.

AUTOBIOGRAPHY OF JOHN STUART MILL. OXFORD UNIVERSITY PRESS. (WORLD'S CLASSICS SERIES.)

Ever since Mill's Autobiography was published, now over half a century ago, it has been maintaining its position as one of the most interesting books in that department of Literature in England. The edition under consideration is substantially the same as the one published by the author himself, though the Editor says in his Preface that he tried his best to get the permission of persons concerned to publish for the first time a few letters which will throw greater light upon Mill's opinion about his father and his wife. But the Editor has succeeded in publishing for the first time some six speeches given by Mill, or intended to be given by him, before the Debating Society of which he was a member in his younger days.

Those who have read the philosopher's autobiography know that he had no childhood in the proper sense of the term. A prodigy who could decipher Greek in his third year cannot certainly be called an ordinary child, and yet it causes no small surprise for the reader to realize that Mill had, even in those juvenile speeches he made when he was 17 or 18 years old, anticipated most of his later ideas, and gives expression to them in such clear and lucid language which is the marked characteristic of his later writings.

His speech on British Constitution, especially, will be read with great interest, where he condemns the idea of class representation, a very thorny problem in the current politics of our own country. We seem to have attained, politically speaking, the stage of development, which England had about 100 years ago, and which was even then condemned by Mill.

Much of what Mill spoke and wrote upon sounds commonplace now, because, as is well-known, he himself was responsible for familiarizing those great ideas, and the present generation, which imbibes them, naturally cannot appreciate the

enthusiasm with which they were hailed by an older generation, of which, alas, we have at present very few representatives. He has been aptly described as the Saint of Rationalism, and the young man just on the threshold of life can have no better guide than Mill, who may not give him specific solutions of problems, but who would certainly put him in the proper frame of mind to enable him to solve the problems for himself.

The reading public are under great obligation to Mr. Humphrey Milford, who has included this classic in the fine series he is publishing: The World's Great Classics Series.

PRIMER OF ENGLISH LITERATURE—FROM A.D. 670 TO A. D. 1832—BY STOPFORD A. BROOKE, M.A., WITH A CHAPTER ON LITERATURE SINCE 1832, BY GEORGE A. SAMPSON, M.A. (MACMILLAN & Co., LTD.) Price 2s. 6d.

That well-known classic of Stopford A. Brooke, the Primer of English Literature up to 1832, had the unique honour of being reviewed by no less a person than Matthew Arnold himself. Mr. George A. Sampson, who, as the readers of this *Review* know, has taken over the editorship of the Pitt Press Series from Mr. Verity and who has distinguished himself in other ways also as a populariser of English Literature, has written a chapter bringing the story of English Literature down to our own times.

The supplementary chapter is broadly divided into two sections, the Victorian Age, and the Post-Victorian Age, the former producing "literature of security" and the latter dating from 1890 onwards (the literary chronology is not always coterminous with political chronology; for example, the Elizabethan age is sometimes brought down to Milton's time) producing "literature of unrest" with its change in "values."

The leading figures of literature are grouped under different categories, such as Poets, Philosophers, Scientists, Theologians, Historians, Novelists, etc. There is a section devoted to the literary

revival in Ireland. A brief account is given of the works of Travellers and Explorers, of light literature, and the literature of scholarship and letters.

There are short appreciations of important poets and men of letters like Tennyson, Browning, Carlyle, Ruskin, which are very just and illuminating. The poets of the period are classified as Poets of Affirmation, like Tennyson and Browning, Poets of Perplexity, like Matthew Arnold and A.H. Clough, Poets of Escape, like Rossetti, Swinburne and Morris, and Poets of Faith, like Coventry Patmore and Christiana Rossetti.

The second section has most of the main categories mentioned above together with the category of Drama added.

The conclusion ending as it does with Matthew Arnold's famous dictum that "the future of poetry is immense," is optimistic enough, even though the writer is not blind to the defects of modern democratization of literature, such as unduly exalting minor writers, and the tyranny of the newspaper.

Since the book was published, death has taken away from us Joseph Conrad William Archer.

