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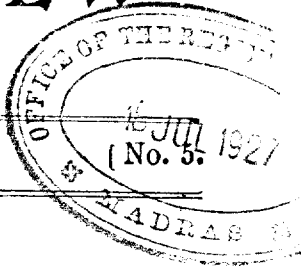
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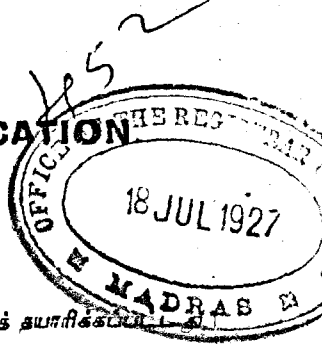
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ஆரம்ப கணிதம்

(முதல் பாகம்.)



சென்னை வித்யா இலாகா அதிகாரிகளால் தொகுக்கப்பட்ட விலாபஸ்க்கணக்கத் தயாரிக்கப்பட்டது.

இஃது கும்பகோணம் கவர்ன்மெண்டு காலேஜ் பிரதம ஆசிரியராயிருந்த ராவ்பகதூர் P. V. சேஷாசாயர், B.A., L.T. அவர்களாலும், சென்னை பச்சையப்பன் கலாசாலை ஹெஸ்கூல் பிரதம ஆசிரியர் V. வெங்கடசுப்பையா, B.A., L.T. அவர்களாலும் ஆக்கிலத்தில் இயற்றப்பெற்ற

Elementary Mathematics, Part I இன் மொழி பெயர்ப்பு.

மொழி பெயர்ப்பாசிரியர் :

சேலம் முனிசிபல் காலேஜ் கணித போதகாசிரியர், S. சிவராமன், B.A., L.T.

முதல் பாகம் 1-வது வகுப்புக்கும் 1-வது பாரத்திற்கும், கிரௌன் 300 பக்கங்கள், விலை அணா 14.

சைதாப்பேட்டை டிசர்ஸ் காலேஜ் கணிதபோதகாசிரியர் S. பாலசுந்தரன் அய்யர், B.A., L.T.,

அவர்களுடைய முன்னுரையுடன் கூடியது.

பொருளடக்கம்.

I. எண் மானபடி என் திற்ப்படி :-- எண்கள் ; இலக்கங்களால் எண்களைக் குறித்தல் ; எண்களின் கையாடல் ; ஸ்தான மதிப்பும் ; ரோமன் வழி. II. கோடுகளும் புள்ளிகளும் :-- கீழ்ப் , ஸர் பென்கள் ; கோடுகள் : புள்ளிகள் : கோடுகளின் வகைகளும் கோடுகளைப் பரீட்சிக்கும் விதமும் ; புள்ளிகள் குறித்தலும் கோடுகள் இழுத்தலும் ; நீள அளவு ; டிவைடர்களின் உபயோகம் ; எண்களை நீளத்தால் குறித்தல். III. கூட்டல் :-- கூட்டலின் அர்த்தமும் உபயோகமும் ; கூட்டலைப்பற்றிய ஓர் உண்மை ; கூட்டலைப் படத்தால் காண்பித்தல் : அடைப்புக் குறிகள் ; கூட்டல் : பெரிய கணக்குகள் ; கழித்தல் ; கழித்தலைப் படத்தால் காட்டுதல் ; பலவகை கழித்தல் வழிகள் ; கூட்டல் கழித்தலைப்பற்றின சில விதிகள் ; கலப்புக் கூட்டலும் கழித்தலும். IV. பெருக்கல் :-- பெருக்கலைப் படத்தால் காண்பித்தல் ; ஒரு ஸ்தான எண்ணால் பெருக்கல் ; பாக்டர்களால் பெருக்கல் ; எந்த எண்களைக் கொண்டும் பெருக்கல் ; பெருக்கலில் குறுக்கு வழிகள். V. வகுத்தல் :-- வகுத்தலைப் படத்தில் காட்டுதல் ; ஒரு ஸ்தானத்தால் வகுத்தல் ; பாக்டர்களால் வகுத்தல் ; 10, 100 முதலியவைகளால் வகுத்தல் ; நீள வகுத்தல் : வகுத்தலின் இன்னொரு அர்த்தம் ; சில பெருக்கல் வகுத்தல் விதிகள் ; பெருக்கல் வகுத்தலில் சில குறுக்கு வழிகள் ; ஒன்பதுகளை நீக்குதல். VI. பலவின் வெண்கள் :-- அளவை வாய்ப்பாடுகள் : நரண அளவுகள் ; நிறை அளவுகள் ; நீள அளவு ; பிடித்தல் அளவு ; கால அளவு ; கன அளவு ; எண்ணிக்கை அளவு ; இனமாற்றுதல் ; பலவின் வெண் கூட்டல் ; கழித்தல் ; பலவின் வெண் பெருக்கல் ; பலவின் வெண் வகுத்தல். VII. கோணங்களும் அவற்றின் அளவும் :-- திசை, திசைமாற்றம் ; கோணம், கோணங்களை ஒப்பிட்டுப் பார்த்தல் ; கோணங்கள் ; சதுரங்களும் செவ்வகங்களும் ; வட்டங்கள் ; கோணங்களின் அளவு ; கோணங்களின் வகைகள் ; ப்ரொட்டாக்டரைக் கொண்டு கோணங்கள் வரைதல் ; ஒரு புள்ளியிடத்தில் உள்ள கோணங்கள். VIII. டெஸிமல்கள் :-- டெஸிமல்களின் அர்த்தம் ; டெஸிமல் குறிப்பில் ஸ்தான மதிப்பு ; இரண்டாவது டெஸிமல் ஸ்தானம் ; டெஸிமல் குறிப்பு பொது விவரம் ; ஒரு டெஸிமல் ஸ்தானமுள்ள எண்கள் ; டெஸிமல் கூட்டல் ; டெஸிமல் கழித்தல் ; எந்த எண்களையும் கழித்தல் ; 10, 100 முதலியவைகளால் பெருக்கல் ; ஒரு ஸ்தானமுள்ள முழு எண்ணால் பெருக்கல் ; ஒரு ஸ்தானமுள்ள முழு எண்ணால் வகுத்தல் ; பல ஸ்தான முழு எண்களால் பெருக்கல் ; பல ஸ்தான முழு எண்களால் வகுத்தல். IX. உயர்ந்த பொது அளவும் தாழ்ந்த பொது மடங்கும் :-- அளவும் மடங்கும் ; பொது அளவும் மடங்கும் ; உயர்ந்த பொது அளவும் தாழ்ந்த பொது மடங்கும் ; பாக்டர்களால் இரண்டு அல்லது இரண்டிற்கு மேற்பட்ட எண்களின் உ. பொ. அ. ம. தா. பொ. ம. உம் கண்டுபிடிக்கும் வழி ; உ. பொ. அளவைக் கண்டுபிடிக்கும் பொது வழியைப் படத்தால் காட்டல் ; உ. பொ. அ. பொது வழி. X. சாதாரண பின்னங்கள் :-- பலவின் அளவுகளின் பின்னங்கள் ; ஒரு கன்கீட் அளவை இன்னொரு கன்கீட் அளவின் பின்னமாகச் சொல்லுதல் ; சமமான பின்னங்கள் ; சமமான பின்னங்களைப் படத்தால் காட்டுதல் ; பின்னங்களின் சமத்துவம் ; தாழ்ந்த உறுப்புதல் ; பின்னங்களை ஒப்பிடுதல் ; பின்னங்களின் கூட்டலும் கழித்தலும் ; ஒரு சாதாரண பின்னத்தை ஒரு முழு எண்ணால் பெருக்கல் ; சாதாரண பின்னத்தை ஒரு முழு எண்ணால் வகுத்தல் ; ஒரு பின்னத்தால் பெருக்கல் ; பின்னத்தின் பின்னம் ; ஒரு பின்னத்தால் வகுத்தல் ; ஒரு எண்ணை ஒரு குறிப்பிட்ட டிவிடனே பி. உள்படி மாற்றல் ; பின்னங்களைச் சுருக்கல். IX. வாடிக்கை முறை :-- பலமாதிக் கணக்குகள். பரிட்சைக் கேள்விகள். விடைகள்.

PART II for FORM II—in a week.

PART III for FORM III—in July next.

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MADRAS.

has not helped them to become self-respecting citizens of a free nation. Love of one's native land is the basis of all progress. This principle is recognised in all countries. But in our unfortunate country it is the other way. A conquered race feels its heart sink. It loses hope, courage and confidence. Our political subjection carries with it the suggestion that we cannot consider ourselves the equals of free nations. Indian history is taught to impress on us the one lesson that "India has failed." The worst form of bondage is that of despair and dejection which creeps on defeated peoples breeding in them loss of faith in themselves. The aim of true education should be to keep alive the spark of national pride and self-respect, in the midst of circumstances that tend to undermine them. If we lose our wealth and resources, we may recover them to-morrow, if not to-day; but if we lose our national consciousness, there is no hope for us. The dead cannot be raised but the poor can.

The difficulty of developing the idea of nationhood in the vast population of India, including as it does a multitude of diverse races, castes and creeds, is great but it is not impossible. It has not been tried. The American schools are highly successful in Americanising the heterogeneous European elements that flock into the United States year after year. There is no reason why we should not succeed in this task, if our schools and colleges focus the emotions of our youth on the national ideal, if they imbue our young men with a fixed determination to be content with nothing less than control over their own destinies and a burning passion to remove the conditions which prevent the realisation of this ideal. They must sternly silence all sectional tendencies and foster

opportunities for developing the sense of unity and feeling that we are all parts of a whole destined to swim or sink together. When we are all voyaging in one vessel, we cannot hope to keep afloat or win through to port, if there be mutiny aboard or if one man's hand is turned against another's. Communal warfare is another name for national suicide.

SMALL PROPORTION OF LITERACY.

Communal conflicts are possible, simply because our education has not been a success judged either by quantity or by quality. The proportion of the population which is literate is inconsiderable. Our masses bear on their faces marks of physical and mental degradation arising from economic distress and lack of education. They have lost their grip on life and are mostly dispirited and sentimental. In their drab lives, any excitement is welcome. The ease with which the passions of our people are moved almost at will by interested manipulators is a sad commentary on the neglect of popular education. A trained mind is the only security against sensation and excitement.

IMPATIENCE WITH THE PAST.

The quality of education imparted in our schools and colleges has suffered from a serious handicap. Impatience with the past of India has been the dominant note of our courses of study. Indian thought does not form an integral part of the scheme of general culture. Poorly-paid Pandits devote two or three hours a week to it and critical methods are not used in its study. The methods of historical analysis and critical evaluation are applied everywhere else than in Indian thought to which an attitude of hazy emotional reverence is adopted. We live in two worlds, a world of habits which are

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outworn and a world of ideas which are ineffective. The old and the new are jumbled together in our minds without any order or unity. We repeat ancient texts in answer to modern problems. The living faith of the dead has become the dead faith of the living. If educated India is still safe for stupidity and superstition, it is the direct result of the divorce of science and criticism from religion and life. It is no wonder that our culture has not been able to protect us from the newspapers which are specialising in flinging falsehoods at us and the politicians who persuade us to love and hate our neighbours for the sake of their personal ambitions. In times of communal disturbance, even the cultured co-operate with the crowds.

Reverence for the past is one of the essential ingredients of nationalism. It is impossible for India to give up its past and get assimilated to a foreign tradition. We cannot borrow souls as we barter goods. The past of India is the sure foundation on which new ideas can be acquired. While we should expose ourselves to all the winds that blow, we should not be blown off our feet. The great ages of renaissance in history were those when men discovered the seeds of progress in the granary of the past. A critical investigation of our social and spiritual foundations will convert blind fanaticism into discriminating insight. We shall then learn to put first things first and not use the great terms of religion for the little details of ceremonial.

The mere existence of different faiths need not menace a nation's life. History tells us that national and political unity is quite consistent with fervent devotion to distinctive forms of faith. All that is necessary is a new attitude and outlook on life.

CULTURAL INEFFICIENCY.

While it is true that our Universities have contributed a good deal to the public life, social service and the learned professions, it cannot be said that they have influenced much the literature and philosophy of the world, its art and science. We are to-day glorying in the great past of our country as if it were a compensation for the bitter present. As a rule our literature is puerile, our art thin and affected, our science second-hand and shallow and our philosophy—it does not exist. The notable achievements of Tagore and Bose, Roy and Raman are exceptions which prove the rule. The responsibility for this sad situation is the inefficiency of the culture imparted in our colleges. After four years of college life—which should be the most stimulating intellectual experience—most of our students go out into the world with their curiosity unkindled and their imagination untouched. Our colleges do not encourage a free mental life and intellectual adventure. University education is a business proposition but does not lift us to new levels of thought and touch the mind to new adventure. Rigidity of mind and inaptitude to take up new ideas are dangers which we must try to overcome if we are not to fall behind in the rivalry of nations. It is very essential that we should give up intellectual timidity and fear of thinking.

INDIFFERENCE TO SCIENCE.

The difference between the mediæval and the modern outlook is largely due to the spirit of science. It is popularly assumed that scientific studies in India are of the nature of an exotic. Though it may appear that the conquest of the physical environment was rather remote from the main interests of life in India where the most vigorous thought of

A PREPARATORY ALGEBRA

Prepared in accordance with the Syllabus in Optional Mathematics
(C. Group) for the Madras S. S. L. C. Public Examination

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OPINION.

RAO BAHADUR P. V. SESHUAIYAR, B.A., L.T., Retired Principal, Govt. College, Kumbakonam, writes:—"I am glad to find that 'A Preparatory Algebra' by Mr. V. Raghunatha Aiyar, B.A., L.T. (published by Srinivasa Varadachari & Co.) is well planned and written very carefully so as to meet the requirements of pupils in the S. S. L. C. classes for whom it is mainly intended. The expositions and illustrations are clear and lucid and there is a good collection of nice examples and exercises. The appendices A and B are really well-written and add much to the usefulness of the book. * * * I hope the book will meet with the encouragement it well deserves."

CONTENTS.

I. The Use of Symbols:—The use of symbols as mathematical shorthand. Some additional symbols in common use. The Formula, how derived and used. Exercises; **II. Some Fundamental Laws:**—Addition and Subtraction. Removal of Brackets. Insertion of Brackets. Multiplication and Division. The Laws of Indices. Order of Operations. Exercises; **III. Symbolic Solution of Problems:**—The extended application of the Formula. The Laws of Equality. Reversibility of Steps. Verifying the correctness of result by substitution. The Solution of Problems by means of equations derived from them. Exercises; **IV. Graphical Representation:**—Variables and Constants. Dependence of one variable upon another. Graphical Representation. Representation of values by marking points. The Graph. Readings from the Graph. Limitations of the Graph. A few points to be observed in graphical representation. Magnifying portions of a Graph. Exercises; **V. 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[No. 5.]

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EDUCATIONAL REFORM.*

I AM deeply sensible of the honour you have done me by electing me to this office. When I remember that the first Annual Conference was presided over by so illustrious a teacher as Sir P. C. Roy, a unique example of old world simplicity and modern culture, I realise what a distinction it is to be called upon to preside over this important Conference of College and University Teachers. I thank you for your kindness.

It has not been possible for me, in the middle of term time to prepare anything worthy of a Presidential Address. Nor am I so thoroughly conversant with the problems that are facing us, as some other members of this Association are. As those who invited

me knew my limitations, I am sure they would not expect from me what I am obviously incompetent to give. I have put down a few scattered thoughts as an apology for an address.

Since the transfer of the subject of education in 1920 to provincial Ministers responsible to representative Legislative Councils, educational reform has been attracting increasing attention. Popular Ministers who can now to some extent direct the policy of education are anxious to make education effective for national efficiency. It may therefore be useful if we direct our attention to the striking defects of the system rather than dilate on its well-known merits.

NEGLECT OF THE NATIONAL IDEAL.

The educational policy of the Government has been restricted in aim and scope. While it has succeeded in training men into efficient but docile tools of an external authority, it

* Presidential Address delivered by Mr. S. Radhakrishnan, M. A., Professor, Calcutta University, at the Second Annual Conference of the All-Bengal College and University Teachers' Association on the 3rd of April 1927.

each generation was devoted to the pursuit of speculative problems, there are facts to show that science was not neglected in the vigorous days of India. India was not backward in mathematics and astronomy, chemistry and medicine, and the branches of physical knowledge practised in ancient times. The scientific achievements came to a halt somewhere about the thirteenth century. In recent years we have recovered much lost ground, thanks to the workers of the University College of Science among others. May I, in this connection, offer our felicitations to Dr. Meghnad Saha who has been recommended by the President and the Executive Council of the Royal Society for admission to its Fellowship. That the Royal Society should have bestowed its highest award on Indian scientists means that in the making of new scientific knowledge the work of our men is deemed worthy of respect even by critics who are not ordinarily prone to enthusiasm for Indian talent. While much of the work that is being done in our University is of a high order, the general level is low and the State support for scientific studies is by no means generous.

UNPRACTICAL CHARACTER.

It is notorious that our educational institutions are not adapted to our practical needs. India is recognised as one of the foremost industrial countries of the world and yet the economic distress of her middle classes is appalling. We have splendid natural resources, man-power, enough and to spare, and industrial traditions, but our educational system does not make them meet. Our colleges train young men for the two chief industries of the land—law and public service. There is a loud and wide demand for employment and has to be met not so much by the starting of technological institutions as by the rise of

industries. We cannot create industries by training men to practise them. It is an everyday experience in our country that graduates of science and commerce apply for clerks' posts in Government offices. In a country like ours, it is the duty of the Government to build workshops and keep them supplied with well-educated and trained men. It must subsidise all industries which are unable of themselves to gain a foothold in the open market. Huge efforts are necessary if our industrial fortunes are not to suffer an eternal eclipse. If it is true that our middle classes are wanting in mechanical aptitude, industrial capacity or commercial instinct, a University cannot create them by the starting of technological courses. Early school training must help us. I think the new Matriculation regulations may bring about a desirable change. By insisting on manual training and giving a vocational bias, they may help the large body of students whose means and capacities do not allow them to go up to the University and who are therefore obliged to enter on callings in life or whose interests and opportunities impel them to resort to technological or professional studies within or without the University.

Expenditure on education and the development of industrial life is not merely an economic investment from which a steady income may be expected in later years but even a political investment which will divert the intelligentsia from dreams of anarchism and bolshevism. As most of our graduates who are trained for the learned professions are not absorbed by them, they are wasting their energies in the sands of political and racial agitation. A bold effort on a large scale to apply the brain-power of the country to the natural resources has to be made immediately

if the increasing economic restlessness and consequent political disorder are to be averted in any appreciable degree.

It is the duty of our Ministers and Legislative Council to make our education more efficient in every way. It is not necessary to scrap the existing machinery with its long experience and provincial resources at its back; we have only to adapt it to the new purposes of our age. Instead of waiting and watching to see whether the people are fit for another instalment of self-government, the education authorities must use every means in their power to fit the people for self-government as soon as possible by training them for citizenship, wealth-production and national defence. If the present Minister of Education, whose patriotism is unquestioned, takes up with strength and seriousness the problem of educational reform which cannot be further postponed without danger, he may show greater results than his predecessors in office.

SECONDARY EDUCATION BOARD.

The question of the reform of secondary education was thoroughly canvassed by the Sadler Commission who recommended the creation of an independent Board of Secondary Education. Their proposals could not be carried out on account of their financial cost. Several attempts at piecemeal legislation proved abortive. Latterly we have had some agreement on the main principles of reform between the Government and the University. At present the schools are functioning under two separate authorities. The University cannot surrender its right to have its own Entrance Examination and this carries with it the power to recognise institutions which prepare candidates for this test, prescribe the courses of study and conduct examinations. The Government through its Inspectorate

distributes grants-in-aid. The new Board will exercise both these functions and have representatives of the University and the Government on it. There are differences of opinion regarding the controlling authority, whether it is to be the Senate or a new general body corresponding to the Senate. The chief objection to the former course seems to be that the Senate as at present constituted does not have an effective representation of secondary school teachers, but we are all looking forward to the remodelling of the Senate and this defect can be remedied then. The difficulty that the Syndicate is already overburdened with work cannot be seriously pressed, since the new Board would relieve the Syndicate of its school work. It is quite true that the Universities have little to do with schools in other countries but we have to remember that while Universities grew out of secondary schools everywhere else, the reverse process operated in India. The Sadler Commission recommended the ultimate separation of the Intermediate classes from the degree courses. Such a separation is academically sound if financially possible. The control of the Board by the Senate will facilitate the transfer of the Intermediate classes to the Board if and when the occasion for it arises. Besides, there is a social glamour about University examinations and until the new secondary schools and the Board become popular, it is best to retain them under the University. Such a course would save us from the apparently impossible task of assessing the financial loss to the University likely to be caused by the transfer of some of its examinations to the Board. Only we have to take care to see to it that University careers do not dominate school courses. The creation of a General Council will entail much expenditure which

cannot be justified in the present state of our finances. After all, the powers of the Senate will be of a very general nature and the Board will enjoy absolute autonomy. After a time it may be necessary to make the Board autonomous and nothing can prevent us from doing it. There is no finality about educational matters. I hope that the Secondary Education Bill will soon be introduced in the Council and passed into law in a satisfactory form so that education might become a great highroad broad enough for all in their different capacities.

UNIVERSITY REFORM.

