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By Prof. S. K. YAGNANARAYANA Aiyar, M.A., Pachaiyappa's College, Madras.

I DEEM it a great honour that I have been asked to preside over the 17th Madras Provincial Educational Conference. This honour is the highest that a teacher can aspire to in this Presidency—the highest that you the teachers of this Presidency can give to a fellow-teacher of yours. When I see the illustrious names of some of my predecessors in this office I see my own unfitness to occupy this exalted position. But this is the blue ribbon of our profession and however unfit I be, I shall, with your hearty co-operation, try to discharge my function to the best satisfaction of all. I am painfully aware of the fact that under normal conditions either the Vice-Chancellor of the Madras University or the Vice-Chancellor of the newly-created

Andhra University ought to have occupied this position. But owing to circumstances, I need not detail, you find me instead here but I shall try to justify your confidence.

Conferences like this have got a multifarious significance. They may be looked upon as occasions when the public are given an account of the activities of our profession or the occasion when we members of the teaching profession from various parts of the Presidency meet together to discuss what we may call our professional matters, i.e., either matters affecting our pay and prospects or matters like up-to-date and more efficient methods of teaching. Owing to the shortness of notice I am at present in a position to place before you only a few rambling thoughts on education. Matters of professional importance will be discussed by us at the open Conference and I need not survey the present situation in the educational world and offer my personal remarks upon them one by one.

You won't consider me to be untrue to our profession when I say that education in the

widest sense of the term, *i.e.*, the education of all the children in the State and training them up for doing what each can best do and thus contribute his quota for the general welfare, education in this larger sense of the term is not purely a matter in which we teachers alone are concerned; but is a thing of national importance and is the business of the people at large. What the aim of education ought to be, what are the important subjects that the children of the State ought to be taught are questions affecting the welfare of the State as a whole and therefore they are the concern of the nation at large. The best intellects of the nation, poets and philosophers, politicians and statesmen, idealists and practical men, all must think about this large problem and give us the benefit of their experience and views. We are experts in the methods of teaching and as citizens and as parents and as those who know the inner working of schools and colleges, we may contribute our share to the stock of national thought on the subject. But we must welcome every opportunity to enlist the sympathy of non-teachers, not only regarding our own private matters of pay and prospects but in the larger question of educational ideals and aims.

I have always been of opinion that very few schemes of education of the present day are sufficiently well-thought out. They are mostly superficial and tinker with the problem instead of grappling with it in its essentials. For I believe there can be no system of education unless we have definite ideas about the ends and aims of life in general. Education is not an end in itself but only a means to an end, *i.e.*, the end being the richer and fuller life of every individual citizen.

If every one of us were to honestly put to himself the question, what is the education I

am imparting, very few of us, I am afraid, will be able to give a definite answer, because the present scheme of education has not been the result of any well-thought out system. It is true we have various sections of educational activities. We have elementary education, secondary education, collegiate education, technical and professional education and there is a good deal of talk about vocational education. But are all these parts well co-ordinated? Do they form the integral parts of an organic whole? I am afraid not. That is because behind the scheme of education, there is not a well-thought out scheme of life. If on the other hand we take some of the successful educational systems of the world as recorded in the history of our race, for example, the education of a citizen of a Greek State or of the Roman Empire in ancient days, the education of an orthodox Brahmin in our own country or of a mediæval knight or of a monk, we find that all these systems were clearly and well defined, based upon particular conceptions of ideals in life. My complaint is, there is no such ideal in life at the back of the modern system of education in India and nobody has thought about the problem of national education in a comprehensive manner in all its bearings upon the multitudinous aspects of our national life. If there is any subject on which a Royal Commission is needed, a subject upon which the best thought of the country ought to be collected and co-ordinated and rendered available to the workers in the field, it is certainly education, not even agriculture, certainly not public service or taxation.

The State in this country has not, I am afraid, realised its responsibility in educational matters to the nation at large. Whether the Central Government considers itself to be the

inheritor of the older traditions of this country, *i.e.*, benevolent autocracy, or as the introducer of the new democratic spirit of the West, it cannot divest itself of its entire responsibility, sole and exclusive, in the matter of education. Kalidasa in describing his ideal king Dileepa describes him as follows :—

"By properly educating his subjects, by protecting them from enemies from outside and by governing them properly, he was their real father and their so-called fathers were mere physical agents of their birth." Here we have a description of an ideal king who shouldered the entire responsibility in the matter of educating his subjects. He might not have appointed a Director of Public Instruction and founded State schools but he saw to it that every child in his country was educated through some agency or other by subsidising liberally the existing agencies. Take on the other hand, a modern democracy like the U.S.A. or progressive States like England and post-war Germany. The young ones of the nation are looked upon as the most precious national asset and every effort is being made to make the most of each and every child. There is compulsory elementary education and secondary education is almost free and leads up to a variety of occupations, learned and professional, and no expenditure is considered to be too much with regard to national education. We all remember how when England was under the shadow of the greatest life and death struggle she was engaged in, the Educational Minister for the time being, the Hon'ble Mr. H. A. L. Fisher, almost doubled his expenditure on education. His memorable words were :—"The question is not whether we can afford this heavy expenditure but the question is whether we can afford not to incur this expenditure," and England freely gave

him what he wanted. Here on the other hand retrenchment is the cry everywhere. I am familiar with the argument that India is not England. But with due deference to such platitudes, I may say the attitude of the Indian Government towards the problem of national education in its most comprehensive form ought to be the attitude of the enlightened governments of the West or of the old East, *i.e.*, a preparedness to shoulder the ever-increasing responsibility.

I do not know whether persons in authority are aware of the grave danger to education, imperfect, un-practical and inefficient as it is, which confronts it at the present moment. Two causes among others have brought about this great danger. First the insecurity of tenure on the part of the teacher, secondly the ever-growing lack of reverence towards the teacher on the part of the pupil. Some of you present here know the first danger only too much. We are every day getting reports of experienced teachers being sent away, the moment they have reached the maximum in their scale, in order to give place to a comparatively junior person who would work on a smaller salary. Many members of managing bodies are short-sighted enough not to perceive the danger underlying this policy. When a teacher knows that at any moment his services are likely to be terminated, he should be more than human if he would be able to put his whole heart into his work. We always work with this Sword of Damocles hanging about our neck and naturally therefore the quality of teaching has unconsciously degenerated.

Secondly, the sons of the Chairman of a Municipal Council, a Taluk Board President, or even members of these local bodies unconsciously look upon the teachers as mere

servants of their fathers who would either make or mar them as they please. We have ever so many authentic instances of whims and fancies of individuals being exalted into principles and honest teachers put to indescribable troubles. Teachers in such situations perhaps try to approach the authorities above them through their sons who naturally come in their turn to look upon these applicants for favour before their own fathers as their menials and subordinates. The moral degeneracy on the part both of the teachers and of the pupils in such cases is something appalling and unless the teacher is again exalted to the position which he once occupied, not very long ago, of a man of authority, of one who is to be looked up to with awe and reverence by pupils, the nation is bound to go to the dogs because this saps the very springs of healthy national life. It is, in my opinion, the primary duty of the State to see that this canker that is eating into the very vitals of the educational system is removed, and the sooner it is done the better. It is obviously impossible for the State to take up the management of all the schools now in existence and to create as national needs become more urgent and as national demands become more vocal, to start and maintain more schools but it must do the irreducible minimum of insuring security of tenure to the teacher by dealing out exemplary punishment to the management of those schools where the services of teachers are dispensed with for no fault of their own. The Government cannot shirk its moral responsibility on this account. Whether the formation of a combined Board of Management for Intermediate and Secondary Education, as was suggested by the Calcutta University Commission, is the best way of securing this end, is a matter of detail which

could easily be solved if the Government realises its moral responsibility in this matter.

The policy in our own province seems to be to create institutions which are not very urgently needed but which are intended to catch the popular imagination. I am one of those who honestly believe that universal primary education in this land where 99 per cent. of the females and 95 per cent. of the males are absolutely illiterate in spite of the continuous exertions of our benign Government for the last 150 years and more, is a matter of more urgent importance than the creation of new Universities. The spread of popular education will in its due course create demand for the spread of secondary education, cultural and vocational, and after the foundation has been well and truly laid and strong walls and buttresses have been built up, it is time to think of the superstructure. But we have now two Universities, where one sufficed till recently, one essentially not different from the other. I fully realise the fact that a former President of our Conference is at the helm of affairs of the new University and we are glad that in one of his recent speeches in Rajahmundry he has indicated how the new University will work differently from the old, *i.e.*, by the starting of new subjects, by instituting extension lectures as a normal part of University activities, by attempting to draw financial support from local bodies and by ultimately aiming at imparting even the highest University education in the vernacular of the country. We wish him all success in his new venture but I cannot hide my personal opinion that what our country needs now is more schools, efficient elementary schools for boys and girls, and not more Universities. The fact is, persons in authority seem to be more anxious to do something,

the good effect of which they would be able to see even in their own lifetime and they have not got that higher capacity to suppress this personal ambition and work patiently and silently by laying the foundation strong and deep and slowly building up the educational system which will take some generations to be effected and whose fruits could be realised only very much later. I shall not be so uncharitable as to attribute to these persons political and other lower motives.

Enough would be said in the speeches at the open Conference about the fallen condition of our profession and imperative necessity for improving the same at once. I am going to confine myself only to pointing out some of our unfulfilled duties and leave it to you to demand our rights in as loud a form as you possibly can. In the first place, the teaching profession in this province is in a highly disorganised condition and it is no wonder that the resolutions passed at our annual Conferences are not given the importance they deserve or which you and I would like to see they are given. Let alone the well marked triple division of our ranks into the elementary teachers, the secondary teachers and the college lecturers and professors. We have a further essential division into Government servants, Local Boards and Municipal servants, and teachers in institutions under private management. The last class is again sub-divided into teachers under Mission management and teachers in schools under Committee management. Thus we are cut up into ever so many sub-divisions latitudinally and longitudinally. The S. I. T. U. has been attempting to fulfil its function as the Central Provincial Organisation for the profession. But he would be a bold man, who can say that every school has got its Teachers' Association, that all such in

a district are affiliated to the District Teachers' Guild of that district and that all such District Guilds are affiliated to the S.I.T.U. That is our ideal. But we are at present very far from that ideal and it is for you my brother-teachers to see that ideal is reached as early as possible. My friend, the energetic Secretary of the S. I. T. U., will explain to you his schemes regarding the Protection Fund and the starting of a journal which would be the organ of this central organization.

It is not enough if we organize ourselves in the manner above suggested. We must improve ourselves financially and then only can our organisation be effective. There are only two methods of improving our financial position. One to get more but the other, the less popular, to spend less. I am not at all sure whether we have exhausted all possibilities along the second line and whether we have examined into the existence of other methods of increasing our income than demanding more pay from managements. If you take my suggestions in the spirit of friendliness in which they are offered, I would recommend the taking in of a few students as paying boarders by every poor teacher. I am quite sure there are many well-to-do parents who would welcome such an idea and entrust their children to the care of honest and efficient teachers who without taxing the female members of their family unduly and without in any way compromising their position can easily take a few students as paying boarders. The writing of text-books ought to be another source of income to every capable and hardworking teacher. The starting of co-operative societies, more for saving than for borrowing, with the scheme of provident deposits which we of the Madras Teachers' Guild have organised for the benefit of our

members will be another method of improving our financial position.

It has often occurred to me that an institution like the Deccan Education Society, if started in our province, could easily enlist the support of a number of brilliant teachers in our Presidency. It would also serve as a solution of the periodically recurring problem of unemployment. Schools might be started by a band of co-operative workers and I am sure the Department will give every encouragement to such institutions.