We are quite sure that this book would prove to be a source of great help and inspiration to all lovers of literature in general and to the students of our Universities in particular.

"CORIOLANUS," EDITED BY G. E. HOLLINGWORTH AND PUBLISHED BY W. B. CLIVE. (UNIVERSITY TUTORIAL PRESS, LTD.) Price 1s. 6d.

This volume belonging to the Matriculation Shakespeare Series published by the Tutorial Press is bound to be of great use to the students, for whom mainly it is intended. Though it is called Matriculation Shakespeare, in this country this play is very often prescribed for the B. A. classes; and therefore even our college students will find the Notes very useful.

The book has a very good Introduction dealing with such interesting items of critical study as the construction of the play, characterisation, metre, and diction. The two notes added on Shakespeare's opinion of Coriolanus and Shakespeare's attitude towards the populace are very interesting. That Shakespeare meant to picture by this Roman mob the citizens of his own London, who by patrons of the theatre, the young gallants were called "the scurvy cits," is highly probable; and we are reminded of what Dr. Bradley has said: "Shakespeare," says Bradley, "knew that the immense majority of his audience were incapable of distinguishing between rough and finished work. He often felt the degradation of having to live by pleasing them."

The printing as usual is very excellently done, and the notes, though brief, are very useful. The price of 1s. 6d. certainly is not too high.

BYRON (A LECTURE DELIVERED BEFORE THE UNIVERSITY OF OXFORD, BY H. W. GARROD, PROFESSOR OF POETRY IN THE UNIVERSITY).

Last year was the centenary of Lord Byron's death, and therefore there was a good deal of study and criticism and lecturing on that fascinating and illusive personality. In recent times Sir Arthur Quiller Couch has given us his own impression about the poet, and recently summed up his views upon the poet in his Reade Lecture given at the Cambridge University. Matthew Arnold's criticism of Byron was as much an over-estimate as his study of Shelley was an under-estimate, and his excesses have been corrected by the later generation of critics.

Prof. Garrod's estimate that Byron has not been a formative influence, that in spite of his vanity, egotism and sensuality, he was a genius, that in spite of his continentalism he was insular and a typical Englishman, that he was superstitious to a degree not realized by the average reader, that he wrote poetry very often to with-

draw from himself, that his poetry was very often genuine without being truthful, are points on which all judicious critics will agree. It is doubtful, however, whether Prof. Garrod's statement that Don Juan was really the *magnum opus* of Byron will command general acceptance. The lecture, however, is thought-provoking and affords interesting reading.

MEMORANDUM ON PROBLEMS OF ENGLISH TEACHING, IN THE LIGHT OF A NEW THEORY, BY HAROLD E. PALMER, LINGUISTIC ADVISER TO THE DEPARTMENT OF EDUCATION; DIRECTOR OF THE INSTITUTE FOR RESEARCH IN ENGLISH TEACHING, TOKYO.

The dependence of education upon psychology is coming more and more to be realized and as investigations in the realm of psychology progress and bring forth new facts hitherto unrealized, the educational aims and methods are also undergoing modifications in the light of new facts revealed.

The book under review is a fine example of how modern psychology comes to the relief of a teacher who is confronted with the problem of teaching a foreign language to students. This problem is of great importance to us in this country, as English, the medium of instruction in most of our schools and in all our colleges, is a foreign language, whose study and mastery entails a good deal of effort and expenditure of time, both on the part of the teacher and of the taught. Any method, therefore, which would economise effort and time in this direction, is to be welcomed, and hence the significance and importance of Mr. Palmer's book.

He draws distinction between speech and language, which have very often been mistaken one for the other, and starts with the different methods of making students familiar with speech before they study language. Even in speech he distinguishes between primary and secondary speech, and how in the ordinary simple and primary speech-circuit between the speaker and the auditor,

there are various psycho-physical operations before the concept in the mind of the speaker or the transmitter is transferred as a concept in the mind of the receiver or the listener. He has very practical observations to make upon the various primary speech habits, how to strengthen them and make them efficient.