The recent debate on the University grant in the Legislative Council has revealed an unexpected unanimity about the need for University reform on an elective basis. The Sadler Report is not a sacred text and there is no reason why we should not adapt its recommendations to our needs. It suggests the formation of a Court, an Academic Council and a Syndicate. These answer roughly to our Senate, Faculties and the Syndicate. In its opinion the Court should be a much larger and more representative body than the present Senate. While a great and progressive University should be in active touch with the life of the nation, we have to remember that it exists primarily for the advancement of learning and research. It should therefore consist of a decided majority of academic representatives. They will be quite competent to deal with administrative questions. The idea that academic men are not suited for administrative work is peculiar to our country. So far as I know, the Universities of Great Britain and America are controlled by academic men. I am afraid that the Court, if constituted so as to include every important element of the public opinion of the areas

which the University serves will become a ceremonial body whose discussions will be of an unpractical character. While the Senate should include a few representatives of the public at large, it should not be degraded into a *darbar*. Even in the present Senate, there are some gentlemen for whom a University fellowship is a mark of distinction or recognition of public importance. They do not trouble themselves about academic affairs but attend annual meetings to favour a friend or resist a rival. As a corporation of learning, the University should be under the authoritative direction of experts.

A University as an institution for cultural, professional and technological studies cannot be supported by the fees of the students. It must get liberal grants from the State whose subsidies should be statutory, *i.e.*, must not depend on the passing of annual estimates by the Legislature. I may quote in this connection the wise words of Lord Balfour in his opening speech at the Congress of the Universities of the British Empire held at Cambridge last year: "If the State be asked to subscribe great funds, either in this country or any of the Dominions or indeed in any country, there will always be a natural and pardonable instinct on the part of the State to control and supervise the working of an institution which it is doing so much to support. It is perfectly natural but it is extremely dangerous. Cambridge, Oxford and the older Universities are receiving assistance from the State, but our University traditions are so deeply rooted that I do not think there is any symptom, so far as my judgment goes, of any Government attempting to interfere with the University autonomy, which, whether it be well exercised or ill exercised, is at all events at the worst far better than State con-

trol." We should endeavour in every way to free the University from Government control and interference. It does not matter whether the Government is British or Indian, bureaucratic or democratic. The University is a national institution above the strife of parties and all attempts to entangle it in communal and political intrigue will have to be stoutly resisted. The breath of partisanship is blighting to academic ideals.

I think the Senate should consist of (1) *ex-officio* Fellows, who will include all Principals of Colleges training students for a degree course, and University Professors, (2) twenty members elected by the Registered Graduates, who will be the spokesmen of the community helping to keep the University in touch with all sides of national life, (3) twenty members elected by the teachers of Arts and Science Colleges affiliated to the University and of Secondary schools, (4) twenty members elected by the Post-graduate teachers in Arts and Science and teachers in the Colleges of Law, Medicine, Engineering and Teaching; (5) twenty members to be elected by the Faculties of the University and bodies like the Corporation, Legislative Council and Chamber of Commerce, and (6) twenty nominees of the Government. I believe that such a Senate will not be an unwieldy and amorphous body like the Court contemplated by the Sadler Commission but be a more workman-like organisation composed essentially of academic men.

CONCLUSION.

Legislation and reform, curricula and courses of study cannot by themselves do very much; everything depends on the personality and outlook of the teaching staff. An institution is inspired by the men who work it. Teachers of a certain type, men and

women of high attainments with the vocation for the calling of a teacher are more important and more difficult to get than magnificent buildings and libraries. The place of the teacher in the building of the nation is very high. The best men of the country will have to be attracted to the profession of teaching. This cannot be done if college teachers are not provided with adequate salaries and reasonable security of tenure. While the material prizes of academic life cannot compete with those of commercial or industrial careers, they should be high enough to free the teacher from economic want and provide him with the leisure and detachment necessary for patient study and plodding work. A resolution is tabled which proposes an initial salary of Rs. 100 for a college tutor or demonstrator and Rs. 150 for a college lecturer and I hope that these very modest proposals will be accepted by you. It is a pity that the State is not realising its responsibilities to non-government institutions. It must come to their help with substantial grants for the improvement of the pay of their staff.

If the teaching body as a whole should influence the programme of the Universities, secure effective representation on the different authorities of the University and the governing bodies of the colleges, if it is to inspire the intellectual atmosphere of the country and take its proper place in the national life, it has to work with a consciousness of its vocation and dignity and in a spirit of unity and organisation. This Association works for these larger ends. I appeal to the members of the teaching profession in the Colleges and the University to join it in larger numbers and help in the realisation of its objects. For organised we are an army; dissipated we are a rabble.—*The Calcutta Review*, May 1927.

SCHOOL DISCIPLINE.

By Mr. P. P. VAIDYANATHAN, M.A., L.T.,
B. E. T. High School, Rangoon.

IN his article on 'Ideals in Education and School Discipline', Mr. Khagendra Nath Sikdar has been at some pains to show that assistant teachers should be given the right to punish pupils. He does not at all seem to think that the idea of corporal punishment in schools is, to say the least, brutal. It is surprising that he should stand up for such an idea when even in prisons the idea of corporal punishment is losing ground. It is being gradually recognised that punishment fails in the very purpose which it is expected to fulfil, that of reforming the culprit. The whole idea of the Borstal system is based on a recognition of this principle. That our temples of learning should be worse than prisons is simply unthinkable.

The use of the cane has been classed by a master mind under intentional cruelty. The whole idea of punishment is based on a false assumption. If it is agreed that the formation of character is one of the objects of education, nothing can hinder this aim more effectively than punishment. For punishment makes the pupil a hypocrite and a coward. The child fearing the cane dreads to admit its mistake but tells a lie to escape the cane. Besides when the teacher frightens his boys into doing what is right they do the right in his presence for they are afraid of him. But the moment they are out of his sight they pay no regard to his rules. Thus hypocrisy and cowardice are bred in the pupils.

Besides being wrong in principle corporal punishment is also inexpedient. It handicaps the teacher in his work. A teacher who resorts to punishment can never hope to

enjoy the confidence of the pupils. The pupils will be afraid of approaching such a teacher. On the other hand the teacher must remember that the boy is an ego who has come to him and that it is an opportunity for him to accumulate good karma by aiding the child in its evolution. If he keeps this in mind he will not fail to draw out all that is good in his pupils. The boy will go to him with his difficulties because he is sure that in his teacher he has a sympathetic friend who will listen patiently to his difficulties and help him to overcome them.

The question will naturally arise as to how we can maintain discipline in schools. Here I wish to point out that the word 'Discipline' is one of those words which has been entirely misunderstood. Many teachers take it to mean complete silence and inactivity, a kind of sheepishness, if I may so call it. Freedom has no place in their idea of discipline. A boy who puts inconvenient questions in the class is termed insubordinate. But if discipline is properly understood as ordered freedom, it is not difficult to attain it by love. This love of the teacher for the pupil will develop in the mind of the pupil a reverence for the teacher which will make him docile and easy to guide. The habit of reverencing greatness will grow in him. This will also make the life at school one of continued happiness both for teacher and pupil.

Lest anybody should say that this is only an ideal and that it is beyond the average teacher, I wish to point out that in the school in which I serve corporal punishment is unknown. If every teacher realises the cruelty and the inexpediency of corporal punishment then the day will not be far when our schools will become real Temples of Learning. We are not tired of talking about the sacredness of our profession. It is high time that we regard education as service and discharge our duty creating a race of young men full of love, full of devotion, and a burning desire to serve their country and humanity.

HOW TO TEACH ENGLISH IN INDIAN SCHOOLS OR THE RIGHT METHOD OF TEACH- ING FOREIGN LANGUAGES

BY
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SECTION I. PRESENT CONDITIONS.

Prelude.

IT is an established fact that, for manifold reasons which need not be detailed here, English occupies the foremost place in the curricula of Indian schools and colleges; and attempts to improve English instruction and place it on a more practical and efficient basis are no doubt being made from time to time by the Educational Department of Madras and the personnel connected therewith; and newer ideas are being introduced also. But still it is the open conviction of all parties interested in the question and acquainted with the actual state of things that the results of English instruction are far from satisfactory and that large numbers of students are being wrecked on the shores of this difficult subject. Having studied the problem in my own humble way and with some care during some four decades of teaching career, I beg to offer my small quota of contribution which is the result of a life-long research for the information of the public in the hope that they will take such action in the matter as they may think fit to take.

The Situation; Plight of Students.

(2) In order to have a definite idea of the working and results of English instruction now-days, let us look to the plight of our students in English. In any class of 30 or 40 students, we do not find more than three or four quite up to the mark in English; which means that about 10 per cent. of students possess any passable command of English, while the rest, 90 per cent., are far below the mark. Reports of Assistant Ex-

aminers who value the answer papers at public examinations indicate the same view and say that the English which a large mass of students write is far below correction. Every teacher, professor and officer acquainted with the working in schools is sadly aware of this state of things. The Calcutta University Commissioners, as well as the Royal Commissioners on Public Services in India, have declared the same view. It is thus clear that eight years' study of English in our schools up to the School Final or Sixth Form class has signally failed to furnish the students with the requisite working command of the English language so as to befit them to University studies or any decent work in office or business.

Present System of Linguistic Instruction.

(3) Let us now see how English instruction is imparted in schools in general. It is a well-known fact that some 20 years back a method commonly known as the Direct Method was introduced into our schools and all teaching of English was ordered to proceed according to its principles. This method has two aspects, one positive and the other negative. The positive aspect consists in prescribing certain ways of dealing with English in the class-room and drilling the students in speech, reading and writing; the other consists in forbidding the use of translation and grammar in teaching English. No doubt they profess to permit the occasional, tentative and exceptional use of translation, and that in extreme cases; but the spirit of the new method is quite opposed to the use of translation. As regards grammar, they believe that it is unnecessary as a means in teaching English, and prescribe a course of drill completely avoiding it at the initial stages of instruction. When they recommend the teaching of grammar at later stages and by the Inductive method, obviously they make grammar the end, not at all the means. These views have taken such deep root during these two decades that all concerned parties in the department, teachers, professors and officers, have been dealing with translation as if it were a miasma

from which our dear students should be most tenderly shielded; and every possible precaution is, therefore, taken to see that they are not victimised by this dangerous element. Teachers should not use translation in teaching English; there should be no test at any examination in Translation under English; the students' note-books should not contain meanings in the vernacular; courses based upon translation, if any should be forthcoming, are to be put down with an iron hand. These are the means adopted now-a-days to raise the efficiency of English instruction. And if we can judge of the means in the light of the results, it goes without saying that the ends do not justify the means at all; and that the results, 80 per cent. failures, amply justify the condemnation of the means enforced. But the educationists in India are prone to throw the blame on teachers, saying that they are not following the Direct Method aright, that their capacity in English is too low, and that for manifold reasons they are responsible for the sad results. In their view, the Direct Method is, like Cæsar's wife, above suspicion, and other causes are responsible for the results. Whoever is made the scape-goat in this matter, the actual sufferers are the masses of students and, in their interests, it is incumbent on us to institute a searching inquiry into the propriety and validity of the system of English instruction now enforced. So let us trace out the origin and progress of this new method and examine its foundations.

Origin and Progress of the Direct Method.

(4) It is a well-known fact that the Direct Method is not of Indian origin. It was invented in Europe during the seventies of the last century and was adopted in Prussia during the eighties, and in England during the nineties; and from there it has been imported into India and introduced into our schools in 1906; and it has since come to control English instruction in schools. As for the progress of the Reform method in Europe, a perusal of the literature bearing on the problem brings to light certain salient points which deserve our

notice. Of course, the New Method is being adopted everywhere and its principles have come to be generally appreciated too. But all this is not without opposition, which is indeed as vehement as its advocacy. If we make a close study of the Reform movement down to 1905, we cannot find even a shadow of excuse for the pro-Direct Method faith, nor for the anti-translational bias. But both these have come to be established and enforced with rigour even in defiance of respectable and scholarly opinion to the contrary. To come to facts and realities, the opposition to and re-action against the Direct Method have gone so far that, in England about the year 1908, they adopted translation as an alternative method; and began to work it in rivalry with the Direct Method: and in 1917 they removed the ban on translation and welcomed the experimentation of all well-thought-out methods. In pursuance of this re-action they instituted a test in translation both ways and even prescribed a special minimum in this test for a pass at the public examinations. The American school proceeded a step further and instituted a more searching inquiry into the matter. They gathered well-thought-out and detailed opinions on the several aspects of the linguistic problem from representative professors of the several Universities, assigning only one aspect to each. They appointed a Committee of Ten to draw up a scheme of studies for adoption in schools. All this appeared in a compact volume: "*Methods of Teaching Foreign Languages*" by 13 Authors. A cursory perusal of its pages would suffice to indicate the complete dissatisfaction of a large body of professors with the Direct Method in all its aspects and with the anti-translational policy. We find also a statement of opinion made by the late J. N. Fraser of Bombay to the effect that the New Method could not satisfy all parties in Germany, the land of its birth; and that as many schools follow the Old Method. And it appears that the New Method had to be established in Prussian schools by force of law—a point which would suffice to indicate the fundamental weakness of the reform movement.

Results of the Direct Method.

(5) As regards the practical results of the Direct Method, expert and scholarly opinion so far available points to show most conclusively that the Direct Method is a failure everywhere. Dr. Sweet and Otto Seipman both advanced this as their considerate opinion. The Calcutta University Commissioners recorded the view that the Direct Method is a complete failure in Bengal. The American school of scholars go a step further and declare that the Direct Method is not capable of producing any satisfactory results on account of its fundamental defects. They invariably attribute the failure of the Direct Method to its unsystematic and unscientific character.

Foundations of the Direct Method.

(6) In accounting for the failure of the Direct Method the entire host of scholars say that it is due to the fact that it is based upon an insufficient knowledge of the science of language. H. E. Palmer distinctly stated that the Direct Method is only empirical in character and further that the science of language does not exist at all; and that the linguistic methods have not so far emerged from the empirical stage and entered upon the scientific. To come to the negative aspect of the Direct Method, Otto Jespersen, our authority on linguistic methods, says that the anti-translational view is a stupidly negative idea. The American School of Professors condemn the anti-translational view as being more mischievous and pernicious in character. M. P. West of Bengal declared that, if translation from the vernacular into English should be used, the pupil would be 50 per cent. better in half the time. The Hon. H. Sharp likewise expressed the view that he set great store on translation and re-translation. H. E. Palmer threw out the suggestion that more worthy uses of translation have to be devised by teachers. From all this we can fairly conclude that our implicit reliance on the Direct Method and the dogged opposition to translation are both unwarranted. But they have come to stay in our

Province; and what good the change has brought about the results have proved to us with hard facts and figures.

Net Result of Expert Opinion.

(7) The foregoing discussion which is conducted mainly from the standpoint of expert and professorial opinion has led us at least to suspect the validity of the present-day system. Expert opinion thus points to two definite conclusions: one that the Direct Method is not to be relied upon for success in English instruction; and the second that the anti-translational policy is more mischievous than benevolent. Yet we find educationists divided in their views about the matter. Many do advocate the Direct Method with dogged earnestness and oppose translation; and also as many do condemn the Direct Method in their heart of hearts and entertain a sincere wish to see that translation is given its due. All this makes it obvious that each side has its own merits and defects. So, each party extols the merits of his own side and either ignores or suppresses its defects; and likewise exaggerates the weaknesses of the other side and suppresses or ignores its merits. Thus a tug of war is going on and there seems to be no end to it. All this makes it clear that the Direct Method is no unmixed blessing nor is translation an unmixed evil. There are of course merits and demerits on both sides. But the educationists have not so far been able to lay down in definite terms the respective merits and defects with any scientific insight; and what is worse, they have not taken into their minds the idea to involve a scheme comprising the merits of both and eliminating their respective defects. The reason for this state of things is not far to seek. There are three chief obstacles in the way of the evolution of the right scheme. In the first place, translation has come to be the forbidden ground on which to tread is sacrilege, if not sedition; and so everybody thinks it a veritable evil; and nobody gives his thought to find out and utilise its merits. The second obstacle consists in the fact

host of professors declare in their favour and express the desirability of devising better ways of teaching them, it behoves us to apply ourselves to this task. If we have been unable to use them aright hitherto and are still in the dark as to how they are to be treated in teaching a foreign language, it would be more honest on our part to admit our ignorance and seek to find better ways of using them. But to prohibit them means the grape-sour policy and reminds us of the man who set fire to his house for fear of rats.

The principle that students should use complete and correct sentences from the very beginning sounds very well and has fascinated the world of educationists. But all that sounds well may not be sound sense. This idea is purely an empirical one. Of course we want to use language in sentences; so, if sentences are proposed to be taught from the very beginning, it looks so much to our benefit; and this idea is really fascinating. But a sentence is not and cannot be the simplest part of language. Sentences are made up of words. A sentence comprises a grasp of the meanings of words, their forms and their meanings, and the syntactic rules according to which they have to be made into sentences. A little thought would suffice to show that without a grounding in these elements, any attempt at sentence-structure must prove in vain. Again what child ever speaks full sentences at the outset? But the linguistic reformers ignore these simple truths and recommend a course with sentences to start with.

To say that translation sticks to the students and would not leave them for life is simply meaningless. For, the thousands of persons speaking English now in India, are living examples to repudiate this grand theory of the reform movement. We are not first thinking in the vernacular, translating it mentally and then speaking out the translation. Our thoughts do automatically find expression in English and we talk as rapidly in English as in our vernacular. This silly objection

simply illustrates the empiricism of the reform method.

For want of space I cannot exhaust the discussion of the entire mass of mis-conception that has come to be the rule of the day; but I can assure you that, if we think a little deeply, we find that most of the so-called linguistic principles do not deserve any more advocacy. I believe that a careful scrutiny of them all will see their end at once; and in the interests of English instruction in the country, they must forthwith go bag and baggage. Having thus seen wherein lies the empiricism of the Direct Method, we shall now proceed to the scientific aspect of the problem.

SECTION II. THE SCIENTIFIC ASPECT.

The Eclectic Method—Essential Conditions.

(10) Eminent men like Dr. Sweet and H. E. Palmer suggest that the true method must be eclectic in character, *i.e.*, one which is a synthesis of what is best in everything. But the enquiries they made so far do not indicate any attempt of the kind. Having proceeded myself on eclectic lines thus far, I find that every linguist invariably condemns the anti-translational and anti-grammatical views and recognises the manifold uses of translation and grammar. But they are not able to state their merits with a clear and definite insight nor with any scientific precision. So we may fairly conclude, as the result of eclectic inquiry, that both translation and grammar form the essential elements in teaching foreign languages, and that the task before us is to have a clear and definite view of the services they can render. This issue leads us to the questions:—What is translation? What is grammar? What are their uses? How are they to be utilised? The correct answers to these questions would lead us to the eclectic or the rational scheme.

Essential Conditions.

(11) In order to place linguistic instruction on a truly scientific basis, three things are necessary. We must have a clear and definite conception of

language teaching and the elements essential to it; then we must ascertain the conditions requisite to render instruction efficient; and lastly, we have to draw up schemes and courses of lessons based upon such elements, so as to satisfy the necessary conditions. So, the following discussion comes under three different heads: definitions, conditions requisite for linguistic acquisition, and schemes and courses of lessons.

Definitions.

(12) If we examine the literature on linguistic methods so far available, we find no attempt made to define the terms most relevant to language teaching, such as language, language acquisition, language teaching, translation and grammar. This fact would suffice to prove the empirical or unscientific character of the Reform Movement. Not knowing what they are, they prohibit or prescribe the use of grammar and translation according to their own whim or as it suits the context; and not infrequently they make contradictory suggestions. If we can define the terms so as to possess some definite notions of them, all the haziness disappears and we shall be on the right road leading to the true method.

Language Acquisition.

(13) Language is a mass of symbols for thoughts; to be brief, we may say 'Language is symbol for thought'; where 'symbol' and 'thought' are used in their generic and collective sense. So, language acquisition comes to mean the double process of recognising the sense conveyed by symbols and conversely to enable the student to use the right symbols in that language for his thoughts. These definitions lead us to recognise the dual character of language teaching and the educator will have to bear these converse processes in mind in formulating courses of instruction in a language.

Symbol may be either spoken or written, which latter, of course, includes print. The spoken symbol relates to speaking and hearing and is chiefly characterised by sound, whereas the written

symbol relates to the form. But whatever be the nature of the symbol, spoken, written or printed, the symbol refers to sense, and the dual character is therefore present always. We speak and write language to express our thoughts; we hear and read language and receive the thoughts conveyed by what we hear and read. And in all these processes, the material of the language is the same and constant, *viz.*, words, word-forms and sentences. Hence it naturally follows that all the four processes, speaking, hearing, writing and reading, are but different varieties in the use of the same language material; and before using the language material in any of these varieties, the student will have to possess a thorough acquaintance with vocabulary, accidence and sentence-structure of the language to be studied; and every attempt to make the students pursue the four arts before they are furnished with a command of the materials requisite therefor must prove in vain. It is, therefore, incumbent on us to devise a course of lessons which would furnish him with a command over vocabulary, accidence and sentence-structure as the starting point. Let us proceed to see what help grammar and translation can give us in the matter.

Grammar.