I want the teachers, at least such of them as I have got the necessary capacity and the leisure, to come forward and give a lead in the matter of awakening national consciousness regarding educational problems and the nation's responsibility in handling and solving them. I am not inconsistent when I expect this of the teachers having once said that education is not the exclusive subject of the teachers. We, teachers, ought to be the stimulating agency to make people think, to collect and co-ordinate their views and to correct them in the light of our experience and make this volume of enlightened opinion available for national use. It is surprising to see how few books are being published in this country on educational problems. Politics seems to have absorbed the attention of the best intellects of our country, *i.e.*, of those who over and above their professional work have got spare time for the services of the motherland. But education is in no way less important and it is a truism that the children of to-day are the citizens of the morrow and these citizens would be what we and the educational system make them to be.

I have often thought that in shaping the educational policy of this country if at all there was any policy at any stage, the gather-

ed experience of our race has not been fully utilised. Though Lord Macaulay may not deserve fully the epithet "Prince of Philistines" as an ardent apostle of culture nicknamed him, there is no denying the fact that when he wrote his famous memorandum on Indian education along Western lines, he was blissfully ignorant of the best traditions of our race as embodied in our literature, and later administrators have not made good the omission. I would mention only two instances. Any one who reads our Dharma Sastras, especially the Manava Dharma Sastra or the Laws of Manu, would realise the fact that education is given its due place in a comprehensive and well-thought-out scheme of life. Our ancestors always discussed the question of the end of life, of the *Purushartha* first, and looked upon education as merely a preparation to enable a man to realise that end. Secondly, though I am not an advocate of the caste distinction as it is to-day, yet there is a very good deal to be said in favour of deciding the future profession of a person according to his parentage and therefore according to his nurture. There has always been a controversy as to which is the greater force, nature or nurture. Sometimes the scientific opinion swings in one direction and sometimes in the other. But as is always the case, truth lies somewhere between these two extremes and our ancestors realised the force of this. As I said at the outset I am not at all defending the existing caste system; far be it from me to condemn the son of an agriculturist to be eternally confined to agriculture with no chance of becoming a member of the learned professions but at the present time we have come to the curious and hopeless position of believing that every one is fit for every profession in the world and we have no guid-

ance at all in the matter of choosing our profession. It is dangerous to leave the choice to the children. Parents, if they are wise and observant and interested in the welfare of their children, ought to shoulder this responsibility and we in India have lost the old moorings nor have gone to the present up-to-date methods practised in advanced Western countries of determining the natural inclination of a boy by exhaustive mental tests and the result is, we are in utter confusion. I again respectfully submit that in such matters the accumulated experience of our race is a factor to be reckoned with and not to be completely left out as we have done hitherto.

Brother-teachers, owing to lack of time and convenience, I have been able to touch only upon a few topics. I have said very little about many of the burning problems of the hour nor have I said anything about one aspect of our national education which is very often neglected, *i.e.*, women's education. But I should consider myself fortunate if I have impressed upon you the supreme duty of awakening the nation regarding its responsibility in educational matters and to a certain extent leading it along healthy lines of development and of the equally supreme duty that you have of uplifting yourself more by your own efforts than by depending upon external agencies, for as the Lord has said: "You have to lift yourself by your own exertions." "Yourself only is your own friend."

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THE COMMON ERROR IN THE TEACHING OF GRAPHS IN SCHOOLS

By MR. R. G. SADANI, M.A., S.T.C.D.,
N. J. High School, Karachi.

THE chapter of graphs as dealt with in schools is interesting and useful at once. No one can question its great utility in everyday life. Business men, professional men and statesmen make very good use of graphs as taught in the schools. Graphs make their respective work very simple, highly systematic and well-organized. But there is one error which is commonly committed by teachers, nay even by authors of books on Algebra of no mean repute.

In this article I propose to show the error in as simple and clear a manner as possible and suggest a remedy as to how it can best be avoided. The error is about calculating values of certain requirements from the given data. Here teachers that handle graphs forget that it is not always possible to have values of requirements from the data of the similar nature. Values of the requirements can be easily and accurately calculated from the data of the similar nature when a graph, in which, for instance, the two variables marked along ordinates and abscissæ are directly proportional to each other, but no values can be calculated for requirements from the data of the similar nature in case of a graph being a statistical or business graph. For example if we are asked to find out how much 26 men will receive per day when 12 men receive Rs. 30 per day, we can very easily and accurately find that out, from the graph which in this case will be a straight line passing through the point of origin. The answer will be Rs. 65. But suppose it is

given that the temperature of a patient at 10 A.M. was 102° and at 4 P.M. was 100° , we cannot conclude by drawing a graph that his temperature must be 101° at 1 P.M.; it may be anything but 101° . Or to take an actual case, the truth of which can be tested by every one. The population of Karachi in 1891 was 105 thousands and in 1911 it was 159 thousands, we cannot conclude that the population of Karachi in 1901 must be 132 thousands, as really it was 115 thousands or 17 thousands less than the calculated one, which brings in a mistake of about 15% in this case. But the method is entirely wrong, it may bring in a mistake of any magnitude.

With all this, sums about finding out temperature and population from certain data are given in various books on Algebra and such questions are found in various question papers set to the Sixth Standard and Matric students.

This common error can best be avoided by dividing such graphs in two classes, namely, graphs of definite nature and graphs of indefinite nature. Definite graphs will mean to deal with mathematics and indefinite ones with business. Definite graphs ought to be drawn in continuous lines and indefinite graphs in dotted lines to mark the distinction at the very outside, for indefinite graphs represent certain individual facts which oftener than not are found not to exist in a definite order.

Students ought to be distinctly told that no values can be calculated in the case of graphs of indefinite type drawn in dotted lines, while values can be calculated in the case of definite graphs drawn in continuous lines.

To make the matter of calculating values of requirements from the given data of the

similar nature in the case of indefinite graphs appear ridiculous to the students, a story similar to the following may be related :—

A doctor was attending upon a patient suffering from a kind of fever. He visited the patient on one night and suspecting something, gave instructions to the effect that the temperature of the patient should be recorded every four hours commencing from 8 A.M. Accordingly the temperature at 8 A.M. the next morning was taken which was 104° . At 9 A.M., the doctor was sent for as the patient was feeling restless. The doctor took the temperature at the time and it was 102° . He examined the patient and told a boy to accompany him to take back the necessary medicine. He instructed the boy to give a powder to the patient at 9-30 A.M., and take temperature at 10 A.M., especially apart from the usual records at 4 hours intervals. The boy came back, gave the powder at 9-30 A.M., and told his elder brother, who used to record temperature, to take temperature at 10 A.M. also. The elder brother forgot to record temperature at 10 A.M., he however recorded at 12 noon when it was 102° . At 8 P.M., the doctor was again sent for. He asked what the temperature was at 10 A.M. The younger brother went to the elder brother for the required information and the elder brother was stupefied at the demand made on him. However encouraged by the graph erroneously taught at the school he saw that the temperature at 10 A.M. ought to have been 103° , so he told his younger brother "Well, tell the doctor that the temperature at 10 A.M. was 103° ". The doctor sent for the elder boy and the following conversation took place between them :—

Doctor—If you do not mind, I like to know if you shook the thermometer

properly when taking temperature at 10 A.M., for how could it be 103° after the powder, when it was 102° at 9 A.M., i.e., a little before the powder was given?

Boy—If you do not mind, doctor, the temperature at 9 A.M. was 103.5° . Please look at the graph I have prepared.

Doctor—Oh, you good boy, then have you calculated the temperature of 10 A.M. from your graph?

Boy—Yes, doctor, I have.

The doctor then explained to the boy his error by actually proving to him that the temperature after the powder must have gone down by 2 or 3 degrees on giving the patient another powder at 8-30 P.M., when the temperature was 102.5° and by getting the temperature recorded at 9 P.M., which was found out to be 100° .

In conclusion it is hoped that the error of calculating values of certain requirements from the given data in the case of graphs of indefinite nature will be avoided. Such calculations are not only wrong but risky too.

CHEMICAL PROBLEMS AND THEORIES

FIRST PART

BY

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XXXII—46

THE DALTON PLAN.

By Mr. K. SRINIVAS KINI, B.A., L.T.,

Board High School, Karkala.

THE Dalton Laboratory Plan is at present a vitalising force in teaching. Mrs. Parkhurst, the American educationist, originated it and gave it a trial in the Dalton High School and then in the Children's University School. Some of the schools in England and America then adopted the plan and much to their astonishment and satisfaction, they found the results very gratifying.

The plan has now come to stay and it is slowly but surely revolutionising the educational system.

In a general way, it may be described as a system of educational reorganisation which aims at throwing the responsibility of the pupil's getting through his work more on himself than on his teacher.

It guarantees freedom for him to do his work in his own way and at his own rate of intellectual speed. It provides him with an opportunity to feel that he is a member of a society which contributes to his success and to which he has to contribute his quota of work. It gives him scope to develop his individuality.

Under this system, the teacher's business is more to watch and guide than to instruct. He sits in his subject room to preserve an atmosphere of study, to assess the work done by the pupils, to explain their difficulties and to give them information as to how any bit of work or piece of apparatus is to be handled. He has no set-lessons to teach nor has he a class to address except on a few occasions when he may wish to say a few words by way of introduction to a new subject or he may give an oral lesson on the completion of

the pupil's "contract" of work. More than this, he is not expected to do; to do more is to revolt against the very spirit of the scheme.

The pupil is thus thrown on his own salvation. Work is assigned to him for a month or about and he is to do it within the allotted time. He may take advantage of the teacher's guidance or he may severely leave the teacher alone. It is enough if his work is approved by the teacher. He may work at one subject for any time he likes or he may busy himself with two or more subjects the same day. He may adjust his time according to his requirements. He need not leave the study of one subject at any particular hour. There will be no bell and no time-table to summon him to another class or to another subject. The pupil is free to tackle his subject in the way he likes best. All that is necessary is that he should complete his contract within the stated period.

To create a favourable atmosphere for the working of the plan, some mechanical devices are adopted.

One teacher is put in charge of one subject; his qualification and his personal tastes are the criteria for his selection. If he is a specialist in history, he will not be asked to supervise the work in English; if he is good in English, he will not be in charge of the geography work.

This arrangement has its advantages both for the teacher and the pupil. The former, when he assumes responsibility for the subject he is best fitted to teach devotes himself to it; the study of the subject develops his interest in it. Out of the latter, the zeal for imparting instruction is born. The pupil will thus have for his guide one to whom he may confidently appeal in all his difficulties and

whose interest in the subject is never less than his own.

The creation of the subject laboratories is another device that is adopted to ensure the success of the scheme. A room is ear-marked for the study of a particular subject with the specialist in charge and with the available books and appliances pertaining to it placed therein. The necessary atmosphere and the facilities for the study of the subject are thus provided for.

The third device that is adopted is the drawing up of the assignments of work. On the skill shown in this matter does the success of the plan largely depend. Hence every care has to be taken to draw up the assignments in the right way.

What is an assignment then and how is a teacher to draw up an ideal one? The assignment is a brief statement of the nature and amount of work to be done by the pupil in a subject in a month's time. It is sub-divided into periods and units; the period outlines the week's work in the subject and the unit the day's work. For the year's work in the subject, the term 'contract' is used.

The drawing up of an assignment requires considerable skill and a sound knowledge of child psychology. The assignment must be so drawn as to create the pupil's interest in the subject to be studied. The directions for the work to be gone through must be full and definite.

To put the uninitiated teacher in the way, some formal arrangement is adopted, more for his guidance than for strict adherence. Under this arrangement, the topic for study is first mentioned. Then in a few well-chosen words, the study of the subject is introduced. References for reading and after that, ques-

tions on the subject-matter read follow suit. How much this work counts is then stated in terms of units; lastly, references for home-reading are given.

No less important a device than the drawing up of the assignments is the "check" system adopted wherever the plan is tried. The work has not only to be set, but whether it has been satisfactorily done or not has to be ascertained; otherwise the plan will get into disrepute and its success doubted. The "check" system has other advantages as well. It will be helpful to the teacher and the pupil alike; the teacher will get an idea as to the quantity and quality of the work done by the pupil; the pupil will be in a position to measure his own progress by a reference to the graph-cards used to check the work.

