

112

THE EDUCATIONAL REVIEW

VOL. - XXXV

NO. 7

JULY - 1929



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REGD. NO. M. 272.

THE EDUCATIONAL REVIEW

A Monthly Record for India. THE REGISTER No. 7.

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

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Approved as a Text-Book suitable for School use,

vide Fort St. George Gazette, Part I-B, p. 515, dated 1-11-27.

(முதல் பாகம்)

பொருளடக்கம்.

I. எண் மாண்பு; எண் குறிப்பும்:—எண்கள்; இலக்கங்களால் எண்களைக் குறித்தல்; எண்களின் சம மதிப்பும் ஸ்தான மதிப்பும்; மோமன் வழி. II. கோடுகளும் புள்ளிகளும்:—நேர் அளவையும்:—ஆய்; லை பெய்கள்; கோடுகள்; புள்ளிகள்; கோடுகளின் வகைகளும் கோடுகளைப் பிரித்தும் விதமும்; புள்ளிகள் குறித்தலும் கோடுகள் இழுத்தலும்; நீள அளவு; டிவைடர்களால் உபயோகம்: எண்களை நீளத்தால் குறித்தல். III. கூட்டல்:—கூட்டலின் அர்த்தமும் உபயோகமும்; கூட்டலைப்பற்றிய ஓர் உண்மை: கூட்டல் படத் தால் காண்பித்தல்; அடைப்புக் குறிகள்; கூட்டல்; பெரிய கணக்குகள்; கழித்தல்; கழித்தலைப் படத்தால் காட்டுதல்; பலவகை கழித்தல் வழிகள்; கூட்டல் கழித்தலைப்பற்றின சில விதிகள்; கலப்புக் கூட்டலும் கழித் தலும். IV. பெருக்கல்:—பெருக்கலைப் படத்தால் காண்பித்தல்; ஒரு ஸ்தான எண்ணால் பெருக்கல்; பாக்ட் களால் பெருக்கல்; எந்த எண்களைக் கொண்டும் பெருக்கல்; பெருக்கலில் குறுக்கு வழிகள். V. வகுத்தல்:— வகுத்தலைப் படத்தில் காட்டுதல்; ஒரு ஸ்தானத்தால் வகுத்தல்; பாக்டர்களால் வகுத்தல்; 10, 100 முதலிய வகைகளால் வகுத்தல்; நீள வகுத்தல்; வகுத்தலின் தன்மொரு அர்த்தம்; சில பெருக்கல் வகுத்தல் விதிகள் பெருக்கல் வகுத்தலில் சில குறுக்கு வழிகள்; ஒன்பதுகளை நீக்குதல். VI. பலவின் (உவமைகள்:—அளவை வாய்ப்பாடுகள்: காணாய அளவுகள்; நிறை அளவுகள்; நீள அளவு; படித்தல் அளவு; கால அளவு; கணித அளவு; எண்ணிக்கை அளவு; இனமாற்றத்தல்; பலவின் வெண் கூட்டல்; கழித்தல்; பலவின் வெண் பெருக்கல்; பலவின் வெண் வகுத்தல். VII. கோணங்களும் அயற்றை அளவும்:—நகை, திசைமாற்றம்; கோணம், கோணங்களை ஒப்பிட்டுப் பார்த்தல்; கோணங்கள்; சதுரங்களும் வகைகளும்; வட்டங்கள்; கோணங்களின் அளவு; கோணங்களின் வகைகள்; ப்ரோட்டாக்களைக் கொண்டு கோணங்களை வரைதல்; ஒரு புள்ளியிடத்தில் உள்ள கோணங்கள். VIII. டெஸிமல்கள்:—டெஸிமல்களின் அர்த்தம்; டெஸிமல் குறிப் பில் ஸ்தான மதிப்பு; இரண்டாவது டெஸிமல் ஸ்தானம்; டெஸிமல் குறிப்பு பொது விவரம்; ஒரு டெஸிமல் ஸ்தானமுள்ள எண்கள்; டெஸிமல் கூட்டல்; டெஸிமல் கழித்தல்; எந்த எண்களையும் கழித்தல்; 10, 100 முதலியவகைகளால் பெருக்கல்; ஒரு ஸ்தானமுள்ள முழு எண்ணால் பெருக்கல்; ஒரு ஸ்தானமுள்ள முழு எண் ணால் 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 இரண்டுக்கு மேற்பட்ட எண்களின் உ. பொ. அ. உம், தா. பொ. ம. உம் கணக்கிடுதலும் வழி; உ. பொ. அளவைக் கணக்கிடுதலும் பொது வழியைப் படத்தாற காட்டல்; உ. பொ. அ. பொது வழி. X. சதுரங்களின் பின்னங்கள்:—பலவின் அளவுகளின் பின்னங்கள்; ஒரு காண்கீட் அளவை இன்னொரு காண்கீட் அளவின் பின்னமாகச் செலுத்தல்; சமமான பின்னங்கள்; சமமான பின்னங்களைப் படத்தாற காட்டுதல்; பின்னங்களின் சமத்தனம்; தாழ்ந்த

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உறப்புகள்; பின்னங்களை ஒப்பிடுதல்; பின்னங்களின் கூட்டலும் கழித்தலும்; ஒரு சாதாரண பின்னத்தை ஒரு முழு எண்ணால் பெருக்கல்; சாதாரண பின்னத்தை ஒரு முழு எண்ணால் வகுத்தல்; ஒரு பின்னத்தால் ஒரு முழு எண்ணால் பெருக்கல்; பின்னத்தின் பின்னம்; ஒரு பின்னத்தால் வகுத்தல்; ஒரு எண்ணை ஒரு குறிப்பிட்ட டிஸிமல்களால் பெருக்கல்; பின்னங்களைச் சதுரக்கல். IX. வாடிக்கை முறை.—பலமாதிர்க் கணக்குகள். பரீட்சைக் கேள்விகள். விடைகள்.

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Approved as a Text-Book suitable for School use,

vide Fort St. George Gazette, Part I-B, p. 546, dated 1-11-27.

(இரண்டாம் பாகம்)

பொருளடக்கம்.

பரீட்சைக் கேள்விகள். I. டெஸிமல்களின் பெருக்கலும் வகுத்தலும்: ஒரு ஸ்தான டெஸிமல் எண்ணால் பெருக்கல்; சாதாரண பரிசோதனை; எந்த டெஸிமல் எண்ணால் பெருக்கல்; டெஸிமல்களால் வகுத்தல்; சாதாரண பின்னங்களை டெஸிமல்களாக மாற்றல்; டெஸிமல்களை சாதாரண பின்னங்களாக மாற்றல். II. சதுரம், கோடியோ முதலானவை: சராசரி; ரேஷ்யோ; மாறாத ரேஷ்யோ; கோடியோவின் உபயோகங்கள்; ப்ரோபர்ஷன்; லாப நஷ்டம்; வருமான வரி; கடன் மிகுதல். III. பாப் பளவு: பாப்பளவு; கொடாங்கில்; இங்கிலீஷ் பாப்பளவுகளும் ப்ரோஞ்சு பாப்பளவுகளும்; பாப்பளவு வாய்ப் பாடுகள்; ப்ரான் வரைதல், அதாவது அமைப்புவும் வரைதல்; தரையின் பாப்பளவும் நாற்சுவர்களின் பாப் பளவும்; கட்டக் காங்கரீதின் உபயோகம். IV. பொது அளவு கணக்கு—கட்காணங்கள்: அளவு கணிதமும் ப்ரோஜெக்ட்: அளவு கணிதம்: அளவற்றின் பக்கங்களுக்கும் கோணங்களுக்கும்: முக்கோணங்களின் மற்ருரு புள்ளி குறித் தல்; இரண்டு புள்ளிகளிலிருந்து திபத்தலைக் கிணங்க மற்ருரு புள்ளி குறித் தல்; இரண்டு முக்கோணம் வரைதல்; வட்டங்களின் சில தன்மைகள்; முக்கோணங்களின் வகைகள்; ஓர் கோடு கொண்டு முக்கோணம் வரைதல்; வட்டங்களின் சில தன்மைகள்; முக்கோணங்களின் வகைகள்; ஓர் புள்ளியிலிருந்து ஓர் கோட்டிற்கு பெர்பெண்டிகுலர். VI. கோடுகளையும் கோணங்களையும் இருசமபாகங் களாகிதல்: இருசம பக்க முக்கோணங்களின் சில தன்மைகள்; கோடுகளை இருசம பாகங்களாகிதல்; கோணங்களை இருசம பாகங்களாகிதல்; காட்டங்களையும் வட்ட பாகங்களையும் இரண்டு சம பாகங்களாகிதல்; கோணங்களை இருசம பாகங்களாகிதல்; காட்டங்களையும் வட்ட பாகங்களாகிதல்; இரண்டு சம பாகங்களாகிதல்; பெர்பெண்டிகுலர்கள் இழுத்தல்; ஸிம்மெட்ரி. பலமாதிர்க் கணக்குகள்; முதல் பாரப் பாடங்களில் புதிய பெர்பெண்டிகுலர்கள் இழுத்தல்; ஸிம்மெட்ரி. பலவின் எண்கள்; கோணங்களும் வட்டங்களும்; கணக்குகள்:—கூட்டல் கழித்தல்; பெருக்கல்; வகுத்தல்; பலவின் எண்கள்; கோணங்களும் வட்டங்களும்; டெஸிமல்கள்; உயர்ந்தபொது அளவும் தாழ்ந்த பொது மடங்கும்; சாதாரண பின்னங்கள்; பலமாதிர்க் கணக்குகள்; பரீட்சைக் கேள்விகள். அறுபத்தாம். விடைகள். இரண்டாம் பாரப்பாடங்களில் பலமாதிர்க் கணக்குகள். 208 பக்கங்கள். விலை அணு 10.

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Approved as a Text-Book suitable for School use

vide Fort St. George Gazette, Part I-B, p. 513, dated 13-11-1928.

(மூன்றாம் பாகம்)

பொருளடக்கம்.

பரீட்சைக் கேள்விகள்; அத்தியாயம் I. நூற்றுக்குக் கணக்கிடலும் அதன் பிரயோகங் களும்; II. ருண எண்களும் ப்ரீஜ் சமீக்கைச் சேர்க்கைகளும்; III. சமாள்தரக் கோடுகளும் அவற்றின் தன்மைகளும்; IV. படக் குறிப்புகள்; V. ப்ரோபர்ஷன்—நோனதும் மாறான அளவற்றின் தன்மைகளும்; VI. முக்கோணங்களின் சர்வ சமத்தனம்; VII. முக்கோணங்கள், சமாள்தர நாற்பக் கங்கள், வட்டங்கள் இவற்றின் பரப்புகள்; VIII. பருமன அல்லது கன அளவு; IX. தனிச் சமீகரணங்களும் அவற்றிற்குக் கொண்டுவரும் யோசனைக் கணக்குகளும்; X. பலவகைக் கணக்குகள்; பரீட்சைக் கேள்விகள்; பலமாதிர்க் கணக்குகள்; விடைகள்; பலவின் அளவு வாய்ப்பாடுகள். Cr. 8vo. 300 pages. விலை அணு 12.

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SIVAJI AT PRATAPGARH

BY

S. K. DEVASIKHAMANI, B.A., L.T.

*Headmaster, Bishop Heber College High School, Trichinopoly, and Member of
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The Educational Review

A Monthly Record for India.

VOL. XXXV.]

JULY 1929.

[No. 7.]

All literary contributions, books for review, newspapers or magazines, sent in exchange, &c., should be addressed to the Editor, No. 4, Mount Road, Madras. Articles and communications intended for publication in the succeeding issue should, as far as possible, reach the Editor not later than the 20th of the month. The Editor solicits contributions on all subjects of educational interests. Stamps should accompany the MS., if the writer wishes it returned, in case of non-acceptance. The Editor can in no case hold himself responsible for accidental loss.

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LITERARY RENAISSANCE

By Mr. N. SIMHADRI,

Dy. Inspector of Schools, Proddatur.

IT was Dean Inge who said that "the soul of England is reflected in our literature as much as in our history." This is a statement which is applicable to every country. The national temper and spirit of a race of people breathe from their literature and a host of poets and philosophers have interpreted to the world with supreme fidelity the culture, the tradition and the great characteristic features of their race. No nobler example is found to-day than that of Tagore, who in the words of that great and illustrious statesman Lord Willingdon, is "the master of literary culture in India."

The life of a nation is not like the placid flow of deep water in an expansive river without even a ripple to disturb its beautiful face but is marked by the ebb and flow of pulsating life, serious debacles, cheating ice-bound regions and scintillating with hallucinations of wondrous types which baffle even stern realities. The literature of a country is a

faithful record of the genius of the race and the palmiest days of literature are those periods of energising activities of the race. A careful study of the literature of a country discloses the one uncontested fact that the grandest and most fully representative period in literature always corresponds to the epoch-making periods in the life of a nation.

Thus it is that in the history of Indian literature the two monumental epics of the Ramayana and the Mahabharata stand aloft as the twin peaks in which Aryan civilisation culminated. The subsequent literary times were reminiscent of a condition of lower vitality, unsatisfactory standards and no significant moral considerations. Poets and philosophers have always been our spiritual guides and the clearest visions of the invisible are enshrined in our poetry. As a great writer said "our best poetry is generally serious, moral, and often definitely religious in its aim." Examine, if you will, any phase of the development of poetry in India and you will find a distinct religious background. We have a great tradition in fiction and the clever technique, the great charm and the consummate ability which marked its flowering periods are quite

unexampled. But the times have changed, A generation which extolled beautiful things written in beautiful style was succeeded by another which deprecated high morality as mere hypocrisy and called Rama, the great Indian hero, as a mere blameless prig. Such was the gradual decline in the moral elevation of the people that to-day we are confronted with a newer outlook, a different purpose and an altogether changed moral standard. The time for enduring classics is no more; the need for ethical literature is not appreciated and to-day we find ourselves in the words of Dean Inge "in the trough of the wave." The palm for this renaissance should be given to Bengal as it began with that immortal novelist Bankim Chander and still finds expression through the expansive vision of that great Indian patriarch Rabindranath Tagore. This is the first time that one sees the deflection in the guiding spirit of literature. What was hitherto a pageant of human events with an ulterior divine purpose has to-day transformed itself into simple human affairs with a greater breadth of vision and with a definite return to the temporal springs of life. From the sublime altitudes of the Transcendentalist, with his robust idealism and the beatific vision of the Over-lord we have slid down to things of the earth earthy and have shown a greater aptitude for the life of the work-a-day world. The cheap literature though not of the Billingsgate type but of a low order have been flooding the gates of the book-sellers' shops and we have been witnessing a larger and an ever-widening circle of readers stuffing their shelves with such evanescent literature instead of the heavy tomes of classics which adorned the book-cases of the Pandits of the last century. To quote Dean Inge again "in a hustling age when every one reads and writes in a hurry such an attenuation as this is a consequence and lots of people are there for a scabrous story of

adultery or for "revelling in the 'realism' of the man with a muck-rake."

This is the moral degradation that has followed the decline in the motive-spirit of the literature of our country. The fad for light literature after morning tea or some fan and frolic before a night's rest is fast developing among us, that a time is likely to come after the American fashion to print the salient facts of a story or a drama in a few small sentences and leave the moral to the reader to imagine or to dream!

In this age of "sick hurry" and restless activities there is no time for the average man to sit leisurely and pour over the involved sentences and obscure passages of a dreamer or a philosopher. The 20th century moderner invites in glaring head-lines a couple of sentences as the substance of a story or an important event.

The days of heroes and deities are gone for ever and in their place small events of simple Arcadian life are given prominence.

Books of the future will have bearing on the advancement of science, on international fellowship and on a thousand other circumstances that are producing vast changes in the human life of to-day. Well has H. G. Wells said that "human life, the time, the quality, the elements, are changing visibly before our eyes. Human life, as a matter of fact, and not as a matter of sentiment, is different from what it has ever been before, and it is rapidly becoming more different. The scope of it, and the feel of it and the spirit of it change. Perhaps never in the whole history of life before the present time, has there been a living species subjected to so fiercely urgent, many-sided, and comprehensive a process of change as ours to-day."

It is to this changing attitude that literary effort should respond and produce those works of art which reflect inimitably the illusory stream of life.

AN INDIAN LIBRARY OF THE ELEVENTH CENTURY

By Mr. S. R. RANGANATHAN, M.A.
Secretary, Madras Library Association.

Some interesting light is thrown on the place Libraries occupied in the educational institutions of mediæval India, by the "Inscriptions of Nagai" published as No. 8 of the Hyderabad Archaeological Series, which has just been received in the Madras University Library.

Nagai is a village near Wadi and it is said to be the site of an old city, which has now disappeared, leaving behind several monuments and inscriptions of great historical value.

A Kannada inscription in the sixty-pillared temple called "Aruvathu Kambada Gudi" of that village, said to be of the date corresponding to the 24th of December 1058 A.D., gives an account of the public institutions founded by Madusudana, a famous general and minister of the Chalukya king Raya Narayana. One of the institutions founded by him was a residential college "called Ghatikasala for two hundred scholars studying the Vedas, and fifty-two studying the Sastras. The institute was manned by three Vedic teachers, three Sastra teachers and six librarians (Sarasvati-bhandarikas)."

If the appointment of as many as six librarians is significant at all, perhaps one may reasonably infer that the library attached to the college should have been of considerable size and usefulness. One is further tempted to compare this mediæval college library with our present-day college libraries which are so notoriously indifferent and grudging both in improving their book-

resources and in providing them with the necessary human aids for helping the proper exploitation of their resources by their teachers and students.

A later verse in the same inscription shows that Madusudana was far ahead of us in fixing the status of college libraries. For, his allotment of land to the teachers and librarians in lieu of their salary was as follows:—

45 Units (Mattar) of land to the Professor of Prabhakara darasana,

35 Units to the Professor of Bhattadarsana,

30 Units to the Professor of Nyasa (Nyaya?)

20 Units to the Professor of Vedangas,

30 Units to each of the six librarians and so on.

This shows that Madusudana has treated the professors and librarians almost equally and it may further be inferred that their academic qualifications also should have been of the same order.

The present-day educational institutions of the West, which make a correct evaluation of the place of libraries, give professorial status to their librarians and, in return, insist upon high academic qualifications in them. In our educational institutions, on the other hand, the term "librarian" is a misnomer. It is, in most cases, a lad, who has just left school, that is appointed as librarian and his status is seldom higher than that of a junior clerk. The Madras Library Association earnestly hopes that the standard set by our illustrious countryman Madusudana, which is in such close agreement with the present-day practice in other countries, will soon be reached by our Universities, Colleges and Schools.

PARENTS' ASSOCIATION.

By Mr. S. VAIDIANADHA AIYAR, B.A., L.T.,
Headmaster, Municipal High School, Walajapet.