(14) What is grammar? As has been already stated, it is the science of language: it explains the principles governing the formation of words and sentence-structure. The varieties of thought conveyed by boy, boys, boy's, boys' cannot be explained except by grammar. And yet, according to our definition of language, the present-day grammar is defective in not furnishing the thought variants conveyed by the four forms of the word 'boy'. The grammars so far written have failed to contemplate how this omission can be supplied. Grammar no doubt supplies the rule and nomenclature, but it is still defective in not furnishing the sense variants. How then are we to supply this omission and make grammar teaching complete according to our definition of language?

Translation.

(15) Now, what is Translation? Translation is the process of expressing the thought conveyed by the symbols of one language in another language. Here the thought is the same, but the symbols are different and the process consists in giving the correct and accurate equivalents in the other language. Now, in the matter of teaching a foreign language, this process has two aspects, viz., translation from the vernacular into the foreign language and *vice versa*. Translation of a foreign language into the mother-tongue means nothing but giving the thought conveyed by it; and translation of the mother-tongue into the foreign language means no more than giving the foreign symbol for thought. This view of translation is exactly in keeping with our definition of language, and as such translation forms the rational process of connecting thought and symbol. The Direct Method does not contemplate to connect thought with symbol and thus fails to achieve the purpose; and all its expedients remain wide of the mark. And by excluding grammar it keeps the student ignorant of the rule.

Relation between Grammar and Translation.

(16) A little thought would now suffice to show that grammar and translation are simply complementary to each other. While grammar gives the rules by which the forms 'boys,' 'boy's,' 'boy.' are formed from 'boy' and explains their nomenclature and purpose, translation into the vernacular, if given side by side, will furnish the sense variants conveyed by these forms. We can, therefore, fairly conclude that translation completes the work started by grammar and renders it consistent with our definition of language. Again translation is incomplete unless the rule is given; because the student has no opportunity to know the reason; and what is worse, he can neither understand the forms of new words nor form the variants according as necessity arises for them. So, both grammar and translation are severally incomplete; and together they form a complete

unit of instruction. This combination has so far escaped the notice of linguistic scholars; and on this should depend the evolution of the true method and the future of linguistic instruction.

Some Objections to the use of Translation considered.

(17) Instead of recognising, accepting and adopting the services of translation in this way, linguistic reformers have framed a number of charges against translation. In the first place, they say that translation is a round-about course that the student has to pass from the vernacular symbol to thought and then from thought to the foreign symbol. They forget, ignore or suppress the fact that the vernacular symbol gives the sense instantaneously and automatically. The reason for this is obvious enough. The vernacular is picked up synchronously with the growth of thought in the child; and in consequence the association between the vernacular symbol and thought is so strong and intimate that the moment the vernacular term is given, the thought suggests itself readily; and this process involves no round-about and difficult journey as the reformers have led the whole world to believe.

Secondly, they say that translation is an absurd task; because if we take a sentence in one language and substitute in order the dictionary equivalents of all the words therein contained and read these again, they make no sense and generally make a nonsensical mass of words; and therefore translation is an absurd process. But what sane man would translate in this fashion? How can this be translation at all, and according to our definition of it? This process is no translation, nor can it be; and it has been designated by scholars, in derision, as transliteration with which no sane man can have anything to do in teaching a language.

Thirdly, they say that translation is an impossible process because no two languages have perfect equivalents. They say "what Telugu word conveys the idea of 'ice' or of the phrase 'in spite of'?" But they forget that in all languages

there must be words exactly equivalent to father, mother, brother, sister, etc.; and sentences equivalent to 'he comes to-morrow', 'the sun rises,' 'my house is there,' 'the moon shines in the night,' etc., etc. In all countries people have most ideas in common, most thoughts in common. They do entertain same and similar thoughts, talk of same subjects, speak to one another of so many things common to the entire human race. The examples on which the objection is based are but out of the way exceptions, and even they can be explained in the vernacular. So it can be confidently asserted that no language can be wanting in equivalents to express the mass of ideas and thoughts which form the bulk of every day use. In fact, the mass of ideas are the same all the world over and nothing but ignorance and blindness can accept this objection.

Scientific bearings.

(18) The conditions requisite for teaching a foreign language in an efficient manner come under three different heads—Logical, Psychological and Educational.

Logical.

(19) The first requires that a language should be divided into its component parts according to logical principles; the parts have to be classified and arranged on a strictly logical plan, leading from the simple to the complex and to a definite purpose. Such an arrangement requires that we should take up words as the starting point as they are the elements of which sentences are formed, and lead on to sentences. Though this view may be in diametrical opposition to the time-honoured faith, it is decidedly logical in character. And eminent scholars have emphasised the desirability of starting with words and phrases before passing to sentences; only they have not been able to support their suggestion with satisfactory reasons nor have they been able to devise a scheme of the kind.

Psychological.

(20) Having arranged the linguistic material according to the logical plan described above, the

next question would be how to present and impress the material so as to enable the student both to understand and to use the foreign language. Here, our definition clears the matter and leads us to the solution. We have to associate every detail of linguistic material with the thought conveyed by it; and this association should be made so strong that the moment the symbol is given the thought is suggested; and conversely the moment a thought arises the symbol comes out to express it. In order to achieve all this we have to recognise three stages of the Law of Association—Formation, Confirmation and Assimilation. First of all, the association between symbol and thought should be formed; then the association has to be confirmed by the process of memorisation; and lastly the same has to be assimilated, i.e., mastered so as to enable the student to use it aright whenever use requires it, automatically and without mistakes.

These three stages in the Law of Association between symbol and thought relate to the teacher's part of the work. If we recognise that his share of work is but initiative and it is after all for the student to learn, master and use the language, there is much for him to do so as to acquire command of the language. So, there should be three processes requisite for him corresponding to the three stages of the Law of Association. The language material should be reduced to a series of identities; sense to symbol and symbol to sense; and it is only when the student can give symbol to thought and thought to symbol readily and without committing mistakes that he can be said to acquire decent command of the language material. So he must first be able to fill up the identities; then he must memorise the identities; and lastly, he has to assimilate them by constant practice in using the language material. The methods so far promulgated have failed to recognise these principles; and hence no adequate arrangements are made for the formation of associations and memorisation of the details of language.

Now it is very easy to see how the present system is psychologically defective under the Direct Method and what services translation is capable of rendering in the field of language teaching. According to the Direct Method there is no endeavour at all to connect thought with symbol; that is to furnish the meanings of the language material. And we have already seen that the Direct Method cannot demonstrate the meanings of a large mass of language material. As regards translation, the reform school proposes to recognise the usefulness of translation only as a means of explanation; but by reducing its use to the minimum, they have deprived linguistic instruction of the benefit of translation. As for the usefulness of translation as a means of exercise, they are completely ignorant of it. The drill and exercise that the Direct Method has furnished and is capable of furnishing have no bearing on the association between symbol and thought and thus remain wide of the mark; and it is obvious, from the preceding discussion, that translation and translation alone can furnish scope for exercise connecting symbol with thought.

Educational.

(21) In formulating courses and schemes of instruction the educator will have to arrange his work with a definite plan and proceed according to it. In order to do this he has to recognise the distinction between two classes of school subjects—those furnishing knowledge and those relating to the acquisition of arts. The three R's come under the latter category, while History, Geography, Physics and Chemistry relate to knowledge. The educator's work varies and ought to vary considerably in dealing with these two classes of subjects. In furnishing knowledge obviously there is not so much difficulty as in enabling students to master the arts such as speaking, reading, writing and arithmetic. The task in the matter of teaching these subjects is a hard one. The essential processes involved in the attainment of an art are Instruction, Drill, Exercise and Practice. By

Instruction is meant the requisite explanation and knowledge of the material to be used in the art by drill is meant the process of impressing the requisite information of the material relating to the art; here exercise is added as a third process by way of differentiating the student's share of work as distinct from that to be done under the control and supervision of the teacher in the class-room; lastly comes the practice of the arts using the material previously acquired. To illustrate these processes from Arithmetic the Multiplication table contains a mass of identities which have to be explained by means of the ball frame, beads, coins, etc.; then they have to be drilled in the class; the students will then have to memorise the identities and lastly they must be used in problems which require practice. It is for want of adequate attention being paid to these several processes that arithmetical teaching proves a failure in the case of large masses of students. These processes have so far escaped the notice of educators.

Now, in the matter of teaching a foreign language it must be conceded that Speaking, Reading and Writing are all arts. They all require and have in common words, word-forms, and sentence-structure which constitute the working material of the linguistic arts. The student, in the first place, requires instruction regarding these materials so as to understand the meanings of the foreign symbols and use them aright. Then they must be drilled by the teacher in the class-room by way of impressing the linguistic material. Afterwards, the student will have to do adequate exercises by way of memorising the material. It is then that the arts of Speaking, Reading and Writing may be taken up for practice so as to have a fair chance of success.

The old school as well as the modern has failed to recognise this four-fold function of the educator in teaching languages. Under the Direct Method we have seen that there is no instruction at all, since they do not give the meanings of the foreign language and do purposely omit to explain the

principles governing the language material. They do not contemplate to furnish the right kind of drill or exercise with the language material. Omitting these preliminary stages they straightway make students practise the arts of speaking, reading and writing. In these circumstances we must not be surprised to find the results such as they are. If these constructive processes are acceptable and recognised we shall have to draw up and formulate courses of instruction providing for these several processes in due succession.

The Starting Point—Reading vs. Speech.

(22) When the Direct Method made the initial course purely conversational and oral, there is no opportunity created for the student to memorise matter outside the school. The share of the students' work in the language per day comes to about a minute or two which is too meagre for the purpose of acquiring mastery in the arts of speaking, reading, etc. So we have to make Reading the starting point, where the reading books at the initial stage should deal with the language material in the aforesaid manner, and furnish the student with the means to work by himself outside the school. The failure of linguistic methods so far is due to the absence of such an arrangement, and if we recognise this view of the constructive programme, it becomes incumbent on us to produce reading books incorporating the principles enunciated above and containing both instruction and exercise. In the absence of such courses it is idle to expect a linguistic method to be successful.

When the Reading book is made the starting point, there is one more important advantage, viz., the eye is enlisted in the activities of the student so as not only to ensure attention and concentration but also to impress the language material more strongly. For these and other manifold reasons M. P. West has last year announced the view that Reading should be made the starting point instead of speech.

Memorisation.

(23) As regards the memorisation of the language material one point has to be remembered. The existing methods of course propose that the student must memorise language material; but they have so far failed to indicate the manner of doing it. It will not suffice to get by heart lists of words. Words got by heart are like the first halves of the multiplication tables which are quite useless for purposes of mastering arithmetic. Of what earthly use will it be to memorise 4×4 , 4×5 , 4×6 , 4×7 , etc., without knowing the resultants which complete the identities? Similarly it would be no use to get by heart lists of words and phrases without their meanings. So what has to be memorised is the linguistic identity; otherwise the student may know the words; but he uses them incorrectly and in an absurd fashion for lack of assimilation of their meanings. Mistakes like 'His husband,' 'a books,' 'he was a woman' can be traced to this defect all through. So, the process of memorisation should proceed on the lines of the Law of Association between symbol and thought, and must consist of the ready and correct formation of linguistic identities.

For a scheme or course of linguistic study to be strictly scientific, it must conform to the above principles. Though these several points are not so far stated by scholars in categorical terms they do make suggestions emphasizing on every one of the details of the linguistic scheme referred to above. Theirs are but stray suggestions and so far as I know, nobody has yet brought out courses of linguistic study incorporating these manifold suggestions. So, if the constructive views presented in the foregoing discussion are acceptable, it becomes incumbent on us to formulate schemes and courses incorporating the above principles. You may ask 'Is all this possible?' 'Is such a scheme anywhere available?' In answer to these questions I should like to say that all this has been quite possible and the courses are ready. All that

you have to do in the matter is to look into it and see how far the courses satisfy the principles enunciated above.

SECTION III. THE PRACTICAL SCHEME.

Preparatory Stage.

(24) Having thus seen, from eclectic and scientific inquiry, on what lines the teaching of foreign languages has to proceed, it remains for us to formulate curricula, courses and schemes of lessons, based upon the results of the inquiry and incorporating the principles enunciated in the foregoing discussion. As has been already pointed out, reading should be made the starting point; and for this purpose the initial course must acquaint students with the alphabet and pronunciation of the foreign language, so that they may be enabled to read a book with correct pronunciation. It goes without saying that, in the absence of a course of instruction on this score, it would be absurd to expect students to read a book.

So far no attempt has been made to furnish a course of instruction on this subject, so much so that it is left entirely to the winds; and the students are left to shift for themselves as best as they could; and if any could attain the capacity and facility to read with correct pronunciation, they do so in spite of the system; and their success, if any, is due to other causes; and the system cannot claim any credit for it. A scheme of the kind is ready in the form of a book comprising a course of instruction tending to explain and impress English pronunciation and enable students to read English with accurate and standard pronunciation. This is the "Preliminary Course—Alphabet and Pronunciation."

First Stage.

(25) Then comes the main scheme of lessons which takes up vocabulary and sentence-structure for its aim, and proceeds to formulate a series of lessons combining grammatical instruction with translational exercises. In this course some words of common occurrence are taken up as the starting

point; and then inflection, phrase-formation and sentence-structure are taken up in succession. Here English grammar is taught in the vernacular and by association with the accidence and sentence-structure of the students' mother-tongue. The lessons are followed by copious exercises in both directions by way of impressing the principles taught in the lesson so as to enable students both to understand English and to use it aright. This course, along with the preliminary, takes about one year to finish. At this stage no written work is to be introduced; all work must be oral.

Second Stage.

(26) After this course is gone through, a reading book containing connected matter will be introduced for the first time to be taught as it is being done now. Since the students possess some command of vocabulary and sentence-structure, they can follow any kind of work in English with confidence and facility, such as subject-matter, oral composition and conversation. At this stage, written work is introduced; and written exercises in dictation, transcription, translation, grammar and composition will be given side by side with oral work which must of course form the predominating element.

Later Stages.

(27) Fresh courses similar to the first have to be formulated on a concentric plan, taking up fresh vocabulary and advanced grammatical principles. These courses are so prepared that they can be finished each in a year. Making due allowance for accidental circumstances, the three courses above mentioned can be finished in not more than four years; and from actual experience in the class-room, I can give the assurance that if these courses are used in the primary and lower secondary classes, English instruction would turn out to be far more efficient and will produce decidedly better results, so much so that when such students enter the High School stage, they will be in a position to do any work in English with confidence and facility.

Since a Reader is introduced soon after the First Course is finished, this novel scheme does not interfere with the existing arrangements from the second year onwards. And even the Direct exercises can be calculated to proceed more successfully on account of the command which the students have acquired over vocabulary and sentence-structure.

From the second year onwards, these courses take the place of practical grammar to be taught for two or three periods a week.

Appreciation of the Novel System.

(28) The series so far published have won the appreciation of many educationists in the country, the Press and the Educational Department of Madras (*vide Fort St. George Gazette*, dated 6-1-25, Part I-B, page 8).

A plea for the Translation Method which contains a gist of the claims of translation as a method in teaching foreign languages, has been appreciated by the Educational Department of Madras and included in the list of reference books for teachers (*vide Fort St. George Gazette*, dated 7-1-1908, Part I B, page 6).

Scope and Place of the Translation System.

(29) At this stage, it is found desirable to give a compact view of the respective scopes of the new Translational System and the time-honoured Direct Method in teaching foreign languages. In the old school they utilised translation in explaining passages in the foreign language and rendering vernacular passages into the foreign language. In both these operations, there was neither aim nor plan; and the whole work was aimless and unsystematic. There was no definite conception of language-teaching; nor was translation adapted so as to meet the demands of linguistic instruction. For these reasons translation was a failure under the old school. But now translation comes before the public with a well-regulated, systematised and improved scheme of work adapted to suit the requirements of linguistic instruction according to modern and up-to-date conception, and on thoroughly scientific and at the same time practical lines. Hence it is clear that the constructive programme now laid before the educationists is no retrograde step, but a progressive one which is in perfect harmony with the scientific principles involved in linguistic instruction.

Scope and Place of the Direct Method.

(30) While the old school failed to have a clear and definite conception of the aims of linguistic instruction and adapt translation to suit the requirements of language-teaching, the reform movement started with a distinct recognition of the aims of linguistic instruction and has brought into existence an elaborate system of drill, exercise and practice leading to the attainment of the linguistic arts.

The Reform method deserves all credit for these two features. But the means they devised are wide of the mark and have, therefore, proved to

be futile for the purpose and are condemned by experts to be useless. So we have to conclude that the work of the Direct Method should be the concluding or crowning point of linguistic instruction.

Relation between the Translation System and the Direct Method.

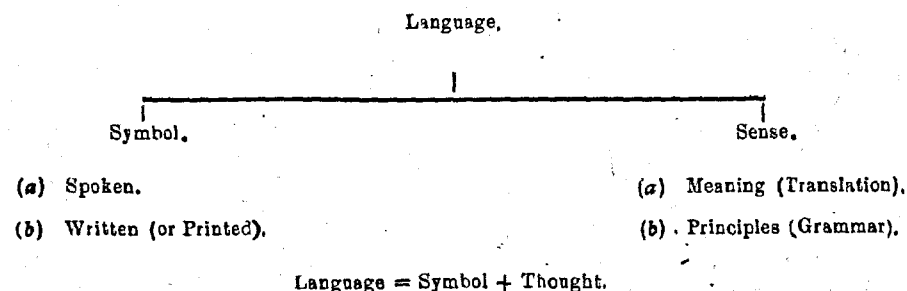
(31) Now the situation is clear. Translation System and Direct Method are not rivals any more. We have seen that each is incomplete without the other. Just as we found that translation and grammar are severally incomplete and mutually complementary, we now find that the Translation System and Direct Method are severally incomplete and mutually complementary and together they form a complete unit of instruction. But each should be relegated to its proper place in the curriculum. As has been already described the Translation System should be the starting point and direct drill and exercise should be the concluding or crowning point. At the initial stage and for one year, there must be only translational course until students acquire some command over vocabulary, accidence and sentence-structure; then both translational instruction and Direct exercises should proceed side by side for a time; and towards the final stages, translation should be completely given up and the Direct work made to proceed in its full swing. To be still more definite, translation should form the predominating element till the end of the Lower Secondary course, with, of course, Direct work, being done from the second year onwards; and in the High School stage Direct Method should be worked in its entirety.

Facilities of the Proposed Scheme.

(32) This arrangement has one great advantage. It is an established fact that the Direct Method demands in the teacher a decided mastery of the foreign language so much so that his thoughts move most freely in the language; and the language he uses must be quite correct, accurate, homely and idiomatic. Such a capacity cannot generally be expected in the teachers now handling the lower classes and forms; and so the Direct Method can have no chance of success at the initial stages. Since the teachers handling English of the higher forms are generally graduates possessing a far surer command of the English language, they can be expected to do justice to the Direct Method. Again the translation system now promulgated can be easily handled by teachers of even inferior qualifications and attainments; and it even helps the teacher to proceed in his work with ease and facility, on account of its simplicity, plainness, and definiteness of exposition as well as the facilities it affords to conduct the requisite drill and exercise,

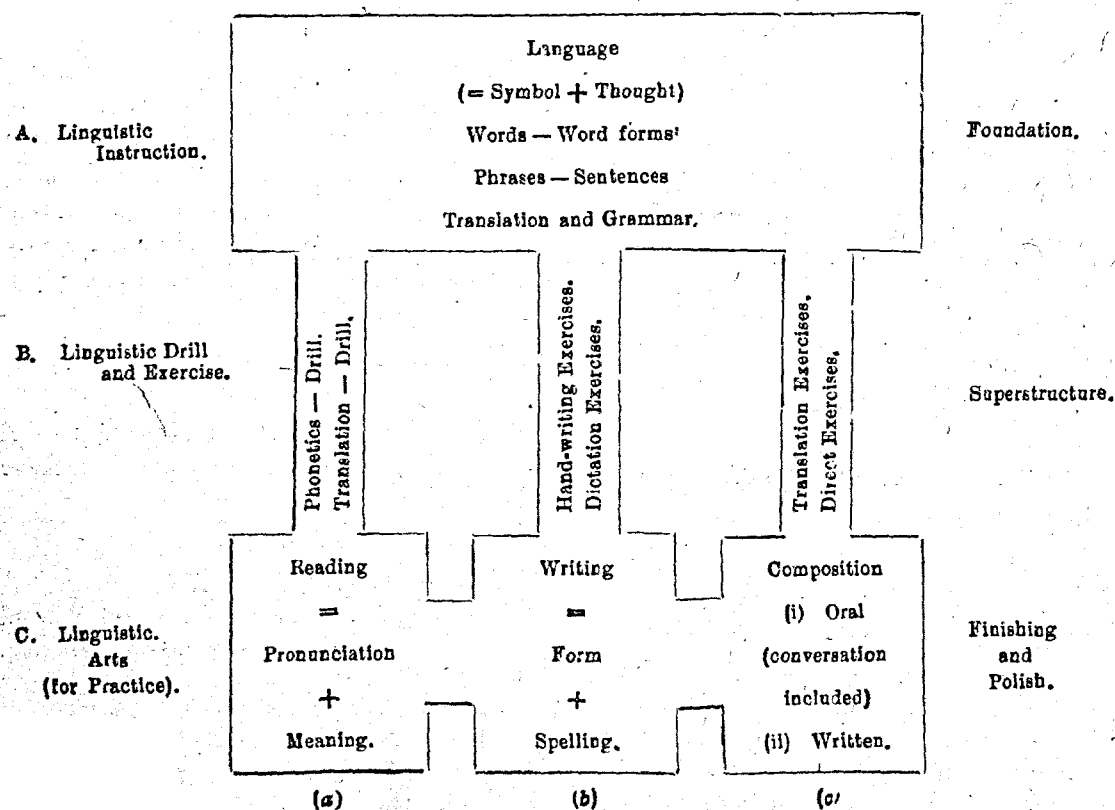
(33) CHARTS TO ILLUSTRATE THE SCOPE AND PLACE OF
THE TRANSLATION SYSTEM:—

CHART I. BASIC ELEMENTS OF LINGUISTIC INSTRUCTION.