There are three kinds of cards in general use. There is the pupil's graph-card to show his progress in the several subjects he works at. There is the instructor's graph-card to indicate the achievements of the class in the subject he is in charge. There is the class graph-card to measure the amount of work done in terms of units in all the subjects in the year.

The design of the cards is simple in the extreme and no difficulty will be felt in marking them. These cards can be had from the Educational Supply Association, Ltd., 40-44, Holburn Viaduct, E. C.

For more information on the subject, the following books may be consulted:—

1. Parkhurst—*Education on the Dalton Plan*.
2. Mrs. Dewey—*The Dalton Laboratory Plan*.
3. A. G. Lynch—*Individual Work and the Dalton Plan*.

LESSONS IN ELEMENTARY ENGLISH PHONETICS—COMPARATIVELY TREATED.

By MR. L.V. RAMASWAMI AIYAR, M.A., B.L.,
Ernakulam.

V.

(Continued from p. 327—May 1926.)

TIP OF THE TONGUE AND FORE-GUM.

[t], [d]: The tip of the tongue closes the super-glottal passage at the fore-gum, air is gathered inside, and sudden separation takes place. The place of contact for the production of the sound varies with different languages and so the sounds too are different. For instance, the French always adopt a more forward position for the production of these sounds which then become dental in character. In English, [t] is dropped in pronunciation in [lɪzən], [ka:sl], and [d] disappears in [kainnɪs], [græmΛδɪ].

The Malayalam sound in ഞെ [ente] is a slightly different sound; the sound in ഞ [ka:tɔ] is a true retroflex sound. The Indian sounds [t] and [d] = ധ are different in nature. BACK BLADE OF THE TONGUE AND BACK PALATE.

[k] and [g]: Inter-vocalic [k] is not unstable in English, while in Malayalam it is so:

മാക്ക [makɔn] > [mΛxɔn] > mΛgɔn > [mΛbɔn] > [mɔ:u] > [mɔ:n] [k] has two values in the English words "cat" and "call"; in the former word [k] has a palatal value while in the latter it has a guttural value, cf. Malayalam [kappɔkka] or [kappɔkkʲa] [n] + [K] in Malayalam > [ŋK] > in Tamil [ŋg].

NASALS: All English nasals are voiced except in *camp, snake, hent*, etc., [kæmp] etc.

Lip and Lip: [m] is always voiced in English except in the above instances. The

English and the Malayalam sounds are the same. In English words like 'prism' and 'chasm' the final [m] is syllabic and they should be [prɪzm] [kæzm]. The habit of introducing a short [ɒ] or [ʊ] sound immediately before [m] is to be deprecated.

[n] has the same tongue-position as for [t], [d].

This sound is confused with Malayalam cerebral [ɳ] and English sounds are uttered with the vernacular cerebral sounds, e.g. *bone*, *money*, *haunt* are wrongly pronounced as [bo:n], [mʌni], [ha:nt].

Syllabic [n] exists in "mutton," "bulton," "ridden," while in "cotton," "sodden" the sound is not syllabic but is [ɒn].

BACK BLADE OF THE TONGUE AND BACK PALATE.

ŋ = as in [sɔŋ], [lɔŋ], [siŋiŋ] but [lɔŋgɒ] and [æŋgɒ]; Malayalam colloquial [uŋɖeŋŋi] உண்மையான.

Tamilians wrongly pronounce the sounds in [siŋgiŋg] etc. for [siŋiŋ] etc.

In addition to the nasal sounds above described, Malayalam has the alveolar [ɹ], cerebral [ɳ] and [ɲ]. Malayalam [ɹ] < old Tamil [j] in [ɹæ'n] < old Tamil [ja'n].

LATERALS: [l] has two different values in English; cf. [lɪtɪ] and [kækl] in which [l] adapts itself to the [t] sound and becomes "thicker" the high cerebral value of Malayalam [l] is never attained in any Eng. word. It is wrong to cerebralise the [l] in words like *bull*, *deplorable*, etc., as some Malayalis do.

VIBRATION OF THE TIP OF THE TONGUE.

[r] is produced by the tip of the tongue being pointed towards the upper gums. In Northern England and Scotland, the sound is trilled, i.e., the tip is made to vibrate. If vibration is absent, then the Southern English

sound is produced. This Southern English sound is really a fricative. Tamil and Malayalam [r] has different values. Initially it is slightly trilled with three or four strokes against the teeth-ridge, while medially and finally it is only a mere flap. Malayalam [r] is a cerebral sound and is often trilled.

[r] in English is altogether elided, at the end of a word except when followed by a word with an initial vowel; while before a consonant either it disappears altogether or becomes vocalic [ba:], car [ka:] etc.; [ga:ddən]; [ha:ti]; etc; but [kædrən fɔ:stɒ] "care and foster."

[r] intervocally is fully brought out, e.g., [veri]; [Hæri]; but even in such cases the tendency in certain parts of England is to vocalise them as [Veji], [Hæji] or something like this. *Girl*, *first*, *sir*, *bird*, *earth*, *clerk*, *Derby* are respectively pronounced as [gɜ:l], [fɜ:st], [Sɜ:], [bɜ:d], [ɜ:θ], [kla:k], [Da:bi]. In Malayalam [r] is sometimes interchanged with [ɖ] or [ɹ] as in colloquial [kɒnɖɒ] or [kɒnɖɒ] for [kɪnɖɒ], cf. *Malra* > *tt* as in [ma:ɹɒ] and [ma:ttɒ].

SOUNDS IN COMBINATION.

A sound, taken by itself, has a definite value; in combination with other sounds, this definite value undergoes modification on account of various factors some of which are indicated below:—

1. When two or more sounds are sounded together, certain sounds or certain syllables receive greater stress while others receive comparatively less stress. This leads to modifications of the sound, however slight they may be.

2. Differences in intonation would also bring about the same changes.

3. The influence of the quality of one sound upon that of another also results in modification. This is called Assimilation.

Length of sounds becomes important when sounds stand together. Again, sounds in combination give rise to *on-glides* and *off-glides*. In Malayalam, sounds in combination give rise, in addition, to *sandhis* and *samasas* (not very dissimilar to the French *liaison*) and to doubling of consonants.

We shall discuss these sound attributes separately one by one.

DYNAMIC STRESS: Dynamic stress is the force with which the current of expiration is sent out when a sound is uttered, and a sound or syllable is said to have greater dynamic stress, or simply greater stress when it is uttered with great force of expiration than other sounds or syllables. This dynamic stress should on the one hand, be distinguished from *musical stress* or *intonation* or *pitch*, and from the duration or quantity of sounds, on the other. Musical stress refers to the pitch of the tone with which a sound is uttered. Length of sound relates only to the time during which the particular sound is uttered.

Stress also affects words in sentences. When a particular word is pronounced with greater force of expiration than the neighbouring words, the stress is called *Emphasis*. In *Emphasis* we take a comparative estimate of the degrees of force with which different words in a sentence are pronounced, while in the case of *accentual stress*, we estimate the relative degrees of force with which the different syllables of a word are pronounced. Different degrees of stress can be detected even in a particular syllable, but for our discussions, these differences are not material.

There are many Indians who, though they otherwise speak English accurately, are unable to observe the correct rules and usage of stress and intonation while speaking English. The effect is really ludicrous in many cases, especially where the stress and the intonation of the vernaculars are imported bodily into the pronunciation of English.

Various degrees of word-stress exist in English; but for practical purposes the primary and the secondary stress of a word alone need be observed. Words of one syllable do not contain within themselves any appreciable or significant variations of stress, but at least the principal and secondary stress in words of more than one syllable should be noted. In a word of many syllables like in | —com | pre | hen | si | bi | li | ty each of the syllables has a particular degree of stress. Poly-syllabic words always offer difficulty in this respect; simple words, however, do not present any trouble as the following general rules of English accentual stress show:

1. Accentual stress in English native words is generally initial.
2. Stress in old loan-words is not definite, but initial stress is permissible in words which have been assimilated into the English language.
3. Recently adopted foreign words retain their foreign stress in English. All foreign French words adopted into English during the recent great war retain their French accent, except in the case of those words which have passed through the mouths of British Tommies who have naturalised the words thoroughly into English.
4. For the sake of contrast and emphasis, variations from the above rules are possible.

5. There are certain cases of stress which are guided by mechanical principles of the rhythmic movement of sentences.

We shall discuss each one of these separately.

1. The initial accent in English is the result of tradition. Stress on the initial syllable of a word is the rule in all Teutonic languages, while in French the stress, if any exists at all, is on the last syllable. In English, in order to distinguish between different parts of speech, sometimes the initial stress is changed into one of secondary stress as in *ábsent* and *absent* where the first word is an adjective and the second a verb. Foreign loans like "danger," "nature," which have become naturalised in English, adopt the English stress while recent borrowings like *dépot*, *envelope*, *camouflage*, *bouquet*, *coiffure*, have all the French accent. "Camouflage" has also a native English sound [kæmðfɪdʒ] which is due to its use by the Tommies in the trenches of France during the war.

Another influence which varies the effect of tradition is that of the psychological or logical sense which plays a very important part in sentence-stress and is not inactive in word-stress also. (a) *General emphasis* on the whole sentence may often reduce the disparity of stress between two syllables of a word and thereby raise the level of stress of the normally unstressed syllables. (b) The desire to contrast two separate ideas may sometimes lead to the stressing of unaccented syllables. Take the words, "impression" and "expression," "propose" and "oppose," "fifteen" and "eighteen," "donor" and "donee." It is quite possible to stress them out of the normal, so as to contrast the ideas conveyed.

Again, sometimes mechanical influences like the mere fact that a sound is at the end of a sentence, or a breath group, alter the stress, e.g., *eighteen* when separately uttered has stress on both the syllables, but in the sentence "he was only eighteen," the stress on the word is *distinctly at the end only*. Rhymic flow also influences stress as in "g^{ood}-n^{atured}" and "a g^{ood}-n^{atured} m^{an}."

The stress of a syllable may sometimes be increased or decreased by the rise or fall in the pitch of a syllable. This, however, is not so important a change as to deserve detailed discussion here.

In the South Indian vernaculars, pitch-variations appear to be more prominent than variations of dynamic stress. I have discussed this view elsewhere and tried to reinforce my view with illustrations from some of the phonetic peculiarities of Tamil and Malayalam.

Intonation or Pitch:—It is evident that intonation can refer to only the voiced sounds. Pitch-variations depend upon the rapidity of sound-vibration. Each language has a peculiar system of intonation for its speech. The Englishman's intonation is different from the Frenchman's, while the Malayali's intonation is different from the Tamilian's. The acquisition of the native intonation of a language is the last but the hardest part of the work of a student of a foreign language. There are people who despair of the task of acquiring the intonation of a foreign language. The intonation of English speech is acquired only by few Indian speakers. An Indian need not necessarily be guilty of affectation when he intones English syllables and English words in the correct way. The first step to acquiring English

intonation is, to begin with, to guard ourselves carefully against the mistake of importing our vernacular intonation into the pronunciation of English. If this task is achieved, the rest is easy. No definite rules regarding intonation can be formulated but some of the factors which guide changes of pitch are outlined below:—

(a) Stress and pitch have some inter-relation, as we have seen above.

(b) The emotional state of feeling influences the pitch. For instance, the word "yes" can be intoned in four ways to indicate four different emotional states:—

(1) *That is so*—slightly falling intonation.

(2) *Of course it is so*—fully falling intonation.

(3) *Is it really so?*—Rising intonation.

(4) *That may be so*—Level intonation.

Cf. the various emotional states indicated by the different intonations of the Malayalam word [vannuvu], which may indicate a query, or express surprise or satisfaction.