NOW that Education has become a transferred subject and therefore is under popular control an institution like the above is quite necessary and useful. No doubt Associations of the kind are here and there, but they function either spasmodically or without a clear-cut programme. What is wanted is one of the right form in every place which is an educational centre or at least where there are Secondary schools. The very name "Parents' Association" connotes that the members thereof generally have their wards reading in the local educational institutions.

The parents will generally be more concerned with schools than colleges; for, the students of the latter are either too old to need guidance or check or to be irresponsible; or the authorities of the colleges too big and knowing to consult the parents or be interfered with by them. This has been seen in actual experience.

Apart from the democratic control above referred to there is another reason why such Associations are becoming necessary. It is the change of mentality of the boys at schools and colleges. The Youth Movement now so much in evidence and the isolated instances of strikes in schools and colleges and an undercurrent of indiscipline generally are all symptoms thereof.

On the one hand, all these may be considered to be due to a consciousness on the part of the youth of a rightful share in the present onward struggle as they alone are to be mainly affected in the future. On the other, it may be due to impatience against discipline

and incapacity of self-control and immature judgment of proper ways and means. A wise course would certainly be *festina lente*.

This changed mental outlook and the present-day activities of the youth are viewed differently by elders. There are those that passively approve, those that actively encourage and again those that do not countenance such tendencies. Through Parents' Associations a satisfactory solution of these problems is possible by a thorough understanding and meeting of the view-points of all the parties concerned, *i.e.*, pupils and parents, staff and authority and outside public.

All these have the same goal in view and the difference is only in the means adopted, and there they clash and sometimes bring about a crash of the main thing.

According to the nature of a place, its size and situation, its people and their activities, there are any number of associations and societies there. A Parents' Association would not be one too many. As the name implies, only parents are to be the regular members. The association should represent all classes, vocal and otherwise, official and others. It should be strong and effective with a practical and practicable programme of work. It is purely non-official and private, distinct from the official and quasi-official committees and councils. It should have ordinary and special meetings—the former once in a quarter and the latter as occasion arises.

Such of the parents as can command leisure and have inclination to watch and know what goes on in schools may place important matters before the meeting. Questions regarding annual promotions of boys, physical and moral instruction, general discipline,

school hours, and even text-books may be considered. They may put themselves in communication with other schools and the Educational Department. It need not be viewed as another authority overriding the teaching staff. The association can only suggest its views on the many questions connected with the school and co-operate in a healthy and friendly spirit with the staff from its view-points for a better and harmonious working of the school.

As it is, parents form their opinions about the working of schools either from prejudiced reports or from stray cases without getting to know the real state of affairs and all aspects of the question. The association would avoid such partial, prejudiced and unfair impressions. Working within right and reasonable limits it is sure to have an influence with all concerned with schools, their own boys, the staff and management and the department. Instead of meeting and agitating after an event and throwing the blame, in ten in one, on everybody else except their own wards as it is now happening, they could well in time gauge the real circumstances and attempt to guide their boys or to suggest a line of action to the authorities. This would save a lot of unnecessary commotion, a sense of wrong or hardship suffered by one party, a feeling of prestige lost or authority outraged by the other.

The old ferule rule of the teacher and the bated-breath attitude of the pupils are now things of the past and instead, the Soviet methods and aims are slowly coming in. These latter are to this effect—that maintenance of discipline in schools is not the teachers' but the pupils' affair; that teachers have only to teach and answer questions and clear doubts; they should not re-

strain pupils' ways and methods, send reports or issue certificates; that neither attendance at school nor home-work nor examination is compulsory. It is the other extreme which is equally undesirable. Liberty should be distinguished from licence and reasonable latitude from utter chaos.

Neither the teacher nor the parent should entirely shove the responsibility for the proper formation of the character of the young and thus find an excuse for blaming the other, but instead, they should share it between them.

That youth no more defies the teacher nor dreads him; that youth is full of vision, impulses and action; that ideas of independence, equality and self-respect are getting into their heads, should not be lost sight of by the teachers.

That discipline has its own value in every stage of life, that youth is the proper period for discipline and that school is the proper place for enforcing it should not be lost sight of by the parents as otherwise they would lose the wood in the tree—and find later the trouble transferred from school to their homes. That old men have wisdom without inclination to act and youth have energy to act without wisdom, and a combination of both is wholesome should not be lost sight of by the youth.

That where we understand everything, we pardon everything should not be lost sight of by all.

Hence an Association of Parents is one of the important adjuncts of educational institutions more for the formation of the character of the youth which is in itself more important than the acquisition of knowledge.

TEACHERS AND THEIR WORK.

By Mr. M. SUBBARAYUDU, B.A., L.T.,
Senior Mathematics Assistant,
Sri Rajah's High School, Tuni.

Mr. M. Venkatarangayya's address and advice to the teachers delivered as President of the Guntur Teachers' Conference is interesting for more than one reason and therefore a comment on it will not be unwelcome or superfluous.

In the first place the nature of the address gives a clear picture of the sort of education he has received. His mind is fed on books of History—almost all written by people, if free, to make their own country look large in the estimation of the world, and if imperial, not only to deify everything of their own but also to damn everything of their subject countries. To secure their object, the writers must cultivate the art of writing history as a fine art in order to pass injustice for justice and justice for injustice. It requires on the part of such writers a special knack to make mountains of molehills and molehills of mountains, just to scratch and skim where they ought to dive deep and probe deeper. To appraise his suggestions at their proper worth, this mental content of his should not be lost sight of, for it is one of the determining mental features of his public attitude.

Next it should not be forgotten that he is one of the best products of the present system of education or more properly the British system of Indian Education. His mind is thus neither English nor Indian but a blend of both. Therefore it would not be surprising to find statements of two distinct varieties: (a) those bearing the clear impress of the English mind, and (b) those bearing the clear impress of the Indian mind.

Those ideas which are characteristic of the English mind may again be sub-divided into two classes, (1) those in which the characteristics of the pure English mind are dominant, and (2) those in which the pure English mind is clouded by imperial bias. Similarly the ideas which are characteristic of the Indian mind belong to two classes: (1) those in which the pure Indian mind is dominant, and (2) those in which the Indian mind is befogged by the sense of humiliation and mortification due to India's want of freedom.

The whole of his address is coloured by the colour of his history-fed mind. He touches only superficially the burning problems of the educational world. He omits and commits. He naively stops short of suggesting true remedies. Once he recognises that teachers are 'mere tools and instruments' when it suits him. Again he finds fault with them for 'their apathy and indifference.' He pleads for efficiency, harmonious relations between the heads and assistants in schools. He lays stress also on the advantages of harmony between Managers and Teachers. He says that the teacher was formerly 'master of himself' but that now he is only an 'employee.' He advocates the cause of teachers in their cry for raising their status economically. He also says that the law of supply and demand is inexorable. He says that Secondary School teachers have proved their incapacity for Swaraj in that school-record which was once held high is now considered valueless. He says that the 'indiscriminate admissions by Principals of Colleges' made the University assume the function of preparing eligible lists. He says that the S. S. L. C. was brought to remove the domination by examination of all school work. He speaks of the Moderation Board and the cooking-up of marks in

schools. He speaks of the wastefulness of the school-holidays and suggests 'restriction of holidays.'

It is an interesting study if an attempt is made to trace to their sources his views on each of the above several topics and also to sketch his methods of presentation of problems and their solution. But the brief psychological analysis of his mind given above will enable the reader to apportion each of these topics to its inner springs of his mind. Then only he can be correctly criticised. Otherwise it is very dangerous to deal with such writers. Agreement with them *in toto* is as difficult as disagreement with them. In this aspect Mr. Venkatarangayya's address is as finely and carefully written as Miss Mayo's 'Mother India.' It consists of neither full truths nor full falsehoods but only half-truths.

Bearing all that was said before in mind a summary reply to his advice may be given as follows:—

(1) *Shaping and formulating the Educational policy*:—At present it is entirely in the hands of our Government which is foreign. Of course, it would be a very good thing if the Indian Educational policy is framed, formulated and followed by Indians. Undoubtedly the members of the teaching profession should have a large share in the shaping of it. If anything, the Government is over-anxious to control the Educational system and therefore India's claim for shaping her own national educational policy will only be another name for her claim for Swaraj. It will be a tough fight between the Government and the people. It is a national fight. Should teachers be in the system and fight or should they non-co-operate with the system? is a grave question. Every teacher

fights shy of this problem. Hence their apathy and indifference to Teachers' Associations and Guilds in their true sense. Great and fearless thinkers and educationists like Mahatma Gandhi and Aravinda Ghosh repeatedly say: 'The present system of education is to be ended.' It cannot be mended. It is to be re-formed but not reformed. Teachers individually know what is safe for them. If they join any association, there is the danger of their being carried by the current. Then their safety may be lost. They can thus form and work in a corporate way only so long as their work there does not bring upon them the wrath of (1) the Headmasters, (2) the Managers, (3) the D.E.O.'s and (4) the Almighty Government of India. Mr. Venkatarangayya should have led the teachers here and he signally failed to do so.

(2) *S. S. L. C. scandals and their significance*:—That in a few or many schools marks were cooked-up may be a fact. But it shows only that the Moderation Board did not remove the domination by examination or prescribed-mark standard for pass or eligibility, of school-work. Pass mark in examination was not more valued than the required average mark for eligibility. Both come to the same thing in the ultimate analysis. Are not errors inevitable in the beginning of any new venture? For faults of College Principals it is preposterous to heap undeserved blame on Secondary School teachers. It is a common sight to see Secondary School teachers presiding over Elementary School Teachers' Conferences and telling them that the deficiencies of Secondary Schools are largely due to the want of a sound Elementary School education. The 'structure system' theory of education must go. It is to be at once

recognised that each is a whole in itself and that all the several parts are interdependent and ramifying into one another. Conceive of the whole system as an organic whole. Each member is the body and the body is each member. The superstructure theory has obsessed Mr. Venkatarangayya as he himself admits his conviction about its efficiency.

(3) *The wastefulness of holidays*:—His opinion as to College-holidays is not clear. School-holidays are to be restricted. This is a very good and safe idea. It does not provoke any powerful beings. It is good inasmuch as it provides greater time for studies and the Government may support this reform to save idle pupils' brains from becoming devils' workshops. But Mr. Venkatarangayya knows the genesis of this problem. Why does he not prescribe the right remedy for the right malady? Formerly examinations were held in December and results announced in January. So the long summer vacation of two months came within the school-year. Every good student was busy with extending his school-acquired knowledge in the summer and those who wasted the summer rued the consequences of their winter. The right remedy, therefore, is simply to shift the examination to its old position. But to suggest restriction of holidays, taking the present as sacrosanct, untouchable, is cruel to say the least. Let the Government be approached to compel all Railways to issue free tickets to all who wish to go on educational tours. Of course true teachers and true pupils feel and realise all days as holidays—holy days spent in the acquisition and enlargement of knowledge. But this ancient Hindu ideal of teachers and pupils does not fit in with this cast-iron structure system of education.

(4) *Deterioration in the quality of the present-day student*:—Mr. Venkatarangayya has done a service to the teaching profession in opening the avenue to educational research by way of investigation into the question of the fall of the present day students. Is it a fact? If so, who are responsible for it? and how far? Somebody remarked that a pessimistic view and sight of the present as a fall from the past is a sure sign of senility of the observer. We are only too apt to judge the present by the old standards. We should guard ourselves against this general human weakness. A new evaluation of everything is in the mint. Teachers should be eternally young means that their minds should be fresh and ready to take to new standards so naturally, curiously and joyously as children. Another pitfall in the path of investigators of this problem lies in the so-called 'unruliness' of the present students, a sense of which produces prejudice and bias, the Scylla and Charybdis of good judgment. Implicit obedience so far as it is composed of blind reverence for authority is beginning to end. Implicit obedience based on intelligent appreciation is coming into being. Intelligent obedience is always better than implicit obedience—especially when the commanders have to revise their ideas of duty. This to do justice to students. Next to do justice to teachers, it should be noted that the school is only a miniature world. It reflects the life of the country and therefore, the teachers cannot be responsible wholly as things stand to-day. In one sense a subject people have only to follow but not to initiate or lead. Thus they have no life in the real sense of the term. It is, therefore, truly true that we see in schools the shadow of death stalking in the country. A parent requesting teachers

for the boon in the form of the promotion of his children to higher classes as lightly as one would ask for a pinch of snuff is a sad and bitter commentary on the economical and educational condition of our country. Teachers and non-teachers should together investigate.

The above comment on Mr. Venkatarangayya's advice to teachers will be incomplete without a comparison and contrast of it with Mr. P. T. Srinivasa Iyengar's advice to teachers delivered by him as President of the Madras Teachers' Provincial Conference. The former lays stress on the destructive aspect of teachers' work for educational reform. The latter lays emphasis on the constructive side of teachers' activities. The one shows a bias for idealism and pleads for a higher evaluation of teachers' work by teachers as well as outsiders. The other grasps the stern reality of the present and pleads for immediate practical work in a pre-eminently practical way. The two speeches are supplementary inasmuch as construction and destruction are only the obverse and reverse of progress. Both are superficial in not boldly or deeply penetrating into the causes that have brought about the present deplorable state of things. Both are equally guarded and diplomatic in their enunciation of the ideal for which teachers whether severally or in corporations, should strive for. The former simply said that the teacher was formerly 'master' of himself but that now he is only an 'employee.' The other suggests how 'employees' can better their conditions of life by combined action and by getting control of the vote. The two features of Mr. Iyengar's address are a contribution to educational thought. Incidentally his contempt of vulgar control of education is discernible in his address.

From a close study of the two addresses, the present writer makes bold to formulate the following conclusions and offers them for public criticism:—

- (i) गुरुर्ब्रह्मा गुरुर्विष्णुर्गुरुर्देवो महेश्वरः ।
गुरुस्साक्षात्परंब्रह्म तस्मै श्री गुरुवे नमः ॥
अज्ञानतिमिरान्धस्यज्ञानाञ्जनशलाकया ।
चक्षुस्त्वमीलितं येन तस्मै श्री गुरुवे नमः ॥

The teacher is the creator, preserver and destroyer of the Universe. He is the ultimate reality of all human endeavour. He makes by magic touch the ignorant to know as the blind to see. This is the highest conception of the teacher and his work. Let us Indian teachers show it to the world by making it the first duty of teachers and teachers' associations to realise this ideal. Let there be no mincing of matters. This means that teachers should be above law. It must be taken for granted that they can do no wrong. Let teachers rise to their full stature and dignity and become the dictators or directors of humanity. The teachers' association in any land ought to be the paramount power there. Instead of education being a department of Government, the right state of affairs should be to treat government of a country or its State as a department or limb of its teachers' association. Even now to a keen observer of human affairs it is apparent that though for outward appearances the State rules and education is held as a subordinate department, in reality the State is ruled by its teachers directly or indirectly. The greatest menace threatening the world is the diminution of wisdom's influence in the conduct, direction and control of human affairs all over the world. It is, therefore, the supreme duty of teachers to assume their

office and function. Let the teachers therefore, be true teachers.

(2) In conformity with the high or right conception of teachers as indicated above, the idea and scope of education is to be remodelled. There is any amount of work for teachers and teachers' associations to do in this direction. The first thing to do in this connection is to recognise the fact that any system that may be devised is to be fit i.e. it must be such as to make possible the realisation of the object of education which is the production of the highest human being—the right man or God as you please. Ancient India which proclaimed to the world the highest idea of Guru also evolved the best possible system of education. The main features of that system are: (1) It recognises and acts upon the conviction of man's being and becoming god. (2) It recognises and acts upon the conviction of the fundamental unity and oneness of the universe. (3) It views life in its entirety and not in departmental or compartmental glimpses or peeps at it. (4) It assigns equal value and status to all forms of human activity and creates congenial soil for the fullest self-expression of all. (5) It recognises and acts upon the psychological principle that a man's education begins long before he is born and continues long after he is dead. (6) It is highly concentric keeping in bold relief the aim of life, man's realisation of his oneness with the Universe or God. (7) It recognises that man is more than the instrument he uses and thus it is ready to sacrifice anything for man but not man for anything, and lastly (8) It recognises acquisition of knowledge and gift of knowledge as the sacred duty of man and his purpose of life.

Thus it brought about a state of society wherein people instead of clamouring for rights and privileges and shirking of duties, renounced their rights and privileges and religiously took upon themselves the burden of the poor, the wretched, the idle, the sinful, the weak and the ignorant. Verily the earth was a beautiful bit of the paradise. It is the duty of the teachers to bring into being such a millennium again.

It passes one's comprehension why Messrs. Venkatarangayya and Srinivasa Aiyangar, two great and highly-cultured educationists, should not have made a clear enunciation and exposition of the Indian teacher's ideal. Certainly they could have penetrated deeper into the past and seen farther into the future and thus lifted the subject to a higher plane. They remind one of the Congress leaders of old who said much, left unsaid more, did little and asked others to do as they said but not as they did. They always attributed the want of people's response to their castrated appeals to the apathy and indifference of the people at large. These are days of federations of world teachers. The world needs a right exponent of our Indian ideal of education. The work of teachers should be so moulded in thought, word and deed that the way is prepared for the advent of such an exponent to vitalise both the systems and ideals of education. The exponent of the Indian educational ideal must naturally set the evolution of a system of education for the realisation of that ideal as the work of any teacher or teachers' society. He should take an airship survey of the present state of the system of education. From a great height he can see things in their proper place and perspective. In ancient India, the ideal of education was an ornament to the

system of education and the system of education was in its turn an ornament to the ideal. The disharmony between the ideal of education and the system in vogue for its realisation accounts for the discontent and unhappiness that prevails everywhere in the world. The exponent must have a whole-view of the universe. He should rise above the modern mental malady in the form of part-view of the universe, especially of life. Part-view of life engenders a sort of communalism in the aspects of life, like different communities in society become self-centred, exclusive and bitter enemies for the establishment of the kingdom of God. In the field of education,

this partial view of life resulted in establishing a state of affairs where Elementary School teachers, Secondary School teachers, College teachers, Managements, the Government, and the Universities, look upon themselves as all different one from the other. Those who see, see that there is unity running through all this bewildering diversity. The first duty of all teachers, therefore, all the world over, is to realise this unity. They should all combine and make a common cause. They should by their worth resume their role of gods on earth and free all educational institutions of state control and get the state itself under their control and supervision.

Approved as a Text-Book suitable for School use,
vide *Fort St. George Gazette*, Part I-B, p. 547, dated 1-11-1927.

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FOR SECONDARY AND COMMERCIAL SCHOOLS

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

By T. V. SUBRAMANIA AIYAR,

Commercial Instructor, Govt. Muhammiadan College, Madras; Author of
Commercial Correspondance, Book-keeping for Beginners, Graduated Exercises in Typewriting, etc.

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TEACHING OF ELEMENTARY MATHEMATICS.*

By Mr. A. T. PALMER, B.A., L.T.

Headmaster, McLaurin High School, Cooranada.