Then he deals with secondary speech-circuit in the same manner and discusses the speech habits in connection with this more complex problem. He takes up next for consideration the six writing-reading habits. His remarks upon language exercises and the designing of a linguistic course for foreign students and the considerations to be borne in mind by the framers of such a course, the various lines of approach which make the task an easy one, all these are highly suggestive and useful, and we hope the recommendations of the author, which are not the fabrications of his own imagination but which are the result of his own patient labour and investigations, will be given the due weight they deserve by the teachers of English in this country. We also hope that with suitable alterations some such line would be followed by our brother teachers in India, which will result in the lessening of the strain upon the teachers and the students in the matter of acquiring proficiency in a foreign language.

We commend this very useful book to all teachers in India.

THE PSYCHOLOGY OF THE FREE CHILD, BY CHRISTABEL M. MERIDITH (CONSTABLE & Co.) Price, 5 s.

The subject of this book is the psychology of young children between the ages of three and twelve, and taking into consideration the environment of the child, which at this age is most important in education and development.

Some thirty years ago Professor James entered a protest against the extravagant claims then being made on behalf of a "New Psychology" to

provide a basis for a new and exact practice of education. The new psychology of that day is now old in most parts of the world, and by the introduction of such books as Miss Meridith's, we hope, that before long it will also be "old" in India and that every teacher of children will have made a study of this all-important subject if he wishes to be successful in his work. It has made and is still making its contribution to the most important science of the day, and it has in most parts of the world, revolutionised education. Even in India we see signs of the subject having filtered out through the minds of educational theorists, and hence we do see a slight, but let us hope, increasing degree of modification in educational practice. It is for this reason that we recommend Miss Meridith's book to all teachers of this Province for we feel sure they will benefit not only their own mind, but their treatment of the children whose fate it is to work under them.

The book contains chapters on the new methods of teaching such subjects as Reading and Writing Number and the Elements of Mathematics, History and Geography and Handwork. It deals with habits and environment and that most important phase in child life the 'Play period.'

The book is well got-up and attractive. We heartily recommend it.

WOMEN PEACE-MAKERS, BY HEBE SPAULL. (G. G. HARRAP & Co., LTD.) INDIAN AGENTS: THE P. T. I. BOOK DEPOT, BANGALORE. 124 pp. Price 1s. 6d.

This pretty little book, sketching the careers of seven women-leaders associated in the work of the League of Nations, makes very pleasant reading while at the same time presenting much useful information. Incidentally the reader can learn a good deal about the work of the League of Nations. The chief point however to be borne in on the reader is how women have come to take a very important lead in the affairs of the world.

Yet almost all of them so distinguished, have been like ordinary girls, with the ordinary education, in most cases, which a girl generally gets, marrying and making good wives and extremely affectionate mothers. It is remarkable how in almost all the cases domestic affections have grown into world service. Several countries are represented in this book though the largest number is from England. Mme. Curie, the discoverer of radium, Polish in birth and French by adoption, sits on the Committee of Intellectual Co-operation organised by the League. Frøken Henri Forchaunner of Denmark helped largely towards the evolution of the League, having been a medium of communication between the belligerent countries during the war. Rachel Crowdy rendered brilliant service on the Red Cross during the war and has been busy in the world health organisations under the auspices of the League. Frøken Jeppe has striven wonderfully for the uplift of the distressed woman in the Near East. Fru Kjelsberg has shown extraordinary courage in trying to improve the lot of the factory-worker. Mrs. C. Tennant has been the pioneer of the Suffragettes in England and Mrs. E. Lyttleton has also been associated actively with the work of the League.

Each character is presented in the light of some picturesque anecdote bringing out a prominent quality in her. The book, priced very low, has also the attraction of several photographs of the subjects being produced in it.

MEMOIRS OF A LONDON DOLL, EDITED BY MRS. FAIRSTAR, WITH AN INTRODUCTION BY MARION ST. JOHN WEBB AND ILLUSTRATIONS BY EMMA L. BROCK. (G. G. HARRAP & Co., LTD.) INDIAN AGENTS: THE P. T. I. BOOK DEPOT, BANGALORE. Price 1s. 6d.