The emotional peculiarity of a man, or a group of men or a race may colour the general intonation of the speech of the respective parties. An enthusiastic child at play, an adventurous globe-trotter and a mob-orator make use of greater and more picturesque variations than a pessimistic man of the world, or an extra-careful diplomat. Even races have been said to be possessed of different emotional states and the Mediterranean races enjoying the temperate weather of South Europe and other blessings of Nature are said to be fond of greater pitch-variations than the races of the cold and bleak northern regions of Europe. Again, civilisation, it is said, always reduces the wildly excessive pitch-variations of the speech of barbarians

and savages. I am not so sure of this as of the fact that sophistication and cunning in a man certainly reduce the intensity of his pitch-variations!!! A German deplores in the following terms the wild intonation of his native race which, according to him, is described as being due to want of culture. "The fact that in Germany the shrieking habit of speaking is not regarded as plebeian, at least in certain high circles, always arouses the antipathy of the foreigners. One of the pedantic sins against which we ought to set our face in stern opposition, is the manner in which this shrieking way of speaking our language is, in the elementary grades and lowest classes of our schools, often sedulously fostered and cultivated by teachers themselves; for such a habit of speaking not only offends external etiquette but is inimical to internal cultural progress too!"

(c) A smaller pitch is employed when sentences or words are ended, when replies to questions are made and when otherwise a sense of finish is felt. The last syllables of a long speech are always intoned with less pitch, except perhaps when orators declaim their perorations.

In South India, intonation varies almost with every district. The intonation of Tamil in Madras is different from that of Madura or Tinnevely which again is different from that of Tanjore or that of Coimbatore or that of Salem. The North Malayali intones his speech quite differently from the Cochinite who again gives a different intonation to his speech from that of a central or South Travancorean.

QUANTITY OR DURATION OF VOWELS AND CONSONANTS.

Both vowels and consonants can be long or short. The existence of long vowels and

long consonants belonging to all classes, except the plosive group is easy to understand and explain. The length of vowels in English is not ordinarily denoted in writing, except where double vowels and other vowel combinations are used. Length of consonants is denoted in English by the use of double letters. In regard to plosives, length is to be understood (1) by the extra time which elapses after the forming of the stoppage and before separation, and (2) the extra strain imposed upon the muscles of the mouth. Spinning [spin:ɪŋ] or [spinnɪŋ] —stopping [stoppɪŋ] or [stop:ɪŋ].

For practical purposes, we need distinguish only between three grades of length: *fully long*, *half-long* and *short*.

We are not here concerned with the absolute length of the particular vowels and its relation to the absolute length of another vowel. The absolute lengths of vowels depend upon various factors with which we need not occupy ourselves now.

Rules regarding the length of vowels cannot be easily laid down, either in English or in Malayalam; the following rules for English are given by Daniel Jones in his book:—

(1) [i:], [æ:], [u:], [ɔ:], [ɑ:] are long in stressed syllables when final or followed by a voiced consonant, e.g., *sea*, *seed*, *halve*.

(2) They are half-long (a) when followed by breathed consonants, e.g., *seat*, *half*, (b) when quite unstressed, (c) when followed by another vowel as in *debut*.

(3) [ɪ], [æ], [e], [ɒ], [ʌ], [ʊ] are generally short, but become half-long when stressed and followed by a voiced consonant other than a liquid, e.g., *pit*, *pig*, *pin*.

(4) Consonants are slightly lengthened when final and preceded by short vowels.

In Malayalam, though all long vowels are specially indicated by symbols and all long consonants are doubled, all long vowels and consonants are not really sounded long. Length of vowels and consonants is retained by them.

(a) in root-syllables which receive the main stress or intonation;

(b) when occurring at the ends of breath-groups;

(c) in cases of consonant doubling or [dʒɪtʃɪm],

In other cases, full length is reduced to half-length or even further to short value.

Short vowels are sometimes slightly lengthened into half-length when they occur at the ends of questions, or sometimes even at the close of breath-groups.

Assimilation is the process whereby sounds that are articulated in quick succession influence, or are influenced by their neighbours.

A. *Palatalisation* is a variety of assimilation. The [tʃ] sound in 'church' is derived from an old English sound [k] which influenced by an immediately succeeding palatal or front consonant, gradually became palatal [kʲ] > [ç] > [tʃ].

The palatalising influence is also seen if we examine the sound of [k] in *call*, *kill*, *key* and *coat*. The [k] of *call* and *coat* is distinctly purer than the [k] of *kill* and *key* which is a palatalised variety. This is due to the way in which the mouth organs have to accommodate themselves to different sounds. Examples to illustrate this position from the vernaculars can be had in plenty:—

Cf. Tamil கை [kai] and Telugu [cʃejjo].

Cf. Pure Tamil [ɪŋge] and dialectal [ɪvʃɔ].

B. Another variety of assimilation is that of breathed sounds to voiced sounds and *vice versa*. (i) Breath to voice as in raspberry [razberi], cupboard [kʌbəd]. (ii) Voice to breath, e.g., snuff [snʌf] (when [n] is unvoiced), small [smɔl], etc., have to, [hæf tu].

C. *Nasalisation* of [d] into [ɳ] in *kindness* [kainnis] and *grandmother* [grænmaʃɔ] —cf. the change of Sanskrit [ṇd] into [ṇṇ] in Malayalam.

D. Assimilation of one sound to another sound, e.g., *this year* [ðɪʃjə:]—cf. *master* in the mouth of Malayalis became first [ma:stər], then became by assimilation [ma:ʃtər] or even [me:ʃʃə]. Many Sanskrit and Malayalam Sandhi rules give illustrations of this variety of Assimilation:—

Old Tamii [kan] + [tu] (past tense ending)

> [kanʈu] > colloquial

Malayalam [kanʈu]

Sanskrit [nd] > Malayalam [nn].

All the above varieties of Assimilation can be classified again as (a) *Progressive* or (b) *Regressive*. In *Progressive Assimilation* the first sound influences the succeeding one. In *Regressive Assimilation* the process is *vice versa*.

Very closely allied to Assimilation is what is called *Assibilation* which means the dropping of sounds between two other sounds by a process of absorption as in *castle* [kʌzl], *whistle*, *fasten*, justly [dʒʌsli], Malayalam colloquial ക്ഷേപം [cʃɔ:ʃtʃɔ]; ക്ഷേപം become [kanʃɔr].

BASIS OF ARTICULATION.

Sweet says — "Every language has certain general tendencies which control its organic movements and positions, constituting its organic basis or basis of articulation." This

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basis of articulation forms, as it were, the genius of the spoken language. The genius of each language is peculiar to itself. This is why we are able to distinguish between various languages by merely hearing them spoken. This is also why when a foreigner speaks our tongue we often times detect a strangeness about his pronunciation which we in common parlance describe as a "foreign accent." The genius of a language always favours a certain degree of muscular tension, a certain definite tongue-position for particular sounds, etc. I shall describe below, as briefly as possible, the special characteristics of the 'basis of articulation' of the English language:—

Vowels:—(1) Lip-rounding in the case of certain vowels exists but is not so prominent as in French or in German. (2) Neutral vowels are very prominent especially in weak syllables. (3) Short vowels are more open than their corresponding long ones.

Consonants:—(1) Definite tongue-position exists for [t], [d], [n], which is neither too forward to be dental as in French, nor too backward to be cerebral as in Malayalam or Tamil. (2) Trilling of [r] avoided ordinarily. (3) Vocalisation of [r] in certain positions (*vide above*). (4) Breathed plosives aspirated. (5) Voiced plosives have various degrees of voicing. (6) Assimilation not so great as in Tamil or Canarese or Telugu.

General:—(1) Stress accent strongly initial, as a general rule. (2) Length of vowels varies with particular positions and in particular combinations. (3) Intonation neither so prominent nor so picturesque as in the South Indian languages. (4) Wider opening of lips and lesser muscular tension on the whole (??) for the articulation of South Indian words than for the articulation of English.

THE TEACHING OF GEOGRAPHY IN HIGH SCHOOLS.*

THE introduction of the School Leaving Certificate Scheme brought in its train certain evils which are happily remedied under the new rules. Among these evils may be mentioned the unfortunate neglect of History and Geography. Of these two the former had some importance attached to it since candidates could offer it as an optional subject, while the latter was however wholly relegated to the dust heap. Geography was only regarded as a subject at the time of school inspection. Quite a number of students have passed out of schools in blissful ignorance of the elementary ideas of Geography and a considerable number have even graduated. Some of these graduates have also entered the Education Department. It is no wonder then that such men cannot be expected to discharge their duties satisfactorily so far as the teaching of Geography is concerned because of their lack of interest for the subject while at school and probably want of sufficient reading later on.

It may not be out of place if I refer at the very outset to the advantages of studying Geography and the position the subject occupies in India as compared with that in Western countries.

As was recently remarked by an eminent authority, a knowledge of Geography gives a clue to the differences in the manners, customs and activities and temperaments of the various nations and by emphasising the influence that environment exercises on humanity, leading towards understanding

* A paper read by Mr. D. Narasimhan B. Com., F. R. Econ. S., Mysore Education Service, before the First Provincial Conference of High School Teachers and Inspecting Officers.

and sympathy. The study of Geography develops the capacities of the student. It gives training to observation. It induces industry and accuracy in recording observations, quickens and clarifies judgment. It inculcates reverence for the Creative Power behind the phenomena of life. In its excursions, it makes for physical health as well as for initiative and co-operation in organisation. In addition to these it has also a utilitarian value. Owing to the differences in vegetation resulting from differences in climatic conditions and mineral wealth, people living in different parts of the world are brought together in the mutual exchange of the necessities and comforts of life, linking up the regions of productivity with the regions of consumption.

In keeping with the importance of the subject, Geography occupies a prominent position in Western countries. Elaborate syllabuses have been drawn up and degrees instituted in Geography. Some of the Universities have given it a place next only to that of English Literature. What is the position in India? It occupies, I am sorry to remark, a lamentable position. The advantages of Geography already detailed are lost sight of and the teachers are not trained in the geographical method. Mere memorization of the names of towns, mountains, rivers, lakes, products, etc., is all that is associated with the subject. Recently the Allahabad University has founded a chair of Geography and intends providing instruction up to the M.A. standard from July next. The Bombay University has given some prominence to the same by prescribing it as a compulsory subject for the degree in Commerce. Otherwise Geography has not received the attention it rightly deserves in the

scheme of education. A School of Geography, if established in Mysore, would considerably improve the position of the subject. You are all aware of the discussion in the Madras Senate regarding such a proposal for Madras by the Director of Public Instruction.

The theme of my paper concerns itself with the teaching of Geography in High Schools. Our schools are not properly equipped and the teachers not sufficiently trained in the geographical method. Some of the schools have no globes and others have not a good set of maps. Even where maps are found they are out of date and do not contain the information necessary for the lesson to be given. According to the New Rules a knowledge of Commercial Geography is also expected of the candidates for the S.S.L.C. A separate set of maps for this branch of the subject is absolutely necessary. In this connection I venture to submit that some of the High Schools do not receive adequate grants. There is a feeling that too much attention is bestowed on Science. This partly accounts for the neglect of Geography.

To improve the teaching of Geography, I beg leave to make a few suggestions which may be duly considered by the Conference.

In order that instruction may be most effective, it is indispensable that there should be a separate class-room equipped with the necessary apparatus for the teaching of Geography. Where this is not provided, experience shows that complications result from having to transport the material needed for each lesson, causing loss of time and possibly encouraging a certain type of teacher to dispense with the means of illustrating the lessons. In big schools where Geography is taught by three or four persons, it may so

happen that a lesson on India may be given in the same period in two classes. When the school has only one map of India, one of the teachers has to give his lesson without a map, unless he is resourceful enough to have an outline map drawn with the necessary data.

The essential apparatus is as follows: A blackboard of large dimensions, a good globe and one or two sets of wall-maps. All these are not found in some of our schools. Geography, like Science, requires apparatus though its equipment costs only a few hundred rupees. A good globe is necessary because, for example, it is not possible to give a just idea of the dimensions of the Pacific except on a globe. The old fashioned political maps crowded with names are now supplemented, and in many cases, superseded, by maps showing the various physical aspects of the continents and countries. In addition to the large scale wall-maps of the same continents and countries, it is desirable to possess a series of maps of the same continents and countries—like those of Philips or Oxford University Press—each map illustrating a different distribution so that the whole group may serve to show the correlation of one distribution to another.