BEFORE I take one step into the subject permit me to confess I am not a Mathematics man. But as the proverb goes 'a cat may look at the king,' I have undertaken this difficult task because I have so much sympathy for the young people who like me do not possess that mathematical acumen that my mathematical friends possess and are thrown to the background discomfited and discouraged week in week out for want of sympathy. Let me say at once that in this paper I am not going into the methods of teaching Elementary Mathematics. It will be like carrying coals to New Castle if I were to teach experienced L.T.'s such things. Indeed I am not fit to do it as it is well nigh a quarter of a century since I dabbled in the teaching of this intricate subject and methods new and up-to-date have come into existence since.

I should also like to add you won't find anything new or original in what I am going to say. All that I have attempted in this paper is to collect and present to you what I think very important in the interests of the young boys and girls placed in our hands for the learning of Elementary Mathematics. After giving you my own definition of Elementary Mathematics, I shall proceed to enumerate the present-day defects in the teaching of the subject as I find them and explain how they can be remedied. Incidentally other items might crop up which will be dealt with in their turn. Let me start by saying that many of the present-day students

* A Paper read before the Teachers' Association, East Godavari.

are very backward in Elementary Mathematics and something must be done and that immediately if we care to stop the mathematical deterioration of the school-going boys and girls. The chief cause of the state of things I believe is the premature promotion of students into Higher Forms. The agonies that these poor students undergo for lack of foundation in the subject when they come into Higher Forms is indescribable.

Now coming to the definition of Elementary Mathematics, the word elementary is an exceedingly elastic term. I remember as a student a treatise called Elements of Algebra, which in its treatment went beyond the scope of Differential Calculus. I used to wonder, as a boy, if Elementary Algebra was such, what would be the scope of Advanced Algebra? This seems to be the case with the all-embracing sphere of Elementary Mathematics of the S.S.L.C. curriculum. It seems to include everything conceivable under the sun. From Justice Paffy in the Legislative Council to Scouting in a school. Elementary Mathematics is Arithmetic, Algebra, Geometry and what not mixed up and beaten into one, I don't quarrel with the system friends, I find fault with the vagueness of the syllabus. If I am asked to define in my own way what Elementary Mathematics means, I should without hesitation say it ought to include just the working of all such practical problems that usually fall to the lot of an ordinary individual, say for example, the calculation of areas, interest and simple estimation of house building, etc. The aim should be essentially one of practical utility and value. No doubt here and there a problem of academic interest may be introduced just for diversion and amusement. The difficulty of unfamiliar subjects is enhanced by the difficulty of under-

standing unfamiliar language. A greater proportion of failure has to do with the latter. The S. S. L. C. Board should look into this matter with some care and not let examiners run riot in the setting of examination papers.

One great mistake that we teachers commit not only in Elementary Mathematics but in the teaching of other subjects also is that we overlook minor mistakes in students as trivial. It is the trivial mistake that is an obstacle in getting at the right answer. And wrong answer in mathematics is the most discouraging thing to the mind of a young student. Take for example, the wrong formation of numbers *six* like *four*, *zero* like *six*, *seven* like *nine* and *five* looking like any number imaginable. Think for a moment the confusion such malformation leads into and what formidable fractions are developed in the working of a problem sinking the hearts of the trembling student. The very first step in Elementary Mathematics is clear formation of numbers. I cannot excuse a teacher of the lower classes who commits this crime of neglect which is a life-long curse to the poor student. Then take the question of the multiplication table. Have you paused for a moment to see how many even in the VI Form commit blunders like 9 times seven is 56. Or again the very common mistake of $6 + \frac{x}{4} = \frac{25x}{4}$ or $5(x + 6) = 5x + 6$. Accuracy is the basis of all Mathematics. I say teachers ought immediately to begin to take great care of these trivial mistakes before they proceed to anything else. We have to descend to the level of students in teaching Elementary Mathematics.

The next defect in teaching of Elementary Mathematics lies in the fact that many teachers adopt the 'Do you understand' method.

I hope you grasp my meaning. The teacher thinks that the students are quickly following his rapid explanations. I tell you Sirs, not 25% in very bad classes and not 35% of them in the very best classes follow you. Don't believe their saying 'yes'. It is a myth. Make yourselves sure by giving them not one but ten of such problems before you move an inch further. A very good method, though it is a loss of time is to call up a student to the Black Board to work out problems. A lot of their difficulties will thus be revealed. Perhaps you will ask, will not Home work do this? Yes it will, if home work is honest work, which as it is, is unfortunately not. Besides home work with answers readily available does not do much good. Home work in most cases, on the other hand, gives teachers the false consolation that students have done so many sums. Alas! so many sums but not a single sum of their own thinking!

Let us beware also of the intermediate step in the working of a sum—the simplest step to the teacher—a very small step, so easy that it does not deserve a place on the scheme of working, but a tremendous obstacle to the youthful beginner, a stumbling block against which many a student has broken his head. Descend again I say to the level of the poor student.

Perhaps one great defect in the modern student of Elementary Mathematics is a deplorable lack of mental arithmetic. In good old days, before students entered the regular High School classes, they went through the drilling of pial schools, with the result they could tackle lot of arithmetical manipulation mentally. Lack of such mental training is a great handicap at the present day. This has to be

met with somehow or other in the Lower Forms. Otherwise the waste of time in the simple processes of arithmetical addition and subtraction is heart rendering.

It is also a matter of much regret that Simplification of Fractions is becoming a much neglected exercise. If attempted, it is not done in that fine fashion when every step led into every other in a methodical manner, with all the signs, $+$, $-$, $\times$, and equal to in their proper places. This laid the foundation to all neat work and proper sequence in problem working.

In my experience as a Headmaster extending over many years I have noticed another great defect in the teaching of Elementary Mathematics. Teachers as a rule (of course there are noble exceptions and all glory be to them) do not insist on neat working and logical connection of steps. Is not Arithmetic a science of logical reasoning? It is a wonderful subject at school for disciplining mental arraying of thoughts. What do we notice on the other hand in the majority of cases, mere numbers scrawled pell-mell all over the page with not a single word or group of words to make head or tail of what the student is aiming at. A good slice of school education is lost if Arithmetic is not learnt by students as a branch of logical reasoning. It is a good thing the present day examiners allot marks for working—a thing not heard of in our childhood—and yet we were adepts in those days in the use of since, therefore and but in our problematic evolutions. Teachers cannot be too strict and vigilant in training up students in working sums in full and with proper steps and neatness. Slovenliness is the bane of the modern student for which, pardon me if I say, we teachers are mostly responsible.

There is another defect which is generally noticed in our classes and that is the slowness with which a problem is worked. There are students who can hardly work at the rate of a sum an hour and that correctly! Unless time limit is placed on each problem in the class and teachers strictly insist upon it, matters cannot improve. Quickness means life and life means enthusiasm. Brisker the boys greater is their achievement.

Very often problems are set whose idea is foreign or new to the student, for instance, a problem on interest to a child of ten who knows nothing about the transaction called 'interest' or a problem on adulteration of wine to a boy who fortunately or unfortunately does not know what that liquor is. The ideas conveyed in the problem should be familiar to the students. It is a wrong principle to teach general knowledge to students through the medium of Elementary Mathematics. And subjects like Interest, Income-tax, Discount, have to be thoroughly and clearly explained before problems on them are attempted. It is here the knack of the teacher should come into play.

Perhaps this is the place where I should introduce another defect I generally notice in the teaching of Elementary Mathematics and that is the subject is not made sufficiently interesting and attractive. I heard from a school girl the following incident: On a certain occasion their regular mathematics teacher was absent and the Manager, a European lady, happened to take the class in Arithmetic. The teaching was so interesting and arresting the girl who generally hated Mathematics was able to work a sum or two on that day. Is mathematics teaching made sufficiently attractive to students? Are concrete illustrations brought into use in teaching men-

suration, square measure, clock sums, problems on pipes, etc.? Why, Arithmetic ought to be a highly practical subject. I won't be afraid to bring into a class bricks to show how many of them make a cubic foot. Nor rupees, annas, pies to show what net income and gross income are in teaching income-tax. I am not unaware Sir, of the exigencies of time, covering of syllabus, so on and so forth. But we must admit there are real cases when illustrations and concrete examples are valuable and profitable, nay imperative.

Let us now turn our attention to Graphs, those most fascinating things in all Elementary Mathematics. What striking things they reveal! With what ease problems are worked with their help! How they arrest one's attention! Do we make proper use of them? Are they employed to produce that clarity of intricate problems that they are intended to do? When I see the hum-drum and matter of fact way in which Graphs are introduced into a class, the dull, prosaic manner in which they are brought before the student's mind, my heart often plunges into despair. How happy it would be if teachers employ graphs with less seriousness and more visuality and use them more frequently and profusely than at present.

And what about decimals and short methods? Please don't teach them if students don't see their utility. Don't give students pills—especially in Elementary Mathematics bitter pills to swallow. If they realise their beauty, their value, their usefulness, give them more and more of them. But I should mention here the stage where decimals and short methods and approximation should be taught is not the VI Form nor V Form either. It is the lowest form. By the time students reach the higher forms they

should be at ease to employ these. Their fingers must be itching as it were to use them.

I have observed another thing by experience and I have no doubt you too have done so—different students have different problems which they like. Teachers ought to notice this and make students specialise in them. A mathematics teacher should be all sympathy and vigilance. He must not run after the hares but lead the tortoises, the halt and the lame and make them win the race.

In conclusion gentlemen, let me say that no student is inherently wholly backward in Elementary Mathematics. If he is, it is a result of neglect. For one knows as a matter of fact, that the intellect of the average Indian student is much above what it appears to be at the present day.

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WHAT IS NATIONAL EDUCATION?

By

Mr. N. K. VENKATESWARAN, B.A., L.T.,
Vanchiyoor, Trivandrum.

IF it is by no means easy to define education, it is nearly impossible to define 'national education.' Although we may define a thing in clear enough words and still not know what it is, our inability to define 'national education' also implies our uncertainty regarding its nature. Yet 'national education' is so often made the subject of both speeches and writings as though its content is universally known and accepted. It is because we think that 'national education' is something *national* and anything national is dear to a people wishing to become politically free.

It is possible that the expression 'national education' may be a perfectly agreeing or a perfectly disagreeing combination, but it is certain that its sense is not half so clear to the majority of us as its sound is alluring. Education in its essential features is everywhere the same and if it seems to differ from country to country, it is only because different biases are imported into it in different countries. In an industrial country, for example, education might be strongly tinged with an industrial complexion. Does the supporter of 'national education' derive his manifest, and perhaps laudable enthusiasm from any such proposed bias or aim? It is doubtful he does. It is, however, clear, whether we understand the content of 'national education' or not, whether it has any content at all or not, the expression serves at least as a symbol of the growing dissatisfaction with the prevailing educational system of India.

And this dissatisfaction is not confined to the nationalists. While the nationalists ask for

'national education' without, perhaps, quite knowing what it is, others are often content to speak of educational reform. The need for change is admitted by all parties. We must do the justice to the nationalists that if they are too eager for change to ask themselves 'What change?' the practical educationalist is only asking himself 'What change?'

If the country is fond of 'national education,' let it be given it, provided that some useful things are put into it before the gift is actually made over. A new education is the thing whether we call it national education or native education. India is too hungry a land to be able to live on a diet of purely literary or general education. Culture without competence, knowledge without welfare may be education but cannot be much account to India in her present condition. The country has learnt to her cost that a practical education must be more helpful to her than an ornamental one.

A rational system, call it *national* if you like, but let it be rational of education, for India would carry out a universal programme of primary education with a marked bias in favour of practical agriculture. India is a land of (silent, suffering) villages and her predominant village character must continue if not for all time to come at least as far as we can see along the road of time. Primary education for India must, therefore, contain the necessary elements for the amelioration of village-life. It is possible to invest the Three R's with a superstitious sufficiency and to argue that the introduction of any bias into the primary course would be prejudicial to the unimpeded development of children. It is time India learnt to estimate the old

educational orthodoxy at its true worth which, in all conscience, is doubtful enough.

Look at what they are doing in the Philippine Islands. There the new education under American auspices was started with a *definite aim*. It was deliberately 'biased' from the very beginning. They carefully adapted it to the social and economic needs of the people. The primary course there prepares the child for the life into which he is born. It confirms the child in the soil, in those human values which are possible in the land and which, properly tended, must promote general welfare. Their educational policy is marked by a wholesome distrust of general educational ideas and vague formulas. The primary course, therefore, embraces civics, hygiene and sanitation, practical agriculture and handicraft, sewing, cooking and wood-working, besides the essentially usual things. It is a complete course, not a mere beginning and it has been made complete in view of the fact that most children would not know any education other than what is given in the primary schools. Here is an object-lesson for India.

Our primary education, timid and vague, tears the child from his traditional surroundings, which still hold several ancient wisdoms, tears him, as it were, from the mother's breast and sends him into an exile of polished inutility, of purposeless appurtenances. The great error that underlies the prevailing Indian educational system is that primary education has not only been severely restricted but also severely constricted in its scope, has been largely abandoned to the tender mercies of certain theoretical notions of uncertain value. And what is more, while primary education is thus left to drift, secondary and University education are pampered

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and given elaborate 'facials' to be made to look like those of some other country. Imitation is generally no good because we can often only imitate the outside, and it is nothing surprising that we are getting more cram and contempt of manual labour, on which depends so greatly the prosperity of India, than real culture, balance, courage or capacity.

It is but just to say that even this education has done much good to India. That is perhaps because education, misconceived and misapplied as it might be, is still education of a kind. Education is certainly the most vital factor in individual and national well-being and it would be less than justice to ourselves not to strive to take full advantage of it.

No emotional or intermittent enthusiasm can be trusted to deal wisely with this all-important question of 'national education' or educational reconstruction. No country in the world stands to-day in greater need of a *paying education*; no country probably has less of it. Our education cannot conduce to the greater welfare of the people unless primary education is amplified and extended to every one of the seven hundred thousand villages of India. It is a tremendous problem, one before which the educational people must tremble. But it is only in that way that true 'national education' can be realized.

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SOME ASPECTS OF EDUCATION (CHIEFLY SECONDARY EDUCATION).

By Mr. E. NARASIMHA AYYAR, B.A., L.T.,
Science Assistant, Board High School, Bapatla.

1. UNITY OF EDUCATION.

EDUCATION must be considered as one whole and the Elementary, the Secondary and the University courses are its parts. These three parts must be so shaped that one must lead to the other while at the same time care should be taken to see that the aim of each part is maintained. So then these stages must be graded and continuous. As it is, there are two parallel courses in the beginning, one primary and the other secondary, running side by side, the former coming up to a certain point in the secondary course. There is thus some overlapping in the initial stage which means so much waste of money and energy. To avert this wastage the several departments of education must be made continuous. The first stage, *i.e.*, the primary or the elementary education, must be universal and must lead to the next stage—the secondary education. The secondary education must be a training ground not only for those who enter the University but it must equip those, who leave it, with sufficient knowledge of men and things so that they may be able to work independently or enter any department of life, should they happen to discontinue at that stage. The aim of the former course should be to give to all people the minimum knowledge necessary for the proper understanding of the elementary principles of life; while the latter must, as far as possible, be complete in itself and anybody who has undergone that course must be in a position to stand upon his own legs for his living. The University

education will cater to the needs of those who want higher and more cultural and professional training. Therefore the first and foremost thing to be done in the matter of education is that the distinction between elementary and secondary or between secondary and University must be brushed aside—the three courses being considered as logical and sequential parts of one main whole.

2. CONTROL.

The University being solely responsible for the control and direction of education imparted in colleges, the University course may be left to be controlled by the University itself. But the first two must be under the control of the District Education Boards. There must be only one Education Board for each district to control education in the district—both elementary and secondary. The District Educational Council and the District Secondary Education Board that are now functioning separately may be amalgamated into one body called the District Education Board, which must exercise the same powers as are now vested in the two bodies, of course with some modifications to suit the altered constitution. The strength of the suggested Board may be fixed at 32 which may be distributed as follows:—

- | | |
|-----------------|---|
| | 1. The President of the District Board |
| | 2. The D. E. O. |
| 1. Ex-officio 4 | 3. The Deputy Inspector of Schools of the Headquarters Range. |
| | 4. The Inspectress of Girls Schools |
| 2. Nominated 4 | (2 for women.
(2 for minorities). |

- 2 for Headmasters.
4 for L. T. Assistants.
4 for Secondary Grade Teachers.
3 for the District Board.
3 for Municipalities
3 for Non-mission Managements.
3 for Mission Managements.
2 for Teacher-Managers

3. ELECTED 24.

3. COURSE.

The Primary School course must be one of 3 years' duration in which in addition to the Three R's, agriculture and gardening must be taught and the teaching of these two subjects must occupy a third of the school time. The Secondary School course which must begin in the I Form and go right up to VI Form must have the following subjects:— (a) Music and Art and Literature to develop aesthetics, (b) Hand-work and Craftsmanship to develop creative skill, (c) Popular Science to widen interests of man in the world around, (d) religious instruction to develop moral training, (e) physical culture to improve the physique of the pupils, as the chief aim of the Secondary School course is to make the pupils self-sufficient and self-reliant. Again throughout the whole course the Secondary Education must be given a vocational bias and so subjects that give training to the hand and eye must be introduced in addition to the subjects that are necessary for developing the cultural aspect of man. For the sake of convenience in the first three years, *i.e.*, in the I, II and III Forms, Vernacular, English, Mathematics and General Knowledge (a general outline of the whole Geography, Indian History and some of the phenomena of Nature scientifically explained, Drawing, Agriculture and a vocational subject must be included in the curricula of studies while the higher Forms must have the following curricula of subjects:—

A. Language and Literature Group.

- | | |
|---|---|
| 1. Vernacular or an Indian classical language and English | } for cultural development. |
| 2. Mathematics | |
| 3. Science | } for accurate thinking and proper reasoning. |
| 4. History and Geography | |
| | } for wider knowledge of men and things. |
| | |

B. Art and Craftsmanship Group.

- | | |
|-------------------------|--------------------------------------|
| 1. Agriculture | } for practical application in life. |
| 2. Manual Training | |
| 3. Book-keeping, &c | |
| 4. Drawing and Painting | |
| 5. Music | |

C. Physical Culture, Moral Culture. } Give completeness to education.

4. CLASSES.

To ensure efficiency and thoroughness of instruction, the classes must be reduced in strength to 25 in the lower forms and to 30 in the higher forms and as far as practicable the classes must be held in the open air.

5. EXAMINATIONS.

There must be two examinations one, at the end of the Middle School course and the other at the end of the Secondary School course. The subjects to be brought up for the first examination are Vernacular, English, Mathematics and any one of the remaining subjects. Pupils appearing for the final examination must bring up all the subjects of A and one of B. There should be no practical examination in Science subjects as the classes will be unwieldy and hence practical work cannot be insisted upon. Again practical work is only a chance test and many a useless pupil has been able to score up marks in the practical test while he cannot explain the simplest phenomena in science. Further the system of conducting the practical examinations is not at all satisfactory. Again, practical work is possible only if there is specialisation.