We have not seen the like of this fascinating book before. It is a discovery to us that such a delightful little romance can be written about a doll, weaving into the story only the simplest and

commonest incidents of life. The book, we learn, is seventy-seven years old and a second edition having been issued in America, the present book is the third issue. The illustrations in this edition, which are published for the first time, are also a great attraction to the reader.

One touch of the doll, we may say, makes the whole world kin, and the pictures of life typical of different gradations of London society which we get in this book are all happily strung together by the human joy of a doll. Not only is the domestic life of different classes described but also the popular London amusements with all their simple and quaint old-world charm.

BELL'S NOVELIST READERS—THE SCOTT BOOK—SCENES FROM THE NOVELS OF SIR WALTER SCOTT, EDITED BY W. P. BORLAND, M.A. (G. BELL & SONS, LTD.) Pp. xvi & 279. Price 2s. 6d.

This is an addition in a series which we know already. Extracts of nine novels are embodied in this volume and they have been chosen with an eye to the requirements of children having to acquire a taste for the work of the novelist. So we should not be surprised if the "Bride of Lammermoor" or "Guy Mannering" has not been extracted from. The book with its illustrations, some in colour, and a simple but excellently worded introduction, is everything that youthful readers should need.

A LEGEND OF MONTROSE, BY SIR WALTER SCOTT, WITH INTRODUCTION BY ANDREW LANG, AND NOTES. (MACMILLAN & CO., LTD.) Pp. xli & 332. Price 3s. 6d.

We welcome this edition of one of Scott's famous novels, in the familiar series, "English Classics." The story of this novel going back to the 17th century and depicting the war between the Parliament and the Crown serves to bring out many notable qualities of Scott as a novelist. The charac-

ter of Dugald Dalgetty in this novel has attained immortality.

The present edition is practically a reprint of the volume in the famous Border Edition, except for a few additional notes, and will be easily appreciated both by the student and the general reader.

SWIFT: GULLIVER'S TRAVELS—THE VOYAGES TO LILLIPUT AND BROBDINGNAG—EDITED BY A. J. WYATT, M. A. (UNIVERSITY TUTORIAL PRESS, LTD.) Pp. xxiii & 156. Price 2s. 6d.

Everybody knows that enjoyable as "Gulliver's Travels" is as a story book, its full value as a satire can be comprehended only with some commentary. The present book selects the best and most characteristic portions of Swift's fiction and provides very useful notes to them. It will be eagerly read by all lovers of literature.

A TREASURY OF VERSE FOR SCHOOL AND HOME, SELECTED AND ARRANGED BY M. G. EDGAR, M. A. REVISED EDITION, EDITED BY ERIC CHILMAN. PART II. (G. G. HARRAP & CO., LTD.) INDIAN AGENTS: THE P. T. I. BOOK DEPOT, BANGALORE. Pp. 125. Price 1s. 3d.

This is a beautiful collection of simple poems, most of them very familiar. We have reviewed the First Part before in these pages. One notable feature is the large number of extracts from living poets, among which are Kipling's well-known lines, "The Children's Song."

The Educational Review.

With this number, the *Educational Review* enters upon the thirty-first year of its existence and we may be pardoned if we pause on this occasion, to take stock of the work we have always striven to accomplish and to extend our warm greetings once more to the members of the educational profession in India with whom it has been our privilege to be associated during all these years of our existence.

The educational profession in India has still to consolidate itself and we have attempted from the very first issue of our journal, to help it onward in the work and we have stood invariably for the dignity and the high mission of the teachers' calling in the economy of national life. Time was when the *Guru* in India occupied a seat of honour with kings and received the highest marks of respect in society. Owing to the force of various unfortunate circumstances, he has fallen from that high pedestal in recent centuries and it has always been one of the purposes of this *Review* to hearken back to the ancient ideal. With the imperious insolence of the more lucrative professions on one side and the complete indifference of a bureaucratic government on the other, the teacher has not come into his own and we can only hope that better days will dawn in the