Hence, Linguistic Instruction involves two converse processes: Thought for Symbol and Symbol for Thought.

CHART II. THE TRANSLATION SYSTEM.



(34) Explanation of the charts:—

(1) Linguistic Instruction (A) is like a reservoir. Just as the waters of a reservoir can be drawn and utilised for any and every purpose, the material acquired under this head may be used for any and every use of language; and in the absence of this reservoir the rest should be useless.

It is again like the roots of a tree. Just as a tree dies and cannot bear flowers and fruits the moment its roots are cut away, all work in language teaching proves futile without this course.

It is again like the head in the human body. Just as, if the nervous system should fail to do its work, the activity of the limbs comes to an end, all work in language teaching must fail to achieve its purpose in the absence of this course.

(2) The openings between A and B and those between B and C indicate that the linguistic instruction enters into every form of drill, exercise and practice, exactly as the waters of a reservoir flow into the required places and taps; and also just as the sap flows into every part of the tree to strengthen it; and just as the force of the nervous system permeates through the body to keep it active. The openings between a, b and c indicate that, though they ought to be treated distinctly each by itself, the several Arts are to be correlated.

(3) The present day system of foreign language teaching amounts to be no more than children's card palace without a foundation and with but a futile superstructure; and if, just as the card palace topples over in a moment, the present day linguistic instruction fails to achieve its purpose, we must not be surprised at it.

(4) According to the purposes aimed at by the linguistic student, any particular Art or Arts required may be taken up and practised alone, after A and B are finished. For instance those who require a foreign language for purposes of personal intercourse with foreigners may take up C (c), Oral Composition with Phonetics in (a), and stop there. The European students generally come under this head.

Those who require a foreign language for reading its literature and learning the customs, manners, etc., of the foreigners or for philological or literary

purposes may concentrate on C (a), Reading and Meaning, and stop there.

Again merchants' clerks, etc., who require to correspond and attend to written work may take up C (a), Reading, and C (b) and C (c) in Written Composition and attain their purpose.

The Indian student who requires English for all these purposes will have to practise all the Arts in C.

But one point must be noted: whatever be the Art required, it cannot be attained without A and B being gone through as a preparatory step.

(5) As regards the time required to attain decent command in a foreign language for all the purposes mentioned in C, a, b, c, it has been already pointed out that some four years are required, giving eight to ten periods a week as it is the case now in the Middle School stage. But in the case of adults and those who do not aim at such an all round capacity, so much time will not be necessary and two years may suffice.

Corrective Use.

(35) This system has the further advantage of setting right students' defects, if any, which might have accrued by following wrong methods. We see that students of even the High School forms now commit awfully absurd blunders in speaking and writing. They can all be eliminated in a very short time if these courses are gone through in a systematic manner.

Direct Method and the Translation System Compared.

(36) Now let us compare the fundamentals of the Direct Method and the proposed Translation System.

The Direct Method

1. is simply empirical in character;
2. is based upon an imperfect knowledge of the Science of language, which has not yet come into existence;
3. has no logically arranged plan;
4. omitted to avail of any psychological principles;
5. failed to take note of any valid educational principles;

6. is wanting in definiteness of conception and aim;
7. is based on blind imitation;
8. is defective in not tending to the formation, confirmation and assimilation of any association;
9. is unsystematic in treatment;
10. is wanting in drill, and exercise;
11. does not furnish the meanings of the language material (by prohibiting translation);
12. does not explain the principles (by discarding Grammar);
13. has been a failure owing to the above defects;
14. is defective without Translation;
15. has brought to the fore-front the chief aims of linguistic instruction;
16. has invented and formulated a copious system of drill and exercise leading to the attainment of directness.

The Translational System

1. is highly scientific in character
2. is based on scientific principles, newly formulated and duly enunciated;
3. follows strictly logical lines;
4. is formulated strictly according to psychological principles; and the Law of Association;
5. has recognised and followed practical educational principles;
6. proceeds with a definite conception as to the aim and means;
7. is sensible all through;
8. is through and through built up on the Law of Association;
9. is decidedly systematic in treatment;
10. furnishes drill and exercise at every stage and for every detail;
11. supplies meanings for every detail (by incorporating translation);
12. explains every detail of accidence and syntax;
13. must prove successful on account of the above merits;
14. would be defective without Direct Method;
15. has learnt the linguistic aims and recognised and adopted them;
16. has incorporated the drill and exercises in due course.

N. B.—The proposed scheme, therefore, amounts to be a combination of the merits of the rival schools, eliminating the defects of both. Thus it is none other than a compromise of the two systems.

Apology.

(37) In presenting the foregoing courses, with an apology for the personal element, I must admit frankly that it is far from my intention to claim that these courses are the best of their kind or the very final ones meeting the problem. But one thing is certain: they are the first of the kind in the field and the only ones so far available. Able teachers may devise more suitable courses based upon translation; and even these very courses may be improved upon to meet linguistic requirements in a better way. And I am not unaware of the possibility of even rectifying defects in them, if any, and effecting improvements. Yet so far as I could judge of them from the eclectic inquiry such as has been described above, I have every assurance that each and every one of the features incorporated in these courses has a large mass of expert opinion in its support; and I have no small reason to be certain that every probable and possible objection to any of the features in these courses would vanish away if judged according to the new light thrown upon the problem; and I earnestly exhort the educationists to explore the vast literature on the subject and see how far the proposed courses are consistent with the best pedagogic thought so far available and also with the scientific principles enunciated above.

The larger work.

(38) In this connection I may further invite the attention of the educationists to the fact that what is now presented is but the gist of my complete say on the subject. Since a whole literature has sprung up on the subject it is obvious that the whole ground cannot be possibly covered in the short space of an article. Having worked at this problem for nearly four decades as a teacher, I

contributed a series of articles to the leading magazines in India and England dealing with the several aspects of the linguistic problem. A perusal of the said articles will throw more light on the problem and will go a good way to justify the several views advanced in the foregoing discussion. God willing, I hope to bring out an elaborate volume on the subject ere long.

Steps to be taken.

(39) In result, I beg to suggest that, in the interests of English instruction in schools, it is a matter of urgent necessity to take the following steps at once:—

(a) The bias against translation must forthwith be given up.

(b) The anti-translational regulations must be completely repealed and a pro-translational policy inaugurated instead making it imperative on all parties to see that translation is used in a systematic manner.

(c) The pro-Direct Method regulations have to be modified so as to relegate it to its proper place as suggested above.

(d) Since examinations influence teaching to no small extent, a test in translation both ways should be instituted and made compulsory at all examinations under English.

(e) Courses of instruction based upon translation, if any are available, should be welcomed, encouraged and given fair trial in schools.

Appeal.

(40) In conclusion, and in the interests of the masses of students who are being wrecked on the rock of a difficult school subject, for the cause of educational progress on right lines and in the name of that rationality and scientific truth which must guide education in the land, I respectfully solicit the educationists in the country and the Educational Department of Madras to give their careful consideration to what I have presented and take such steps as, in their judgment, the suggestions deserve.

COMMERCIAL ARITHMETIC

FOR

SECONDARY AND COMMERCIAL SCHOOLS

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

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CHAP. I. Some short cuts and artifices; II. Signs, tables and vocabulary; III. Averages and Percentages; IV. Insurance, Commission, Brokerage, Tradesmen's Discount, Rates and Taxes, Bankruptcy; V. Bills and Invoices; VI. Profit and Loss; VII. Alligation. VIII. Partnership; IX. Interest—Simple and Compound; X. Present Worth and Discount; XI. Equation of Payments; XII. Shares and Stocks; XIII. The Metric System; XIV. Foreign Coins and Exchange; XV. Miscellaneous Examples; XVI. Madras S. S. L. C. Question Papers; APPENDIX—ANSWERS.

OPINION.

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

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SRINIVASA VARADACHARI & CO., 4, MOUNT ROAD, MADRAS.

THE UNIVERSITY ENTRANCE.

By Mr. S. SANTANAM, M.A., L.T.,

Board High School, Tiruturaipundi.

THE Madras University has now bestirred itself in proposing to institute an Entrance Examination for separating the sheep from the goats among the S.S.L.C. holders. The idea underneath the proposal is that the present S.S.L.C. system does not eliminate the unfit and weed out of the colleges those who are incapable of coping with college studies. It does no credit to the University to suggest any pecuniary motive for the desire, as one of the previous writers on the subject has done.

If the motive prompting the institution of the Entrance Examination is then, as it ought to be, nothing else than the elimination of the unfit, one can only wonder how this test will achieve it better than the present S.S.L.C. or the present Intermediate Examination. After all, the Entrance Examination too is an examination like the S.S.L.C. or the Intermediate with but an insignificant difference. In the first case, it is an examination held by a separate body, the S.S.L.C. Board. In the second case, it happens to be an examination held by the University itself two years after the S.S.L.C. instead of one year after. If objection is taken to the S.S.L.C. Board on the score of its affecting the autonomy of the University, as some writers point out, we can pass over it as futile, arguing that this plea may be used to shut out all students outside the jurisdiction of the University.

If, on the other hand, the Entrance Examination is proposed only as an alternative to the Intermediate, one has to ask, what is the necessity or urgency for such a step? The

Intermediate itself serves the place of the Entrance Examination wonderfully well. There are also some other distinct advantages in keeping the *status quo*. For one thing, there will not be any meaningless meddling with the present system. Secondly, the students, after passing the S.S.L.C. examination, can breathe free for one year at least before they are again subjected to the fiery ordeal of a second public examination. God knows what a terror and nervous excitement the public examination, University or otherwise, has become without leading to any sound or real knowledge on the part of the unhappy students ground down by that mill. Will it not be injurious to, nay, undermining, the delicate constitutions of our feeble boys, most of whom are weak to a proverb? Public examinations are inevitable for certification. But why should we victimise innocent children at their altar consecutively for two years? Thirdly, one may pertinently inquire, what is there in a name, followed by a mere reshuffling of the present course? The ordinary college course of four years is not, it is hoped, intended to be altered by the new proposal. What is the virtue in changing the present system of University examinations, each coming after a biennial course to another of two examinations, the first after a year's course and the second after a triennial course?

In my humble opinion, it seems that this attempt of our University is mere playing, if not fooling with the college course, or aping other Universities which have adopted this system. I have had an experience of three years of such a system at Bangalore, where I handled the Entrance Classes attached to High Schools in accordance with the Mysore University Regulations. It is nothing

but an Intermediate examination with half the portions, as the period of the course is but half. I have no reason to think that this system has in any way produced a better set of graduates than our University. It can only be called fashion to institute this new-fangled Entrance test.

One honourable writer has done honour to the University as having been more impartial and just in the award of Matriculation certificates than the S.S.L.C. Board. One having no experience of both the systems cannot speak with authority on the subject. But it is not fair to insinuate that, unlike the University, the S.S.L.C. Board, or system as such, gives any room for injustice or partiality of any kind. The only way in which this has sinned is by its declaring more successes than the old Matriculation. Who does not thank the system for it?

The public cannot tolerate the old Matriculation scandal of the slaughter of the innocents hereafter. The University may insist on a high standard of proficiency in different subjects as it thinks fit, but its standards should not be adopted by or imposed on the Government for the selection of people in its services. There is, as hinted by several previous writers, a way out of this difficulty. Out of the eligible list published by the S.S.L.C. Board who are, in framing the list, guided by the public opinion as regards the standards they should adopt, the University may frame another list to suit its higher standard. The first list is one of people eligible for public service (E.P.S.) and the second is one of those eligible also for college studies (E.C.S.)

The University is justified in holding aloft its ideals. Those who are within it should have a thirst of knowledge for its own sake,

an intelligence and diligence high enough to tread delightfully through its mazes and a taste for the culture and refinement flowing from higher studies in literature, arts and science. They should not go in for such studies out of any desire for high emoluments or prospects of big salaries after attaining the University degrees. This should be plainly driven home to every youth aspiring for a University course. Driven home, it will be only if the Government does not attach any preference to the graduates merely on the score of their degrees. Then there will be no indiscriminate rush for them on the part of our young men. As things go at present, more than ninety per cent. of the young men found in colleges are there, not out of love of knowledge or taste for high literary or scientific culture. Their and their parents' motives are far different and their thirst for degrees is due to the prospects that have been opened to them by the Government in its services or other professions patronaged or controlled by it. Let these be also opened to the S.S.L.C.'s and other under-graduates. The crowd in the colleges will then dwindle. The public also will raise no hue and cry over the E.C.S. List, because they cry not for degrees but only for good careers for young men.

A second distillation, if necessary, may be effected by the use of what have become famous as the "Intelligence Tests;" for examinations can give no sure indication of intelligence in the successful students. The University exists only for the encouragement of talents and genius, and not for the mere bestowal of degrees with prospects. Sometimes dull students unfit for higher studies come into the E.C.S. and the college staff can easily weed them off by such tests. In the same way among the failures and the E.P.S., there may be some intelligent young men who owing to some unhappy circumstances were unable to figure in the E.C.S. For them, of course, chances are to be offered to sit a second or even a third time for the examination privately or through a school as they like.

By such a simple measure and not by the institution of an Entrance Examination the University can really fulfil its desire,

EDUCATION AND THE STAGE.

By MR. S. SUBRAMANYAM, B.A., L.T.,

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I THINK I will be raising a storm of protest from the citadel of orthodoxy in our Hindu society, if I were to say that 'the stage' also takes a prominent place in the education of children. All the more so, an Amateur Sabha in educating the ignorant adults of our poorly-educated country. Or rather, I might be allowed to state at the outset, placed as we are under a foreign country which has paid scant attention to education, for, compulsory and primary education is still talked of, and bringing it into force is left to the sweet whims and fancies of the Taluk Board Presidents and Chairmen of Municipal Councils, while the all-solicitude Education Ministers would not make it the policy of the Government, it is the only programme for India.

To return to the subject, not to speak of the appeal to sight to children, the dead past becomes a living present at the hands of a resourceful teacher who instead of simply visualising an incident, can make the boys act and feel the incident themselves. So then, it should become the important programme of every school, to train boys to take to the stage even from childhood, lest they should cultivate the abhorrence at a later period of life. Of course, I do not mean everybody in a school should be an actor but those that have the aptitude should be properly guided and encouraged. The end of a term, the school anniversary day and other important events in the school should not be missed to stage a play either in English or in Tamil or in both.

Then we come to the choice of plays suited to the age. What kind of play suits the

children best, the boy best and the adult best? The question can be straightway answered, that staging farces and small plays having short duration, would gladden the young minds, stir up their imagination and provoke thoughts. Historical incidents, events concerning a hero, and social dramas would be well-suited for the boys. As for the grown-ups, the tragedies and the comedies, plays involving great moral truths, and plays intended to eradicate pernicious social customs and superstitions might be availed of.

The question of equipment arises at once. I should think it is easily solved. While the managements of schools are prepared to spend money on costly laboratories and sports materials, why should they shrink to spend annually a small sum to make the children rise one step higher in society. One need not go in for the gaudy and fanciful articles that the professionals are fond of. Simple dress would do for children. So also for boys. They need not deface themselves with powder and useless colours available in the bazaars. They may be permitted to appear in their true colours, care being taken to choose suitable actors. The grown-ups are endowed with powers enough to practise strictest economy in consonance with their resources. Every school should also provide lump-sum grants annually for scenic arrangements and dress.

The reasons for the aversion to stage by the orthodox members of our society are not far to seek. This has been mostly due to the class of men who took to the stage. Any scamp who had the slightest pretension to music considered himself fit for the stage. Men without character took to it as a profession. Those that had no knowledge of the Three R's and learnt everything by rote and

constant practice came to the stage. The songs were lude, the speech was vulgar, more attention was paid to cater to the mob and make money than to elevate society. Morality was conspicuous by its absence.

The surroundings were unreal and unnatural. Acrobatic feats of a robber's character in a 'Satharam'—of late we hear of electric robbers!—won approbation of the mob and brought more money into the coffers of the proprietor. Anachronism is a common feature on the professional stage. Exaggeration of anything is their very breath of life.

The reaction has now set in. We hear of more Amateur Sabhas to-day than what they were a decade ago. The Suguna Vilasa Sabha of Madras and the Vani Vilas Sabha of Kumbakonam are the premier amateur institutions that have received the patronage of highly educated men. I hope the day will not be far off when more amateur Sabhas would come into existence to drive out the professionals, bag and baggage. Instead of loafers and characterless people taking to the stage, educated young men with status and stake in life should come forward and take to it, in the cause of the country, to elevate their brethren and thereby contribute to the happiness of the country they love so much. Then the aversion of even the orthodox members of our society would have been dispelled.

All this could be done only if the taste is created in our young men in the school—the future citizens of India.

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Mr. N. G. RANGA, B. LITT. (OXON.)

*Diploma in Economics and Political Science;
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ELEMENTARY EDUCATION.

THERE has been some sort of a school for the past 100 years in Nidubrolu. The first school which people of seventy remember, was organised by Mr. Krishnamma, the grand-father of the present Munsif, and the teacher was Mr. Pattayya, his clerk. Pattayya had very few students who were mostly from the rich Kamma families. He ran his school for about forty years and had to give it up owing to old age. Now Pattayya used to be a very hard task-master and was known to beat his pupils with a long, strong and bulky rope. The grand-father of G. R. Naga ran away from his school because of this severe punishment and hid himself for seven days in a cholam field.

Then Subrahmanyam started a school and ran it for three years. He became very popular with parents as he was supposed to be good at not only in beating his pupils most cruelly and effectively but also in pursuing them and bringing them back to school when they ran away. But his pupils made it so hot for him in the end with nasty practical jokes, such as placing thorns under the mattress upon which he sat, throwing mud at his face and burning his house, that he had to leave the village.

D. Appayya, who performed Saptaham in Doppalapudi, organised a school soon afterwards in the temple of the Polasamma, the Shakta goddess, during 1908. Rangayya,



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the one-eyed teacher as he was popularly known, started another school, because there happened to be a large supply of students. Appayya was turned out of the village because he tried to exact fees as high as 4 annas (4d.) per student per month. In two years' time, the other teachers also left the village. Then Konedena Appayya started another school and ran it successfully for three years. But he became involved in some immoral episodes and so had to give up his school.

On the ruins of all these schools, Subrahmanyam came again to organise and run his school. This time he was successful as he had to meet a milder and younger generation of pupils. From this time onwards this village school entered on a new phase of its history because he was the first man to make such a school pay and he managed to educate a fairly good number of students in a thoroughly scientific manner. He was as usual a very hard task-master and he did not mind using any methods of punishment to bring his unruly pupils to heel. He used to beat them with ropes, whips, and special sticks, and sometimes he used to swing them round and round by their long hair and kick them on their backs with his bare feet. His specialities in punishment were the following:—A rebellious student is ordered to lie down flat on his back. Then his legs are taken up, a stick is put between his knee and the forelegs which are bent on to the thighs and his hands are tied to the stick. Now another strong student can pick him up by the stick on which he is practically hanging. He is then placed in the scorching sun. Another method is to order such a rowdy student to hold his ears. Then he must bend to the earth and touch it with his elbows. He must bend in such a way and knock the earth with his elbows.

so as to make an appreciable amount of noise. He must bend like that from a hundred to a thousand times, the exact number depending upon the nature of the mischief. The rest of the students do not sympathise with the teacher but pity the poor victim and except those who are enemies of the boy punished, the rest sincerely vow vengeance upon the teacher. It is the limit of the cruelty which can ever be inflicted upon a student.

But he was still popular with his pupils because he taught things which were never before taught to Kammass and Sudras and which were the special knowledge of Brahmins. He taught his pupils, not only simple arithmetic, but also sums depending on simple rule of three, compound rule of three, simple and compound interest, fractions and decimals. He taught them accountancy, a knowledge which was till then the special preserve of Brahmins, and he showed them the way to write 'Registration Documents' at the writing of which, many Brahmins were until then making a lucrative living, cheating many a poor ryot. And he also taught his students how to measure house sites, lands and tanks, which is a part of the science of surveying, which only the Karnam of any village and a few Brahmins knew.

So many Kamma young men, who were advised by Z. A. to take advantage of this opportunity, joined his school to get the coveted knowledge, needed for a successful career in business and other active walks of life.

Subrahmanyam was hated by many Brahmins of the village for divulging the secrets of the success of Brahmins and because of this opposition, he decided to break another

monopoly of his fellow-Brahmins. He taught the Mahabagavatam, the great epic of Lord Krishna—a Telugu translation by one of the greatest Andhra poets, of the Vishnu Purana, to his students who were thus enabled not only to hear it, as their parents had, but also themselves to read and understand the famous epic. The result of such education was that most of his pupils became as competent, learned and educated as Brahmins, and desired to be treated by Brahmins as equals. Many Kamma people realised that their own people also could learn and interpret the epics, could keep their farming and banking accounts, could survey their lands and could register their bonds and deeds. This appreciation of the possibility of becoming the equals of Brahmins was of extraordinary importance in making possible the success of the movements described below.