Wall maps have a limited use. As a rule, the student who is seated at the back of the class-room cannot see every detail that is pointed out to him. It is up to the teacher then to prepare special rough sketch maps in connection with the physical, political or economic geography of any region. The successful teaching of Geography requires therefore a supply of maps, globes and sketch maps. A cheap shed for meteorological observations—for easily grasping facts connected with climate, rainfall, etc.—will enhance considerably the teaching of Geography, making it practi-

cal like that of Science. There are Observatories at Bangalore, Mysore, Hassan and Chitaldroog, which may with advantage be utilised in teaching Geography. In other places Observatories may be erected and attached to the Science section of the High Schools.

We all know how the Department is taking effective steps to systematize the instruction in Elementary Science in Middle Schools and Biology in High Schools. Would it be too much to plead for the same concession being shown to Geography? A special course of lectures may be arranged for during the next vacation, giving greater emphasis to Commercial Geography which is newly added on to the Geography syllabus. This suggestion was favourably received in certain quarters already.

A set of books on Geography and Travel recently published would be a valuable addition to the High School library. As the subject was neglected for over fifteen years, no good books are available in the libraries.

A few words regarding the geographical method may not be out of place. The methods employed to-day to induce pupils to learn are very different from those of, say, fifteen years ago, partly because our conception of the study of Geography has changed and, therefore, new methods are demanded. Under the old system, teachers knew what to do, or rather what to make the student do. All that was necessary, then, was that the student learn a number of geographical facts. Now facts must be used as material for study. You have to suggest things to the student and make him build up the geography of any region.

What the teacher has to aim at is to show how the building is constructed, while the

students take part in the work of construction. The student may have his mind filled with facts and yet be unable to know the connecting link of cause and effect, because he has not learnt to think for himself. Now, it is not sufficient that he should know that Australia is the world's chief wool producer; he must know why it is so. When he understands that similar geographical conditions prevail in other parts of the globe, he will be able to name the other sources of supply without memorizing a list of names. This principle of self-help has to be applied.

All subjects lend themselves to the importation of the practical element, some very obviously and others not quite so obviously. Action makes for quicker and much more secure comprehension, and therefore, the teacher should introduce it wherever possible. Mere passive listening to a teacher, whatever his attainments, is not sufficient for effective learning on the part of the pupils. The practical work set may consist of map-reading, filling in details on small maps prepared by the teacher with the help of the mapograph, map-drawing and the construction of diagrams and graphs to illustrate the rainfall or the trade of a country.

Each student should possess a good atlas, one which clearly shows physical features. As in the case of text-books, students should be compelled to buy an atlas and instructed to bring it to the class, so that they may become acquainted with the main outlines, at least, of the geography of every country in the world. The use of an atlas is indispensable to the study of the subject.

There are some teachers who prefer to commence the course with a consideration of the Home Area on the principle that it is better to proceed "from the known to the

unknown." What seems nearest to the student is the Home Area. After some time he is quite capable of understanding that similar or different physical and climatic features obtain in other lands. Constant reference to the geographical phenomena and human development in the Home Area can be made the basis of further progress. In studying, then, any part of the earth, we are led into comparison and contrasts which are very helpful.

Some time must be spent in the construction of maps. To prevent the Geography lesson becoming a drawing lesson, it is advisable to have some outline maps. During the course of the lessons, the student can fill in such details as the rivers, railways and towns, and also show by shading the distribution of minerals, the density of population, etc. Various notes can be inserted on the maps, *e.g.*, isothermal lines, direction of winds, rainfall, leading exporting ports, etc. As it is, no practical work can be done in the class-room in our schools. Therefore practical work has to be set as home work.

A few notes are valuable for revision purposes. They should consist of the salient

points. Where necessary, the teacher should explain the subject-matter and dictate brief notes. Whenever possible, passages from books of travel may be read so as to give a human touch to the subject. Excursions, as already referred to while dealing with the advantages of Geography, are of great assistance to the students in helping them to obtain first-hand information by observation. In recent years they are not so much encouraged probably due to financial stringency. Let us hope that the Department will remedy this ere long.

It is a good thing to revise. If revision is systematically resorted to, memorization becomes easier. To test the progress of students, scholarship examination questions may be set as in England at the end of a week or a fortnight. Such a system equally applicable to other subjects may be tried with good results.

My aim in writing this paper has been to draw the attention of this Conference to the present unsatisfactory state of Geography Teaching in our High Schools and to plead for better equipment and the training of teachers in the geographical method as now understood.

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HINDU MUSIC—ITS ART AND APPRECIATION.

By MR. K. ANANTHACHARI, B.A.,
Madras.

MUSIC is one of our ancient arts. It is something more than an art, as in itself it is a Sastra. We may also call it a science like our Sciences of Tharka, Mimamsa, Jothisha, etc. But we do not have any of the old books as an authority on this subject.

During the Hindu period, the Brahmins, who were the only educated classes in the country, did not pay any attention to this art, though the kings are said to have been great masters of music. So, the musical books which we have now for our authority are of very recent times—all within five hundred years. It was during the lifetime of Sri Tiagaraja Swamikal of Tiruvadi that music had a re-birth. He has by universal consent the honour of having revived the art and made it so easy and attractive.

Hindu music has got its own rules and principles. In general it comprises of Ragams and Keerthanams. There are seventy-two Melakarthas or main Ragams. The whole of the Hindu musical art is based upon limitations since everything in music must come under the seven and seven fourteen swarams or marks of sounds. The first seven swarams known as Sadjamam (lower), Rishabam, Gandharam, Madhyamam, Panchamam, Daivatnam, Nishatham, are in the ascending order of sounds and the second seven beginning with Sadjamam (higher) and ending with Rishabam are in the descending order. These two orders are commonly known as Arohanam and Avarohanam. Each ragam is formed by a certain combination of these swarams both in the Arohanam and the Avarohanam.

For instance, the ragam Hamsadhwani is formed by the swarams which are denoted by letters, Sa, Ri, Ga, Pa, Ni, Sa and Sa, Ni, Pa, Ga, Ri, Sa and Mohanam, another ragam, is formed by the combination of Sa, Ri, Ga, Pa, Dha, Sa and Sa, Dha, Pa, Ga, Ri, Sa.

Then from the ragams we have keerthanams which are limited both by the particular swarams and by thalams. They differ from ragams in two ways. First the ragams are not controlled by thalams in their durations, whereas the keerthanams are checked by particular kinds of thalams (marks of time) to have fixed durations of sounds. Secondly, the keerthanams are composed of aksharams or letters with meanings but ragams are not so. Hence in a keerthanam we have two things, swaram and sahityam. For a keerthanam in Hamsadhwani we have the arrangement of swarams formed by several combinations of Sa, Ri, Ga, Pa, Ni, Sa and Sa, Ni, Pa, Ga, Ri, Sa and upon this, Sahitya is formed to give meaning. Similarly thalams have fixed limitations and differ from each other in the number of intervals and strokes. There are many varieties, the Athi-thalam, the Jambai, the Rupaka, the Thripata, the Ata and so on.

There is a set order or arrangement in which this art is taught. The beginner must learn by heart the Sarali and the Janda varisais, that is, the various combinations of the fourteen swarams and their exact sounds and thalams. This will make him familiar with the Arohanam and Avarohanam and all the possible combinations of sounds. Later on he has to learn Geethams and Varnams which are swarams of set combinations with thalams and each Geetham and Varnam will enable him to get a good knowledge of the ways of that particular ragam, its scope and

limitations and also to get acquainted with the particular thalam.

After learning all these Varnams which are only a few in number since we have got Varnams only for the main ragams, the student must proceed to keerthanams. He has got a wide field in this, as he has to get by heart first the swarams and then the Sahityas. There are innumerable keerthanams but the number we have on record will be roughly about a thousand and the student must learn at least about three hundred of them which come under important ragams. After all these he may be said to possess a fair amount of knowledge of the science of Hindu music. To learn these will take him at least six years of regular training and instruction. For at least two hours in the day he must learn and take instructions at the feet of his master and for another two or three hours in the day he must practise by himself all the details he has learnt from beginning to end. Music greatly depends upon every-day practice and if the student neglects it for a week he will find it very difficult to begin exactly where he had left. He should always be in close touch with the subject. Not only this, he must also constantly attend musical entertainments by experts and hear the songs attentively, because music heard is many times more useful and valuable than music learnt.

There are two kinds of music—Vocal and Instrumental. Vocal music is the singing by human voice and instrumental music is played upon instruments of music. The musical instruments are of three different varieties:—(1) Stringed instruments such as Fiddle, Veena, Thambaru, etc. (2) Leather instruments such as Mridangam, Thavul, Kanchheera, etc. (3) Blowing or Tube instru-

ments such as Flute, Harmonium, Nayanam, etc. Instrumental music is more difficult than the vocal because the student must learn music vocally first and then practise it on the instrument. Generally those who do not possess a good tone resort to instrumental music but those who have a good tone prefer vocal music since it is more interesting to the hearers than the other.

To us, music is more important and necessary than it is for any other nation. In fact everything in our life is closely connected with music. Our Vedas are full of music and Vedic Hymns are always uttered in a musical tone. Tamil poems and Sanskrit slokas are recited in some musical tone or another. It plays a great part in our dramas. Our marriages cannot be celebrated without a number of songs, and in fact our festivals like Dasara do require songs as a matter of necessity. In no other country has music got so many uses as in India and in no other country is there to be found such a vast and wonderful science of music as we possess.

Now-a-days the tendency of the musicians is to contrive all sorts of bad habits. Before they begin to learn the alphabets, they begin to chew tobacco, because somebody puts a false notion into their heads that the use of tobacco will help them to have a clear throat and a sweet tone. Then the use of snuff follows and gradually all loose habits are taken in and as a result they forget that in order to have a clear voice they must possess strong and healthy bodies and thus ruin their health and destroy the music they have learnt. We know many instances of this kind in our musical circle. A pure and healthy life with high morals alone will bring forth mature musicians.

It is yet another pity that most of us do not possess a taste for music. This is because many among us have no knowledge of music at all and just as a man who does not know English will not stand for a minute to hear two persons conversing in English, similarly a person who cannot understand music will not only fail to appreciate it but will even go to the extent of hating it. So it is absolutely necessary for everyone to have some knowledge of music in order to appreciate it.

Some are of opinion that music is instinctive and inborn in a person and therefore everyone cannot hope to know music, but it is a mistake to think like that. It is true when we say that certain persons are gifted with a sweet tone and it is also in a sense true that certain persons are born musicians. Music comes to them even when they are five years old. They sing excellent songs without any training at all and here it is gift and instinct. But these are quite rare and exceptional. Generally music can be learnt as an art by anybody who really wants to learn it. Those who do not possess a suitable tone may train themselves to play upon instruments and those who could not find time to have a regular training may at least pick up some knowledge of music which may put them in a position to appreciate it.

Music has got its own attractions. Even cows are said to be attracted by music. We know also that snakes are caught by men when they are deeply absorbed in hearing the music of the Magudi instrument. Our babies are lulled to sleep when their mothers sing sweet songs to them. So it is that music is said to be one of the divine pleasures enjoyed by those in heaven. For a man who is concentrating himself in some business, when he

hears the music, at once ceases his work and all his concentration is gone. We have also heard of a story that a magician by playing on his fiddle continuously took away with him all the rats of a town and thus relieved the people from great troubles caused by them. So it is that Shakespeare has often given great importance to music in his dramas and he says in the "Twelfth Night":

"If music be the food of love, play on;
Give me excess of it, that, surfeiting,
The appetite may sicken and so die.
That strain again! It had a dying fall:
O! it came over my ear like the sweet sound
That breathes upon a bank of violets,
Stealing and giving odour."

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THE VEDIC AGE.