In the scheme under discussion there is no room for specialisation.

6. PAPERS AND HOURS OF EXAMINATIONS.

The Middle School Examination will have the following papers:—One paper of 2½ hours' duration for each of the subjects and the maximum for each will be 100 marks. There must also be a *viva voce* examination in English and Vernacular, the maximum of marks for each being 50. So, for English 150 marks and Vernacular 150 and the total for all the subjects 500 marks. For a pass a candidate should secure 30 % in English, Vernacular, and Arithmetic and 25 % in the remaining subjects.

The School Final Examination may have the following subjects and papers:—

1. *Vernacular*—Two papers each 2½ hrs.
 - (1) Text and Grammar ... 50 marks.
 - (2) Composition and Translation ... 50 "

and a *viva voce* Reading and Recitation ... 50 "

Total ... 150 marks.

2. *English*—Two papers each 2½ hrs.
 - (1) Text and Grammar ... 50 marks.
 - (2) Non-Detailed Text and Composition and Translation ... 50 "

and a *viva voce* Reading and Recitation ... 50 "

Total ... 150 marks.

3. *Mathematics*—Two papers each 2½ hrs.
 - (1) General Mathematics... 50 marks.
 - (2) Algebra and Geometry. 50 "

Total... 100 marks.

4. *Science*—One paper 2½ hrs. (to comprise Physics, Chemistry and their practical applications in life) ... 100 marks

5. *General Knowledge*—Two papers each 2½ hrs.
 - (1) Indian History and Geography of India ... 50 marks
 - (2) British History and Geography of the British Empire ... 50 "

Total ... 100 marks

6. *One subject in "B" Group*—One paper 2½ hrs. ... 100 marks

Also there must be a test for gauging the development in the physical and moral culture of pupils. This may take the form of a proficiency certificate which must accompany every application for the final examination.

The District Education Board must be empowered to examine the pupils and declare the "eligibles." The Board must also have powers to issue certificates to the successful candidates. The present system of maintaining a register must disappear from our schools as the registers now in vogue do not at all serve any useful purpose nor do they really show anything about the candidate's real worth. This sham of the S. S. L. C. book must go. It is enough if the successful candidates are given certificates containing particulars with regard to (1) the school in which they studied last, (2) the centre of the examination, (3) subjects brought up and (4) the percentage of marks obtained by the pupils in each subject and (5) the class and rank of the pupils. For a pass, a student should secure 35 % in A and 25 % in B and 35 % in

the aggregate as minima. For a first class 50 % in Language and Mathematics and 50 % in the total, and 40 % in Language and Mathematics and 40 % in the total may be fixed for a second class and those that satisfy the minimum pass test must be put under third class. Pupils coming under I and II classes must be given their ranks in their respective classes. This will be an incentive. One of the causes for the present deterioration in education is the absence of such an incentive.

7. TEXT-BOOKS.

There must be text-books for almost all the subjects taught under the scheme. The fetish of syllabuses must be driven out of our school rooms. The substitution of syllabuses for the text-books and the consequent worship of notes and summaries have told much upon the efficiency of the products of secondary education.

English.—For detailed study the text should contain 75 pages of prose and 700 lines of poetry—the selections being taken from standard writers. All the 700 lines to be got by heart. This is for the higher forms. Easy lessons of 50 pages of prose and 400 lines of poetry should be prescribed for the Middle School course—all the 400 lines to be memorised.

Regarding text-books for non-detailed study, the fewer the books, the better. In the lower forms, the study of non-detailed books should not be insisted upon. For the higher forms one book for each of the IV and V Forms and two books of easy style for the VI Form may be prescribed.

As for Grammar, a systematic course in Grammar is essential in all classes.

Regarding the other subjects the portions in them must be curtailed and the whole thing re-adjusted so that the salient points in each subject may be learnt by the pupils.

N.B.—What has been said with reference to English must be applied to the Vernaculars.

The course in Physics and Chemistry may be practical so far as the teaching is concerned. But there is a great difficulty. The whole class cannot be conveniently taken through a practical course. A few pupils who have the special aptitude for the subjects may be given a course of practical training in some chosen experiments if that is considered necessary. Even then, there need be no practical examination in those subjects. But such pupils as have undergone a practical course in those subjects must be required to produce a certificate signed by the Headmaster and the Science Master of the school from which the pupil is appearing for the examination. The certificate for the Science practical work may be like the following:—

This is to certify that has done and recorded carefully..... experiments out of..... for the year, the number of periods of 50' each devoted to Practical Physics or Chemistry being..... of His work in..... has been assessed at.....%.

Date.

School.

Headmaster.

Science Master.

8. TEACHERS.

In every school teachers are working under a high pressure system. The causes for this state of things are not far to seek. Want of freedom to teachers, want of good and right

understanding between the head teacher and his assistants and the domination of vague and heavy syllabuses to satisfy the demands of the incubus of examinations are the chief ones. Growth is possible only under a free atmosphere. At present there is no love lost between the Headmaster and the Assistants almost in every institution, because of the petty tyrannies of the former. Teachers are unnecessarily teased by Headmasters—of course, honourable exceptions apart. The Headmasters assume the role of autocrats and look upon their Assistants as so many bipeds. The panacea for the ills and evils that are at present hovering over the schools and vitiating the school atmosphere is the doing away with the supervision of the Headmaster and making him do teaching work at least for half the school-time daily. If this change is brought about, school assistants will be relieved of half their groaning. Under the existing circumstances the Headmaster does nothing but check the diaries of so many masters under him. He always finds loopholes but never offers any constructive suggestions. Again as the Headmaster has no such restrictions and checks placed over him, the tendency is that he always rides rough-shod over the helpless and voiceless assistants. Therefore if secondary education is to be made efficient, the sooner the supervising inspection of the Headmaster ceases to be such, the better. Besides, in most cases the supervision takes the form of inspection which seriously interferes with, and hampers, the progress of the lessons, not to speak of the demoralising effects which such supervision produces on the relationship between the teacher and the taught.

There is another serious drawback in the present-day secondary education. Most of the teachers' time is spent in writing notes of lessons, which are prepared only for the sake of inspection, and in the correction of the

written work of the boys, which work is, in most cases, ugly and slovenly and pupils do not care to look into the corrections made by the teacher—and very little time is left for him for his self-improvement. Instead of being a scholar spending his time in the company of books during his spare moments, the modern teacher has to waste his precious time in doing some mechanical work, *viz.*, copy-writing, writing of exercises and giving red and blue pencil marks to the note-books of his pupils. The teacher must be given ample opportunities to read pedagogical literature, indigenous and foreign, and must be encouraged to do some experiments in his own field.

He must be assisted both by the Government and the management in this direction. The management should allow him to undergo special training periodically by giving him leave and the Government must come forward to help the management by awarding adequate grants to enable the manager to assist the teachers in this work ungrudgingly.

The kind of inspection that the schools are now having is not at all conducive to any satisfactory progress of education and should be replaced by a better type. There must be periodical Conferences of the D.E.O.'s and the teachers, wherein educational problems and experiments and suggestions for the better working of the system should be freely discussed. The D.E.O.'s must be in a position to lead and guide the educational system on sound lines, acting as philosophers, friends and guides to teachers.

Schools must be made real centres of light and learning. The Headmaster and his lieutenants must look upon the school as a temple and conduct themselves accordingly. The internal affairs of the school should be entirely in the hands of the Headmaster assisted by a School Council consisting of

some members of the staff elected from among themselves on matters concerning the internal administration of the school; the decisions of these School Councils should be given greater weight. Personal equation should not be allowed to vitiate the school affairs and schools expect every person connected with them to do his duty.

9. MANAGEMENT.

The managements must come in for a large portion of the blame that is levelled against the modern educational system. What with the unsympathetic treatment meted out to teachers by the managements and what with the niggardly way in which institutions are now-a-days conducted by some calculating managers, especially the Committee Managements, many a school-master has been groaning under very many disabilities such as insecurity of tenure of service and an ever-threatening financial strain and in consequence he has not been able to turn out efficient work. The managements must change the angle of their vision over a broad range and look upon the plodding pedagogues as the real builders of the nation and treat them with kindness and courtesy.

10. THE GOVERNMENT.

The Government should always be solicitous about the advancement of education in the country, as the education of the people is one of the primary duties of the State; and in this they are assisted by a large number of aided schools and also by a big army of teachers. So in fairness and in recognition of the hard work of the teachers, the State must extend its helping hand to teachers by granting liberal subsidies to schools and by making the teachers State servants which has become an accomplished fact in Ceylon which

is not far from India. What is possible of accomplishment in Ceylon must be possible in India also. The only thing that is required is *the will* on the part of the Government. Where there is a will, there is a way.

11. MEDIUM OF INSTRUCTION.

Throughout the course, vernacular must be made the medium of teaching in schools in respect of non-language subjects. This does not mean that every word must be translated into the vernacular. Words of foreign languages that do not lend themselves easily to be translated may be bodily transposed and transliterated as otherwise the vernacular words and expressions would be more difficult than the English words and expressions. The vernacular should be the medium of instruction and its help must be sought only so far as the imparting of knowledge is concerned. Specialisation should go away from the school course.

12. CONCLUSION.

The ideal of education, which is the suppression of the lower and elevation of the higher or divine nature of man, *i.e.*, the ideal of self-determination in man, should be kept in view. And therefore education must be such as will gradually lead to the fulfilment of the ideal. The most important factor in the realisation of this self-determination in man by education is the teacher and the teacher must always have for his guidance the seven lamps of his architecture. They are Idealism, Enthusiasm, Optimism, Patience, Eloquence, Silence and Love.

ROMULUS OR THE FUTURE OF THE CHILD.

By

Professor INDRADEVA TIWARY, M.A.

Benares Hindu University.

I.

THIS is delightful and thought-provoking book in the *To-day and To-morrow Series*, published by Kegan Paul. The author, Mr. R. T. Lewis, discusses the advisability of having a net-work of Nursery Schools in England, maintained by the State for the education of children of two to six years of age. To a large body of people, the slogan, "The child's place is the home" is an accepted truism. Mr. Lewis however thinks otherwise. He doubts the ability of parents to carry out the task.

The home and home-life are changing. There is the difficulty of sufficient accommodation. "Space-limitations of the house make birth-control a more necessary study than that of parenthood" and that "with the arrival of the first born, come shades of the prison house. For years man and wife may be unable to go out together. The unity of the family life is broken from the start." The childless couple is much happier. The modern home is not in ninety cases out of a hundred a place suitable for the rearing of children.

Parents are as a body not qualified for the delicate work of child guidance. Child training is a highly technical matter. Few parents have the necessary qualifications. Hence the author's plea for making nursery schools an integral part of the educational system.

II.

The author's remarks on the discipline of the pre-school child and the importance of play in his education are very sensible. The

dictionary in defining discipline emphasises its double function, the building-up of serviceable habits and the breaking down of un-serviceable habits. Few parents appreciate this double function, regarding discipline as synonymous with punishment and confining it almost entirely to the breaking down of those habits which do not suit those with whom the child comes in contact. The cane has long been its accepted symbol, and discipline has consequently been more concerned with "don'ts" than with "do's."

Smacking and thrashing are not only brutal but as a means of obtaining obedience, altogether unnecessary. Such punishment must appear an injustice and arouses hate. "Though like all parents I have indulged in it to a small degree myself, I am convinced that on each occasion it has done more harm than good." (Page 55).

All investigators into the psychology of play agree upon the supreme importance of this activity of childhood and the necessity for the appreciation of its importance by the parent and teacher. The author is not in favour of giving the pre-school child the finished toys of the modern toy-shop. The true toys are found in the Montessori apparatus.

III.

What exactly is a nursery school and how far is it a school in the accepted sense of the word? The picture of young children cooped-up within four walls, drilled into obedience by the teacher, taught things in which they are not interested, comes to the mind.

The author's picture of a nursery school is one that seeks to remedy the defects in the conditions of home life. It is a species of Montessori or McMillan school with health as its objective. It provides for free movements

in fresh air and sunlight, training in all desirable bodily habits, particularly personal cleanliness: games, hand-work, physical exercise and "walking, hopping, skipping, marching, running and arm exercises are particularly valuable. Fullest advantage should be taken of life in the open air, and all those activities for which open air life affords scope, such as cultivation of little gardens, the care of birds and pet animals, the observation of beautiful things in nature, as well as natural romping and playing."

Miss Margaret McMillan, to whom the Nursery School movement owes so much, sets forth the aim of the school as follows:

"What kind of education will you give in this place to your little ones? Well, to begin with, the new environment is an education in itself. It is stocked with nature's apparatus.

Suppose, you want to develop the touch sense. Lo! here are a score of leaves, hairy sunflower, crinkled primrose, glossy fuchsia and the rose. Do you want to compare colours, to note tints and shades; well, here is wealth a-plenty. The herb garden will offer more scents than any one can put into a box, and a very little thought will make of every pathway a riot of opportunities. Not, of course, that we do not use type apparatus. Not that we have not colour tablets here, and also insects. But what are these if they are to be used only in classrooms and we are to be familiar only with cupboards. No, let us get out while we are little. For the greatest schools—the schools immortal of Syria, of Athens, too, and Venice, and even of Paris—these were roofed only by the sky."

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EDUCATION AND NATIONAL RECONSTRUCTION IN INDIA.

By Mr. A. S. VENKATARAMAN.

INTRODUCTION.

IN every country, reformers, legislators, agitators, stump-orators not excluded, are busy planning or discussing schemes of education and its part in the process of National Reconstruction, mostly with the idea of fostering national consciousness and solidarity. However hard the Pacifists and the Internationals may try to impart a cosmopolitan and an international outlook to every subject of importance, the nationalists cannot get away from the idea of national greatness, national glory, and national interests, which divested of all verbiage, must mean only national exclusiveness.

'NATIONAL' IN A RESTRICTED SENSE.

It is however in a limited sense that the term 'National' will be here used, for the very reason that national consciousness is only slowly coming into existence, and that national exclusiveness is only an unhappy sequel to national consciousness, if no room is given for the free play of international forces. It will be admitted on all hands, that a sense of nationality should be cultivated in times of peace, as in times of war, as a part of any concerted programme meant for national progress.

EDUCATIONAL PROGRAMME AND NATIONAL NEEDS.

Now, education has got to play a vital part in national reconstruction or in the building-up of national forces. I deem that every nation has before it a goal, a plan and a programme, and that in the same way, India too, should have a goal. It is but fair to argue that education should be adapted to

national needs, circumstances and ends, and if it is not so adapted, it is either mischievous or perilous in its effects. Now the national goal may be immediate or remote and may vary from time to time. In that case, schemes of national education must be so adjusted to different or varying needs. Education, as it is commonly defined, is a process of adjustment to environment and the essential corollary is that there is a need for a suitable alteration of educational programmes in conformity with national needs. The question for us is, how to chalk out a programme to fit in with the modern educational needs of India.

HISTORICAL RETROSPECT OF ENGLISH EDUCATION.

Even a casual student of Indian educational programmes cannot but be struck with the fact that the educational system at present is too ante-deluvian, too wooden, too iron, too inelastic to be of any use for national ends. Planned at a time when there was a demand for English-knowing clerks, the system is still in force, when the *raison d'être* of it has ceased to exist. As it still is in vogue, it has all the remnants which suit ill with modern requirements. We need not labour the point that in ancient India, the chief feature of national life was one of rural economy. The village besides being the unit of administration, had also its industries and its schools. All these were of a piece with the peaceful, ordered life of village organisations. Dynasties rose and fell but the village republics remained unaffected. Even during the Moghul rule, the features of village life remained intact. There was no super-imposition of a foreign culture over that of the Hindu, and in all its essentials it was the same as it was centuries before. With the advent of the English however, the situation became

altogether changed. One thing about this new culture is its power to enthral its adherents, and to victimise its votaries. The village industries could not withstand the competition of cheap foreign manufactures, and so declined. The arts and crafts which stood the villagers in good stead in their off-season, all fell into decay. With the introduction of the English language into schools, the indigenous schools were neglected and vernaculars too fell from their positions of importance and greatness. The schools, in which English was taught, were thronged with eager pupils, and became factories for the manufacture of quill-drivers. The Government offices first absorbed them and continued to do so for some time. There came a time at last, when the supply of quill-drivers and a hierarchy of administrators exceeded the demand for them. To quote from Sir Charles Trevelyan's paper on "The Political Tendency of the Different Systems of Education in India": "The spirit of English literature on the other hand cannot but be favourable to the English connection. Familiar acquaintance with us by means of our literature, the Indian youths almost cease to regard us as foreigners. They speak of our great men with the same enthusiasm as we do. Educated in the same way, interested in the same subjects, engaged in the same pursuits with ourselves, they become more English than Hindus, just as the Roman Provincials became more Romans than Gauls or Italians. What is it that makes what we are except living and conversing with English people, and imbibing English thoughts and habits of mind? They do so too; they daily converse with the best and the wisest Englishmen through the medium of their works; and form perhaps a higher

idea of our nation than if their intercourse with it were of a more personal kind. There is no class of our subjects to whom we are more thoroughly necessary than those whose opinions are cast in the English mould."

RESULTS OF ENGLISH EDUCATION.

Now there are two inevitable results. The demand for English-knowing clerks has slackened considerably but their supply, because of the multiplication of schools and Universities, is increasing in a geometrical progression, so much that one is tempted to exclaim: "The supply has increased, is increasing and must be diminished." At the same time, there has been another unfortunate result. The English-knowing Indians in general, and the officers and clerks in particular, become enamoured, not only of the new language but also of the English dress, manners and customs. The English dress is preferred to the Indian costume, the English language is set over the Indian vernaculars and the English-knowing Indian becomes a stranger at home. That is why, there is a wide gulf between the English-knowing classes and the masses of the people. The English-knowing classes have long been selfish and exclusive, the Government has been slow in the matter of educating the masses therefore have been marking time. It is obvious therefore that while the need for a good number of schools, where English is taught, has vanished, they are ever on the increase, and have become costlier than before. The masses have been left in the cold. They have been shunned by their countrymen, and discarded by the Government, though of late, attempts are being made to raise them out of the quagmire of ignorance and illiteracy. The tendency all along has been to equate the English-knowing with the educated people and the

non-English-knowing with the uneducated. A premium has been placed upon a foreign language, and the more foreign a person is, the more thoroughly educated and bred he is supposed to be. A foreign degree is a passport to superior services and to prize posts, and the Indian degree is a hall-mark of inferiority.

EDUCATIONAL IDEAL.