Subrahmanyam used to charge 4 as. per month to each of the beginners, 8 as. to those who were learning simple rules of three and simple arithmetic, and one rupee per month to each student who had reached the highest standard. He used to keep his pupils for four years in this highest standard and teach so little in any year, so that he could get a large income. His fees were regularly paid and any one who did not pay was strictly prohibited to attend his school. He made about Rs. 4,000 on this school in a period of six years, in addition to maintaining his own big family.

In 1908, Pullayya, who was a clerk of P. Ramaswami, was persuaded by his master to open another school to rival that of Subrahmanyam and so reduce the fees charged, so that children of poor people among Kammass could be educated. Pullayya taught all the subjects that were taught in

the other school and so by 1910, he had 80 students in his school as against 100 in the other school.

It was mostly Brahmins and Kammass who were able to send their children to such schools. Some barbers' boys were also educated in Perayya's School and some dhobies' children were educated in Subrahmanyam's and Pullayya's Schools. Fortunately the Kammass and other high caste people did not object to send their children to the same school where boys of lower castes were also educated. Indeed when the Dasara* festival came (which usually falls in October) Brahmin and Kamma boys are allowed without any trouble to go with other low caste pupils to the houses of the relatives of these low caste pupils, to sing and then request some money for their teacher and for themselves to buy sweets. In spite of this democratic spirit, very few boys of the low caste people were able to take advantage of these schools because their parents were more anxious to get something through their labour than to educate their children. For the same reason, most of the Kammass never used to send their children to any school.

In most villages no charges are made in such schools for education. The teacher is usually able to earn his living by keeping accounts to the ryots and private bankers of his village and by writing some 'Registration Bonds'. So the income from his school is available for his savings. Usually the rich

* Dasara Festival lasts for twelve days, as far as the school teachers are concerned. It is during these days, that such teachers go to the houses of parents and relatives of their pupils with all their pupils, nicely dressed and let their students sing and then request the people who are thus approached to give gifts of money to the teacher and a few rupees to boys to buy sweets.

people whose children are sent to such a school give some paddy costing about Rs. 10 per annum to the teacher. In addition to such payments, the teacher does not get any regular payment except the Dasara income. Now during Dasara he gets about Rs. 8 per pupil and if he has about 30 students he manages to get at least Rs. 200 per annum. Out of that sum he has to spend about Rs. 50 on the family cloth budget and saves the remaining Rs. 150.

The students of such schools are not taught anything of Geography, Modern History and Elementary Science. They are not taught in any scientific way anything of drawing, though the students develop an idea of drawing as they are encouraged to decorate their slates with nice designs, once in every fortnight, when they get two days' holiday. Reading and simple arithmetic are all the subjects taught, though as we have seen, in some schools other subjects are also introduced. We find such schools almost in every village of the Sattenapalle, Vinukonda, Palnad and Ongole Taluks of the Guntur District, and it is largely true to say that there are greater number of such schools run as private adventures than of modern elementary schools, which are financed both by the Local Boards and the State.

To return to Nidubrolu, the Bapatla and Ongole Taluk Board suggested in 1910 that a Board Elementary School would be of great use to the villagers. But N. Ankappa, supported by Subrahmanyam, refused to have anything to do with the Board. The local teacher spread wild ideas about such a school, that Christian and Panchama teachers would be introduced and very heavy fees would be charged and so on. Again in 1912,

the Board sent a message that it would open a school. This time the Magistrate who found out that the village could scarcely supply enough enumerators for the 1911 Census insisted that such a school should be established in the village. The local leaders gave way and Subrahmanyam was satisfied when he was offered a post in the proposed school. So the Board Elementary School was established in 1912, into which Subrahmanyam's school was incorporated. Pullayya refused to join the new school and ran his for five years and then gave it up as it no longer paid.

All the boys of the so-called highest standard of the old school were admitted into the third standard of the new school and the new Headmaster taught them Elementary Geography, History, Physiology, Botany and Zoology. He trained them in writing essays in Telugu prose, which they had never done before. Drawing and physical exercises were also taught.

This new kind of education was very unpopular for a time among the villagers but soon these students who were already about 15 years of age grasped the importance of these new subjects and began to ridicule their Pundits who professed to know everything but who knew nothing of these new subjects. No Brahmin understood that the earth is round, that there are such things as oxygen and nitrogen and their special characteristics, and every Brahmin thought that there was in the physical organisation of a man nothing similar to that of any other animal. So on every point these newly-educated youths could ridicule their elders. This was the beginning of the strong reaction which set in against the old institutions. Furnished with a few salient facts, these young men believed

that since their old Pundits could not answer their questions, their holy books must also be useless, their religion a mockery and their old habits the result of barbarism. They made little effort to educate themselves beyond the elementary school standard, and they ceased to care to understand the spirit and purpose of their ancient institutions. Incidentally, this strong reaction which has been largely disadvantageous to the country in many ways had one salutary effect, and that was to lessen the belief in the omniscience of Brahmins and to lessen the respect paid to them.

Among children this new school became very popular because they had to study between 7 a.m. and 10 a.m. and 2 p.m. and 5 p.m. or 6 hrs. against 10 hrs. in the old schools, and they got four Sundays as holidays against two formerly, and they were allowed to take the novel physical exercise. Among parents too, it was popular because the fees were considerably less than those in Subrahmanyam's school. The nature of the punishments became more humane, summer holidays ran for a month and there were tables, chairs and pictures in the school. By 1917, every boy or girl who was of school-going age was sent to this school, which became a thoroughly established institution. There are now 114 boys in this school and there are five standards and five teachers. The school is housed in a rented building, as the Bapatla Taluk Board is too poor to provide it with a permanent building.

There is a 'Board Elementary Girl School' in Nidubrolu and it was established in 1925, through the influence of the Munsif, G. R. Naga, and the Library people. The headmaster is a man but his two subordinates

are women. There are about 100 girls in this school which is also in a rented building at present.

A 'Missionary Girl School' was established in 1923 through the influence of the Library people, after much agitation in the village for a long time upon the question whether the Hindu children should be sent to a Christian school or not. There were 150 students in that school in the beginning. But soon the school became very unpopular as the girl students were expected to recite Christian songs and prayers and so all the girls left the school. The Missionaries had to close it in 1924.

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THE REMAINDER THEOREM.

By MR. U. PUNDALIK SHENOI, B.A., L.T.
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THE Remainder Theorem is, on account of its wide application, one of the most important theorems in Algebra, and for this there is but one formal proof in text-books. Of late this time-honoured proof has been criticised and its logical soundness questioned. The objection raised against this proof is such as will naturally strike a critical mind and seem difficult to be got over. One interesting thing about it is that the present proof seems to be the only acceptable one, though the objections raised against the proof cannot lead to the theorem itself being false; for the truth of the theorem can be seen from any number of particular cases that might be examined and from the fact that the result obtained by the application of the theorem can always be verified to be true by independent means. Nevertheless the objections raised against the proof of the theorem have perturbed the equanimity of many a teacher and student of mathematics, and they have probably grown uneasy about the matter, as the objections seem to be well-founded and as the task of mending the proof so as to be absolutely flawless seems to be difficult. Some who see this from another point of view, namely, that of public examinations, are probably afraid whether the examiners would discount the existing proof or discard it as faulty. Hence a discussion of this theorem seems to be very desirable and is bound to be fruitful.

The writer of this article doubts whether the objections to the proof of the theorem are really well-grounded, and whether the apparent flaw is not based upon a mathematical illusion or fallacy wherein we are deceived by something correct appearing to be incorrect, just as in an ordinary fallacy we are deceived by something wrong appearing to be right. And in the following lines an attempt will be made to show that objections to the proof are based upon a misconception and

the proof is all right without the need of any further improvement. Besides, two other proofs of the theorem will be given, wherein, it is believed, there is little room for discussion and objection, so that those who do not like the present proof might very well adopt one of these.

The present proof of the Remainder Theorem is as follows: If $\phi(x)$ be the quotient obtained by dividing a rational integral function $f(x)$ by $x-a$ and R be the remainder, $\phi(x)$ is a function in x of one degree lower than $f(x)$ and R is an expression which does not contain x but which is formed out of a and the co-efficients in $f(x)$. As the relation between a dividend N , its divisor D , quotient Q and remainder R is always such that $N = D \times Q + R$, we have in the present case, $f(x) = \phi(x)(x-a) + R$. This relation is true for all values of x , and hence true when $x = a$. When a is substituted for x in this relation, the value of R is not changed as it does not contain x , while the values of the other expressions change, and we have the equation $f(a) = \phi(a)(a-a) + R$ (unchanged), whence $R = f(a)$. Now what are the objections raised against this proof? They are as follows: As the relation $f(x) = \phi(x)(x-a) + R$ is based upon division of $f(x)$ by $x-a$, and when $x=a$, this division is not possible, it is not valid to say that the relation is true for all values of x which include a . And as subsequent argument is based upon this particular value a , the whole proof is invalid.

If the above criticism were sound, some changes would be necessary in the present proof, but a consideration of this necessity does not arise when the criticism itself seems questionable. If the objection taken to the division of $f(x)$ by $x-a$ when $x=a$ means that we cannot think of a quotient and remainder in that division, a similar objection can also be taken when x is equal to many another numerical value and when the division is possible. For example, when x is any fractional number, or when x is an integer and a

and the co-efficients in $f(x)$ are fractional numbers, division of $f(x)$ by $x-a$ is possible, but as in that case $f(x)$ and $x-a$ will each be fractional, we cannot think of a quotient and remainder as a result of division, and division in that sense is meaningless and its consideration out of question. Again when a and the co-efficients in $f(x)$ are all integral and when x also is given an integral value, division is possible and has meaning, giving a quotient and remainder; but, for that particular value of x , say m , $\phi(m)$ is not the quotient and R the remainder when $f(m)$ is divided by $m-a$. For example, if $f(x)$ is $2x^3 + 4x + 8$, and divisor $x-1$, $\phi(x)$ is $2x+6$ and R is 14; and if x is given the value 10, $f(10) = 248$, $\phi(10) = 26$; but R or 14 is not the remainder when $f(10)$ is divided by $10-1$ or 9, and $\phi(10)$ is not the quotient. Verification will make it clear. Thus it is seen that the division of $f(x)$ by $x-a$ for any particular value of x so as to obtain the quotient and remainder as indicated in the relation is either impossible, meaningless or wrong. In fact, the consideration of such a division amounts to confounding algebraical division with arithmetical division. Moreover this consideration is of no consequence in the proof of the Remainder Theorem, whether the division has meaning or not.

How then can we show that $\frac{f(x)}{x-a} = \phi(x) + \frac{R}{x-a}$, or $f(x) = \phi(x)(x-a) + R$ is an identity, i.e., a relation true for all values of x including $x=a$, and what do we mean by it? That the first relation is an identity follows merely from the fact that when we divide $f(x)$ by $x-a$ we do not think of any particular value of x . And when we say that the relation is true for all values of x , it does not mean that if x be given a particular value m , the quotient obtained by dividing $f(m)$ by $m-a$ is $\phi(m)$ and the remainder is the same as R . It only means that $\frac{\text{value of dividend}}{\text{value of divisor}} = \text{value of quotient} + \frac{\text{value of remainder}}{\text{value of divisor}}$. In

this relation R itself may be put in the place of 'value of remainder' as R is independent of x and its value for any particular value of x is therefore unchanged. And in this relation $\frac{f(m)}{m-a} = \phi(m) + \frac{R}{m-a}$ there can be no objection to putting any numerical value in the place of m , even a itself. But then it may be asked what is the result of $\frac{f(m)}{m-a}$ and of $\frac{R}{m-a}$ when $m=a$. True, these results are incomprehensible and cannot be found, but there is no need of finding these results. From the identity $\frac{f(x)}{x-a} = \phi(x) + \frac{R}{x-a}$ we can get another relation, namely, $f(x) = \phi(x)(x-a) + R$, by multiplying each side of the identity by the same expression $x-a$. And the resulting relation is also an identity, as we do not think of any particular value of x when we multiply each side by $x-a$. In this relation also when we are trying to find the particular value of $f(x)$ in terms of the corresponding values of $\phi(x)$, $x-a$, and R , when $x=a$, there is an operation with zero, and this operation is comprehensible and possible. Therefore when $x=a$ we get $f(a) = \phi(a)(a-a) + \text{the unchanged } R$, i.e., $f(a) = \text{the unchanged } R$. Whatever may be the soundness of the objection to getting the second relation from the first in order to get rid of the difficulty in the first, the second identity can be independently obtained. How? Any rational integral function $f(x)$ can be expressed as $\phi(x)(x-a) + k$ where $\phi(x)$ is a function in x one degree lower than $f(x)$ and where k is an expression independent of x but depending upon a and the co-efficients in $f(x)$. For example, taking $f(x)$ to be $c_0x^3 + c_1x^2 + c_2x + c_3$ it is easy to see that this function can be put in the form $c_0x^3(x-a) + (c_0a + c_1)x^2(x-a) + (c_0a^2 + c_1a + c_2)(x-a) + (c_0a^3 + c_1a^2 + c_2a + c_3)$ i.e., $(x-a)\{c_0x^2 + (c_0a + c_1)x + (c_0a^2 + c_1a + c_2)\} + (c_0a^3 + c_1a^2 + c_2a + c_3)$ i.e., in the form $(x-a)\phi(x) + k$. Again this relation is an identity since we do not think

interval could be utilised for home lessons and preparation for afternoon work generally. Furthermore, it provides the much-needed rest after the mid-day meal which with most of us is the principal meal of the day. It also frees us from the strain of having to work under irksome conditions especially in hot weather. Lastly it enables boys to turn out much better work since it provides sufficient rest after the morning's work.

The objection may be raised that such a scheme will not suit city schools where pupils attending schools will have to come from long distances and that, even in the case of mofussil schools, the arrangement may not be suited to all kinds of weather. There is much truth in such contentions. But all that we should insist is that the scheme be put into force in mofussil schools, considering its many advantages to the pupils.

PHYSICAL EDUCATION.

Very often it is considered that a school-master's duty ends with cultivating the tastes and developing the minds of the pupils under his charge. But the fact is, he is as much responsible for the proper growth and development of the muscles as for the proper growth and development of the brain of his pupils. The school cannot divest itself of its responsibility for the proper physique of its pupils inasmuch as every parent has a right to insist that not merely the intellectual but the physical wants of his children shall be attended to with a view to their full development. The days of intellectual giants and physical dwarfs are gone and what we want is an all-round development. To attain this object, the school should devote more attention to games. It is the business of the school to see that every child engages himself in some kind of physical game or other. The

boys should not be content to be mere 'on-lookers' but they must be made to take part in games, suited to their age and strength. There is no more effective way of doing this than that of the teacher himself taking part in games, thereby setting an example to others. The organising of physical contests or shows periodically will have a salutary effect as the boys generally like to distinguish themselves in the presence of their elders.

HOLIDAY COURSES.

So far we have been considering the ways and means of improving the condition of pupils. We shall now turn to the teacher and see what can be done to improve his lot. The one obvious solution is to improve the pay and prospects of the teacher. No doubt this is necessary, but this is not all. The teacher in order to be efficient must be fully equipped for his task. This means that he should keep himself in touch with all the new currents in the world of education or he will run the risk of becoming obsolete. He must strongly resist the tendency to stagnate, the tendency to remain content with what one knows already irrespective of changes that might have taken place. Further his mind should be free from bias and it should be ever open to fresh avenues of thought. Now how can all these be effected unless the teacher is brought face to face with what is going on elsewhere in the sphere of education by means of suitably arranged courses of instruction? In England and other western countries we hear of holiday courses in different subjects arranged for the benefit of teachers at which men of repute lecture to their audience for a small fee. Though it may not be possible to exactly imitate such things here, yet we can arrange for brief courses in various subjects at fixed times for

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the edification of the teaching profession. It is needless to say that such periodical lectures will be of immense benefit to the bulk of our teachers who are engaged in the work of training our children.

ANNUAL CONFERENCES OF TEACHERS.

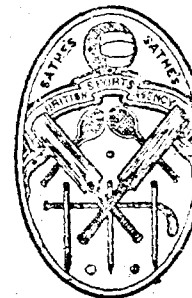
This is a subject that has been receiving consideration of late at the hands of the authorities. Last summer * a Conference of Teachers was held in Tumkur at which several papers relating to educational topics were read and discussed. The Conference was presided over by the Inspector-General of Education who showed a sympathetic attitude throughout. No doubt this is a move in the right direction. But what we would like to suggest is that such Conferences should be multiplied and their scope and utility increased. Instead of there being one Provincial Conference of teachers there should be a number of District Conferences presided over by competent persons from within and without. Again, we may have a Conference of teachers interested in Primary education, another of teachers interested in Secondary education and so on. It would be advantageous to organize these Conferences at different places every year, so that those that attend may have the opportunity of coming

in contact with various sets of teachers in various localities. The organizing of exhibitions and trips or excursions to neighbouring places must be considered an essential part of the programme of such Conferences. The success of such Conferences would presuppose not merely a body of enthusiastic and capable teachers who are interested in the cause of education, but also the strong and enthusiastic support of the powers that be whose concern it ought to be to promote such Conferences.

CONCLUSION.

In conclusion we might say that, given proper facilities, our Secondary school-masters are second to none in their power and eagerness to do their duty. All that is needed for the advancement of secondary education in future is the provision of men who are properly trained and equipped and who have a liking for the profession, and the granting of facilities not merely for the improvement of the pupils in their charge, but for the betterment of the teachers themselves as indicated already. Finally, we should remember the saying that 'as is the teacher, so is the pupil' and try to do our best to improve the lot of the former so that we may get adequate return in the shape of pupils who are well-trained and well-disciplined and who will prove to be good citizens of the future.

* April 1926



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IN THE CHILDREN'S WORLD—III TALKS TO PARENTS AND PARENTS' CONFERENCES—AN ESSENTIAL FACTOR FOR THE CHILD'S PROGRESS

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(Continued from p. 233.)

PUNISHMENTS.

THERE are some ways in which you could set an example to the child and raise the respect of the child towards his teacher. The first thing deals about punishments. As I have said before, the pial school system with its rigorous discipline has produced a race of children who fear the teacher simply because of his punishing power. No doubt it cannot be completely dispensed with till we get into ideal conditions and has to be sparingly exercised. Where there should be love and respect there is now awe and fear. Both of these are not really conducive to children's true growth. If we really like to be free and if we think that too much of subjugation to another is not healthy and good for right progress, we must first and foremost recognise the need for more freedom in the child. Here there are two extremists. One side advocates rigorous discipline and severe punishments.

Some parents really say in these words: 'Give him life and you are at liberty to deal with him as you like.' The answer: 'Are we born only to punish' echoes from my heart. Though no doubt there is the sincerity of the welfare of the child, still the method is not happy but leans to one what we could term as 'the method of the brute.'

Now then there is the sanction of the society. The teacher has to resort to some

form of correction or other and sparing punishment is one form. We must all remember that to err is human. There are very many causes that put out the teacher from his usual temper. The most significant ones are huddling together of a number of boys in the class-room and consequent lack attention, the lack of progress in some boys who may be termed as dull or backward, the teacher's anxiety to finish off his portion of work for the year in a prescribed time, his over-zealousness to see the majority of children promoted from his class, etc. But he is too full of good intentions towards his children and looks after their progress as his own. But in a weak moment when he cannot control himself, he punishes the child. The next moment he reviews the situation and feels quite unhappy at the sad incident and owns his fault. But leaving aside all these considerations, some parents (probably they are only rare exceptions) try to magnify this and some more of the teacher's defects and condemn him in the presence of the child, he a pupil of the said teacher. And what is worse is to condemn the teachers as a lot. This is a problem for your serious consideration.

Here is the other extreme. Some parents are passionately fond of their children that they themselves acknowledge the indulgence given to the child from childhood. They tell the teacher that they have no mind to be severe with the child, ask him to do this or that or to show a sign of his dissatisfaction at the child's conduct or to utter a note of warning. Life is not always full of pleasures and the child must also know the other side of life. They are proud in saying 'the child obeys neither me nor his mother.' The situation is indeed very delicate but

at the same time pitiable. The child takes advantage of the weakness of the parent, and any letters to the parent regarding the child's progress and conduct prove of no avail in correcting the child.

Therefore a training in free self-discipline is necessary. Freedom should be given to the child in self-expression and self-activity but a constraint is at the same time necessarily exercised to check the child from transcending the limits of a smooth and orderly conduct of the home and society. This is a warning to those who are lavish in their fondness of children. As a parent it is natural to all of us. But as educators we have sometimes to see it is harmful even to the parent. Probably one day he may override us and we will only be reaping the fruits of the seed sown by us in childhood. Therefore we have to look at the education of the child with a certain amount of seriousness. We should exercise some amount of strictness in the child doing his things according to the simple rules and principles of the home and society. The earliest period of childhood is the most formative and impressionable period in the life of a man.

There are cases where some punishments are necessary, e.g., thieving, not owning the fault done, absconding from school, copying from the neighbour. Let me quote some examples. A poor boy, at the same time an intelligent boy, was not able to procure the necessary money for the purchase of books from his father, so what did he do? He resorted to the very detestable crime of stealing a book of a boy in the front bench. The theft was brought to light. But the boy disowned the fault, while it was plain. He has pasted a paper on the owner's name which could itself be seen from the thinness

of the paper and written his name on the slip so pasted. Punishment was found to be necessary. The punishment or say the pain which it causes to the outer frame does not at once produce the required result. He was not asked to go home for his appeals. His parent was sent for. He remained in the class-room. The class-room almirah was kept open. The teacher's money purse and other belongings were left on the table. He was the only one to remain there during the interval. Don't you think that this fact should not be reported to the parent? The parent came and felt ashamed as anybody else would do.