DR. R. Shama Sastry, B.A., Ph.D., Curator of the Oriental Library and Director of Archaeology in Mysore, writes in the preface of his book "Gavam Ayana" that the meaning which the Vedic poets attach to Yugas "Krita, Treta, Dwapara and Kali" can by no means be what those words bear in the later astronomical works of India and that it appeared to him absurd to believe that the Vedic poet meant ten times 4320000 years when he said that Dirghatamas grew decrepit in his tenth Yuga (Rig Veda, I. 159. 6). In the introduction to the same work, he states that the modern Oriental scholars, whether Indian or European, regard the theory of the revelation, viz., that the Vedas are coeval with the creation of the world, as nothing but a nursery tale and that they are of opinion that, like any literary work, the Vedas must be a product of civilisation and that, as civilisation itself is of recent growth, the Vedas, as one of its products, must be still more recent, and adds that they, with this conviction, have carried on their investigations into the historical records of various nations and found their conclusions about the chronology of the world's activity, according to which the Rig Vedic age lies somewhere between 4500 and 2500 B. C. The Doctor, in the body of his book, believes these facts and thanks the Western scholars for the knowledge they impart.

Such notions which were hitherto confined to the Doctor's English works have of late been carried to the oriental institutions (where the antiquity of the Vedas is expected to be firmly established as a creed in the young minds studying in those institutions) through articles published in the Sanskrit journals disproving the antiquity of the Vedas and

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their Angas. It is therefore high time for us either to accept such views or to try to prove the antiquity of the Vedas and their Angas with a view to remove false notions with which the young minds have been and are being prejudiced.

One of the foremost points on which the antiquity is very much doubted, is the improbability of the longevity of Dirghatamas for ten Yugas which comprise 43200000 years, according to Rig Veda, I. 159. 6 (Dasameyuga). We shall now discuss whether this is probable or improbable. Before doing so, we shall define the word "Yuga." It means nothing but the period of conjunction of two astronomical phenomena. The period units are different for different purposes, as for instance, one hour or 2½ ghaties in the case of a "Lagna," 12 hours or 30 ghaties in the case of a Savana day, 15 Thithis or a Paksha in the case of a lunar month, Ayana or six solar months in the case of a solar year, and the cyclic period of 60 years in the case of "Manushyamana" or man's longevity which measures 120 years. We cannot, therefore, value a Yuga as measuring any one particular unit of duration, without reference to the context. In the present case, viz., Rig Veda saying that Dirghatamas grew decrepit in his tenth Yuga, it should naturally be taken as referring to man's standard age, i. e., 120 years, and ten times the same should be a period of not less than 1200 years. It may mean even more when valued under "Devamana" which Dirghatamas was entitled to by virtue of his "Samadhiyoga".

Coming to the point in dispute, viz., whether it is probable for a man to live for so long a time, let us consider for a moment the structure of man. It is no doubt a

divine mechanism, the existence of which will continue as long as the breathings continue (Bramha Siddhanta). The minimum number of breathings per day which would make a person live up to 120 years, is said to be 21,600. If these breathings are curtailed or increased, it may be assumed that there will be corresponding increase or decrease in the longevity. It is with the object of increasing the longevity, that the "Pranayama system" is taught to our boys during "Upanayana." In the case of a watch or clock which is a purely artificial mechanism, the same theory is seen to hold good. A watch which is expected to work for a specific period can be made to last for a longer or a shorter period according to the attention paid to the working conditions of the mechanism. Thus there is no improbability in the abnormal increase of longevity by means of "Samadhiyoga."

The next point, *viz.*, that the Vedas were composed by civilised men in recent ages particularly between 4500 and 2500 B. C. is

entirely a dogmatic assertion made on the authority of historical records recently compiled to suit the Western thoughts. These cannot be believed in, unless substantiated by scientific demonstrations. A careful study of the Vedas will throw light on the theory of the "Precession of equinoxes" according to which all the twelve months of the year will in inverse order become the first month of the year at intervals of two thousand and odd years in a period of nearly 25000 years. When it is said in "Satapata-Brahmana" that the lunar month "Phalguna" is the first month of the year, it is clear that the nearest age of 'Satapata Brahmana' from the present time is not less than 25000 years. In the Yajurveda, Mahabharatha, etc., we have evidences to show how the equinoctial point varied from time to time. When such great personages as Yaska, Bhattabhaskara and Vidyaranya, who were working for the good of the country have declared the antiquity of the Vedas, to disbelieve them merely on the authority of the recent Western ideas is a heresy.

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Opinion.

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

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DRAFT CONSTITUTION AND FUNCTIONS OF THE MANAGING COMMITTEES OF NON-GOVERNMENT HIGH SCHOOLS*.

THE MANAGING COMMITTEE.

ELECTORAL ROLL.

1. A Register shall be prepared by the Head Master of every school in consultation with the Managing or Executive Committee and shall be revised annually with such consultation as aforesaid. The Register will be provisionally closed on the 15th of February. It will be open to public inspection from that day and will be finally closed on the last day of February with necessary corrections in each year in which an election to the Committee hereinafter constituted takes place after the happening of which event the Register will be re-opened.

2. (i) All guardians, whose names are entered as such in the Admission Register, (ii) all members of the Teaching Staff, (iii) Founders of a School, and (iv) Donors paying a donation of at least Rs. 300 in one sum, or (v) an annual subscription of Rs. 25 at least, (vi) such benefactors as may from time to time be approved by the Committee shall be entered in the Register.

N.B.—A teacher who is also a guardian shall be entitled to have his name registered but he shall not be eligible for election to the vacancies to be filled up under the provision of Clause (iii).

3. The Body thus formed shall elect from among themselves to the Executive and Managing Committee seven members. Of these, three at least shall be guardians, and at least one shall be a Donor or Benefactor, or Founder, and, whenever available, one Medical Practitioner, if there be such in the locality.

* Prepared by the Educational Department, Bengal, for consideration.

4. The members of the Teaching Staff shall elect two members from amongst themselves to the Executive or Managing Committee.

The Head Master shall be an *ex-officio* member.

5. (a) In the case of schools, aided by Government, the constitution of the Committee, shall, in accordance with the existing departmental rules, be subject to the approval of the District Magistrate.

(b) The constitution of the Committee of all schools shall be subject to the approval of the Syndicate which retains the power, in special cases, to approve of Committees not constituted in accordance with these rules.

6. The Secretary shall, before the 28th February in the year in which election to the Executive or Managing Committee takes place, convene a meeting at not less than seven days' notice of those whose names are borne on the Register mentioned above for the purpose of electing the persons set out in para. 3.

7. The Managing Committee should ordinarily consist of ten members, as specified above, including the President, Vice-President, if any, and the Secretary of the Executive or the Managing Committee, who shall be elected by the members of the Committee ordinarily from among themselves.

Six members shall ordinarily form a quorum.

8. Casual vacancies occurring in the course of the year shall be filled up by co-option but the member so co-opted shall represent the interest in respect of which the vacancy occurs and shall hold office only up to the next election. If any member of the Managing Committee ceases at any time to fulfil the qualifications in respect of which he was elected, a vacancy shall be automatically created which shall be filled by co-option as provided in the rules, except in the case of teachers' representatives who shall be elected in a fresh election.

9. The members of the Executive Committee other than the Head Master shall hold office for two years. But such members shall be eligible for re-election.

10. Any member of the Executive or Managing Committee absenting himself from four consecutive meetings shall automatically vacate his membership; the vacancy shall be filled as provided in Rule 7.

11. The Executive or Managing Committee shall appoint annually an Auditor not being a member of the Committee or in its employ, who shall examine the school accounts every year and submit his report to the Committee on or before the 31st March—a copy to be forwarded to the University.

12. A meeting of the Executive or Managing Committee shall be called by the Secretary at least once in every two months. Not less than seven days' notice of the meeting shall ordinarily be given.

13. A special meeting shall be convened by the Secretary within a fortnight when a requisition for such a meeting is made by not less than three members of the Committee. Not less than 7 days' notice of the meeting shall ordinarily be given.

14. If on receipt of a requisition signed by not less than three members of the Committee, the Secretary fails to convene a special meeting, the matter shall be referred to the President who shall convene the meeting. In the event of the President failing to convene the meeting within ten days, the requisitionists shall have power to convene the meeting.

15. Emergency meetings may be convened by the President, if necessary, at not less than 24 hours' notice. All resolutions passed at special emergency meetings shall be subject to confirmation at the next ordinary meeting.

16. All meetings shall be held in the school premises except in cases as the Committee may decide to the contrary.

17. The notice of each meeting shall set forth the business to be transacted at the meeting and no business other than that so stated shall be transacted except with the consent of three-fourths of the members present.

18. In the absence of the President, the Vice-President will preside and in the absence of the President and the Vice-President, the members present shall elect one of themselves to preside.

19. The President of the meeting shall have a casting vote in addition to his ordinary vote when the votes of the members present are equally divided.

20. The Auditor's annual report on the school accounts shall be taken into consideration at the first ordinary meeting following its receipt.

21. Under the direction of the Executive or Managing Committee, the Secretary shall carry on correspondence with the proper authorities on behalf of the Committee. He shall also keep a record of the proceedings of the Committee in a book kept for the purpose. The record of each meeting shall be confirmed at the subsequent meeting.

22. If the Secretary fails to attend a meeting for more than four months, a fresh appointment may be made either permanently or for the period of absence as the Committee may decide. In the temporary absence of the Secretary, the President may convene a meeting.

23. The Secretary shall be in charge of the invested funds, title-deeds and other legal documents belonging to the school, but all papers relating to the school in the shape of accounts and records shall be available at any time for inspection after due notice by members of the Executive or Managing Committee, or any competent authority. In all Calcutta schools and in all schools in the mofussil with pucca buildings, all papers, documents and accounts shall be kept in the school premises.

24. The Executive or Managing Committee shall have the power of appointing and removing teachers, deciding promotions and increments, granting leave, and free-studentships, ordinarily on the recommendation of the Head Master, managing Schools funds, framing the annual report, dealing with all schemes of developments and such other matters as are brought before them for consideration.

LEAVE.

25. *Casual Leave.*—Casual leave shall not exceed fifteen working days in a year. The Head Master shall be the final authority in granting casual leave. Casual leave up to seven days at a time may be granted.

26. Casual leave shall not be affixed or prefixed to any vacation.

27. A teacher shall be entitled to full pay during casual leave. A register of casual leave shall be maintained by the Head Master.

28. *Sick Leave.*—Medical leave may be granted to a teacher by the Managing Committee on the production of a medical certificate, or such other evidence as the Committee deem satisfactory on such allowance as the Managing Committee or the Executive Committee shall direct.

29. *Leave with or without pay.*—A teacher may be granted leave by the Committee with or without pay to the extent of one month for each year of his service.

30. *Special Leave.*—Special leave may be granted by the Managing Committee at their discretion on such terms as they may think fit.

DEFINITION CLAUSE.

A Committee includes both a Managing Committee or an Executive Committee.

APPOINTMENT OF TEACHERS.

31. Each teacher shall have an appointment letter. He may be appointed on probation for six months. He shall subsequently enter into a permanent engagement with the Managing Committee. During the first two years of this period the teacher shall not be entitled to resign except on the ground of continued ill-health, nor shall the Managing or Executive Committee have the power to dispense with his services except on the grounds of moral or professional misconduct. After the expiry of the second period of two years the services of the teacher may be terminated either side by one calendar month's notice on sufficient

and satisfactory grounds. Existing teachers who have been in the service of a school for at least a period of two years shall be deemed permanent teachers within the meaning of this rule.

Provided that in the case of a school not enjoying permanent recognition, the appointment letter may contain a provision for the termination of the appointment on recognition being withdrawn.

32. A teacher may be suspended by the Managing Committee on grounds of moral or professional misconduct; but before he is finally dismissed, a time should be given to him to appeal to the District Arbitration Committee.

33. *Vacancies.*—Posts carrying a monthly salary of rupees fifty or upwards shall ordinarily be advertised in the newspapers.

HEAD MASTER'S FUNCTIONS.