We are compelled to the inevitable conclusion that English education has not been much of a success, and that modern education in India is neither national nor rational nor modern. It is out of place and out of time. It is high time for us to overhaul the educational system and make it suit the altered conditions of society. The accepted ideal in education is that the school is a nursery of citizenship. If it is so, it follows that education is the relation that exists between the school and the every-day world. It is not an isolated phenomenon but vitally connected with and fundamentally based on the environment and experiences of the child, in order to fit him for the work he will have to do in after-life. The curricula of studies must be adapted to the life conditions of pupils. This pre-supposes or implies the necessity of the medium of instruction being the mother-tongue. Probably in no civilized country is it that the foreign language becomes the medium of instruction in schools and colleges. Educationally it is an unsound policy to adopt the foreign medium, as it is in other directions, socially and politically. It leads to social disruption, political subjection, intellectual inanition and decay, and moral degradation.

SCOPE AND AIMS OF INDIAN EDUCATION.

Side by side with the adoption of the vernacular medium in schools and colleges,

a mobilisation of forces should be made for effecting schemes of mass education. Unless schemes of organisation of mass education are taken on hand, the social cleavage between the masses and the classes is likely to become wider and produce pernicious results. Not only is it that education should not be the monopoly of this class or that, but also it is highly essential that the aim should be for one to gain knowledge and skill, and what is more, to give it to others, benefit them and be benefited by them. Adult education programmes, social, collective and co-operative educational schemes should be worked by bands of scholars. It would be better if it is made obligatory on the part of each student to train a number of adult classes. I should think that no educational programme will be successful to a degree, unless it promotes or is intended to promote the virtues of selflessness and service. At the same time, a note of warning is to be struck. I detect here and there in schools repercussions of the class struggle and class domination so peculiarly characteristic of our present adult political life. If these unhealthy symptoms should find a ready soil in schools, woe be unto that day! For then, the founts are poisoned, the schools become the nursery of class domination, struggle, jealousy, strife and disunion, and the future of the country becomes a dark horizon overcast with inky clouds. As Mrs. Linen remarked vehemently but justly: "The school is rather an embryo and a symbol of the future society without classes."

CURRICULA AND METHODS.

The aims and scope having now been made clear, the curricula and methods also may now be suggested. There is a good measure of agreement on the point that the same curriculum of studies or subjects cannot be

deemed good for all schools over a large area, co-extensive with the limits of this Presidency or any other province. What is meant is that the curricula and the choice of subjects have to be governed by the conditions of the neighbourhood, for it is, what is often called, the practical laboratory of the school. Most of our towns are only enlarged villages, and as they are, the advantages of modern civilised life or the amenities of modern social life should be introduced into them. The aids due to Cinema, Broad-casting and other improved appliances may be indented upon. For that matter, if the scheme is likely to be costly, a definite bias should be imparted to each school, say, an agricultural bias to most of the schools, an industrial bias to a good many, a classical and a religious bias to a few others in each province. The method also has to be suitably devised. For it will be clear as the noon-day sun that life in schools at present is highly artificial. Book-learning, first, second and always, is resorted to. The learning is confined to set books, and a mentality independently of them is yet to be born. The schools are so book-ridden, rule-of-thumb-ridden, department-ridden, examination-ridden that a reaction has to set in. A standard of revolt must be raised against artificiality, uniformity, the examinations and excessive State interference. It is unnecessary for one to labour the point that many greatest men of the past, kings, statesmen, commanders of armies, governors, entrepreneurs, discoverers, leaders and inventors, were not literate but not, on that account, less successful than their literate compeers.

In his "What India can teach us?" Max Muller says: "There is such a thing as social education and education outside of books, and this education is distinctly higher in India

than in any part of Christendom. Through recitations of ancient stories and legends, through religious songs and passion plays, through shows and pageants, through ceremonials and sacraments, through fairs and pilgrimages, the Hindu masses all over India, receive a general culture and education, which are in no way lower, but positively higher, than the general level of culture and education received through schools and newspapers or even through the ministrations of the churches in Western Christian lands. It is an education, not in the so-called Three R's but in humanity." As it is now admitted that the key-note of any educational programme should be service in the cause of the country and humanity, the process of auto-education is about the best educational method that can be proposed.

SELF-EDUCATION THE BEST EDUCATIONAL METHOD.

As we learn swimming by practising swimming, so we get educated by a process of self-education. Everywhere, this scheme is advocated. It means nothing but a pursuance of the maxim "Back to Nature," in educational matters, as in other matters. Life is a simplicity complex and each band of scholars has to live for a time, the life of different men, as they live together. For instance, a number of schools join together and form a health complex. They try to live in healthy surroundings and to follow the hygienic conditions of life. This becomes the model for others, young and old. They may also go about in the town, helping the townsmen in their efforts to lead healthy, sanitary lives. They put their theory into practice. In the same way, other subjects may be treated as complexes, children's life, community life, human relations, work, nature, industry, agriculture, etc. It is quite easy to plan very many schemes but not so to bring them to a successful termination. It may be that we may fail but let us have the determination to try and fail, for there lies the way to success. I need hardly add that self-education is a means and an end by itself.

THE TEACHING OF LOGIC.

By Mr. K. R. SREENIVASA IYENGAR, M.A.

THE study of Logic is sometimes condemned on the ground that it treats only of the form of thought in entire disregard of the particular contents or matter of actual thinking. No one has laboured more to expound this aspect of the question than Dr. Schiller—the Humanist Philosopher of Oxford—who in his volume on “Formal Logic” has attempted to exhibit the “hollowness of the pretension” of Logic from first to last. In his own words, his work is “an attempt to expound the traditional doctrine strictly that it is possible to study the formal truth of thought irrespective of its truth in point of fact, and to shew that this fundamental abstraction everywhere leads to failure, failure both to account for the procedures of human thinking and failure to attain even formal consistency.” “His conviction” is that “It is not possible to abstract from the actual use of the logical material and to consider ‘forms of thought’ in themselves, without incurring thereby a total loss, not only of truth, but also of meaning.” (*Formal Logic*, pp. viii, ix.)

Without professing to offer explanations for all the difficulties raised by Dr. Schiller in his work (a task which would in itself demand an entire volume), I shall only attempt to meet his fundamental objection (above stated) to the possibility of a Formal Logic, and thus clear the ground for the few words I wish to say on the method of teaching this science. Doubtless it is true that Formal Logic endeavours to study only the forms of thought and aims to secure what is called consistency in thinking. But no logic—or whatever you may choose to

call a study of the theory of thought—can pretend to accomplish more. Were material truth or the truth of the actual contents of our conceptions and judgments and reasonings—“objective” truth, as it is technically called—to become the goal of our study in logic, logic would then only be another name for all of the “departmental” sciences put together. Nobody imagines that this would be a happy consummation devoutly to be wished for. What then is intended to be conveyed by the charge that logic disregards the real or material truth or falsity of our proposition? Is it intended to imply that it neglects the actual rise and conditions of thought in the individual human mind? Does it mean that logic overlooks, as immaterial for its purposes, the hopes and fears, the particular desires and attitudes, the concrete situations, the actual psychological processes of the mind, which generate our judgments in daily life, that it abstracts these judgments from their actual contexts and considers them in isolation? Dr. Schiller is not at all clear as a logician would wish him to be on this point. It, by his criticism of Formal Logic, Dr. Schiller really means that it entirely sets aside the concrete psychical setting of our thoughts which it pretends to evaluate, he would then appear to be in favour of merging Logic in Psychology which is at present growing up as an independent science. True it is that the concrete psychological context, which in any given case, gives rise to a thought or judgment, colours the meaning of that particular thought or judgment and, to that extent, makes it unique in character, and thus less a “type” for the logician to deal with. But the suggestion that the logician ought to be able to take cognizance of this meaningful individual colouring in the case

of every judgment can only appear ridiculous when it is remembered that here, as elsewhere, abstraction is of the very soul of science, and it is this abstraction from the particular context of individual thinking which renders Logic's treatment of thought formal.

Indeed, a little reflection would produce the conviction that, in a sense, every science treats only of the general forms of things. Physics, for instance, discovers only the various forms of force or “energy”—light, heat, electricity, magnetism, etc. It does not tell us anything about the particular setting—physical, atmospheric, and other kinds of environmental and personal setting—of this light in my room, or that heat in my neighbour's stove, or the flash of lightning which killed my beloved friend (however concrete and rich and vital such a setting may be to the parties concerned) but only formulates (mark the significance of the word *formula*) the general principles or conditions of these natural phenomena, studies, that is, their common forms in disregard of their matter or the actual cases in which such phenomena find their illustration. Biology, again, is concerned only with the general principles and conditions of life, both vegetable and animal, with the forms or types of life, in fact, irrespective of the concrete particularities of life. And likewise with all the other sciences. Even Psychology, which is believed by Schiller to be concerned with thinking as guided by a person intervening and directing the course of thought in accordance with his interests and ideas (*op. cit.*, p. 14) does not as a science deal with the “jungle of wishes, desires, emotions, questions, commands, imaginations, hopes and fears” of mind, but with the general forms of psychic life, sensation, conception,

imagination, etc. Assuredly, it is everywhere with forms or “types” of phenomena that science has to do. And for a very good reason too. It would be well-nigh impossible, and nearly fruitless, for any science to treat of every particular instance and the concrete setting of the phenomena it surveys. Such an attempt would frustrate the very object of science, viz., to discover the relations of sequence and succession, of cause and effect amongst groups of phenomena coming within its province. Abstraction, therefore, is the key-note of the scientific method. It is at once its strength and weakness. Science too, no doubt, pays a price, like Logic, for this abstraction. If, as Schiller complains, logical abstraction leads to the consideration of terms, and propositions and inferences which are merely the ghoulish forms of concrete thinking, scientific abstraction condemns us to a “mean” or “average” which nowhere exists in the universe of discourse; to “laws” which are only statements of ideal conditions, etc. If Logic has to employ certain fictions and falsities for its purposes, they are at any rate no worse fictions than the atom or the electron, the centre of the earth, perpetual motion, a perfect circle, $\sqrt{-1}$, etc. In short, the logical method is everywhere the “form” or type of the scientific method, and it remains one of the unintelligibilities of philosophy (or, shall I say, the vagaries of critical thinking) that a thinker like Dr. Schiller, who is such a devoted student of science and scientific methods, should have overlooked this characteristic of scientific procedure and thought fit to anathematize logic on the score of abstraction and formalism. Even Psychology, which according to him, appears to be concerned with the actual thinking processes

of individual minds, has not been able to escape formalism. The most modern writer in the field, Prof. C. Spearman, whose work on "The Nature of Intelligence and the Principles of Cognition" has almost revolutionised the foundations of Psychology, enunciates his basic "principles of cognition" both qualitative and quantitative—(Apprehension of experience, eduction of relations, and eduction of correlates, retentivity, etc.) which he appropriately designates the "form," along with the "material" to which this form can possibly be applied (p. 344). Let me give the distinction between "form" and "material" in his own inimitable language.

"The 'form' is, in fact, only the aggregate of those attributes of the occurrence which remain in all instances similar; whereas the 'material' is composed of such attributes as may vary from one instance to another. Consider, for illustration, the first law of physics 'every body perseveres in its state of rest or of uniform motion in a straight line.' All instances of this are similar with respect to the bodiliness, perseverance, rest and uniform motion, etc.; but they admit of diversity with respect to size, density, speed, and so forth."—(P. 49.)

No better discussion or illustration could be given in respect of the validity of the distinction between form and matter, nor could any more decisive reply be brought forward to Schiller's fundamental contention—decisive, because it is a reply from the camp of Psychology itself—a science to which Dr. Schiller appeals at every point of his criticism of Logic.

I

But every science can be degraded to mere "formalism" in quite a different sense, by

robbing the spirit or soul of it in trying to emphasise over much the technical details to the exclusion of a healthy exposition of its principles. And for a long time Logic has been suffering under the tyranny of such frigid formalism. The belief has been engendered, and is widely advertised and accepted, that Logic is on a par with Mathematics (being its substitute, so to say, in our University training), and since a teacher in Mathematics is not called upon (in the early stages, at any rate) to expound the basic principles of his science to his pupils but begins right with problems and exercises, the teacher of logic likewise claims immunity from the burden of the exposition of principles and "gets" directly to his problems and exercises. Exposition of principles is so much weariness of the flesh. It is, on the other hand, so much easier, more convenient and business-like to "work" the "practical" portions in logic. And forsooth, they do work something like mathematics. Consequently it is not unoften that we find the Logic examination paper of the Intermediate standard, for instance, run in the following form:—

I. Describe the logical characteristics of the following terms:—

* * * *

II. (a) Criticise the following definitions, pointing out what rules, if any, are violated by them:—

* * * *

(b) Divide the following logically:—

* * * *

III. Cast the following sentences into the logical form giving the obverse, the converse, the contrapositive and the inverse of each:—

* * * *

Or

What is the logical relation between each of the following propositions?—

* * * *

IV. (a) Prove the special rules of the fourth figure.

(b) Prove generally that when the major term is predicate in its premise, the minor must be affirmative.

(c) If the major be distributed in its premise, etc., determine the mood and figure.

V. Reduce the following arguments both directly and indirectly:—

* * * *

VI. Examine the validity of the following arguments, pointing out the fallacies, if any:—

* * * *

Now the importance of working logical exercises as an instrument of mental discipline can hardly be over-estimated. "I am persuaded," writes J. S. Mill in his Autobiography, "that nothing, in modern education, tends so much, when properly used, to form exact thinkers, who attach a precise meaning to words and propositions, and are not imposed on by vague, loose, or ambiguous terms." (*Vide also* the preface to Jevons's *Studies in Deductive Logic*.) And it is true also that in this respect Logic has great affinities with Mathematics. But while Mathematics manipulates mainly with numbers or symbols of thought, Logic has to unravel the intricacies of thought, *qua* thought. For, Symbolic Logic has after all not attained that success which was said to be its destiny. Moreover, a blind working of exercises in Logic according to this or that "method" without a rational understanding of the why and the wherefore of the processes involved, without any know-

ledge of the natural development of the processes or of the relations between one topic of study and another, is sure to defeat the very object which a study of logic purposes to realise—namely, acquirement of clearness of thought, of the power of comprehension, the ability to grasp mutual relations in thought, to perceive the necessary implications of a position, etc. In fine, the explanation of the rationale of the science ought to be the guiding principle and the source of inspiration alike to the teacher and to the student of Logic. If, as the result of his study of the science, for two or three years in the University, a student can carry away with him some clear notions about the ways in which human thinking generally finds expression, especially the ways which lead to sound thinking or inference, that should be the *Ultima Thule* of a teacher's aspirations, though the student may not always be able to give the inverse and contrapositive of every proposition, or to reduce Bocardo indirectly. Science and not "solution," sense and not skill, ought to be our motto in the teaching of Logic. After all is said and done in favour of working exercises, logic is assuredly not an *art* of correct thinking: it is certainly not a matter of mere thumb-rule and practice. There is more in Logic than what appears on the surface, and that is the analysis of thought-operations it yields, and the ideal of valid thinking it upholds. These constitute the soul and sense of this science and any exposition of it, however elementary, which fails to take due note of this *raison d'être* of the science, can scarcely be said to do even the barest possible justice to it. It is not surprising, therefore, that students of logic should often complain of lack of life in their Logic classes. The Logic exercises are no

doubt sometimes hard nuts to crack, but nut-cracking is not always the best means of sharpening one's intellect: it would help only when the rich juice of principles freely flows in. It is this element of juice which the present writer believes is lacking in the current teaching of logic in the classrooms. May I therefore suggest some of the ways in which the study of logic could be made more scientific and less lack-a-daisical?

II.

Logic, we say, deals with the forms of thought primarily. But this does not mean that the forms hang by themselves and are capable of being studied by logic as forms.* Form implies material and it is in and through this material, as envisaging this material, that the forms of thought could be studied. Moreover, Logic tries to distinguish correct from incorrect thinking, and for this purpose it must be able to point to the existence of a sum of knowledge which is an embodiment of correct thinking, and which, consequently, may be said to supply the form or standard of correct thought to Logic. The material, then, which Logic handles, and in which the ideal of valid thought is illustrated, is to be found in the body of accepted truth that we know by the name of the natural and the social sciences. The facts about nature and man, embedded in these sciences, represent truth for all practical purposes, and an analysis of their structure is a supreme way of enabling us to understand the nature of the intellectual processes by which they have been discovered. This, then, is the very first point to be

impressed on the minds of the students. In Logic they are not studying empty formulae and meaningless statements. They are dissecting the most certain body of truth, and trying to apprehend something of the nature of the thought-process which built up such knowledge. Nothing is so distasteful, disgusting, and eminently disappointing, to the fresh mind of a junior who begins his study of Logic in all seriousness, eager to understand the mysteries of this tempting science, than to be told, to begin with as an example of logical argument, that vapid, worn out, truistic argument, "All men are mortal. Rama is a man, etc." Nowadays, students who begin to study Logic are much too advanced in their knowledge of human being and mortality to need to be told any such insipid platitude by Logic teachers. It is better therefore that all our arguments and illustrations in Logic should, wherever possible, be drawn from the natural and the social sciences so that the students may feel that they—and logic—are in touch with real life and its problems. Not only would they, by this means, learn the processes of thought which lead to truth at first-hand they would at the same time imbibe some amount of scientific material, which is in itself not an inconsiderable gain. Logic after all is not so bereft of material as critics would imagine it to be.

The material, however, cannot remain merely as an external record of knowledge; analysis of thought-operations implies that the material must be assimilated, made our own, and reinterpreted in our own consciousness.

The next important point that needs clear comprehension is the division of Logic into deductive and inductive, syllogistic and

"scientific." A great deal of confusion prevails at present in the minds of the students with reference to the distinction between the two parts of Logic and the proper scope of each. It must be remembered in the first place that both divisions come under the general designation of "Formal" Logic, and this name is not confined, as is sometimes imagined, to Deductive Logic alone. In this connection, it is advisable to drop the name "material logic" out of use altogether as it is likely to suggest that Inductive Logic deals with the "material" of our thought. Induction does no such thing. In another sense, of course, Deductive as much as Inductive Logic deals with the "matter of thought," for form and matter, body and soul, are inseparable though distinguishable. Even while treating of the form of thought, Logic will be forced to consider material truth to a certain extent. For the form itself depends to a large extent upon matter: the matter of our thought controls at every step the appropriate forms in which it can be expressed. We think in different ways about subjects of different kinds, and so to study the principles of our thinking, we must, to some extent, consider the difference in our thought arising from difference in things thought about. Even so, however, the main interest of Logic is to discover the correct forms which thought assumes when it results in truth. In this sense both Deduction and Induction are equally formal and it is misleading to give the name of "Material Logic" to the latter. Secondly, the students must not be led to entertain any false notions in regard to the value and function of Deductive Logic. When it is asserted that thinking is the pursuit of truth and that Logic, as a normative science, tries to describe and evaluate

thoughts in relation to this end, this form or standard of truth, care must be taken to emphasise that this standard of truth, in Deductive Logic, is only one of formal consistency or self-consistency of thought and not of "scientific" or "material" truth. Deductive Logic is, in other words, only the logic of proof of demonstration. Its main utility lies in furnishing a method by means of which the knowledge we already possess may be systematised and proved convincingly to others. Granting the existence of a sum of certain knowledge, the syllogistic Logic enables us only to exhibit the connection and interdependence of all its parts so as to put it beyond all possibility of attack. The Logic of Induction is, on the other hand, the logic of discovery in the sense that it analyses the ways in which new ("objective") truths are actually discovered in the positive sciences for example. A study of Whewell's *History of the Inductive Sciences* or his *Philosophy of the Inductive Sciences* would establish this point beyond dispute. It is not meant, of course, that a person who has mastered the principles of Inductive Logic would, by virtue of his study, be able to discover new truths in fresh fields: the study only analyses and reveals the several processes or "methods" which are actually resorted to by scientists to discover new truths so that it is an index of the scientist's method, and not a method which he has to copy. Of course, a conscious study and adoption of the methods discussed by Induction would help even the scientist in his discoveries, but it needs to be borne in mind that the logician does not give his rules to the scientist, but only formulates the general principles of scientific procedure. Logic, as I said, both Deductive and Inductive, only discusses the general

* See for an able discussion on this point "Introduction to Logic" by Joseph, who therein concludes that Logic does not so entirely disregard the matter of thought as it is commonly supposed to do.

principles and conditions involved in all correct thinking, ordinary as well as scientific.