There was a second case, a boy who was absconding from school but was all the time giving indications to the parent that he was regularly attending school. He emerged from the house at the usual school-going time with all his books and returned home as all children do. This did not evoke the suspicion of the parent. The teacher sent word through another boy of the street. The parent came and he was surprised to see and learn the behaviour of his boy. The child was not punished since he was too young and sensitive but was lost in the company of bad companions.

A boy once stole some money and spent it away in buying eatables at the instigation of his bad companions. Another boy suffered punishment for being an abettor in a case of copying from the neighbour, the boy who copied himself sharing no less fate. Copying is another form of stealing. In so doing, the child wants to show that the work turned out by him is by his own genuine effort. He is deceiving not the teacher but himself. Too much of punishments hardens the child. In some cases there is ready sub-

mission to punishments which the child too well knows would be inflicted on him, but continues in his own way. An appeal to the inner conscience is very much necessary. As old Tamil saying is 'we can forget the beating but not the word.' It is injurious to punish delicate children. It may tamper with the child's physical and mental developments. It may shock him and undue fear may creep in.

COMPANIONS.

There is a lesson that we could learn from some common instances of boys' school crimes. We should keep our eyes open in seeing that our children get into the company of good companions. No doubt these have to be tried, but once we notice that it is no longer healthy to keep our child in that company, we should at once separate the boy and advise him well. We must go to the play-ground and get ourselves in touch with the child's companions, their parents, etc. There have come a number of instances where children by falling in friendship with evil-minded children got themselves spoiled. When once the evil takes root it takes time to wring it out. Here again severe thrashing alone will not be producing the desired result. Reasoning and appeal to the divine qualities as love, sympathy, remorse, etc., have to be tried to turn the child from evil.

PLAY.

The above leads to another factor connected with the education of the child. It is play. Play is necessary for the healthy development of the individual. It is as important to him as food, water and air are. A healthy body has a healthy mind. What is the best play centre for the child? Children usually play in the street. But it is not advisable as the street is very often dirty. Therefore our

duty is to realise the responsibility that lies on each of us to keep the streets clean both from the view point of hygiene and children's evening play-centre. Very often the children play round the temple. It is certainly a place where they could roam about freely and enjoy fresh air. I still remember the day when myself and my play-mates were within the precincts of the temple. But at the same time, we should impress upon our children the sanctity attached to these places of worship and the value of clean surroundings in the temple where all people gather for worship.

In play they learn very many good qualities. But in actual practice, I feel sometimes that there is a tendency to acquire exactly the opposite of the virtues of play. Such tendencies are to be found out and curbed. 'Nip the evil in the bud.' Apart from the street and the temple any other common place for play is necessary. The school play-ground is one. Any open space near the street is as good as all the above. A generous landlord could assign a portion of his dry land or tope for free play to children of the neighbouring streets. Very soon this site could be converted into a big play-centre so as to attract number of children and parents into it.

My next suggestion is to divide the locality into as many wards as there are number of teachers, parents or social workers who would be willing to take care of the children of the street. This question has to be considered more fully before it is given a final shape and put into actual practice. Even without this, teachers would be willing to guide the children of the street and in the play-ground and bring to the parents' notice all irregularities in the conduct of the child. The parent's duty is to advise the child and correct him.

The next question deals with *vacations and holidays*.

(i) On all festival days you will be the first to ask that your child should stay in the house that day and hence holidays on festival days are necessary.

(ii) One holiday a week is essential from the educational point of view. The child requires freedom of thinking, action and play from the routine work of the school week. The teacher needs it as well. The teacher's work will be brought to light when you see him deal with thirty to forty children especially in teaching a first lesson on a certain principle. Teaching is not so easy as every one thinks about it.

(iii) As for the long holidays, they come when the days are extremely hot and when that is the season for marriages and festivities. We cannot expect children to do much on a hot day. The climate is so enervating. Teaching and learning are both a process of the mind. Only when there is a mind ready to learn, we can learn. Otherwise not even herculean labour will bring forth a mouse.

The teacher too must have long rest for his mind and body. He has spent away all his lungs in dealing with children. They require rest. His mind likes to be cleared. New ideas must spring upon his mind for tackling with the problem of teaching more successfully next year. Apart from these, he must have time to go through some other routine work connected with teaching.

Hence I believe that holidays are not superfluous and are as much necessary for the teacher and the taught in order to lead a healthy life as other essentials are.

PRIVATE TUITION.

It is a service done for the child in the extra hours of the child by the teacher or anybody else. A well-brought-up child does not exactly require private tuition, nor is it possible for one and all parents to engage a tutor for their children. Before engaging a tutor, the parent has to consider the advisability of the same in the light of the following points:—

1. The theory that anybody and everybody can be a successful teacher is fast dying out. A professional training is required of him.

2. The teacher has a number of difficulties in undertaking this private work. The time which he could with advantage give to his own children is given to the child of the parent engaging him. It is a time at which he could look after his own body by giving it rest or exercise and hence he should be doubly rewarded.

3. That because a teacher accepts some honorarium for service he is doing, that should not be the criterion to under-estimate the nobility of the profession. Because he is under-paid, he has but naturally to eke out a living by other means and nobody can dispute the fact that private teaching is the only honourable course open to him in this respect.

4. The class teacher is the best from the view of the parent, but for practical reasons he is better not. But when the school, the teacher and the parent are of one mind, that is possible.

One educational advantage that private tuition gives the teacher is close contact with the child, his home and parent, which duty is expected of him with regard to each child.

Hence this Conference is itself an object-lesson to the private tutors whoever they are, when in or outside the teaching profession. The private tutor, the teacher and the parent must join hands in looking after the healthy development of children. The tutor must get himself acquainted with the teacher and the school work.

Once I suddenly peeped into a room where some of my class children were being coached up by a private tutor, the latter being one of my past students. The children thought it their duty to learn from him lessons different from the school. It struck me that the teaching there was in no way a help to the children. They did not show their note-books to the teacher, speak to him about their home work, nor even their table of lessons for the next day, and my old pupil the private tutor had not called for them. I had to make the duty of the private tutor clearer on all these points and the parents who assembled just then to see the class teacher evinced great interest in the words of the teacher. I believe private tuition is a duty of the parent shifted to the private tutor.

So far as school and home training is concerned there are other factors to be considered which strengthen the contact of the parent and the teacher.

1. Mutual interviews between the parent and the teacher in the school, home or street.

2. Parent to study the child's time-table, text-books, curricula of studies, pay attention to the child's handwriting, home-work, etc., are some means by which the parent can come in close touch with the child's school work.

3. Taking interest to study the occasional reports, frequent letters and the constant

remarks made by the teacher in the child's note-books.

4. Occasional visits of the teacher to the child's home is also necessary. The child evinces great delight in seeing that his teacher has a place of honour in the list of invitations sent out in connection with a marriage or an important festive occasion in the household.

5. So long as children remain under the teacher and even after that the teacher should take an interest in the welfare of each parent, his child and his family in general.

Now I propose to enter into some details as to how these may be successfully carried. The two questions are—

1. How can the teacher help the parent?
2. How can the parent help the teacher?

Both these are inter-related, and their only object is the welfare of the child and so there cannot be a clear cut in their mutual obligation. Both of them should feel their responsibility in the matter.

1. DAILY WORK.

25-10-26. 1. Remember Home-work; Arithmetic sums 2 and questions based on the English lesson.

2. Read lesson on Manure in Tamil Reader.

26-10-26. 1. Tamil poetry, Verse No. Read story based on the Verse.

2. Nine lines in the English lesson.

27-10-26. 1. Tell me the story in Lessons 20, 21, 22 of your Non-detailed Text (Bharatam in Tamil.)

2. Ten more lines in the English lesson.

The above is a specimen of a week's work. Each day's work is written on the previous evening and each child enters the same in the note kept by himself exclusively for this pur-

pose. The necessity arose from their inability to comprehend in what exactly they have to come prepared to school the next day. It contains particulars of about what things they have to bring to school, what work they have to do at home and what exactly the lessons they have to be thorough with. The parent's duty consists in inspecting this note-book and the note-books that reveal the daily record of work in the school and act according to the then requirements.

The following remarks or letters reveal exactly the particular situation that requires the careful consideration of the teacher.

1. ABSENCE.

A. The last day attended by your child is 7-2-27. From that day he has been absent. Please let me know whether it is due to any illness. Please send word through the bearer of this letter.

B. Very often I find that your boy is absent on all the mornings invariably and gives his attendance only for the afternoon. As the difficult lessons come only in the mornings, I request that he may be advised properly.

2. UNSATISFACTORY CLASS-WORK.

i. Yesterday I wrote out all the difficult words on the black-board and asked all the children to copy them and come prepared to-day for a dictation lesson. The note-book reveals the exact state of affairs. May I request you to attend to his spelling in your leisure hours? The list of words may again be copied in slate and spelling learnt incidentally.

ii. *Lack of proficiency in mental work.* This morning they had mental sums on the type they have worked in the note-book, e.g., one anna a dozen: one fruit one pie;

two annas a dozen: one fruit two pies. Out of 6 sums he has done only one; more exercises of the type noted in the note-book may be given to him.

3. INATTENTION.

A. In copying the sums written on the blackboard in his home-work note-book, he has taken down wrong figures. This is written to you after repeated warnings to the child.

B. This morning's transcription exercise also shows the number of mistakes committed by him even in copying from the text-book.

Kindly watch him during copying work. I am glad to reproduce here a letter written to me by a parent in reply to a letter to him on the above point. It is exactly the kind of interest that everybody is expected to take and act upon:

"Your kind note re: inattention of my son in regard to transcription of exercises. Many thanks for your kindness. I am particularly glad that you take so much interest in your boys. I have pointed out to my son his defects, and I shall see at home that he bestows more attention. It is gratifying to glean the relative responsibilities of the teacher and the parent in the up-bringing of the pupils."

4. ENTIRE NEGLECT OF SCHOOL-WORK AND SHIRKING RESPONSIBILITY.

A. Three sums were given for home work for Saturday and Sunday. He has not brought the same this week. The record at the end shows that he has been neglecting this.

B. I intend that the work should be done by the child himself. It is no work for his uncle. No doubt the uncle can help him in

doing the sum on the slate, but the entire work in the note-book should be done by the child himself.

C. On the above point I sent you a letter, and to-day again he shows me an exercise done some days previously. Is this not cheating? On many occasions I have noticed him doing in this manner. He needs good warning and sound advice. He has stealthy habits.

D. He has not been showing you the two letters I wrote in his note-book. Please ask him to show my letters to you. I would very much like to speak to you about your boy.

NOTE.—Very often out of fear children tear away such letters or do not at all show these letters. They say to the teacher that they showed these letters and the father said nothing. If these letters are to be used to advantage no doubt written in the welfare of the child the first thing is to relax fear and grow respect in its place and the second thing to reply the teacher on the action taken or proposed to be taken, or at least sign in the letter as a mark of acknowledgment.

II. HOME WORK.

The need for home-work arises from the following causes:—

1. That in a week of five school days and only about 40 to 50 minutes each day for a period and with thirty to forty children, we may not be fully sure whether all the children would have grasped the principles taught to them or learnt their lessons completely.

2. That the children do need some work at home during the week-end holidays and that the time could be usefully spent in revising their lesson of the previous week.

3. That the home-work gives the parents an idea of the work turned out the week previous to the holidays.

4. That it gives practice to the individual, and individual progress can be ensured. If this home work should really be useful to the child, the parent must take an interest in this home work. An educated parent can help us much in this matter. The child must work out the sum for himself on a slate and then do it in his note-book. Ordinarily they simply copy from another boy's note-book or ask some of their friends to do the same for them in their own note-books. Is this a piece of work for the boy or for others, you can judge for yourselves.

From the record shown underneath, it could be clearly seen whether the boy had been regular in his home work, what the mistakes committed by him are, and other details:—

No.	Date.	No. given	No. done correct.	Mistakes committed.
12	14-10-26	6	4	Addition in 2 wrong. In sum 5 calculate price at 8-14-0.
13	22-10-26	2	2	
14	29-10-26	6	6	
15	3-11-26	9	7	18 ÷ 12 wrong. Division in sum wrong. one exercise due.
16	15-11-26	2	2	

Hereunder is another form of report of home work given during the Christmas holidays. As the children have more than fifteen days holidays, the work though it seems to be much, is carefully calculated and given. Could we not expect a boy to do 2 sums a day, write a page of transcription either in English or his vernacular and answer 2 simple questions? What children ordinarily do is to finish

off the work during the first two or three days in a careless way and then play about as they like.

Herein the parent can help the child a good deal. We must cultivate in children the habit of following some systematic work every day.

Christmas Holidays—Report of Home Work.

English	Transcription. 10	Questions. 10	Copy. 8

Arithmetic.	No. given.	No. worked.	Correct	Wrong.	No. not attempted.

Tamil.	Copy 8.

General Remarks:

Class Teacher.

Signature of Parent or Guardian.

III. HAND-WRITING.

Hand-writing is the most important item that requires the personal attention of the parent. In the school we insist on bold types, spacing between words and lines, etc. It so happens that some children escape the knowledge of the teacher. Sometimes such careless children are asked to bring a page of transcription every day. The advice given in the school will have more value with the child if the same is made to be practised at home. The following are some defects: Children have only very short pencils; they hold the pencil so close to the lead point. Sometimes the pencil has not been mended properly. Consideration of the cost of paper comes in. They do not care for the tidiness

of the page, but value even one square inch of paper space as though that portion if let out will fetch high rent. Some children bend close to the paper and write at times when they should not do writing work, for example, twilight, early morning or at night sitting beside a kerosene lamp. All these are bad ways of writing. They should be clearly told that if they do not adhere to the rules of writing, they will get their sight impaired.

The following are the suggestions:—At home a slate may be used for developing good handwriting. School exercises may first be done on slates to ensure correctness and get practice in good writing and then neatly copied on paper. We expect more tidy work from home than in the school. But the experience is quite the contrary. They present us a most slipshod work, very careful children being some exceptions. They should be told not to consider the economy in paper in so far as it relates to their handwriting and neatness of execution. The present system of school education has drifted from text-books to note-books. But I believe that the time has come for a change though the place of note-books cannot entirely be relegated to the back-ground.

I feel the necessity for note-books under the following reasons:—

- It presents to the child, the parent and the teacher a continuity of work from the beginning of the year.
- It shows the child the mistakes committed by him and the correction of the teacher.
- It is in itself a text-book for the child.
- Any boy who is careful in his handwriting would very much value his note-book.

at some later day, if he would only carefully preserve it.

IV. CLEANLINESS.

This is another important point we have to remind you about. 'Cleanliness is godliness.' From early childhood we must make the child value cleanliness. Example is much better than precept. We must point out to him the ways of avoiding dirt and untidiness. It is after all the foremost factor to be considered in so far as the personal health of the child is considered. I, for example, may like to be clean; but it is also my duty to see that my children also are clean: cleaning teeth, washing face, fingers, feet, looking after the nails, toes, etc., are some which are to be practised by the child.

V. HEALTH.

Another thing on which we could help you is to report about the health of the child as it is revealed to us at school. The following are note-worthy: Sudden fever, vomitings, accidents, sore eyes and sore ears, bad teeth, bad postures in writing, reading, sitting, etc., giddiness, emitting blood from nose, etc., suddenly falling unconscious and recovering consciousness after the application of first-aid, etc. Indigestion, frequent passing of urine are also some other cases. The children do not know their own need when they should go out and ease themselves. They sometimes make the class-room thick with foul air. Some of these habits have to be taught and repeated from early childhood.

BRIGHTNESS AND DULLNESS IN CHILDREN.

All children are not of the same level of intelligence. Some are bright and some are dull. Some children make up by their industry and perseverance what they lack in intelligence. This is as is seen from Nature.

We have to work with what God has been pleased to give us and rest contented, though no doubt we have to do our best in the task given to us of educating the child in the best ways possible.

Some parents do not like to be told that their children are below the average of the class even when the fact is based on close observation of the child for a long time. I concede it is not possible to judge a boy's work in the class in a week, or ten days or in a month. Because the opportunities given to him to show himself up in that time are only few considering the number of children in the class. Sufficient time has to be taken, and a number of opportunities have to be given to the child and the teacher must have sufficient record as to the child's performances in the class in all his work. In this respect it is all the more the duty of the teacher and the parent to put their heads together and devise means for the child's progress.

There are some obstacles in the way and they are: The parent's anxiety to push him up to the next higher class for which he will be thoroughly unfit and his ambition to admit a boy in a class for which he has been declared to be unfit after some tests. So the parent himself stands in the way of the intellectual progress of the child. It is the child that suffers and that is to suffer in the long run. We must wait and see the working of Nature and what is more is to guide and advise the child. The mind is no bag that could be stuffed with facts. If one day we labour hard and put into the child's mind what all he cannot comprehend in a day, we will be doing only a disservice to the child. The child gets confused in his ideas and the next day again we have to begin from the elementary

notions on the subject. In this way we retard the natural growth.

Moreover it is the case with some parents to promise to look after the boy at the time of admission or promotion. But the promises seem to be empty and unfulfilled. They know they have no time to sit with the children, watch them, guide them, etc. In this case somebody in the household ought to take upon himself or herself the duty of devoting some time to attend to the school-child in the manner detailed previously.

There are always some bright boys in the class and well behaved too who could help the backward child. But it is for the parent to get hold of this boy and ask him to guide his child. One parent does not admit this fact which is born in Nature. I do not think that the teacher can reduce or raise the children all to an average level of intelligence, though I seriously think whether the teacher is not unmindful of the bright children during his hard task of coaching up dull children.

LONG ABSENCE DUE TO ILLNESS OR OTHER CAUSES

It so happens that children absent themselves for a pretty long time from the school. If it is sickness it is quite unavoidable. But there are also cases when children are kept in their homes from attending school for causes best known to parents. Very often such cases of absence are not reported to the teacher. The latter has himself to undertake the task of finding out the cause of absence by letters or from the children of the street or by chance from the parents themselves. To be regular at school is a good habit necessary to be acquired by children. Children who are absent for some time do miss their lessons and seem much handi-

capped when they are not able to answer questions put to them in the portion done during their absence. Here again the bright child can be of much use to the former child. The teacher could also be of some service to the child in talking to the parent about the lessons done during the absence and pointing to the child the several lessons taught in the class in the period of his absence.

PERIOD OF STAY IN A CLASS.

All of us have to obey certain laws and there are also some educational laws that guide our work. No doubt we have to apply these laws not in a general sense but with reference to each individual case. For all normal calculations the period of stay in a class is one year. But in the elementary school stage, there arise some occasions when a child can be promoted to the next higher class during the course of the year. This will lead to a double promotion if the same boy is able to pass the several tests in the class he has been recently promoted to. This procedure can only be done when there are sufficient data to show that the child would not feel the slightest difficulty in following the teaching in the higher class.

Equally so a boy that cannot follow the teaching in one class has to be sent down to a class where he could find pleasure. It is not any disservice to the parent or the child. Even the suggestion of this procedure evokes the anger or displeasure or disapproval of the parent. But a calm and dispassionate judgment will reveal the desirability or otherwise of this procedure.

There are now schools where children read language alone in the fifth class, learn Arithmetic in the third class and English in the fourth class. The truth is that the child's proficiency in each of these subjects

varies. It will be difficult to give a practical shape to this arrangement as it requires a thorough remodelling of the present school system in the light of the experiment alluded to above.

SPECIMEN OF A PERIODICAL REPORT.

Name of Institution :

Progress Report for the period ending Dec. 1926.

- (i) Name of child. Class.
Attendance.
Cleanliness.
- (ii) Remarks as to subjects of study with marks obtained in each.
1. Vernacular.
 2. Arithmetic.
 3. English.
 4. History.
 5. Geography.
- (iii) Remarks as to
Hand-writing.
Home-work.
- General progress and conduct.
- Signature of class teacher. Head teacher
Date Date
- (Signature of parent or guardian.)

[NOTE:—To be returned to the school on the day of re-opening of the school after the holidays.]

The parent has to study the remarks under each head and endeavour his best to put the child on an average level of the class. As I have already remarked, it would be doing a great harm to the child if he is threatened or asked to work beyond his capacity for work or the subject dinned into his ears at a great pressure when the receiving and sustaining capacity of the child is too low.

THE TEACHER'S INTERVIEW WITH THE PARENT.