34. The Head Master shall prepare the annual list of holidays in consultation with the Committee. The number of holidays shall not exceed that sanctioned from time to time by the University. The Head Master in consultation with the Secretary may also grant holidays on a special occasion.

35. The conduct of current business of the school such as arrangement of curriculum, classes and time-table, examinations, award of class promotions, selection of candidates for the Matriculation Examination and all matters relating to school discipline and teaching shall be left entirely to the Head Master, provided that in all cases of rustication or expulsion, the decision of the Head Master shall require the approval of the Committee. The selection of text-books shall rest with the Head Master whose selection shall require the approval of the Committee. In all matters where the Head Master is overruled by the Committee, the decision and the reasons therefor shall be recorded in the proceedings and a copy forwarded forthwith to the local Divisional Inspector who shall without delay enquire into the case and in the event of any action appearing to him to be necessary, he shall

report to the University any facts which call for their attention together with his specific recommendations.

N.B.—Any enquiry under the provisions of this clause shall not be conducted by an officer below the rank of a District Inspector of Schools.

36. The Head Master's opinion shall be recorded in writing in all cases of appointment, promotion and removal of staff under him.

37. There shall be a Council of Teachers in every school, of which all teachers shall be entitled to be members. The Head Master shall consult the Council in all important matters in which he considers consultation is necessary.

CENTRAL AND DISTRICT ARBITRATION BOARD.

38. Any teacher, who is dissatisfied with the decision of the Executive or Managing Committee on a question of dismissal, discharge or reduction or withholding of salaries, shall be at liberty, on payment of a fee of five rupees, which shall accompany his application, to appeal to the Arbitration Board mentioned in the succeeding paragraph.

Provided that no appeal shall lie against any action taken by the Managing Committee of the school in compliance with the order of the University in the case of Unaided schools and of the Director of Public Instruction or the University in the case of Aided Schools.

39. There shall be an Arbitration Board in each District consisting of five members—two of whom shall be teachers, one at least being a Head Master, elected by the High School teachers of the District other than those in Government Schools, in manner to be prescribed hereafter, a local educationist appointed by the Syndicate of the Calcutta University, and one nominated by the District Board and the District Inspector of Schools. The Committee shall elect its own Chairman and the District Inspector, unless elected Chairman shall be the Secretary, unless the Committee otherwise decide, and make provision for any necessary expenditure.

40. For the city of Calcutta there shall be an Arbitration Board consisting of two teachers, one at least being a Head Master, elected by the High Schools of Calcutta in manner hereinafter prescribed, one member nominated by the Syndicate of the University from a college staff, one member nominated by the Syndicate and one Inspector nominated by the Director of Public Instruction. The Board shall elect its own Chairman, and the Inspector nominated by the Director of Public Instruction, unless elected Chairman, shall act as Secretary, unless the Board decide otherwise, and make provision for any necessary expenditure.

41. An appeal shall lie to a Central Board from the decisions of the Arbitration Boards mentioned in the preceding paragraphs. The Board shall consist of nine members, of whom three shall be Head Masters of High Schools in or around Calcutta, nominated by the Syndicate of the University, and four members nominated by the University (two by the Syndicate and two by the Senate), and two Inspectors of Schools nominated by the Syndicate with the consent of the Director of Public Instruction.

N.B.—Provided that when any question comes before the Board, affecting a Girls' School, the Board may co-opt the Inspectress of Schools, Presidency or Burdwan Division, or some other lady connected with female education. The Central Board shall appoint its own Chairman and Secretary.

42. The decisions of the various Boards shall be reported to the Syndicate for any necessary action.

43. All appeals to the Central Board shall be accompanied by a fee of Rs. 15 out of which the expenses of the Central Board shall be defrayed.

44. The Central and District Arbitration Boards shall be appointed for two years. In the case of any vacancy occurring, it shall be filled according to the method of original appointment,

and the appointment shall hold good for the unexpired period of two years.

45. Three members shall form a quorum in the case of the District Arbitration Boards and five in the case of the Central Board.

46. Any appeal from the decision of a Managing Committee shall be preferred within one month from the receipt of such decision by the applicant, and any appeal to the Central Board shall be preferred within one month from the receipt of such decision of the District Arbitration Board by the applicant.

47. In the event of a matter referred to the District Arbitration Boards not being disposed of within 90 days of the date of the application, the person or body aggrieved may refer the matter to the Central Board without further payment of fee, who shall finally dispose of the matter.

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BUDGET OF THE CALCUTTA UNIVERSITY.

DR. ROY AND GOVERNMENT GRANT,

DR. ROY began by referring to the series of Conferences that were held between the Government on the one hand and the representatives of the University on the other, in order to arrive at a definite figure of the yearly deficit and the contribution that the Government should make to meet it.

The Government, said Dr. Roy, in the first place, wanted the University to amalgamate the principal fund heads as they thought that this might show that the annual deficit would not be so great as had been stated by the representatives of the University. Although this could be easily made, the Board of Accounts regarded the procedure suggested by the Government as undesirable for the purpose of accounts. In their opinion each department of the University should know what its allotments were, so that the Board could watch the progress of receipts; and expenditure of each. This was only possible if the fund heads were kept separate in the books. If for instance, the revenue accounts of the Fee Funds, Science College funds were amalgamated, it would be well-nigh impossible to watch how far the Law College or the examinations were paying their way. Besides, they might be landed in serious difficulties if the balances of one fund were appropriated by another department.

In the second place, Dr. Roy went on, the Government took the Budget estimates of 1925-26 as the basis of calculation of the probable annual deficit in each of the succeeding five years. They then separated the items which they considered non-recurring from those which were obviously recurring and they

attempted to arrive at a figure which would indicate the recurring deficit.

No Budget of the Calcutta University, said D. Roy, was framed or could be framed on those lines for the simple reason that their income was uncertain, and therefore it did not warrant their setting apart a certain sum for non-recurring items. Further, in the case of the growing departments of teaching and research particularly in the Science College, it was impossible to indicate which of the items mentioned in the Budget estimates of 1925-26 would continue to be absolutely non-recurring in character for the next five years. This procedure adopted by the Government was open to a further objection. Questions were asked by the Government regarding certain heads only about which they had doubts. If they (the University) agree to the method of calculating the recurring costs simply by deducting the cost on the non-recurring heads from the total expenditure under the Fee Fund, it would necessarily imply that they also agreed that none of the other heads of expenditure required any augmentation during the next five years, nor that any new item might arise necessitating expenditure out of the Fee Fund. It would be obviously absurd, said the speaker, if they the members of the present Senate, were to bind down the future Senate for five years to such a condition. On this point the representatives of the Senate and the Government differed widely with regard to the amount of non-recurring cost.

RECURRING GRANT.

In order to avoid a further discussion, it was agreed that the University should get a grant, in the first instance, for a period of five years. At the end of that period, the matter would come up again for revision and with the

experience of five years it should be possible to arrive at a more accurate and definite figure of the recurring grant which the University should receive from Government. For these five years the Government accepted the figure of three lakhs as representing the total annual deficit of the University, but a difference of opinion arose as to the probable total receipts of the Fee Fund. The University had put it at Rs. 11,75,000 as the estimated total receipts from the Fee Fund and Rs. 2,45,000 as the probable receipts from the fees of the Law College students for the year 1925-26. The Government put these figures at Rs. 12,22,000 and Rs. 2,55,000 respectively. The net result of all these negotiations was that while the Government accepted the figure of three lakhs as the University's total deficit and not the deficit of the Post-Graduate Department alone as was indicated in the Senate resolution of May 21, 1924, they granted the University only Rs. 2,43,000 a year with a contingent grant of fifty-seven thousand. This arrangement the University had to accept because no choice was left to them. Dr. Roy maintained that this arrangement would hit the University hard so far as the Fee Fund expenditure was concerned. None of the departments now being maintained by the Fee Fund would be benefited by any increase in the receipts of the Fee Fund as long as the increase did not exceed Rs. 12,22,000.

DR. ROY'S PROTEST.

Continuing D. Roy said, "Look at it from another point of view. During the last year and the current year the total expenditure in the Fee Fund apart from additional contribution to the Post-Graduate Teaching Funds, have been Rs. 12,40,000 and Rs. 12,67,000 respectively. Therefore, if the Fee Fund

were to give to the Post-Graduate Teaching Fund all its receipts above Rs. 11,75,000, the Fee Fund will continue to suffer from a deficit of Rs. 50,000 and more, unless the expenditure is heavily curtailed much below the actuals of this year, or until the receipts go above Rs. 12,22,000, which is considered hardly likely. Need I point out to you also that when after five years the whole question comes under discussion, the recurring grant to meet the deficit will necessarily be determined by the amount by which the expenditure exceeds the income. Last judgment goes against us by default, I formally protest against this arrangement forced upon us by the Government at this stage. During the next four years, this will produce a cramping effect on the activities of the different departments fed by the Fee Fund and we shall, unless we find other means of increasing our revenues, be compelled to limit our expenditure to a figure below Rs. 11,75,000 if we are to have a balanced Budget and it will be on the basis of this expenditure, again so artificially restrained, that the future deficit will be calculated."

Dr. Roy indicated that it was proposed to increase certain fees, including the fees of non-collegiate students appearing at examinations which would yield a total income of over Rs. 1,07,000 and this would enable them to have practically a balanced Budget at the end of the next five years.—*The Statesman*, Calcutta : 1st July 1926.

UNIVERSITY EDUCATION IN U. P.

THE chief features in University education are the continued increase in numbers and the persistent disparity in standards. Each of the two Provincial Universities of Lucknow and Allahabad have more than 1,000 post-Intermediate students. In the Aligarh Muslim University the number of such students is over 800, and in the Benares Hindu University, including students in the Intermediate classes, the total number is over 1,900. In the examination for the B. A. Pass degree, the percentage of successful candidates varied from 55 to 91.4. It is to the Universities primarily that the province must look for its future leaders of thought and of action and unless a high standard of intellectual attainment is maintained and quality is not sacrificed to quantity, the Universities will have failed of their purpose. It is for them to take concerted action to prevent the lowering of standards. The Universities have, however, achieved success in other directions. In the Allahabad University the Training Corps has proved popular and successful; extension lectures were well attended; the number of research scholars has increased and post-graduate work has been carried out successfully. The University received an endowment of Rs. 50,000 from the estate of the late Lieut.-Colonel Kamta Prasad for the chemical analysis of Indian medicinal herbs. We convey to his daughter, Mrs. Gupta, our warm appreciation of this posthumous benefaction.

Colonel Needham inspected the King George's Medical College, which is maintained by the Lucknow University and found its methods of teaching to be satisfactory. Thirteen departments of the University were

engaged in research work and twenty extension lectures were given. The Aligarh Muslim University have opened a department of Geography. It is now generally recognised that the Allahabad University cannot develop freely as a teaching and residential University so long as it is hampered by an external side. Government have, therefore, decided to proceed with the Agra University Bill which, if passed, will enable the Allahabad University to develop as a residential and teaching University.

English Secondary Schools:—The large majority of English Secondary Schools and Intermediate Colleges are aided: of 225 English High and Middle Schools only 48 are maintained by Government; of 26 Intermediate Colleges only 8 are Government institutions. In the Intermediate classes there were over 4,000 students and in the High Schools there were more than 50,000. Here again, as in the case of the Universities, there is a marked disparity of standards. In this Province there are three distinct bodies which are responsible for the High School and Intermediate Examinations or examinations equivalent thereto, namely, the Board of High School and Intermediate Education, the Intermediate Examination Board of the Aligarh Muslim University and the Benares Hindu University. The percentage of passes in the Intermediate Examination varied from 47 to 67. There is a natural tendency among students to take those examinations where their chances of success are the greatest.