Again, how many students know, as a matter of fact, that Logic proper is concerned only with inference, deductive and inductive, and that all the rest of the subjects usually dealt with in Logic is only so much introduction to the study of inference? For the majority of the students, why, Logic begins with terms, predicables, definitions, etc. Nor is it realised that a study of these topics is as much essential to Inductive as to Deductive Logic—they are generally regarded as topics belonging properly to the latter alone. Reasoning is the characteristic activity of thought, and it is the process of reasoning that is the primary and fundamental object of study in Logic. But reasoning cannot be effectively carried on without the aid of language. Our arguments need to be expressed in language before any consistent and sustained thought activity becomes possible. Indeed, the ideas which our reasoning employs have already been fixed by having been expressed in language. Hence it is that many of the discussions with which logic deals have reference to the proper interpretation of words and propositions. Language is sometimes so ambiguous, and we all know of cases where it is employed more to conceal than to reveal thoughts. Hence a proper study of the means through which thought activity is conducted becomes indispensable.

Reasoning, then, or inference—syllogistic and inductive—is the proper subject of logical study. Genuine or scientific thinking is always a matter of inference, but there are some accessory processes through which the mind reaches inference, *vis.*, conceptual thinking, judgmental activity. Not that reasoning

as such is absent in these processes; a judgment is itself an act of inference, and concepts are all crystallised judgments. Still, there is a commonsense way of thinking according to which an analysis of any act of reasoning reveals judgments as constituent parts and these again yield concepts; and an explanation of these constituent elements, concepts and judgments, expressed in language as terms and propositions, is of great value in fostering habits of clear thinking. But it must never be forgotten that inference or the concrete act of reasoning is at once the starting point as well as the terminus of Logic. The several intellectual processes (including even syllogistic and inductive reasoning) are not independent processes, each existing for its own sake, but form parts, and subserve the ends of one organic whole, the concrete act of thought.

III.

It is in studying these introductory topics, as I have called them—topics which concern themselves with terms, definitions, etc., that the rational method of explanation, on which I have been insisting, is most lacking at present. It has been shown above that inference or reasoning the proper subject of study in Logic (an argument like "Poverty is the vice of India, because her millions have no occupation during six months in the year") when analysed into its constituent parts, yield judgment which, when expressed in language, are known as propositions. Each one of the propositions in the given example, however, appears in its turn, to be a combination of two or more distinct ideas technically called terms. Hence, before studying inference proper, it would appear desirable to inquire into the nature and characteristics of these terms first and the pro-

positions next. Well, now, in dealing with terms, it must be borne in upon the minds of the students that we are interested in studying terms, only in so far as they form parts of propositions. They are not a separate subject of logical study, any more than are definition, division, and even propositions themselves. To understand the nature of a term, therefore, it is essential to determine what part it plays in the judgment expressed by the proposition. In the words of Creighton, "the function of the term, rather than the form of the word or words employed, must be considered" in fixing its nature (*An Introduction to Logic*, p. 43). This can be illustrated by a reference to the main divisions of terms in which it will be seen that what is a singular term in one context will become a general term in another, what would be considered concrete in one case would appear abstract in another, etc. "It is only in propositions, and as elements of propositions, that terms have assignable meaning. It would be impossible, therefore, to fix the meanings of isolated terms without reference to the way in which they are used in propositions." (P. 48.) Hence it is unfair to the student to ask him to determine the logical characteristics of terms given, as they are often given in the examination papers, in an isolated form. The terms must be given as embodied in propositions.

Likewise in the case of propositions, it must be impressed on the students that by themselves, apart from their relation to the complete argument of which they form a part, propositions are not completely intelligible. Doubtless some difficulty would be felt by the students in appreciating the truth of this statement, as a proposition generally appears to enjoy a comparative completeness

of meaning. It is true, nevertheless, that its independence and completeness are only relative and partial. A proposition is but the expression of a judgment, and a judgment is either in itself an inference or a part of an inference. In any case, the grounds upon which it rests, or the other proposition or propositions to which it necessarily leads, must be made clear, and it is only in relation to such other propositions that its complete sense can be made known. "The logical nature of a proposition will, therefore, depend upon its function in an argument, and in treating of propositions this fact must not be forgotten." (*Ibid*, p. 44.)

"A logical term is any word or group of words which can be used as the subject or predicate of a proposition." Every proposition is generally supposed to contain two terms, the subject and the predicate, and after ascertaining the logical nature of these terms, viewed as distinct elements of a proposition, it is necessary to understand the relation between the two terms themselves. This is the *rationale* of the study of the "predicables"—the next "topic of study" in Logic. Understood in this light, the subject is a logical development in the study of propositions, which in its turn, is only a preliminary to the study of inference. "The predicables are a classification of the relations of the predicate to the subject of a logical proposition. They do not express what a term is by itself, but only what relation it bears to the subject of the proposition of which it forms the predicate." (Welton's *A Manual of Logic*, Vol. I, p. 78). The predicate, *e.g.*, may stand to the subject in the relation of a container to the contained, a larger to a smaller class or *vice versa*, *e.g.*, "A triangle is a rectilinear figure;" "Zoology is the science of life;" or

it may be related to the subject in the way of expressing certain characters or attributes of the latter: "Hot water, when poured upon thick glasses, is capable of breaking them." The predicate can express three kinds of attributes belonging to the subject, either its essential, differentiating mark, (*differentia*) or some property necessarily connected with this mark (*proprium*), or some accidental feature which is not therefore a distinguishing character (*accident*).

In dealing with these "Heads of Predicables," it must be made clear that the distinction between *differentia* and *proprium* is based more on conventions of language than on the nature of things, that they concern only common terms or class names, and that the heads themselves are not fixed, but vary according as we use them.

In the predicables we consider all the possible relations in which the predicate of a proposition can stand to its subject. But the proposition *S is P* acquires different senses according as we consider the different relations in which the *S* can stand to the *P*. "Jalaluddin was murdered" is, e.g., a different type of proposition from "Potato is a kind of vegetable." The former denotes a certain passion of the subject, a certain experience suffered by the subject, while the latter expresses what kind of substance potato is. These relations of the subject to the predicate, declaring the mode of essential being belonging to any subject that exists, are what are known as the categories. Of course, the modern doctrine of the categories or predicaments is essentially different from the Aristotelian conception of them as a classification of all nameable things. Besides the two categories that have been mentioned above, other possible relations of the subject can

be imagined: such as, this object—how much of it, of what quality, what it does, where it is, etc. The whole subject is, however, properly of metaphysical rather than of logical significance, hence it is not necessary to pursue this subject further. It has been referred to here simply to complete our account of the logical development of the various topics of study dealt with in logic.

Starting with the judgment (provisionally of course) expressed as a proposition, ("Poverty is the vice of India") we have seen that it is composed of a subject term and a predicate term, we have examined in what ways we can characterise these terms logically, we have ascertained in what different relations the predicate term can stand to the subject term, as well as the different modes of existence of the subject as expressed by the predicate. The next important task would appear to be to define these terms themselves, to note down their precise significance (*poverty*, *vice*, etc.) This leads us to the subject of definition in logic. As a matter of fact, it is immaterial whether we study the predicables first and definition next or *vice versa*, the two are mutually involved. In the analytical study of the different factors involved in inference, however, it is of the first importance to comprehend the mutual relations of these elements and the precise function which every one of them is intended to fulfil. The average student of Logic does not know, as a matter of fact, why he should study the predicables, where definition and division come in, etc.

In the study of "terms" the students will have learnt that every term has a two-fold aspect, the one in which it comprehends within itself all the essential attributes or qualities which the object signified by it

possesses (connotation or intension); the other in which it comprises or stands for all the objects or classes of objects denoted by it (denotation or extension). To understand the complete significance of a term, therefore, it is necessary to study both these aspects, to know what objects or kinds of objects are denoted by the term, as well as what essential qualities or objects are possessed by them ("connoted" by the term). This latter aspect of the question leads us to definition, while the former concerns division.

Definition, in fact, broadly understood, includes both definition and division, but it is customary to confine the term to denote the narrower meaning suggested above.

Definition then is making explicit the connotation of a term. The necessity for definition in Logic as well as in ordinary life must be clearly explained and it must be shown that definition fulfils a very real need of a practical life. The unseemly hubbub that is often to be witnessed in debating societies and discussional meetings, the mutual rancour and intolerance that rise in the wake of the religious or political passion of sects or parties, must be shown to be due largely to the failure to understand one another's point of view, which is in effect a failure to define clearly the basic terms involved. Care must be taken, however, to impress on the minds of the students that definition is not necessary in the case of all terms, and only when there is the need to mark off the boundaries or edges of a term from the encroachments of other words, it is definitely called for. There is no point in being precise about the edges when there is an uncertainty about the centre itself. Unless, therefore, the rough

meaning of a word is already known, definition is rarely wanted, and when we are in doubt as to the meaning of a word, what we require is description which consists in giving a general account—a rough sketch, so to say, of the word's meaning. Again, the classical mode of defining "*per genus et differentiam*" is not the only valuable mode of definition, especially at the present day when, with the advance of scientific knowledge, there is felt a greater and greater need to explain the nature of thinking by relating it through general laws of behaviour to other things and their characteristics. That is what is called "genetic" definition, where we are concerned with processes and the laws of their action or combination. The definitions of physical sciences, for example, must be shown to be as important as the ordinary "classificatory" definitions where we subsume an object under a wider group of objects, and at the same time mark it off from the rest of the group by mentioning its special characteristics. Water, for instance, as (Creighton observes, p. 74) is better defined by saying that it is "a fluid formed by adding one part of oxygen to two parts of hydrogen" than by stating that it is "a fluid which descends from the clouds in rain." Again all definitions cannot be of the same type, for the purposes for which definitions are required vary. Hence what is a good definition of a certain object according to one science may not be considered adequate in another. In other words, when we ask for the essential characteristics of an object, denoted by a term, it must be remembered that these characteristics are not fixed, but vary according to the point of view from which the object is examined.

Division has already been shown to be a process of defining a term from the point of view of extension, of determining the possible objects or classes of objects to which the term could be applied. The first step in gaining knowledge is the grouping of like things and events and the calling them by a common name and for the ordinary purposes of life, this work has been done already by our ancestors and the results embedded in languages. The logical division is only a conscious application of this natural process of human thought. In this connection, it must be made clear to the students that division, more than definition, depends upon one's knowledge of particular facts. That is, it is not purely a formal process but involves an appeal to sources of information outside the matter given. Given simply a genus, the process of division cannot even begin, for there is nothing in it to suggest the characteristics which separate one species from another. A knowledge of nature, to a certain extent, is therefore a necessary presupposition of logical division. Here again is vindicated the true nature of logical study, *viz.*, that it is only a means of systematising the knowledge we already possess.

It is not only dichotomous division which thus pre-supposes material knowledge of facts, but what is known as classification—which is also a process of division largely applied for scientific purposes—is almost entirely a material process. The students must clearly grasp that division by dichotomy is important only as a means of testing the validity and exhaustiveness of our analysis, and that for the purpose of indicating distinctions existing in objects themselves, it is classification that is of greater value. Even so, it is only the scientific or general classifica-

tion which is based upon a study of all the discoverable properties of the different individuals to be grouped, which serves this purpose adequately, the classification for special purposes, the alphabetical arrangement to be found in library catalogues and indexes of books, for instance, being based merely on one or two superficial resemblances or differences.

In both definition and division, the students should be trained in the ability actually to define and divide given terms of common experience instead of being asked merely to "test the validity" of given definitions and divisions.

The properties which an object, *e.g.*, a book, possesses, may generally be grouped under three classes:—

(1) Those which all books have and which no other objects have (being made up of paper and written in or printed).

(2) Those which all books doubtless have but which are possessed also by things other than books (being bound in certain shapes and sizes).

(3) Those which only some books have.

Of these three kinds of properties, which shall we choose to define the term book? Any property of the first group may no doubt serve to differentiate books from other things, but all books have other characteristics which it would be unwise to omit completely.

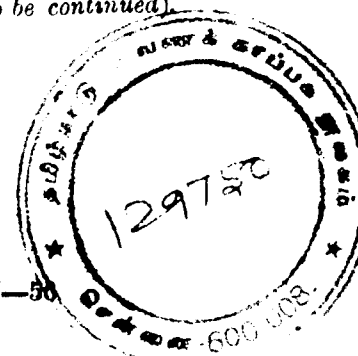
A natural way to discover just those properties, which serve to define a term is to find those central features around which all other properties naturally group themselves. The particular shapes and sizes of books, their being made up of paper and printed—all are connected with the fact that books are intended to convey knowledge. Again that a triangle has its angles equal to two right

angles, and has any two sides greater than the third, follows from the fact that the sides are three in number and are straight. Thus nearly all the qualities of an object can be grouped round a few central ones which will form its definition. If the possession of these prominent qualities serves to define and differentiate the object, the possession of qualities in common with other objects gives the object a place in a wider whole.

In this manner, definition results in classification. A good example is furnished by L. J. Russell in his "Logic from the Standpoint of Education," (p. 28). A triangle is a particular closed plane figure with straight sides. This is the class into which it falls. But this class falls into the wider class of closed plane figures and this again into the class of plane figures in general, which falls finally into the class of figures.

It should be remembered, however, that "Definition, general formulæ, and classification are the devices by which the fixation and elaboration of a meaning into its detailed ramifications are carried on. They are not ends in themselves, as they are frequently regarded even in elementary education, but instrumentalities for facilitating the development of a conception into the form where its applicability to given facts may best be tested." (Dewey, p. 96.)—*The Mysore University Magazine*: July 1929.

(To be continued.)



THE TOUCHSTONE OF POETRY AND SOME REPRESENTATIVE MODERN POETS

By

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"It would be more just and practical before attempting to reckon the merits of a poet of the present age, to discover the touchstone of true poetry—to aim at an idea of what constitutes good poetry."

Poetry is an art, and like every great art, it has need to be suggestive, it should be significant, a thing of life, of breath and of movement. Ever since, therefore, men have come to realise the value of poetry as a possible motive force in their lives, the question has been asked again and yet again "What is Poetry?" and then "What is its function?" The two necessarily merge into one, for when we have known what good poetry is, we have felt what its function should be.

Hazlitt defines poetry thus:—"It is the universal language by which heart holds communion with Nature and with itself." The poet is a being, a highly gifted being, who is endowed with the power of giving expression inevitably artistic, to the workings of his own mind, and to the forces he finds everywhere pulsating through Life and Nature. Poetry is the golden harp of the imagination vibrating with every emotion that sweeps over the soul of the poet, and giving exact utterance to those emotions in beautiful words set to beautiful measures. Poetry again in the words of Shelley, is the order and beauty of the universe expressing themselves through the mind of man. Examining these various views that have been advanced on Poetry, we may arrive at an idea of what may be considered

the highest perfection attainable by poetry, embracing a two-fold beauty—beauty of form and beauty of thought.

Beauty of form.—It is perfectly true that where the thought is great, the language is correspondingly so; without much effort on the part of the poet, for where the poet's powers of expression are fairly facile, his thoughts we might imagine, brim over into language, much as a fountain springs out of the earth, or a river in flood brims over its banks. Yet, it is equally true, that at some point or other in his work, the poet is a conscious artist, at least in the medium of expression he adopts, and being an artist, it should be his aim to make his language as full, melodious, resonant and alive, as it is in the power of words to be, and as his theme demands. Mere metre and rhyme do not constitute good poetry, though in the hands of a good poet, these can be used to great advantage. Johnson has well established this truth in his famous skit on bad poetry:—

"I placed my hat on my head,
And walked into the strand,
And there I met another man
Whose hat was in his hand!"

Though this is so, the language of poetry should, if anything, be quantitative, measured and melodious. If we are to keep alive the spirit of those classical times when poetry as an art was universally cultivated, we would expect the poet to be a singer—an artist, who because he chooses words as his medium of expression, should appeal to the ear equally as to the mind, much as the painter or sculptor appeals to the eye, to the delight in colour and in form equally as to the understanding. As a matter of fact, the distinction between the outer and inner in art is very, very subtle, and one, we might almost say, made for practi-

cal purposes rather than real, the outer being merely the casket of the inner "all of one nature of one substance," the peculiar form of expression chosen by the artist as being best suited to the transmission and preservation of his ideas. Hence in good poetry, there is an intimate and even indissoluble connection between the thought and its expression, and therefore the language of prose however good, would never suffice the poet, while on the contrary, the language of poetry might very well be imitated in prose. The poet is expected to sing his theme, not merely to convey his meaning forcibly through the right words, but even to suggest it by their sound. Not only should the poet seek after and find beauty, but it is his task to perpetuate that beauty in language which is his medium of expression. In brief, the language of poetry should be poetic, aesthetic, full of delightful images, full of delightful sounds that half suggest their meaning to the hearer. This brings us to the second point under consideration.

Beauty of thought.—With the artist we have seen, the outer is merely an aid to the expression of the inner. Hence the poet who expends all his energies in giving expression to what is merely vapid or ugly in thought, rings his own death knell; for however much the fascination of his language might hold us to him for some time, once the glamour of it has faded away by constant repetition, and we are faced with the bare thought, we find ourselves unable to account for our previous admiration of his work.

The poet is exalted above other men in his imagination, and he is expected to "see" more than other men into the meaning of life and existence, and to reveal "his glorious visions" to the rest of mankind. He is an artist, an interpreter, a seer and a prophet.