From the educational standpoint it is quite useful and necessary too. In one of my

writings elsewhere (*vide* "Educational Review" June 1923 : *Elementary Education; New Problems for the Indian Educator.*) I have pointed out the different types of parents and quoted the reply given to me by them in answer to my questions during the course of friendly talk. I took the initiative on my own self inasmuch as I feel convinced that this talk will be productive of some good to my class children in whose welfare each teacher as usual is very much interested. Many of the parents are much delighted to see us, but suddenly they feel that they ought to have been the first to see us. This change of attitude is itself a great achievement of the teacher's visit. But when I speak to my teacher-friends about the usefulness of such visits, they do not receive this idea happily. Not because they are unaware of the advantages of co-operation with parents, not because they entertain a prejudice towards these talks, but because they feel they are misunderstood. How? To some of the parents there creeps in an idea emitting a bad odour. They think that the teacher has come to seek the private tuition of the boy. During the course of my interviews, I have come with only one case similar to this. The father no doubt welcomed the suggestions from the teacher, but an elderly member of the family misunderstood the visit in the above manner. I am only sorry that his view was not broad enough to admit of the immense value underlying such visits. In this connection I have to tell the parent the following facts : The teacher just as any other citizen is a creature of God just as a spider is. From the spider the best lesson that he learns is that he should himself weave out his own destiny by his hard and earnest work and

devotion to duty. The teacher, tenacious in purpose, pensive in mind, always in quest of ways and means of furthering the education of the child, considers himself as a humble worker, working for the children of the motherland from the background. His life in general is one of service and dedication to education of children which is to be the strong foundation for the general progress and advancement of our country.

GENERAL CULTURE.

The general culture of the child deserves an earnest consideration at the hands of the parents. The scope of the class curriculum and text-books being limited, we must try to broaden the outlook of the child by giving him more story-books. Books will only be the larger field where the child could live and grow and progress as swift as he can. The school should have a large supply of such extra reading books and the home should also purchase for the pupil books that would inspire the child for something noble and good and which he could well imitate and act. Stories from Puranas, stories of the lives of poets, selections from prose and poetry of various learned authors, stories of the sons and daughters of ancient India, and stories of the saints are some examples.

We are all extremely fond of our mother-tongue. We all love our ancient language Sanskrit. So we must also make our children take an interest in these languages and where the school cannot amply give scope for it, the intelligent home which sympathises with this view should lead the way and promote the study of the same. The children can be asked to memorise verses from renowned poets, and learn some devo-

tional songs in their vernacular or Sanskrit. These lines having been committed to memory really touch their hearts and when once they are re-stated they express their wonder on hearing the same. Take for example, one sloka :

सत्यं माता पिता ज्ञानं धर्मो ब्रता ध्या सखा ।
शान्तिं पति क्षमा पुत्रा पेटेते मम बान्धवाः ॥

This is a beautiful sloka. It is pregnant with ideas. If the child has been taught this in his younger days, he would appreciate it when he again reads it at a later stage. Even if he doesn't read it, if he has only cherished it in his heart, he will realise the value of the same when he grows to be a man and look upon the meaning of the verse which he once memorised while he was young. These have no bearing on school-work but have great bearing on the future life of the child. I would very much like all of my sentiments, this one and others, find a place in the future elementary school, the like of which I see in my vision. I propose to outline it at a later date.

TEACHER, PARENT AND CHILD TO LIVE CLOSE TO EACH OTHER AND NEAR THE SCHOOL.

In the picture I see before me I find the parent's quarter all around and close to the children's houses or properly termed classrooms. On one side I find the teacher's quarters, in the middle there are the classrooms, and on the other side the parent's quarters. But I know the practical limit of my ambitious plan, at least that part that touches the question of parent's quarters is beyond practicality. But the whole village, if viewed from the standpoint of the picture, satisfies the idea underlying my vision. I feel sincere in bringing together the parent and

the teacher in shaping the education of the child and I am desirous of having my children under my observation, if possible, residing close by the school. There is no necessity for employing a private tutor, if the child could possibly work at the school during extra hours under the guidance of a bright boy or the teacher if the latter can afford to find time. The very idea of residing within the school-compound is to afford opportunity for the backward to make up for the drawbacks of the child and guide him when he requires help.

The next best alternative for the parent is to reside near the school. But can all of them be near the school? There are a number of other considerations that should weigh with the parent in locating his residence, no doubt the child's education receiving a greater consideration than others. In the absence of all these, we must all realise the importance of the co-operation of the parent with the teacher and the value of home-training. These are two essentials necessary for the welfare of the child and his education in general.

Each child is entitled to receive the best consideration at the hands of the teacher. The teacher realises this. Not only that he gives his greater attention to the development of the backward children, I believe that these should also work for some extra hours and learn by industry and perseverance. Enough has been said on the subject. The over-crowding of classrooms is one important item that should be seriously viewed from the point of individual attention.

How my heart rebounds with joy at the very thought of seeing my children, neatly dressed and hair plaited, going to the

temple carrying cocoanut, flowers, fruits, etc., on a Friday evening surrounded by their parents, brothers and sisters. Equally so, I desire to enjoy the sight of all my children dressed in their new clothes on the morning of a Deepavali day. Again the sight of my children going about heart content on any festival day such as Pongal. I enjoy their free play. I do not want to interfere with their play, but I would like to teach them the value of a true and free discipline in all such gatherings. I like the sudden outbursts of laughter and the loud noise they make. But I want them to learn some decency at the same time. I have termed 'my children' as one who is closely associated with his class-children will produce more interest in them. It is also a pleasure to see other children as well in the fashion enumerated above. Equally in the manner suggested above, I ask my children of all religious faiths as to how they would celebrate the coming festival day or holiday. This suggestion itself is received by all children with great interest and one after another rises and says what particular clothes he would wear, what extra nice dishes he will have, his programme for the day. The very thought of that heart-to-heart talk fills me with great pride in serving children. Their faces bloom like the lotus on the rising of the sun. Such talks are necessary to bring the pupil's heart closer to that of the teacher. The education proceeds along the path of joy, freedom and play. If the children's homes are nearer the teacher's, it would give a number of opportunities for the teacher to take an interest in his children in these matters.

ADULT EDUCATION.

The third part of my talk deals with adult education. What bearing has this in

a Conference of Parents and Teachers? I view it as important for the following reason: An illiterate parent is not able to know what exactly his child has to learn or is studying or what is expected of him. In order to ensure on all these fundamentals, he himself requires some learning to help him so as to be able to be a check on the child. Apart from this immediate cause, there is one other general view. All of us whether teachers or belonging to other walks of life, owe a duty to our illiterate brethren who are so unfortunately placed in life. All of us can do a bit in this matter. Even if we cannot form a school, we can help our neighbour in some way or other.

To some extent, the worldly experience has given him some knowledge and the environment has also helped him to develop this knowledge. In addition to this, the vocation which he is pursuing has in many ways facilitated the advancement of his knowledge. But, what exactly does he lack in? He lacks in the fundamentals of reading, writing and figuring. The worldly experience has taught him some general and practical arithmetic just so much as is necessary for his life and living, but not enough for understanding some local problems. The elementary things he therefore requires are, ability to read and write; to read a newspaper or a letter; write a letter or a document; comprehend things going on in the world; more information about his own trade; arithmetic in relation to the vocation and allied needs of a practical living and a general culture.

Most of us have seen that workmen are religiously inclined. They spend their leisure hours in singing Bhajana songs or listening to a Puranic story which one of his fortunate

colleagues, a literate man, reads to them in his own sing-song style. The Mahabharatam, Ramayana, Vikramaditya stories, ballads such as Desingu Rajan, Nallathangal, Siruthondan are some books that find a place in their bookshelf. The hearers are much inspired by the story and the sing-song tone in which the story is read is listened to with rapt attention. Our new school for adults should include this item, this being a great feature to induce the labourer to take an interest in attending the school.

If we really want to make the school a beneficial measure to the labourer, the method which we must employ should also be interesting and appealing. Our aim should be to impart knowledge in a much quicker time than is the case with young children. An adult can take in more. But at the same time, he has to pass through the several stages of reading and writing and arithmetic as is the case with children. Exhibitions, lantern shows, stereographs are useful ways of appealing to him and these provide as a means of self-learning by observation. Popular lectures on topics in nature, newspaper news, the value of early child training, co-operation, sanitation, personal health, reading a great story some time each day—all these will be productive of good results. An appeal to the eye and the ear are the most important factors. Devotional songs may be sung. In the elementary school of the future which I have previously hinted upon, this will be another problem that will have to be solved by the teachers in co-operation with the parents.

NOTE:—I would very much like that a pamphlet: 'School and Home Training' dealing with all the points mentioned herein is given to each parent. I wish that they should carry with them something and could reflect upon

perusing it and carry good memories about the Conference.

CONCLUSION.

I look forward to the day when children will act as the true connecting link between parents and teachers and how this subject of child education will be the centre round which all teachers, parents and others will join hands and sing with one voice 'Come, let us live with and for our children.' In that circle, with the children as the centre, stand around people of all parties, social, political or otherwise. A time will certainly come when we must sink all our differences and they the children will act as the media, join our hands to work for a common good in the cause of child education.

In conclusion, we all thank you for your kind presence and co-operation. We all invoke the blessings of God on your children for bestowing on them a healthy, long and prosperous life, playing their worthy parts as becoming worthy citizens of our dear motherland.

ANDHRA UNIVERSITY EXAMINATIONS, 1929.

Intermediate Examination in Arts and Sciences.

PART I.

RS. A.

- SHAKESPEARE—As You Like It, with Introduction and Notes, by F.W. Kellott, M.A. 1 6
MATTHEW ARNOLD—RUGBY CHAPL, with Introduction and Notes, by E.H. Elliot, B.A. ... 0 4
GRAY—ELEGY, and other poems, with Introduction and Notes, by E.E. Kellott, M.A. 0 12

B. A. Examination.

PART I.

- SHAKESPEARE—MACBETH, with Introduction and Notes, by the Rev. J. Morrison, M.A., D.D. Rs. 1-6-0 reduced to ... 1 0
(being shop-soiled)
MILTON—PARADISE LOST, Book I, with Introduction and Notes, by T. V. Arogiasawmy Pillai, M.A., B.L. ... 0 6
—PARADISE LOST, Book I, with Introduction and Notes, revised by E. H. Elliot, B.A. ... 0 14

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LATEST ADDITIONS.

B. Mathematics.

- Abdank-Abakanowicz: Les integrations la courbe integrale et ses applications; Die integranden.
Abel: Centenaire de sa naissance.
Arago: Oeuvres completes.
" Astronomie populaire.
Baker: Hyper elliptic sigma functions.
Bertrand: Differentiel et de calcul integral.
Bessel: Abhandlungen.
Blumenthal: Ten abhandlungen.
Bobek: Elliptischen funktionen.
" Projectivische geometrie.
Borchardt: Gesammelte werke.
Briot: Theorie des fonctions abeliennes.
" Theorie des fonctions elliptiques.
Cahen: Theorie des nombres.
Cauchy: Infinitesimal a la geometrie; Algebraischen analysis.
Cesaro: Naturlische geometrie.
Clebsch: Abelschen funktionen.
Christoffel: Mathematische abhandlungen.
Cremona: Geometrie pure sur les surfaces du troisieme ordre.
Dedekind: Ideal-classes in der verschiedenen ordnungen eines endlichen korpers.
Courant: Methoden der mathematischen physik.
Dirichlet: Einfachen u. mehrfachen bestimten integralen.
" Zahlentheorie.
Dubois-Raymond: Differential gleichungen mit drei variable.
Dumas: 5 mathematische abhandlungen.
Engel: Berührungstransformationen; Definitionsgleichungen der kontinuierlichen transformationsgruppen.
Fabry: Mathematiques generales.
Fenerbach: Analytische-trigonometrische abhandlungen.
Fiedler: Irrationaler modulargleichungen der elliptischen funktionen.
Fields: Algebraic functions of a complex variable.
Fricke: Lehrbuch der algebra; Theorie der automorphen funktionen.
Gauss: Briefwechsel zwischen Gauss u. Bolyai; Untersuchungen über höhere arithmetik.
Grassmann: Projective geometrie.
Hagen: Synopses der höheren mathematik.
Kantor: Transformations periodiques univoques.
" Theorie der endlichen gruppen.
" Theorie der transformationen in RS.
" 12 math. abhandlungen.
Klein: Riemannsche flächen II.
Klein u. Sommerfeld: Theorie des kraisels, 4 bände.
Klein: Differential- u. integral rechnung auf geometrie.
" Allgemeinen gleichung des zweiten grades zwischen linien co-ordinaten.

- Klein: Elliptischen modulen funktionen.
Madel: Die vichtigeren dreiecksaufgaben aus der ebenen trigonometrie.
Galle: Mathematische instrumente.
Zindler: Linsen geometrie.
Encyclopadie der mathematischen wissenschaften.
Mittag-Leffler: Representation analytique d'une branche uniforme d'une fonction monogene.
Rausenberger: Periodischen funktionen einer variablen.
R-tiger: Lie's theory of continuous groups.
Reye: Synthetische geometrie.
Riemann: Oeuvres mathematiques.
Siermer: Geometrisches darstellen von Kerpenn nach modellen.
Segre: 4 mathematische abhandlungen.
Weber: Traite d'algebre superieure.
Zeuthen: 64 abhandlungen.

C. Physics.

- McKrihan: Surface tension of aqueous solutions of some organic salts.
Hayner: Persistence of radiation excited in mercury vapour.
Hatley: Index of refraction of calcite for X-Rays.
Kronig: Change of conductance of Selenium due to electronic bombardment.
Quimby: On experimental determination of the viscosity of vibrating solids.

E. Chemistry.

- Anderson: Influence of mutameric forms of glucose and of fructose on invertase action.
Bolansky: Mutarotation as a factor in the kinetics of invertase action.
Bender: Phenol and resinoids.
Chandlee: New titration method for the exact determination of phosphorus.
Gegenheimer: Studies on the quantitative estimation of the cystine content of casein.
Horton: Gold adsorption by alkaline charcoal.
Iddles: Separation of the amyloses in some common starches.
Muller: The action of ultra violet light on certain colloidal dispersions of gold.
Smidth: Action of sulfur on p-toluidine.
Chapman: Growth of profession of chemistry during past half-century.
Mellor: Treatise on inorganic and theoretical chemistry, vol. 7.

J. Agriculture.

- Howard: Wheat in India.
Jameson: Report on the diseases of silkworms in India.
MacKenna: Agriculture in India.

L. Medicine.

- Great Britain Medical Research Council Publications:—
Causes of wastage of labour in munitions factories employing women.

- Use of death-rates as a measure of hygienic conditions
Cripps: Application of air force physical efficiency tests to men and women.
Hill: Internal migration and its effects on death rates.
Young: Cancer in different trades and professions.
Rogers: Small-pox and climate in India.
Occurrence of intestinal protozoa in inhabitants of Britain.
Acid base equilibrium of blood.
Lythgoe: Illumination and visual capacities.
Pyke: Report on legibility of print.
Science of ventilation and open air treatment, 2 pts.
Vernon: Methods of investigating ventilation.
Dudley: Schick test, diphtheria and scarlet fever.
Glynn and Digby: Bacteriological and clinical observations on pneumonia and empyema.
Savage: Investigation of Salmonella group.
Dudley: Spread of droplet infection in semi-isolated communities.
Savage and White: Food poisoning.
Gordon: Studies of the viruses of vaccinia.
White: Further studies of the Salmonella group.
Burn and Dale: Purity extracts.
Issolis: Home conditions and intelligence of school children.
Murray: Social conditions and nutrition upon birth weight and birth length.
Cruickshank: Maternal syphilis, as a cause of death of foetus of new born.
Estimation of foetal age, weight and length of normal foetuses and weights of foetal organs.
Mann: Diet for boys during school age.
Social conditions and acute rheumatism.
Mummery: Structure of teeth in relation to dental disease.
Incidence of dental disease in children.
Diagnosis and treatment of peripheral nerve injuries.
Injuries of spinal cord and cauda equina.
Sense of stability and balance in air.
Chamberlain: Sanitation (United States war dept.)
An enquiry into the prevalence and aetiology of Tuberculosis among industrial workers.
Pulmonary tuberculosis.
An investigation into the epidemiology of phthisis in Gr. Britain and Ireland.
Artificial pneumothorax.
Tuberculosis in insured persons.
Tuberculosis of the larynx.
After-histories of the patients treated at Brampton Hospital sanatorium.
Tuberculin tests in cattle.
Reports on investigations in the U. K. of dysentery cases received from the eastern Mediterranean.
Contribution to the study of chronicity in dysentery carriers.
The Flexner-Y Group of dysentery bacilli.

- Studies of bacillary dysentery in British factories in Macedonia.
 Serological races of the flexner group of dysentery bacilli.
 Bacteriological studies in pathology and preventive control of cerebro-spinal fever, among the forces, 1915-16.
 Report on seasonal outbreak of cerebro-spinal fever in the navy at Portsmouth.
 Bacteriology, preventive control and specific treatment of cerebro-spinal fever among military forces.
 Sheffield outbreak of epidemic encephalitis in 1924.
 Ultimate results of treatment of syphilis with arsenical compounds.
 Clinical study of the toxic reactions which follow the intravenous administration of '914.'
 Wasserman test applied before death.
 Results of the examination of tissues from eight cases of death following injections of salvarsan.
 Influence of salvarsan treatment on development and persistence of immunity.
 The Serum diagnosis of syphilis.
 Influences of alcohol on manual work.
 Effects of alcohol and some other drugs during normal and fatigued conditions.
 Classification and study anaerobic bacteria of war wounds.
 Investigation of an epidemic caused by bacillus aertrycke.
 The probable proportion of enteric infections among undiagnosed febrile cases invalided from the Western Front since Oct. 1916.
 On the destruction of bacteria in milk by electricity.
 Studies in wound infections.
 Studies in the aetiology and epidemic influenza by James McIntosh.
T. Education.
 Some experiments in Indian education. (Govt. of India publication).
F. History.
 Coatsman: India in 1925-'26.
X. Economics.
 Killough: Tobacco products industry in N. York and its environs.
Z. Law.
 English Law Reports, Vol. 170.
 Hindu Law Texts:—
 The Samakara mayukha.
 Samaya mayukha.
 Sraddha mayukha.
 Prayaschitta mayukha.

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EGMORE, } S. R. RANGANATHAN,
 1st June '27. } Librarian.

We are asked to publish the following:—

AN EDUCATIONAL "LOCARNO."

An Educational "Locarno," which will meet from 3rd to 15th August in that famous flower-filled valley of the Tessin, promises to fulfil expectations. Educationalists from all parts of the world will meet at Locarno, under the auspices of the New Education Fellowship, to discuss the problems of progressive education.

Even at this early date delegates include the Directors of Education for South Australia and South-West Africa; the Secretary of Public Instruction for Liberia; the Secretary of the National Council of Education, Canada; a representative of the Education Department of Santo Domingo and of the Government of Belgium. Representatives will attend from the Universities of Dacca and Allahabad (India), of Havana (Cuba), Cagliari (Italy), the Keioijuku University (Tokio), in U. S. A. the G. Peabody College for Teachers, Iowa State College, Penn College, International Institute of Teachers' College. Among the Associations sending delegates are the Child Study Association (New York), the Progressive Education Association, the Teachers' Union (New York), the Union of Parents' Associations (New York), the Florida Education Association, the Association of Private School Teachers of the Eastern States of America, the Polish New Education Association.

Among the pioneer schools represented are Frerisham Heights, Bedales, Garden School (England); Lincoln School of Teachers' College, North Shore Country Day School, Winnipeg Schools, Bayer Country Day School, Edgewood School, Tower Hill School, Ethical Culture School, Downers Grove Junior Elementary School (U. S. A.), Tyninge High School (Sweden), Odenwaldschule (Germany), Hof-Oberkirch (Switzerland); Decroly School (Belgium).

In addition to regular evening lectures on the subjects involved in the general theme of the Conference "The True Meaning of Freedom in Education," there will be morning study-discussion groups on such subjects as Co-education, The Problem Child, Individual Methods, Intelligence Testing, The Psychological Freeing of the Teacher, Experimental Schools.

The Conference, which includes recreation as well as study, is open to all who are interested in the new ideals and progressive methods in education. Further particulars may be obtained from the Secretary of the Locarno Conference, 11, Tavistock Square, London, W. C. 1.

The Educational Review

We are glad to find that the Corporation of Madras has decided to extend the provisions of the Compulsory Elementary Education Act to all the divisions of the city. The Commissioner to the Corporation of Madras has issued the following notification which will be read with much interest:—

The citizens of Madras are hereby reminded that compulsory elementary education was introduced in the city in divisions 24 to 27, both inclusive in the year 1925-26 and in three other divisions 28 to 30 in the year 1926-27. Thanks to the hearty co-operation of the citizens and the interest evinced by the members of the Attendance Committees, the scheme has been working satisfactorily.

Once a year, or if necessary at shorter intervals, a census of children of each division in the compulsory area has to be taken, to ascertain how many children there are of school-going age, boys between the ages of 6 and 11, Mahomedan boys between the ages of 8 and 13 and girls between 5 and 10, how many are attending the schools and how many are violating the rules and for what reasons. This information has to be sent to Government. During the month of May, the Corporation school-masters will go round from house to house asking for particulars, and the public are requested to oblige them by giving all the necessary information. Save in cases where exemptions have been granted, the parents of children who have not yet been sent to schools will be liable for prosecution. It is earnestly hoped that such parents will soon send their children to schools and give no room for any unpleasant steps being taken.

The residents of the first 23 divisions of the city are hereby informed that elementary edu-

cation will be made compulsory in these divisions from about the 1st October of this year. According to the Elementary Education Act of 1920, all children, non-Mahomedan boys between ages of 6 and 11, Mahomedan boys between 8 and 13, and girls between 5 and 10, must be sent to a recognised school. Parents and guardians who fail to send their children of the prescribed age to a recognised school will be liable for prosecution. The Corporation school-teachers will go round from house to house in the month of May to prepare a census of the children and the public are requested to give them the information required.