future. The advancement of pedagogic knowledge has not been less constantly before our eyes and we can probably claim without any great breach of modesty that the journal has been instrumental in the study and application of pedagogic principles to the peculiar conditions of Indian life at least in some measure. We do not believe that the advancement of the teacher's prestige is possible without a corresponding increase in his capacity and character and this conviction has actuated the policy of the journal from the beginning. Pedagogy has no room for racial discrimination, except in the study of intellectual and moral characteristics in their bearing upon educational work, but it has always been our principle to stand for Indian and national interests in all matters relating to education. We have not hesitated to incur official disfavour and even consequent loss of patronage on occasions in our anxiety to safeguard Indian interests faithfully. We have counted on our staff of editors and contributors many of the well-known educationists of South India, Prof. T. Denham, Sir Mark Hunter, Prof. Alex. J. Grieve, the Right Hon'ble V. S. Srinivasa Sastriar, Professors K. B. Ramanatha Aiyar, P. T. Srinivas Aiyangar, P. Lakshminarasu Naidu, S. Krishnaswami Aiyangar, Ph.D., P. V. Seshu

Aiyar, P. Seshadri, S. K. Yegnanarayana Aiyar, T. S. Natarajan, C. S. Srinivasachariar, D. Subramania Sarma, S. E. Ranganathan, K. S. Patrachariar, Rev. F. W. Kellett, Mr. E. E. Kellett, Rev. G. Engel, Dr. J. J. Findlay, Prof. A. Subramaniam, Dr. Sattyanadhan, Prof. M. Rangacharya, Rev. C. Pollard, Rev. James Cooling, Rev. R. Scott, Profs. P. A. Narayana Aiyar, V. N. Viswanathan, V. Rangacharya, P. S. Ramakrishna Aiyar, C. R. Narayana Rao, N. Theagarajan, S. Balakrishna Aiyar, T. B. Krishnaswami, K. V. Subramaniam, T. K. Venkataraman, P. R. Krishnaswami, K. V. Subbaiya, C. P. Venkatarama Aiyar, C. R. Porrett, A. Rama Aiyar, T. A. Ramaiya, and Miss Geraldine Hodgson, Miss Macleod, Miss Gordon, among College Professors and Lecturers; Messrs. P. A. Subramania Aiyar, T. V. Srinivasa Aiyar, K. S. Parabrahmam, D. V. Jagannadham, B. Pattabhiramayya, R. Swaminatha Aiyar, K. Krishnamacharya, A. T. Palmer, C. T. Parthasarathy Mudaliar, A. Panchapagesa Aiyar, K. R. R. Sastri and T. V. Apparsundaram, among High School teachers; and Profs. C. V. Raman, F. D. Murad, Owston Smith, R. D. Karve and Messrs. John M. Bhaktul, A. A. Krishnaswami Aiyangar, T. D. Gajra, K. H. Kelkar, Chamupati Rai, Sasadar Banerji, Gokul Nath Dhar, Bepin B. Banerji, T. J. Bhojwani, A. S. Harn-

halli, Dyan Chandra, Rao Bahadur T. Sundara Rao, Prof. Daniel Jones, Prof. Walter Rippman, Dr. Sudhindra Bose, Dr. M. V. Gopalaswami and Dr. Owen Berkeley Hill, M. D., among contributors outside the province, besides a host of others. The list is not exhaustive. The omission of other good names is due to want of space and not to want of appreciation on our part. We beg to convey our sincerest thanks to one and all of them.

We hope that it will be given to us, in the years to come, to discharge our duties towards the educational interests of our land with the same attention and perseverance and that we shall continue to receive the co-operation of the educational profession and of all those interested in educational problems, even in a larger measure, in the task which we have set before ourselves.