As an artist, it is enough if he seeks for beauty, and having found it, reveals it in his own inimitable language to others, for thereby he does not merely awaken and foster the aesthetic sense in men, but also incidentally leads them to discern the inner significance of such beauty, for "Beauty is truth, truth, beauty—that is all we need, to know" as Keats sang. The Eternal Beauty is manifested everywhere, in a storm—in the waves of the ocean—in a sunset or sunrise—in a beautiful woman and in her apparently plain sister—in the most exquisite blooms and in the most common wayside flower—in children, in birds and in trees. The poet should endeavour to impart to the world what he feels to be beautiful in the range of his experience, in language raised to the same degree of sublimity. Thus he can tell us of the charms of his mistress, as Herrick, Keats, Lovelace, Suckling and Sidney did, or portray the grandeur of natural forms as Wordsworth did, or as the same poet did, describe to us the lives of common men and women, or write verses to the seasons and to the birds as Keats and Shelley did, or as Burns did employ his art to detail the loveliness of a little wayside flower. In every instance he will move the hearts of his readers, and awaken their sensibilities to the grandeur and sublimity of all existence. This is in itself a liberal education.

Professor Long tells us how it takes an artist alone to extract the essence of beauty from any object but once this is done by the poet, a new field of delights is opened out to our imagination, for all good literature suggests infinitely more than it actually describes. Many men, says the same writer, pass by a meadow untouched by any deep emotion, but one, a Roumanian poet, passing by a

field when the peasant men and women were tossing the hay into little heaps with their forks, felt his whole being stirred with the thought that this hay was once flourishing green grass, which led him on to consider the mutability of existence. These ideas he subsequently expressed in an exquisite poem the opening lines of which are "Yesterday's flowers am I, and I have drunk my last sweet draught of dew....." and its closing lines, "I drank in all the whole earth's fruitfulness, To make of it the fragrance of my soul which shall outlive my death!"

But the great poet goes further than appreciating the beauty of the universe in even its tiniest details, or discerning in that beauty the presence of God. The great poet is a commentator on life in the fullest sense of the term. "Poets", says Shelley, "are the unacknowledged legislators of the world." Poets have made and are still making the minds of men, seeing into the meaning of life in its fulness, combating with its many problems, and presenting before us great ideals of perfection. The great poet is thus the great thinker. He who thinks ahead of his time, he who influences the thought of his age, not by flagellations of crudities and vices, for then his poems would be mere sermons camouflaged, but by feeling rightly on all things, by evincing a right healthy attitude to life, and by leading others to think. It is the dream always that precedes the deed, and through ages past down to 'our present pupil age,' social reformers and legislators have only tried to embody in laws and institutions the ideals that filled the poet's mind. Years before President Wilson brought about the League of Nations, Whitman, the American poet, sang:—

"All you continentals of Asia, Africa, Europe,
Australia, indifferent to place

Health to you! good-will to you all from me and
America sent!

Each of us inevitable,

Each of us limitless—each of us with his or her
right upon the earth.

Each of us here as divinely as any is here."

Yet great as is the work of such poets, the
greatest poets advance still further in thought.
The greatest poets are seers and prophets—
not mere visionaries but only so to the extent
that in their supersensitiveness they discern
more clearly than do the rest of their fellow-
beings, the essential unity between God, Na-
ture and Man. Like Shelley's skylark, the
greatest poet soars higher and yet higher in
his wonderful imagination, till he reaches
a point in philosophic thought where "God
Himself is moon and sun." The greatest poet
is thus the world poet, the poet whose poetry
finds a response in every human breast how-
ever wide may be the divergence in caste,
creed and nationality, between the poet and
his reader, because his is the purest, the
simplest and yet the most profound philosophy
—the knowledge of the One Spirit permeating
and pervading our life.

And now we are in a better position to con-
sider the poetry of our own time. I would
ask you to understand by the term "modern
poets"—the poets of the twentieth century
or thereabouts, for some of those who have
contributed to the new spirit of poetry have
recently died—Mr. Masfield, Mr. Brooke and
Mr. Flecker, to mention but a few of the
European poets. As time will not permit me
to deal separately with the poetry of Ireland,
India, America and England, nations which
have contributed most to the development of
modern poetry—I will content myself with
characterizing the general spirit of modern
poetry, and discussing more particularly the

literary level attained by the English and
Indian twentieth century poets.

We have seen that the greatest poet is the
prophet poet and the poet of realisation, in
other words, he who is a mystic, he who in
his imagination grasps the fundamentals of
life, of that three-fold existence in one—
humanity, nature and divinity. Not merely
he who is the commentator on life though he
too is great, but he who sings us away out of
the trivialities of the narrower interests of the
world—he whose mission is revelation of the
great life through the things of this life.

From this point of view then, we might
exultingly sing "the poetry of earth is not
dead," for in our time there have arisen a
few poets who have given and are still giving
promise of great spirituality in poetry—poets
who are rapidly moving out of the realm of
the emotional and physical into that of the
intellectual. Poets who are not merely stirred
by passing emotions aroused in the confront-
ing of a natural object, but poets whose con-
stant urge is towards realisation of self—that
self which is closely united to the mysterious
Self of all life.

Be it said to the glory of India that the
Indian poets are above all poets of realisation
in the fullest possible sense. Poets whose
deep spirituality is evinced in all their works
—cosmic poets—who seem to feel and calmly
understand the meaning of all life unlike the
English poets who though also advanced in
this conception, appear to be yet filled with
the questioning spirit, to be yet reaching out
towards that which the Indian poets have
already grasped. The Irish poets are much
more akin to the 'Indo-Anglian' singers in
this respect. Thus while Masfield sings:

"Out of this earth,
Comes the thing birth,
The thing unguessed, unwon....."

and then again, of "The unearthly Self be-
yond, unguessed, untold," Mrs. Naidu, sing-
ing of solitude, has—

"Or perchance we may gleam a far glimpse of
the infinite bosom,
In whose glorious shadow all life is unfolded
or furled.
Through the luminous hours ere the lotus of
dawn shall reblossom,
In petals of splendour to worship the lord of
the world."

To understand yet further the spiritual
tension of the Indian poets, one has but to
read such poems as "The Soul's Prayer" of
Mrs. Naidu, or the lines written to her dead
father, or "Aurobindo Ghose's "In the Moon-
light," and Tagore's exquisite songs of
"Death" and "Life." Thus does Mrs. Naidu
address her dead father's spirit:—

"Farewell great spirit.....
All hail to thee in thy transcendent flight,
From hope to hope, from height to heavenlier
height
Lost in the rapture of the Cosmic Soul."

Mr. Aurobindo Ghose's poem just instanced
should be quoted, I feel, at least in part, be-
cause so little known—

"If now must pause the bullock's gingly tune,
Here let it be beneath the dreaming trees.
Supine and huge that hang upon the breeze.
Here in the wide eye of the silent moon.
How living a stillness reigns! the nights
hushed rule
All things obey but three, the slow winds sigh
Among the leaves, the cricket's ceaseless cry,
The frog's harsh discord in the ringing pool.
Yet they but seem the silence to increase
And dreadful wideness of the inhuman night,
The whole hushed world immeasurable might
Be watching round this single point of peace.

So boundless is the darkness and so rife,
With thoughts of infinite reach, that it creates
A dangerous sense of space, and abrogates
The wholesome littleness of human life—"

Here as a certain writer has remarked, we
have "the fulness of vision and the true
perspective that are the special gift of India
to English literature and to the rest of the
world."

While Tagore can be considered a world
poet, in his universal and inevitable philo-
sophy, Mrs. Naidu is further distinguished as
an interpreter of Indian life—the outer and
the inner. In her exquisite lyrics she has
embodied the whole spirit and kaleidoscope
of that life with its variegated hues, forms
and tones.

Yet not only are the modern poets dis-
tinguished by the depth of their philosophy,
but they also remain poets by the pure music
of their verse. Simplicity in verse and free
verse are the two tendencies at the present
time. Tagore is a poet by the purest possible
interpretation of the term free verse, yet who
can deny the exquisite melody of his poetry?
While Mrs. Naidu and her talented brother
Harindranath Chatopadhyaya are delightful
lyricists suggesting as every true poet should,
half their theme by sound.

Read Mrs. Naidu's little poem "Bangle
Sellers." Here is the first verse of it:—

"Bangle sellers are we who bear
Our shining loads to the temple fare;
Who will buy these delicate, bright
Rainbow tinted circles of light?
Lustrous tokens of radiant light,
For happy daughters and happy wives."

To have at least some understanding of the
corresponding excellence in the powers of
expression, of some modern European poets,
I would refer you to Mr. W. B. Yeats' "The

"Isle of Innisfree," and Mr. Masfield's
"The Lake Isle of Innisfree."

"The Lake Isle of Innisfree."

I will arise and go now and go to Innisfree,
And a small cabin build there, of clay and wattles
made;

Nine bean rows will I have there, a hive for the
honey bee,

And live alone in the bee-loud glade.

And I shall have some peace there for peace comes
dropping slow,

Dropping from the vales of the morning to where
the cricket sings;

There midnight's all a glimmer, and noon a purple
glow.

And evening full of the linnet's wings.

I will arise and go now, or always night and day

I hear lake water lapping with low sounds by the
shore;

While I stand on the roadway, or on the pavements
grey,

I hear it in the deep heart's core."

I would love to continue reading such
poems to you for ever. Here is sheer beauty,
penetrating, intoxicating, and yet healthy and
pure. I think you will agree with me after
this that the future of modern poetry is, to say
the least, highly promising. — (*The Maharaja's
College Magazine, Ernakulam; July 1929.*)

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THE 'SCHOLAR,' Palghat.

We are asked to publish the following. —

THE TWELFTH SESSION OF THE INTERNATIONAL LABOUR CONFERENCE.

The Twelfth Session of the International
Labour Conference opened on May 30, 1929,
and closed on 21st June. It was presided
over by Dr. Brauns, Member of the German
Reichstag and former Minister of Labour.

The agenda was particularly heavy. It
included a final discussion of the questions of
the prevention of industrial accidents and the
protection against accident of workers em-
ployed in loading or unloading ships. The
Conference had also to examine for the first
time the questions of forced labour and the
hours of work of salaried employees. Finally,
it adopted various resolutions relating to the
future activity of the International Labour
Organisation.

THE PREVENTION OF ACCIDENTS.

The first two questions had come up for
first discussion at the previous session, which
had framed questionnaires subsequently sent
out by the International Labour Office to the
Governments of the States Members. The
replies to these questionnaires served as a
basis for the following international regula-
tions adopted by the Conference: —

(a) A general recommendation on the
prevention of accidents, which, on the basis
of the enquiries of the International Labour
Office into the experience of various industrial
countries, proposes to the States Members the
adoption of the methods considered most
appropriate for the safety of the worker.

(b) A Draft Convention concerning the
marking of weights on large packages (one
ton or more) transported by sea or inland
waterway. The object of this Convention is

to prevent the accidents frequently caused by
the use of insufficiently powerful hoisting
machinery in handling heavy loads.

(c) A recommendation concerning re-
sponsibility for the protection of power-driven
machinery, which requests the Governments
of the States Members to adopt and enforce
as widely as possible regulations making it
illegal, within the territory of each State, to
supply or instal any machinery which does
not comply with the safety requirements pre-
scribed by national laws or regulations.

THE PROTECTION OF DOCKERS.

When the general problem of the preven-
tion of accidents was discussed at the Eleventh
Session, it was decided that apart from the
general measures mentioned above, inter-
national regulations should be established
concerning the safety of workers in ports.
Such regulations were urgently demanded by
various transport workers' organisations.

They took the form, in the first place, of a
Draft Convention concerning the protection
against accidents of workers employed in
loading or unloading ships. This Draft does
not merely fix certain general principles; it
is extremely detailed and contains a series of
minutely defined provisions. It relates to all
loading or unloading operations whether on
shore or on board ship in connection with
maritime or inland navigation, and excludes
only ships of war. It defines the measures to
be taken concerning the approaches to docks,
wharves, quays and similar places, with a
view to ensuring the safety of the worker.
Other provisions indicate the particular means
to be used to make these approaches safe.
The Convention also deals with hoisting ap-
pliances and accessory gear, whether used on
shore or on board ship, and stipulates that

such gear-appliances should be inspected
periodically. Safeguards are also prescribed
for motors, power-driven and electrical
machinery, cranes, winches, etc. The Con-
vention indicates means of avoiding the use
of dangerous methods of work, and the
necessary facilities for speedy first aid for the
victims of accidents. It also provides for the
institution of an efficient inspection service,
and for penalties for breaches of the regula-
tions.

This important Draft Convention is com-
pleted by two recommendations. The first
draws the attention of States Members to the
value of concluding reciprocal agreements;
the second deals with the preliminary con-
sultation of the workers' and employers'
organisations concerned.

To sum up, therefore, in the field of accident
prevention, the Conference finally adopted two
Draft Conventions and four Recommendations,
and may be said to have fulfilled all
expectations. All these measures, in the words
of the Director of the International Labour
Office, are intended to go towards the making
of "an International Red Cross on the labour
field of battle," and form a valuable adjunct
to the social legislation developed by the
International Labour Organisation during the
past ten years.

FORCED LABOUR.

The third and fourth questions on the
agenda were discussed for the first time only,
the object being to draw up questionnaires
and to decide on the inclusion of the questions
in the agenda of the next Session, with a
view to the subsequent adoption of draft
regulations.

There is no need to stress the importance
of these questions. With that of forced

Reviews and Notices.

'PIONEERS,' BEING SELECTED PROSE FOR LANGUAGE STUDY, EDITED WITH NOTES, ETC., BY J. R. FIRTH, M.A., I.E.S. (RETD.) AND M. G. SINGH, M.A. (OXON.) Pp. 259. (MACMILLAN & CO., LTD.) Price Rs. 3.

This is a very attractive volume of prose intended for study by Intermediate students. The selections are from the writings of different 'pioneers,' all of modern times, and they offer a rich variety of reading matter. Charles Darwin in his scientific expedition amidst the islands of South America, Livingstone in Africa, Speke in his attempt to discover the source of the Nile, Wallace in Borneo, Doughty in Arabia, Candler in Tibet, and Captain Scott near the South Pole are the writers represented in the book. The editors have intended the book as a basis for language study, and notes and exercises at the end of the book serve this purpose. Attention is drawn to the distinctive character of each author's style, the peculiarities of Doughty being specially brought out. As the editors claim, much valuable knowledge may be acquired through these selections. The book should altogether provide delightful reading to young people.

THE LOTUS BOOK OF ENGLISH VERSE, BY P. C. WREN. TENTH EDITION. Pp. 269. (K. AND J. COOPER, BOMBAY). Price Re. 1.

The usefulness of this selection is testified by its having run through nine editions already. A very long list of poets representing the centuries from the sixteenth to the nineteenth is comprehended in the book. The poems are all well-worn pieces. Young readers will find it useful to keep this selection with them. Though the poems are all old, a modern sense is displayed in the selection. We are glad to note that the lines, 'Sound, Sound the Clarion' are attributed to Major Mordaunt in the light of recent discoveries.

A HIGHER ENGLISH GRAMMAR, BY L. TIPPING, M.A. (MACMILLAN & CO., LTD.)

This is a text-book of English Grammar written on entirely modern lines. The treatment is based on a healthy recognition of the main principle, too often forgotten by writers of grammars: the necessity for formal grammar to adapt itself to the changing character of language, and the need for any complete account of grammar and idiom to describe the laws underlying the language of *ordinary conversation* which should be distinguished both from current *written* language and from the language of poetry and elevated prose. The present book, embodying as it does a clear and discriminating treatment of *modern English usage* from these points of view, presents much valuable new information within a small compass.

Amongst interesting topics of this kind, we may single out the following: why certain nouns are sometimes classed as neuter and at other times as masculine or feminine (p. 30); the existence in English of what the author calls the *Common Number*; the different kinds of Genitives; the *restrictive* and the *elaborative* force of adjectives; usage-sanctioned expressions like *It's me*, *That's him*, etc.; the uses of the Indefinite Pronoun *One*; the Formal object *It*; the particular contexts in which use of the Passive Voice is favoured; the use of the phrase *I've got*; the use of the Perfect Infinitive (over which, we may observe here, Purists are still wrangling); the Participle and the Gerund, etc., etc.

This is a book which eminently deserves to be in the hands of all teachers of our High Schools, who may have to handle grammar and composition.

NOTES TO THE GOLDEN TREASURY OF SONGS AND LYRICS (BOOKS I—V), BY J. H. FOWLER, M.A. (MACMILLAN & CO., LTD.) Price 4s.

Mr. Fowler's notes to the different books of Palgrave's Golden Treasury are here printed

together in one volume, so that the convenience of those who may use the complete volume of the text may be met. Mr. Fowler's notes to Book V (which consists of selections from modern authors made by Laurence Binyon) are also incorporated in this volume. Mr. Fowler's scholarly and illuminating Notes have won the appreciation of teachers and students alike. The large class of readers who would like to have successive "dips" almost at the same time into the literary "foundations" of different centuries, prefer to use the complete volume of the *Golden Treasury*. To this class of book-lovers, this volume of notes will be *indispensable*.

A BOOK OF BLANK VERSE, CHOSEN BY E. E. REYNOLDS. (MACMILLAN & CO., LTD.) Price 1s. 6d.

This daintily got-up volume contains a collection of specimens of English Blank Verse from the time of the earliest Elizabethans down till to-day. The volume not only provides excellent textual material but also serves to illustrate the development of Blank Verse in English Literature. In order to have a rough idea of the marvellous progress achieved in the use of Blank Verse, one need only contrast the jingle of the cross-forms between classical verse and English verse, (employed in *Gorboduc*, with the splendid sinuosity of Shakespeare's Blank Verse or the swell of Wordsworth's immortal lines in *Tintern Abbey*. In the hands of Shakespeare and the Romanticists, it becomes a superb instrument for the expression of the most intimate emotions of man. No verse-form other than Blank Verse could adequately reflect the depth of feeling contained in lines like the following:—

that blessed mood

In which the burden of the mystery
In which the heavy and the weary weight
Of all this unintelligible world
Is lightened:—that serene and blessed mood
In which the affections gently lead us on,
Until.....we are laid asleep

In body, and become a living soul;
While with an eye made quiet by the power
Of harmony, and the deep power of joy
We see into the life of things."

No one indeed among the later nineteenth century writers has risen to the high level attained by Shakespeare in his later dramas and by Wordsworth in some of his poems. The hope that there may be a great future for Blank Verse Plays does not seem to be justified by any of the specimens of the present-day achievements given in the text.

The selection under review contains a good Introduction, useful Notes and suggestive Questions. The edition could be heartily recommended to all students of verse-forms; portions from the book could also be prescribed for study in the higher college classes.

A PIONEER LATIN 'UNSEEN' BOOK, EDITED BY A. H. DAVIES, M.A. (MACMILLAN & CO., LTD.)