The Corporation has, at present, nearly 100 schools, for boys and girls, and imparts education for about 18,200 children and more schools will be opened, as and when necessary. For boys who are anxious to earn their livelihood when they complete their elementary education course, instruction is being given in arts such as carpentry, weaving, embroidery, tailoring and mat-making. In some of the schools, higher elementary classes, from the 6th to 8th, will be opened shortly, to afford chances to gain more knowledge in general education and vocational training. For girls special instruction in music, needle-work and domestic economy is being given. The residents are requested to send all children of school-going age to schools, without being forced to do so.

We hope the order will be enforced tactfully and the measure will be a great success.

It is pleasing to record the growing activity in educational matters apparent in Bengal in recent months. The latest is an attempt at improving the facilities for technical education in the province. A sum of

Rs. 1,70,000 is already being spent for distribution as grant-in-aid to technical schools. An additional sum of Rs. 30,000 has been sanctioned for the purpose. There are now four Government technical schools which may be looked upon as model institutions in Bengal. The Government of Bengal propose to start five other schools for which Government have drafted a new scheme. A special feature of the new scheme will be the addition of a course of cultural education to the existing practical work. We commend the example to other provinces in the country.

In spite of the lead which the senior Presidencies of India, Bengal, Madras and Bombay, have had in educational matters, it looks as if the Punjab will soon steal a march over them in many aspects of progress. The latest report of Public Instruction for 1925-26 is one of which any province may be proud. The percentage of pupils to the total population advanced in the year under review from 4.44 to 5.13 as compared with 2.7 in 1920-21. If the figures for boys alone are considered, the percentage has risen to 8.44 as compared with 4.26 in 1920-21. It means that the percentage of school-going population has doubled itself in about five years. When Ministers and Directors of Education elsewhere plead difficulties of various kinds when confronted with demands for more extensive education, the example of the Punjab should be held up for being followed. Sir Malcolm Hailey,

the Governor of the Province, and Sir George Anderson, the Director of Public Instruction, are both very keen and enthusiastic about the expansion of education and the result is evident. Even with the limited financial conditions of India, it is clear much can be done for elementary education when there is a will in the direction and energy for the effective execution of schemes. Another agreeable feature of the report is the assurance that the conversion of primary into lower middle schools and of lower middle into full middle schools has gone on apace. Middle schools have advanced numerically from 615 to 1733. It is not realised that the principle of compulsion is neither so easy of adoption, nor so desirable in its consequences, as is often imagined. Those who have any acquaintance with the working of the Compulsory Elementary Education Act of Baroda are however familiar with some of the difficulties in the way. Sir George Anderson, curiously enough, unfolds exactly a similar tale. He is of opinion that the growing appreciation of the benefits of education should not be blunted by any hasty or vexatious system of compulsion. "To scatter broadcast over the countryside a horde of subordinate officials in the form of Attendance Officers and to harass the people by the infliction of fines which they cannot afford to pay, would put the clock backward instead of forward. Education would become a by-word of abuse." In view of the evidence which is being presented before the Royal Commission on Agriculture, it is interesting

to know that an attempt is being made to adapt the rural courses and curricula to village conditions and requirements. It is recognised that an extensive application of an urban system of education to Indian rural areas may be fraught with disaster, as it may prove to be an impoverishment rather than an enrichment of the countryside. Everybody will share in Sir George's complaint that experience has shown that the Indian University and Secondary School system tend to suck from the countryside its best initiative and talent and to tempt the brighter boys to urban and sedentary pursuits, while conditions of life discourage men of intellect and initiative from returning to the villages and from influencing the villagers in the direction of progress. It is difficult however to share in Sir George's optimism that the village teacher and inspector can do much to counteract this tendency in Indian life. Among features of village educational organisations which can be imitated elsewhere are village libraries, district community councils and magic lantern lectures. Even a travelling cinema is in contemplation.

The practice of employing women-teachers even for boys in lower schools has come to be introduced in India. If we are not mistaken, it is prevalent in such educationally advanced Indian States as Travancore and Cochin, while it has been more or less the rule in European schools in India. With the increasing recognition of the claims of

women for equality, the practice will probably increase in this country. The following extract from the Presidential Address of the National Association of School-masters at Bristol will however show that some difference of opinion is possible on the subject. We give it below without intending to be understood as necessarily endorsing the sentiments and the conclusion:

"No woman can train a boy in habits of manliness. It is true that one occasionally meets the woman who can 'manage boys as well as any man.' Well, such a one, might be an admirable proprietress of a Wild West saloon, but we have no room for her in our boys' schools."

They as schoolmasters need never be disturbed or diverted from their purpose by those who, smiting their breasts in a hysterical outburst of self-righteousness, lamented the perpetuation of what they choose to call the sex-squabble in education. "Let us end it," they shrieked. "It is undignified, it is uneducational."

In his opinion they could end it to-morrow by surrendering unconditionally. Such surrender, however, would entail the triumph of feminism in education, the gradual supersession of men-teachers by women-teachers. Such a base desertion of the British boy would be unworthy of the British schoolmaster; it would be an educational disaster and a national calamity.

In an article on *English As It is Spoken*, Sir Denison Ross, Director of the School of Oriental Studies, complains about the slackness which has crept into the spoken language of to-day. The war with its slackening effect on the mental habits of the people, has tended to make speech less precise.

Should Women
Teach Boys?

English grammar, according to him, is practically ceasing to be taught. Linguistic studies are being overshadowed by scientific developments and grammatical mistakes have begun to figure in print, in notices, newspapers, cinemas and so on. Newspapers in their attempts to compress the English language in their head-lines beyond its elastic limit frequently break some of the cardinal principles of grammar. It is easy to be too puristic in matters of linguistic evolution, but it will be admitted on all hands there is much truth in the observations of Sir Denison Ross.

Speaking at a District Teachers' Conference in Bengal, Dr. Jenkins, I.E.S., referred to a serious handicap under which Teachers' Associations suffer in this country. The remarks deserve to be more widely known, particularly in view of the criticism generally made that Teachers' Associations in this country are mere trade-unions always clamouring for the improvement of pay and prospects. He said:

When a Western educationist comes to this country he is at once struck by the miserable conditions under which the teachers suffer here. While in the West, there is a highly organised, highly efficient and well-paid service, leading to the proper education of Western children, Indian villages and districts present miserable conditions of teachers and students. The position of the teachers in the West is secure. Their organisations help them to maintain that position. The bread problem is solved for them by the State, so

that they are at liberty to think out better methods of educating their pupils. Whenever an association of teachers meets in the West, it meets for improving the prevailing systems of education as well as for discussing the inconveniences under which they labour. But the position of the teacher is quite different here. He has to fight for his position in society, he has to fight for a living wage and whatever little time he has, thus left, he may devote to the improvement of the prevalent systems of education.

The objects of a teachers' association in this country are therefore manifold. They cannot give their exclusive attention, as Western teachers, in the main, do. The sacred calling of the teacher is, therefore, here little more than a struggle for existence. But they should not despair. Though they have to fight against heavy odds, by concerted action such as yours, they can surely realise their objects.

A handicap of another kind is the lukewarm sympathy, if not veiled hostility, which Teachers' Associations often meet with from the officers of the Educational Department. There are provinces in which Directors of Public Instruction do not view with favour the participation of members of the teaching profession in Associations and Conferences of the brother members of the same calling and this writer has known at least of one instance in which a European Inspector of Schools incurred the serious displeasure of the Department because of the interest he took in Teachers' Associations and non-official Educational Conferences. In these circumstances, it is a pleasure to turn to a communication recently addressed to the 7th Annual Conference of the All-Bengal Teachers'

Association by Mr. E. Oaten, the Director of Public Instruction of the province—we should like to see a similar appreciation of Teachers' Associations and Conferences on the part of educational authorities elsewhere. Regretting his inability to be present at the recent Conference he wrote:

Dear Sir,

I acknowledge receipt of your kind invitation to attend the 7th Annual Conference of the All-Bengal Teachers' Association. I very much regret that I cannot be present. I shall be grateful if you will convey to the members of the Conference my sincere good wishes. As is well known, I consider the Association one of great importance in the educational world and believe that it is capable, by continued pressure in support of its members' legitimate claims, not only of improving the status and conditions of work of individual teachers but of benefiting the cause of secondary education in general. I am confident that the Association will continue consistently to aim at both these objects which are indeed essentially complementary to each other, and in that belief I desire to send the warmest possible expression of my good wishes for the success of the Conference.

Yours truly,

E. OATEN.

Students who have not done well at school and college have often sought consolation in the fact that many men of genius and great achievement in life did not do very well in their educational career, though it is well-known that many who have distinguished themselves at school and college have done very well in life. The qualities of intelligence

and industry so essential for success in studies at school and college are just the qualities which play a great part in contributing to success in life, however much the latter may also depend on luck and the chances of opportunity and environment. But at the recent Educational Conference in England at Margate, special attention was drawn to the fact that the dull boy at school often developed well later, not only in life, but also in the higher stages of education. It was therefore considered desirable not to classify pupils merely according to age, as the biological age was not always necessarily in conformity with mental development, the so-called dull pupils developing their intelligence at a later stage. The mover of the resolution that the practice of classifying children according to age alone was unsound and that classification ought to be left to the decision of the head teacher in consultation with the members of his staff, said that every teacher present knew that no two children were born with equal capacity or could advance at the same rate. Native ability, the power to progress, environment, home surroundings, medical record and often the condition of the school, all entered into the question of classifying children. A number who developed late would not develop at all if classified according to age. Then followed numerous instances of the dulness of distinguished men at school—though we have no doubt that some of the traditional stories current about them are later inventions intended to make their careers appear more romantic.

Sir Walter Scott's headmaster said he had the thickest head in the school. The mother of Hume, the historian, said that in her opinion he was weak-minded. Chatterton was returned to his mother from school by the school master as a confirmed dullard, and Funny Burney, who was called in school a little dunce, wrote a classic at the age of 20. Mr. Cowen said he had also heard that the Chancellor of the Exchequer did not do very well at Harrow, but he had done fairly well since. (Laughter.) It was a matter for speculation as to what would have happened if the Chancellor had been classified according to age from five onwards.

This praise of the dull boy at an Educational Conference may be amusing to some. But there is one lesson to which it should lead—the teacher must recognise that there might be latent potentialities even in the so-called 'dull' boy and no efforts should be spared to turn him into a satisfactory person from the educational standpoint. It is easy to give him up as a hopeless person incapable of any progress at school or achievement in life.

The principle of competition for entry into public services is a sound one in spite of some of its evils, and we feel bound to support the demand which is now being made in the Madras Presidency to revive the old method of recruitment to the cadre of the Assistant Surgeons by holding a competitive examination for the purpose. Because of the disturbing conditions of the Great War, the competitive examination was suspended in 1916 and for some curious reason or other, it has not been revived since. We presume that the *Justice* party which has till recently been in power found it very convenient to stop recruitment by competition so that it could exercise its patronage entirely from the standpoint of communal preference and with a view to consolidate its own political following. Now that the *Justice* party is happily out of power and is showing no signs of coming back into it, the principle of efficiency as the sole test of entrance into office had better be recognised immediately.

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OPINIONS

The Madras Mail, Friday, October 31, 1924:

Books which deal with the problems of educational psychology from the Indian point of view are too few and we, therefore, welcome most cordially one which makes such a study and makes it well. Miss Gordon's contribution to this field is one which ought to be read carefully and digested thoroughly by all those who have to do with the education of children, whether teachers or parents.

The value of Child Study is first twofold, from the point of view of theoretical psychology, and second of education. Education along with psychology has much to learn from the science of biology which suggests to both of these sciences the unit for study, viz., a reaction which is a response to a stimulus. The mental life ought to be viewed as is the physical from this point of view. Further, biological science is showing the usefulness both as to method and content of the observation of development. The study of child-nature is in accord with the genetic method which characterises all the biological sciences. Educationally we have more to do with children than with adults in our schools and so from the practical point of view also the more that we can learn about the natures of educands the better for our work. Miss Gordon's book is thus a real contribution to our literature for it considers these questions with special reference to conditions in South India.

One of the most important of modern developments in this science is that made through the observation of individual differences. Although education is a social process and children are social in nature, yet we cannot deal with them too much in groups without doing great injustice to matters in which they are unlike. Studies made in Europe and America have their value for Indian teachers, but observations made in India, as Miss Gordon's have been, are of great value in enabling us to ascertain the similarities and differences with children of other countries, and the differences among groups and individuals here. Miss Gordon has not only given the result of her own observations but—what is even more important—she has shown teachers and others how they may observe for themselves.

The book surveys the more important problems connected with the study of child-nature. It deals with the stage of child development, with the processes of sense-perception, with play, hand-work, and fatigue, with exceptional children, both sub-normal and supra-normal, with measurements of intelligence, and with the application of the Kindergarten system to the Indian system. It is one of the books which the Academic Council on the recommendation of the Board of Studies in Teaching has declared as suitable for candidates for the L. T. degree. We hope that it may have a wide circulation as its influence is sure to be for good.

Education (Allahabad), March 1925.

The distinguished author of the book under review is one of the few enthusiasts in India who have taken to a systematic study of child-nature. The book embodies the results of close study by the author, not merely of the existing literature on the subject, but of the actual mental and physical growths of children, as witnessed by her in several schools in Britain and India where she has had the opportunity to work. Within a brief space of 200 pages, the author has contrived, in her plain, matter of fact, and at the same time, engaging style, to elucidate the various topics connected with child life such as the sense perception, play, the service of Hand in Mental Development, fatigue, exceptional children, measurement of intelligence and the Kindergarten system; touching the various theories on these topics and supplementing them by her own views based on personal study and investigation. We would especially commend to our readers the beautiful and inspiring chapter on the Kindergarten system in which without going into technical detail, the author has surveyed the basic principles of the system and pleaded in accordance with these principles for the Indianisation of Indian education. We are sure that this little book will prove an excellent handbook for teachers as well as parents and others interested in the subject and kindle in them a deeper interest therein. It has been already recommended by the Academic Council of the Madras University as a suitable text-book for the students appearing for the L. T. Examination and we hope that other Universities will soon follow suit. We congratulate both the author and the publishers on this valuable publication and recommend every teacher to secure a copy thereof.

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The Madras Christian College Magazine, January 1925.

The study of child-nature is exceedingly important for both of the sciences of Psychology and Education. Its importance for Psychology is from the genetic point of view. In the child one is able to observe in simpler forms many of the processes at work which in adult experience become so complex as to make them difficult of analysis. Its importance for Education is too obvious to need extended notice, and yet there are some who are so short-sighted as to neglect it. Here in South India there are a great number of schools in charge of teachers who do not know the elementary facts about child-nature. But with the progress of education the time will surely come when it will be considered as dangerous to employ a teacher who is ignorant of child-nature as it is to employ a man for a physician who knows nothing of anatomy and physiology. Such a book as that which Miss Gordon has written will serve a useful purpose in hastening that day by putting teachers in possession of a primer which contains the fundamentals of the subject in a readable style. It is the type of book which we would like to see translated into our South Indian vernaculars, because it not only includes the principles of the science, but states them with special reference to the needs of Indian teachers.

A personality is the outcome of forces which are both hereditary and environmental so that child study must take account of both sets of factors. Much more is to be gained by teachers through the study of children for themselves than the mere perusal of books on the subject, however authoritative they may be. The trouble with so many students of other things as well as of child-nature is the evident desire to be spoon-fed. They desire to get their information at second-hand rather than take the trouble to study for themselves. In many instances teachers have not the technique necessary to observe intelligently. Very valuable, then, is Miss Gordon's chapter on 'How to Study a Child,' particularly for those who are beginners in child study, and it is a matter of vital concern as much for the parent as for the teacher.

Certain subjects have been especially studied recently by educationists, and Miss Gordon gives useful accounts of the results of these studies. One chapter is devoted to the place of play in child life and in the educative process. It is a wholesome corrective for the old fashioned idea that play is a superfluity. The author brings out some of the most useful services which are rendered by play, for play has direct educative value, assisting in the training of the judging and other mental processes, as well as in the spirit of fair-play and other moral qualities. The play-ground affords a splendid type of voluntary democratic organisation. Another chapter is devoted to 'The Services of the Hand in Mental Development.' Sometimes the school in emphasising the development of the mental processes has tended to neglect the fact that intelligence is sometimes motor, and that these two factors, the mental and motor, are closely related to one another. The questions of 'Exceptional Children' and 'The Measurement of Intelligence' are closely related, since it is through the latter that we get our most accurate knowledge of the former. A final chapter deals with a question on which Miss Gordon is surely competent to speak 'The Kindergarten System and Its Application to Indian Children.' Altogether she has succeeded in writing a most useful little book, and we hope that it may have a good circulation among teachers and parents who cannot but profit by what she has written on the nature of children and how they should be educated.

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WITH A FOREWORD FROM

The Hon'ble Sir A. P. PATRO, Kt.,
Minister of Education, Madras.

BY

K. R. R. SASTRY, M.A., L.T.,

Fellow of the Royal Economic Society (London); sometime Deputy Inspector of Schools, Dharmapuri and Pattukkottai Ranges; Author of "South Indian Girls."

Opinion.

Indian Educator, March 1926.—The book enters the world armed with a befitting preface from Sir Patro, the Minister for Education. Mr. Sastry's rare style coupled with his affectionate sympathy for the village life makes the book highly interesting. All the details of village life are keenly appreciated and if the book is potent enough to turn the educational authorities to greater interest in rural education, we are sure it can be said to have achieved its object. Mr. Sastry is surely a pioneer in this line of action and we hope he has successors to follow him.

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ஆரம்ப கணிதம்

(இரண்டாம் பாகம்.)

(சென்னை வித்யா இலாகா அதிகாரிகளால் தொகுக்கப்பட்ட விவரணுக்கிணங்கத் தயாரிக்கப்பட்டது.)

இஃது கும்பகோணம் கவர்ன்மெண்டு காலேஜ் பிரதம ஆசிரியாயிருந்த ராவ்பகதூர் P.V. சேஷ-
அய்யர், B.A., L.T. அவர்களாலும், சென்னை பச்சையப்பன் கலாசாலை ஹெஸ்கூல் பிரதம ஆசிரியர்

V. வெங்கடசுப்பையா, B.A., L.T. அவர்களாலும் ஆங்கிலத்தில் இயற்றப்பெற்ற

Elementary Mathematics, Part I இன் மொழி பெயர்ப்பு.

மொழி பெயர்ப்பாசிரியர் :

சேலம் முனிசிபல் காலேஜ் கணித போதகாசிரியர், S. சிவராமன், B.A., L.T.

இரண்டாம் பாகம் 2-வது பாரத்திற்கு, கிரௌன் 208 பக்கங்கள். விலை அணு 10.

சைதாப்பேட்டை டிசர்ஸ் காலேஜ் கணிதபோதகாசிரியர் S. பாலகிருஷ்ண அய்யர், B.A., L.T.,
அவர்களுடைய முன்னுரையுடன் கூடியது.

பொருளடக்கம்.

பரீட்சைக் கேள்விகள். I. டெஸிமல்களின் பெருக்கலும் வகுத்தலும் : ஒரு எந்தான டெஸிமல்
எண்ணால் பெருக்கல் ; சுமாரான பரிசோதனை ; எந்த டெஸிமல் எண்ணாலும் பெருக்கல் ; டெஸிமல்களால்
வகுத்தல் ; சுமாராய்ச் சொல்லல் ; சாதாரண பின்னங்களை டெஸிமல்களாக மாற்றல் ; டெஸிமல்களை சாதாரண
பின்னங்களாக மாற்றல். II. சராசரி, ரேஷியோ முதலானவை : சராசரி ; ரேஷியோ ; மாறாத ரேஷியோ ;
ரேஷியோவின் உபயோகங்கள் ; பரபேர்ஷன் ; லாப லப்தம், வருமான வரி ; கடன் மிகுதல் III. பாய்
பளவு ; பரப்பளவு ; ரெக்டாங்கிள் ; இங்கிலீஷ் பரப்பளவுகளும் ப்ரெஞ்சு பரப்பளவுகளும் ; பரப்பளவு வாப்ப்
பாடுகள் ; பிளான் வரைதல் அதாவது அமைப்புருவம் வரைதல் ; தரையின் பரப்பளவும் நாற்காலங்களின் பரப்
பளவும் ; கட்டக் காகிதத்தின் உபயோகம் IV. பொது எண் கணத்தின் சமீகரணங்கள் : அங்க கணிதமும்
பீஜ கணிதமும் ; சில பெபர் விளக்கங்கள் ; சமீகரணங்கள் ; இன அங்கங்கள் ; அடைப்புக் குறிகள் கீக்குதல்.
V. முக்கோணங்கள் : அவற்றின் பக்கங்களும் கோணங்களும் : முக்கோண விரிப்பு ; முக்கோணங்களின்
கோணங்கள் பக்கங்களுக்குள்ள சம்பந்தங்கள் ; ஒரு புள்ளியிலிருந்து சிபத்தனைக்கிணங்க மற்றொரு புள்ளி குறித்
தல் ; இரண்டு புள்ளிகளிலிருந்து சிபத்தனைகளுக்கு கிணங்க மற்றொரு புள்ளி குறித்தல் ; கொடுக்கப்பட்ட அளவு
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புள்ளியிலிருந்து ஓர் கோட்டிற்கு பெர்பெண்டிகுலர் VI. கோடுகளையும் கோணங்களையும் இருசமபாகங்
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