It is well-known that the Medical Council in England has recently had occasion to examine the medical courses in India and complain of the inadequacy of training in midwifery in some of the North Indian Medical Colleges. If the degrees of those centres of medical learning were to be recognised by the Medical Council in England, it was insisted upon that better provision should be made for training in midwifery, a demand with which they have

The Calcutta University.

all complied by making some improvements at the centres themselves, or by sending their students for training in midwifery to Madras. But the University of Calcutta has had trouble of another kind with the Medical Council in England which has just disaffiliated the University and has refused to recognise in future the degrees in medicine which may be conferred under its auspices. The matter deserves wide attention as issues of a serious kind affecting the autonomy of Universities are being raised by the Medical Council's action. The Syndicate of the Calcutta University claims to have done everything in its power to adopt the suggestions of the Medical Council in England and has expressed its willingness even to change the syllabuses as desired before the end of 1925. The Medical Council, however, claimed the right of inspecting the Final M. B. Examination of the Calcutta University to satisfy itself that the required standards of efficiency were kept up. But the Syndicate refused to give any facilities for such an inspection. The consequence mentioned already has followed but the Syndicate has just issued a memorandum on the subject putting forward its own case. In the course of the statement it is observed:

In June, 1924, the Official Inspector requested permission to inspect the Final M. B. Examina-

tion of this University. This permission was not given by the Syndicate because "it is not usual to grant permission of this character." While the University gave all facilities to the Official Inspector to visit the affiliated medical institutions and report on the arrangement obtaining therein for effectively imparting instruction in the course of study prescribed in the syllabus, they deliberately refused this permission to inspect the Examinations. They depended on the fundamental principle, namely, that while recognition of a College for the purpose of affiliation implied inspection, "recognition" of the "Degrees" conferred by one University or examining body can never mean inspection either of the colleges or of the examinations held under the auspices of the University. For example, under Section 7, Chapter XVI of the Regulations of the Calcutta University, the University has power to admit to any University Examination any person who shall present a certificate from such institution as may be from time to time recognised for the purpose by the Syndicate, showing that he has attended courses of study, passed examinations or taken degrees equivalent to those which are required in the case of students of the Calcutta University. No University in India working under the Universities Act of 1904 has yet arrogated to itself the authority to send Inspectors to investigate "the courses of study and the nature of examination passed" by candidates of other Universities.

It is possible the University of Calcutta is not very well advised in tackling the General Medical Council in England in this manner, but there is much to be said in favour of the attitude of independence.

maintained by the University. At the same time, it may be pointed out that the maintenance of such an attitude implies an inherent sense of responsibility with regard to the keeping-up of high academic standards which, we are afraid, has not been much in evidence in recent years at the University of Calcutta. High academic traditions at a University cannot be built up entirely on occasional bouts with governors and academic bodies like the Medical Council in England.

We are afraid we cannot congratulate the authorities concerned on the proceedings of the last meeting of the Senate of the Madras University which were characterised by unnecessary hesitation and a great love for shelving important questions. We are surprised that Government should have declined to increase the grant under travelling allowances, in spite of the greater responsibility in the matter for members introduced by the new Act. The Syndicate has reduced travelling allowances to a scale hardly consistent with the dignity and even the bare necessity of members of the various academic bodies attending meetings of the University but the grant is even now insufficient. We are glad the House in the end accepted Prof. Ramunni Menon's motion: "That with a view to securing the

efficient working of the several University authorities in accordance with the spirit of the Madras University Act, the Government be requested to make a grant sufficient to pay for the travelling allowances of members of these authorities in accordance with the scale laid down in the resolution of the Syndicate, dated the 12th July 1924." Our complaint is however with regard to two other matters which came before the Senate. Mr. Littlehales, who represented the University of Madras very ably at the recent Universities Conference in Simla moved for the acceptance of the recommendations relating to the proposed Inter-University Board, but unfortunately the matter was put off to the next meeting. It is difficult to understand what hesitation there could be in a matter of this kind. The Universities of India which have till now been working as independent units have resolved upon coming together for purposes of common action and it has been suggested that there should be an Inter-University Board with the following aims:—

(a) to act as an Inter-University organisation and a bureau of information;

(b) to facilitate the exchange of Professors and students;

(c) to assist in the co-ordination of University work and the promotion of specialisation of functions.

(d) to assist Indian Universities in obtaining recognition for their degrees, diplomas and examinations in other countries;

(e) to appoint or recommend where necessary a common representative or representatives of India at Imperial or International Conferences on higher education;

(f) to act as a bureau of appointments in Indian Universities.