This book is a welcome addition to Macmillan's popular Elementary Classics Series. The 'pioneer' character of the book lies in the fact that the selections are such as to facilitate *the understanding of Latin in the Latin order*. The editor has put forward a strong plea for the adoption of the method of translation *which would take the Latin as it comes*, instead of the orthodox method which hunts for the verb, then for the subject, then the adjuncts of the subject, etc. A Latin sentence *solvitur ambulans*, says the editor. The illustrative exercises and other useful hints such as *common errors*, *words with various meanings*, *gerundive and participial sentences*, etc., serve to explain the process by which the novel method of translation recommended by the editor, may be effectively adopted.

The selections are graded according to difficulty, and are mostly from the writings of classical authors. Though the vocabulary at the end and the short, suggestive headings (in English) prefixed to each of the selections would certainly be

helpful to the pupil, they cannot by any means supply the place of textual and grammatical notes which are lacking in this edition.

THE RIVALS, BY R. B. SHERIDAN.—INTRODUCTION AND NOTES BY R. HERRING M.A., (MACMILLAN & CO., LTD.) ENGLISH LITERATURE SERIES, No. 119. Pp. xxviii + 131. Price 1s. 9d.

This is a handy illustrated edition of Sheridan's play. The Introduction is full and informing, and the Notes should also be found useful. Like the Introduction, the Appendices show an expansive critical study of the play.

THE DYNASTS—AN EPIC-DRAMA OF THE NAPOLEONIC WARS, BY THOMAS HARDY—SCENES SELECTED AND EDITED BY J. H. FOWLER, (MACMILLAN & CO., LTD.) No. 121, ENGLISH LITERATURE SERIES, Pp. xvii + 122. Price 1s. 9d.

THE TRUMPET-MAJOR—A TALE BY THOMAS HARDY. ABRIDGED BY C. F. KNOX, WITH INTRODUCTION AND NOTES BY J. H. FOWLER, (MACMILLAN & CO., LTD.) No. 122 OF THE SAME SERIES AS ABOVE. Pp. xvi + 168. Price 1s. 9d.

Hardy wrote his tale of the Trumpet-Major in 1880, taking for his background the Wessex of the time of the Napoleonic scare. He put together a number of very good stories of the time handed down by tradition and by records. The novel gives a very enjoyable account of rural folk and the love story of Anne and her two lovers is made very touching. Mr. Fowler who has previously edited a school edition of the unabridged novel appears here again to supply notes. The abridgement by C. F. Knox has served to present to the young reader all the important parts of the novel. Benjy and his nephew, the preparations for the war and the press-gang at the mill, Bob's departure and return, and John 'marching into the night' are all here.

Twenty-four years later than the above work, Hardy wrote 'The Dynasts,' an epic-drama based

on the same Napoleonic story. Its action was spread over ten years and represented through one hundred and thirty scenes. It is not a drama to be acted but is only to be read. Even for reading it is bound to scare away many readers. The present selection therefore should serve a really useful purpose as an introduction to the larger work. Hardy shows a vast power in the handling of his subject, and his work has the sublimity of the Greek drama. It is an education to go through this exercise of imagination of such important events of history as are to be associated with Napoleon. Pitt's demand to roll up the map of Europe, Sir John Moore at Coruna, Nelson's misery over the sense of his irregular loves, and the famous battle of Waterloo are all here. English readers will do well to avail themselves early of this abridgement so as to be introduced to the monumental work, "The Dynasts."

A word about the binding of this familiar English Literature Series. We have found that the cloth cover lends itself to damage by insects more rapidly than other bindings. The publishers may try to discover anything in it fatally attractive to insects and avoid it.

SELECTIONS FROM EDWIN ARNOLD IN POETRY AND PROSE, (MACMILLAN & CO., LTD.) Pp. vi + 182. Price Re. 1-8 as.

We congratulate the publishers on bringing out this excellent selection from Edwin Arnold's writings. Edwin Arnold knew India and loved India, and his interpretation of that country is of the greatest value to readers in India. The story of Buddha which forms the "Light of Asia" is well brought out here. Not less famous than that of Christ, this story will deserve to be read by every reader in India. "India Revisited" cannot be over-estimated as a travel-book about India. It conjures up all the past centuries while delineating all the present manifestations. "Indian Idylls," "Lotus and Jewel"—with the remarkable poem on the "Rajput Nurse," and "The Song

Celestial" are also represented here. We recommend this book warmly both to the Indian student of English and to the general reader in India.

We cannot however like the red or pink-coloured cardboard cover. Even for school-books better bindings should be chosen. Otherwise the book is well got-up and illustrated with many valuable pictures.

FOUNDATIONS OF ENGLISH GRAMMAR AND COMPOSITION, BY J. D. STEPHENSON, M.A. (METHUEN & CO., LTD.) Pp. 103. Price 2s. 6d.

The elements of grammar are presented here in a readable and interesting manner. At each stage the meaning of grammatical rules is well associated with their practical application. In the last chapter, "Points of Interest," there is an attempt to stimulate thinking in Composition. The book is printed on thick paper.

A JUNIOR COURSE OF ENGLISH GRAMMAR, BY A.M. WALMOLEY, M.A. THIRD EDITION. (UNIVERSITY TUTORIAL PRESS, LTD.) Pp. xii + 208. Price 2s. 6d.

The elements of grammar are carefully studied and presented in this book. There are 36 chapters. From parts of speech we pass to number, gender, etc., and then to analysis of sentences and end with figures and idioms.

CAMBRIDGE INTERMEDIATE MATHEMATICS, BY H. J. LARCOMBE—ALGEBRA, PART I; ARITHMETIC, PART I; GEOMETRY PART I, WITH ANSWERS. (CAMBRIDGE UNIVERSITY PRESS, 1928.)

The title of these books requires a little explanation, especially since the word 'Intermediate' has a certain connotation in India different from what is meant by these books. One may be tempted to believe that the books may be useful for our Intermediate Colleges. On the other hand, it is just the reverse.

The books are designed to meet the needs of what we may call 'Intermediate High Schools,' the

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The Educational Review.

We welcome the formation of the All-India Women's Education Fund under the auspices of the

Women's Educational Reform Association of India. The idea was mooted at the Women's Educational Conference held at Delhi in 1928 and received further consideration at the Conference held early this year at Patna. It has now taken practical shape and a constitution has just been framed in Simla for the administration of the Fund, towards which subscriptions have already been promised by the wives of several ruling princes in India. The aims of the Fund will be—

To promote the education of women and girls in India, including—

The aid of schemes for the furtherance of the education of the girls and women of India recommended from time to time by the All-India Women's Conference;

The institution of propaganda for the education of the women and girls of India;

The increase of the supply of better trained teachers, having particular regard to the inclusion of training in domestic subjects;

The encouragement of the production of better text-books and attractive and suitable literature in the vernaculars;

The promotion of the education of children of Kindergarten age, and in rural districts;

The provision of suitable housing accommodation for women teachers, specially in rural areas;

The promotion of courses of training in home craft, fine art, domestic science, physical culture and other suitable subjects.

The problem of wiping off female illiteracy in India is so serious that efforts from all directions are necessary, and we congratulate the women-workers responsible for this organisation. The Provisional Secretary of the Fund is Mrs. Rustomji Faridoonji of Hyderabad who will be glad to furnish any information to enquirers regarding the Fund. Persons interested in the movement for the education of women in India can help the Fund not merely by donations, but also by enrolling themselves as Members or Fellows of the Fund. An annual subscription of Rs. 5 enrolls a person as a member, while an annual subscription of Rs. 25 secures the privileges of Fellowship. A consolidated payment of Rs. 100 makes one a life-member, and a life-fellowship can be secured similarly by payment of Rs. 500. We hope the movement will gather strength and mark a new epoch in the development of women's education in India.

An interesting batch of visitors coming to India within the next few months will be a band of Public School Boys from England. The idea of enabling senior boys at a public school to have the benefits of travel is an excellent one indeed, and this new experiment will be watched with considerable interest in all educational circles. The intellectual horizon is bound to be widened considerably and the impressions

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gathered at such an early period of life will go a long way in shaping a student's outlook on life. We have no doubt that these young men from England will be very much impressed by the picturesque life of India, while the signs of modern life and improvement which will be perceived by them will enable them to have the right perspective with regard to this country. We wish there were similar facilities available for the school children of India. The Indian boy is proverbially home-sick and it will do him much good, if he can see at least some places outside his neighbourhood in India itself. We wish some enterprising school arranges a tour of this kind to the great places of historical interest in Northern India, Benares, Agra, Delhi, etc. If the tour can be made to include Rajputana, its educational value will be enhanced considerably and form a very useful supplement to the work of the class-room especially in the subjects of Indian History and Geography.

In the course of his recent Convocation Address to the Indian Women's University at Poona, Principal A. B. Dhruva of the Benares Hindu University tried to refute some of the arguments usually advanced against the use of the vernaculars as the media of instruction in India. To the objection that English was bound to be the national language of India, Mr. Dhruva replied that only Hindustani could occupy such a place. As English will be a compulsory second language in any

scheme of imparting education through the vernaculars, it was no use, according to him, to complain that English studies will receive less attention; contact with the civilised external world will thus undoubtedly continue. As for the objection that suitable text-books were not available in the vernacular, Principal Dhruva thought they would be available in large numbers provided there was a demand for them. The most valuable part of the address was however his appeal to the lady graduates to fulfil the highest functions of woman's destiny in the world—an exhortation which is not altogether unnecessary in these days of growing disinclination on the part of educated women to shoulder the responsibilities of domestic life. Principal Dhruva said:

The work that lies before you is immense. You have to bring up the children who will be the makers of India of the next generation not by playing the role of lookers on but by introducing better methods of child-rearing. You have to make Indian homes more sanitary, more beautiful and more peaceful. There is a great amount of welfare work which you women alone can do. Our innumerable unfortunate sisters ground down by poverty, ignorance and unjust social customs, will confide their cares and troubles to you alone. The sick in the hospitals are groaning for relief at your healing hands. At present for want of lady teachers, elementary education is suffering, which in the natural course of things should be in your hands. And if the education of the child is to be really efficient it should be individual and not collective as at present, and this

reform can be carried out by placing it largely in the home. If some of you have a bent for research, here is your special field, *viz.*, child-psychology in which at present we men do little more than read books written by men, and these again based on observation of the child-mind and the child-behaviour of Europe and America. Then, again, you have Indian music, with its northern and southern schools, folk-songs and aboriginal music, which you can study scientifically and historically, and compare them with European music and finally develop Indian music on original or syncretic lines. The same thing *mutatis mutandis* for painting. Next, is chemistry of cookery taught in the Royal College of Science? I believe it stops with the study of vitamins. If so, is there not sufficient work for you in the shape of developing the art of cookery for the benefit of the sick, the convalescent and the epicure? Why should your brothers feel attracted to Italian confectionery if you can supply better and more wholesome dishes after a careful scientific and artistic study of Bengali, Madras, Maharastri, Gujarati and Hindustani cookery? Do not imagine that this work is *infra dig* for you, or that we men want you to confine yourselves to this and similar work. Indian women have distinguished themselves in the past in various walks of life, as poets, philosophers, scientists, religious teachers and administrators. The Mahabharata, which abounds in stories of different chronological strata, and holds the mirror faithfully to Ancient Indian life, records dialogues which do much credit to the intelligence, culture and commonsense of women, and it is your right to walk in their foot-steps. Modern India is showing signs of a great national upheaval in science, letters, politics,

and social and religious life in which women have begun to take their proper share—which is the happiest augury of the success of the silent revolution which is already upon us. At the same time you will permit me to say that marriage and its consequential responsibilities make up your highest avocation. As my friend—Babu Bhagavandas—observed on one occasion, “the vast majority of women are intended by nature, and at heart prefer to be, not unmarried Misses Sarasvati, but Grihalakshmis and Annapūrnās, goddesses of the family home, whose very presence and companionship bring joy and strength into the life of their partners, and make it possible, and worth while, for them to follow their special vocations successfully.” “Motherhood,” it is rightly said, “is the noblest of priesthoods.”

The anxiety of the new Minister of Education in England, Sir Charles Trevelyan, to keep in touch with the teaching profession in the country must

serve as an object-lesson to educational authorities in India who are usually supremely indifferent to the teaching organisations. Sir Charles has sent the following message to the teaching profession in England:

“May I be allowed to express my gratitude to the *Teachers' World* for the encouraging greeting it has given me on my return to the Board of Education? It is, I believe, an indication of the goodwill which the teachers generally are prepared to extend to the Labour Government, which I hope may

Education
Ministers and
the Teaching
Profession.

justify the anticipations formed. I have no doubt that the country is prepared to see a great expansion of educational opportunities, even if it should imply an expansion of educational expenditure. To be liberal without waste, to be daring without recklessness will be our method. But if we give the right lead in Parliament, there must be an active public opinion outside to carry us through difficult phases of educational change. *That opinion, the knowledge and interest of the teaching profession must help us to create.*" The italics are ours and we are anxious to draw attention to the serious responsibility which rests on the teaching profession in the matter. Teachers are mistaken if they are under the impression that their duties cease by efforts towards the advancement of their emoluments. They must be able to give the lead to the country in all educational matters, by a study of the problems of the educational world. We may be allowed to put the question frankly to the educational profession in India to-day, whether it has been able to give sufficient light and guidance to the publicist and administrator in this country.

The complaint has been voiced forth by the *Isis* of Oxford that the art of oratory as judged by the Union

Debates has declined and we no longer hear speeches of the high order which prevailed some years ago. Various explanations have been put forward for this decay of oratory in recent months at

Oxford. The general elections, it has been suggested, have made the undergraduates take their debates rather too seriously. The discussion of realities does not probably lead to such eloquence as the discussion of theoretical questions in an irresponsible manner, and now that the elections are over, debates may be expected to resume their normal course of progress. The art of debating has struck deep root in the educational institutions of India, where perhaps on the other hand, a little more knowledge of the actual realities of life will undoubtedly lead to better results. The regulation of the work of the debating societies must be looked upon as one of the essential duties of the authorities of every educational institution.

An Association of Women in Japan has formulated a scheme for the teaching of ideas of International Peace in the elementary classes of educational institutions. As we have observed more than once in these columns, the only prospect of international peace in this world is in the inculcation of its need in young minds at school and college. The League of Nations has already made a number of valuable recommendations for educating pupils at school in an atmosphere of international brotherhood and these new suggestions coming from Japan are worthy of serious consideration by all those concerned with educational programmes. The scheme is as follows:

How to give International Education in the Primary School?

Object: To train the Japanese nation in international understanding.

Method: 1. To teach our children respect for other nationalities, at the same time making clear what our nationality represents.

(a) To make children understand patriotism and filial piety as the foundation of our national spirit.

(b) To try to increase the general welfare of mankind.

2. To make them understand the relation of the nations.

(a) To teach the reason of establishment of the League of Nations and development of international co-operation.

(b) To teach national anthems and flags and respect for them.

(c) To secure appreciation of the value of consideration of international relations in every course of study, and to teach foreign languages, keeping in mind the needs of the country.

(d) To bring about an understanding of the various conditions of foreign countries through newspapers and periodicals.

3. To make them appreciate the benefits of international life.

(a) Contributions of foreign culture through commercial relations.

(b) Contributions through social relations.

(c) Contributions due to the development of mail and telegraphic communication.

(d) Other contributions.

4. To cultivate an international spirit in children.

(a) To make them desire to be ideal citizens of the world, at the same time cultivating patriotic spirit.

(b) To teach them international etiquette.

5. To cultivate a friendly spirit for other peoples.

(a) To teach our children to respect and esteem foreigners.

(b) To commemorate Goodwill Day (May 18).

(c) To make Girls' Festival (March 3) and Boys' Festival (May 5) days for the encouragement of peace.

(d) To commemorate world peace (November 11).

(e) To encourage Boy Scouts and Girl Scouts of the various countries to co-operate with each other.

(f) To exchange dolls, pictures, etc.

(g) To establish libraries for children containing literature on international friendship and international relations.

(h) To utilize the radio in encouraging international friendship.

6. To cultivate a sympathetic attitude toward our immigrants.

7. To assist other educationists in cultivating international spirit.

(a) By providing the latest literature on the subject.

(b) By sending delegates to Conferences in foreign countries.

8. To appeal to officials to assist this important work.

(a) Through establishment of courses in international relations in normal schools.

(b) Through sending teachers to foreign countries for observation and giving them opportunities to meet other peoples.

(c) Through the establishment of libraries for teachers on the subject of international goodwill.

We offer our hearty congratulations and good wishes to the authorities of the Annamalai University on its inauguration on the first of this month. May it prosper and grow into a great centre of higher education worthy of the noble founder and the great cultural traditions of the Tamil country. The staff has already been enrolled and the selection must be considered fairly satisfactory, though we wish such an exaggerated weight had not been

attached to foreign degrees and the authorities had not been so anxious to import outsiders, when a number of highly qualified persons were available in the Madras Presidency itself. The assumption that a person with a foreign degree must necessarily be superior to the best product of our Indian Universities is fatal to all ideas of progress and it is a pity that the new University should start with such a handicap. As additional appointments are made when future vacancies occur, we trust however that wiser counsels will prevail and the University will do its best to bring out the best of the talent available in this country.

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SOME OPINIONS.

MONSIEUR JULIEN VINSON, professeur à l'Ecole des langues orientales vivantes, rue de
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I would like to present the *Asiatic Society* here with it.

We both are poets, since I wrote a few Tamil verses, but you are young, full of
hopes and joys, and I am old having experienced much trouble and sorrow. Allow me then
to wish you a long and happy life, devoted both to literary works and domestic virtue, which
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as you.”

MR. M. COLLINS, B.A., Ph.D., Professor of Comparative Philology, Madras University
(18-11-'16):—

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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 nature of the child 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, hard-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.

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 superfluous activity. 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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Mr. S. BALAKRISHNA AYYAR, B.A., L.T., Lecturer in Mathematics Teachers' College, Saidapet, writes under date 12-3-1929:—Dr. Vaidyanathaswami, M.A., F.R.S.E., of the University of Madras, has written the Foreword to Mr. A. A. Krishnaswami Aiyangar's book, "A New Geometry for High Schools." This ought to be a sufficient recommendation for the book being largely resorted to by teachers and students of the subject. The treatment followed appears to me to be on novel lines, following a kind of compromise between the Euclidean sequence and the re-adjustment found in the more modern text-books. The abundance of notes, historical, philosophical and critical, should be attractive to the teacher and the interesting variety of exercises useful to the learner. I am awaiting with interest the appearance of the other three books.

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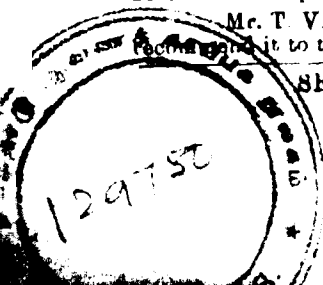
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