It will be noticed that none of these objects are capable of anything but good to the Universities in India. Still the University of Madras could not make up its mind about joining the Board and the matter has been put off to the next meeting. The question of compulsory military training to students came up before the meeting, but the Senate could not find its way to pronounce an opinion on this question either, and could only postpone its consideration to the next meeting. There is a good deal to be said in favour of Mr. Candeth's contention at the meeting that compulsion would do more harm than good, but the Senate could surely have made up its mind one way or the other, especially as the subject has been before the public now for some weeks having been discussed already by the Universities of Bombay, Allahabad and Benares.

The absence of facilities in Indian education for the training of the æsthetic faculties has been a matter

The Fine Arts in India.

for adverse comment for many decades. We are glad to find that within the last few weeks an impetus has been given to the cause of education in art in India. There was an excellent All-India Art Exhibition at Lucknow and there was also the session of the All-India Music Conference at the same place. The former was responsible for bringing together a large number of specimens of Indian painting, the Rajput and Moghul schools being particularly well represented. Under the auspices of the latter were gathered together some of the best musicians of India and there were musical entertainments of a superior quality, night after night, at the Kaiserbagh, which at one time was the centre of great rivalries when it formed the residence of the Nawabs of Oudh, who were great patrons of music. Exhibitions and Conferences of this kind are generally apt to end without any permanent consequences, but an attempt at starting a College of Music in the United Provinces has already begun with the encouragement of H. E. Sir William Marris. The amounts subscribed for the purpose have already reached the figure of nearly a lakh of rupees and we hope the institution will soon be an accomplished fact.

[JAN. 1925.]

The energetic Secretary of the All-India Fine Arts Exhibition, Mr. W. C. Mehta, I. C. S., has also been lecturing at the various Universities of the United Provinces rousing interest in the subject. Our readers will be glad to hear in this connection that the Benares Hindu University has been the recipient of a splendid offer from a rich French lady, devoted to India, of a legacy of £ 15,000 for an Art Museum and a fine collection of objects of art gathered during several years. When this museum gets started, it will practically be the first Art Museum in connection with any University in India.

We congratulate the authorities of the Muslim University, Aligarh, on the very successful functions they have just had in connection with the annual Convocation. H. E. the Viceroy was visiting the institution at the same time and served to make all the func-

tions a unique success. H.H. the Begum of Bhopal presided on the occasion as Chancellor and delivered an instructive address in Urdu while His Excellency also made an eloquent speech dwelling on the importance of education for the Muslim community in India. Appreciative references were made to the life and teachings of Sir Syed Ahmad Khan, the illustrious founder of the M.A.O. College, which has since developed into the Muslim University. The University, judged by the progress report read by the Pro-Vice-Chancellor, Dr. Ziauddin Ahmad, seems to have recovered from the disastrous effects of the Non-Co-operation movement and has thought of such new lines of development as a girls' college and a technological school. Her Highness the Chancellor made a donation of Rs. 20,000 for the former purpose. We hope that the Muslim community will come forward with the active support necessary for making the institution the great success that it deserves to be.

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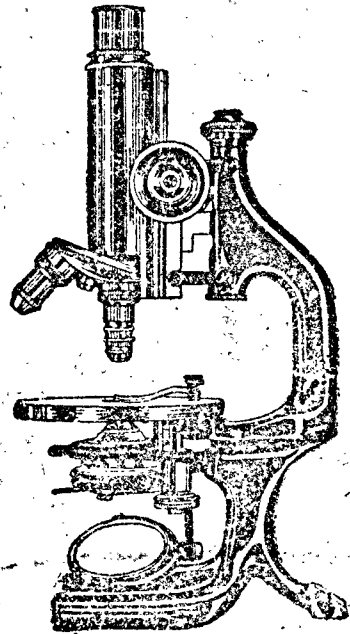
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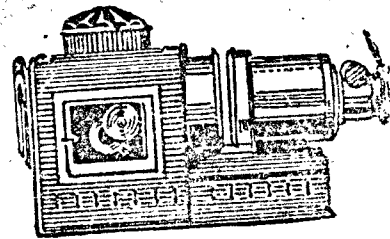
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