The working of the Intermediate Board has been criticised and Government have appointed a Committee to examine the matter. Government are also anxious to see a few schools on the model of the English public

schools established at suitable centres in the Province. Steps are being taken to improve the quality of teaching by sending teachers abroad to study Western methods of teaching. Among the more noticeable features of Secondary education referred to by the Director are the large building grants given by Government to Aided Intermediate Colleges and High Schools to improve their accommodation; the introduction of music in the Kanyakubja Intermediate College, Lucknow; the good work done by Boy Scouts during the floods of 1924 and during fairs; the gratifying progress made in the teaching of Hygiene and First Aid.

The difficulty of attracting suitable men as teachers in Aided Schools continues. The Education Department have drawn up a draft form of agreement to be entered into by teachers of Aided Schools which will, it is hoped, do something to improve the relations between the teachers and the managers of Aided Schools.

The present system of medical inspection of schools has been found to be seriously defective and Government have recently taken steps to improve it. They propose to appoint ten medical officers for the inspection of schools in the more important towns.

Vernacular Middle Schools:—These are mostly maintained by District Boards and have nearly 50,000 pupils reading in them. To give them a rural bias, agriculture has been introduced in ten such schools. English as an optional subject has also been introduced with two objects; first to give boys, who wish to enter into business, a working knowledge of English, and secondly to keep as many of them as possible from drifting from the country-side to the towns, in search

of English education. It has yet to be seen to what extent these hopes will be realized.

Primary Education:—Mr. Kichlu has made important proposals in regard to the improvement and expansion of Primary education. These will be dealt with in a separate resolution. The number of Primary Schools increased during the year by more than 800 and the number of scholars by more than 35,000. The total expenditure on Vernacular Primary education was over 71 lakhs, of which Government contributed more than 50 lakhs. It is clear that when Government are contributing roughly two-thirds of the total cost of Primary education, they are entitled to see that local bodies seem to regard any measure of Government supervision as unjustified interference with the activities of self-governing institutions. Government would be failing in their duty to the taxpayer if they were not to watch closely how the money was being spent. Eighteen Municipal Boards had introduced compulsory primary education by the end of the year. The Director reports that with the exception of Bareilly, Moradabad and Lakhimpur Boards, the other Boards have made good progress with their schemes and that their schools are now better staffed and equipped than they were before compulsion was introduced. The responsibilities of a Board do not end by simply introducing compulsion. It should see that all the boys who ought to be at school are there, that attendance is regular, and that the staff does its work conscientiously and well. The chief need is constant supervision and not merely spasmodic enthusiasm in the cause of Primary education.

Female Education:—The Director points to a slackening of effort on the part of District Boards which accounts for the decrease in

the numbers attending the Primary Schools. Many schools are still held in inadequate buildings; the teachers are ill-paid and the equipment is often poor. The education of girls is, however, now receiving increased attention; and taken as a whole it has expanded more rapidly than in the previous years. The three Normal Schools at Lucknow, Bareilly and Allahabad are doing good work but have reached the limits of expansion and in the opinion of the Director another Normal School is urgently required. Government await the Director's proposals. The two colleges of University rank, viz., the Crosthwaite College, Allahabad, and the Isabella Thoburn College, Lucknow, had a successful year. The latter institution is now housed in a fine building and is doing noteworthy work for the higher education of women.

Education of special classes:—European schools have continued to do well. The increasing difficulty of finding suitable employment for both boys and girls after they leave school is recognised. A number of schools, specially for the poorer classes, are, therefore, now turning their attention to vocational training to enable students to earn a decent living.

The Colvin Talukdars' School is not doing as well as it might and the Governor, acting with his Ministers, has noted with concern the decline in enrolment. Before the school can reach a high level of efficiency and can provide an adequate training, it is essential that its staff should be strengthened.

Muslim Education:—The total number of Mussalmans reading in Vernacular Schools is a little over 175,000 of whom about 35 per cent. are reading in Islamic Schools and Maktabas. The total number of Mussalmans

under instruction has increased by 5.91 per cent. We hope that District Boards will take full advantage of the provisions of the new Primary Education Act and will work them with scrupulous regard to the interests of all communities.

Education of depressed classes:—The education of the depressed classes in special schools continued to receive attention, and there were over 23,000 scholars reading in such schools at the close of the year. There are clear signs that the depressed classes are becoming increasingly alive to the value of education.

General:—The Intermediate Board have established a new examination called the Agricultural Diploma Examination. They have also made a regulation, which has been sanctioned by the Hon'ble Minister of Education, which permits candidates for the High School Examinations to answer questions in English, Urdu and Hindi in all subjects other than English. The regulation will come into force from 1927, and will apply in the first instance to the subjects of history, geography, the classical languages and agriculture. The change is of a far-reaching character.

The first Board completed its term during the year and Government desire to acknowledge their services.

There has been much discussion lately as to the value of the education given at present. It is urged that our education is divorced from the economic needs of the people; that our English schools and colleges are turning out men who cannot find employment, and who may, therefore, become a danger to society. All this criticism is not wholly justified, but there can be no doubt that our system of education should not be cast into a

rigid mould, but should be elastic and able to adapt itself to the rapidly changing conditions of social life in this province. "Knowledge is its own reward" cannot be offered as a complete scheme of life for the great majority of students who leave our schools and colleges. We are glad to note that Government are fully alive to the urgency and gravity of the problem and will explore all avenues in order to make the educational system respond to the changing needs of the people.

Another subject to which more attention should be paid than hitherto is the urgent need for organizing the physical training of our students. A Committee has been appointed to examine this important question and to advise Government as to the best method of dealing with it.—*Wealth & Welfare*, Lucknow: 25th June 1926.

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A PLEA FOR EDUCATIONAL RESEARCH.

By MR. M. V. RAMAKRISHNAN, M.A., L.T.

It is now admitted on all hands that there is such a thing as the *study* of education and that there is such a thing as the *science* of education. An empirical treatment of educational problems had been obtained in the past, but now with the method of applied psychology and with the science of statistics, everything has been reduced to scientific terms. Thus education is a science to-day, and one of the chief characteristics in its research is accuracy. The difficulty with educational methods in the past was its lack of a scientific technique. Now a scientific study of educational problems is quite possible. The scientific method to-day is the inductive method, and a sufficient number of facts observed and collected determine the generalizations which have been made.

It therefore requires no emphasis to state that educational research should be undertaken by teachers and psychologists in this country with a view to enable the child to learn things better. But so far no attempt has been made by the Government or by any constituted body to undertake such a research. We have no institutions to prosecute research with a view to promoting the efficiency of teaching. "The Indian teacher is rarely given an opportunity to step out of his class-room and take a detached view of his experience in the light of the work of other colleagues, or the latest contributions of educational science." There are, of course, certain individuals who are pursuing research in this direction. These individuals, who have had experience and training in this field in Western colleges and who are bringing their experiences to bear upon our

problems here, may be depended upon to begin the work and point the way to others. Rev. D. S. Herrick of Bangalore has made certain experiments with Goddard Form-Board. The Teachers' College at Saidapet (Madras) has been experimenting with the use and adaptation of the Stanford-Binet tests; and the results of the experiments are given in Bulletin No. 15 of the Teachers' College. Professors P. V. Seshu Aiyer and S. R. Ranganathan have made certain investigations into the marking system in examinations, and the results of their valuable investigations have been published in THE JOURNAL OF THE INDIAN MATHEMATICAL SOCIETY. In the Narsinghpur High School (Central Provinces), some work has also been done with the Form-Board test, as also in the College and schools of the American Arcot Mission at Vellore. Thus apart from stray instances, there has not been pursued any organised research in India.

What is the spectacle that presents before us in other countries? The position of the advanced study of education in the United States and the European countries is striking by contrast. In the United States there is provision for post-graduate courses in education. The Teachers' College, Columbia University, provides for such post-graduate courses and offers facilities to the students pursuing researches in education. It is, so to say, 'the Mecca of educational investigators'. The Biennial Survey (1920—22) of the Bureau of Education states that no less than 80 City, State and University Bureaus for educational research have been maintained, experiments were extensively carried on in all phases of school administration and instruction in numerous institutions including 22 Colleges and University Laboratory

Schools and about 50 Experimental Schools for "progressive education." In addition to such work, an abundant stream of articles, monographs and reports are issued from numerous presses. Thus educational research is being pursued in America with extraordinary enthusiasm. In other countries research in this direction appears to have been pursued though not with so much enthusiasm as in the United States.

While so much is being done in other countries, it is regrettable that nothing should be done in India by way of educational research. There have not been wanting in India men who would undertake such research. The Teachers' College at Saidapet, perhaps the best Training College in India, may be made a centre of research, and investigations may be carried on there into the latest theories advanced by Western countries. Some other centres may be founded in other parts of India. These institutions will offer facilities to teachers for a post-graduate course and will undertake investigations into educational tests and scales for measuring school achievements. The field for research is vast. A systematic observation of educational conditions may be made and the necessary facts collected and a record of the observations made. Having observed and collected a sufficient number of facts, by induction a generalization can be arrived at. In such a course, a study of the theory of statistics may be helpful, for we have in statistics "the precise mechanism which we need to complete our study and interpret our results." Again we can devise criteria of mental measurements. Here also a prime necessity for scientific study is the systematic observation of facts. That is characteristic of mental measuring. The experimenter tries to reserve his conclusions

until he has summoned to his aid all the available facts that are relevant. "The greater the number of facts which we can collect in regard to the individuals or groups of persons, through the channels of psychological tests, the more scientific will be our conclusion." In this question of mental measurement investigations may be made into the problems of crime, delinquency, and disease. There is again the complex problem of the system of marking, "the injustice of which is most obvious in examinations." Besides these, research may be conducted in other directions, e.g., the suitability of certain studies to the ages and capacities of children, the quality of teaching, and the relative position of schools and school systems.

What is the position of the school teacher as distinguished from, say, the research worker in education, with regard to the various methods of educational research? Prof. T. Raymont thus summarises his position in educational research. Research requires the knowledge which only a trained psychologist possesses, so that only those who happen to be trained psychologists are qualified to undertake it. The school teacher can do much to help the research worker, by enabling him to carry out his experiments so that the results may not be vitiated by disturbing causes:

The very presence of a stranger in the class-room is such a disturbing cause, which can often be eliminated if the teacher will undertake to carry out strictly the instructions of the expert. Considerations of convenience tempt him, and sometimes compel him to rely upon two or three visits to a school in order to obtain his data, whereas there is often nothing to prevent the teacher from letting his experiment last two or three terms should he think it necessary. Even when research involves technicalities with which he is unacquainted, the teacher can thus do much to further its ends.

It is therefore obvious that there is a fertile field for research to be worked out in India. India which could boast of Sir J. C. Bose, Sir P. C. Ray, Dr. C. V. Raman and the late S. Ramanujam could still be found to contain men who would undertake educational research. To make a beginning, graduates from Western countries may be invited to put us in the path—I mean graduates who have been trained at the Teachers' College, Columbia, or in the London Day Training College. Centres of educational research may be created in each of the Presidency towns, and these may be developed as time goes on. "What we need is a strong Faculty of Education, separate altogether from the Government Training Colleges. The need for a Research Department of Education is all the greater.....The Faculty should be attached to a University and should be completely free

from Government control. It could organize educational surveys in the Province, and collect data that are absolutely essential to the organisation of a system of free elementary education. It could synthesise the activities of the Department of Education and formulate a policy that will be consistent in its aim." The Department of Education may also appoint specialists in the field to give courses of lectures with experiments at the Training Colleges, and to travel throughout the Presidency getting work begun and organized in various centres. The Government will tell us that they cannot afford it, but, as Dr. Woodburne says, they ought to realize that they can ill-afford not to do it. The need for educational research is never so pressing as it is now, and it is hoped that adequate facilities will be afforded to the teachers for its prosecution.—*The Indian Review*, Madras: May 1926.

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OPINION.

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

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Reviews and Notices.

A HISTORY OF INDIA, PART II—THE MUHAMMADAN PERIOD—BY H. L. O. GARRETT AND SITA RAM KOHLI. (LONGMANS, GREEN & Co.). Price Rs. 3.

It is more than a decade since the well-known publishers, Longmans, Green & Co., brought out Part I of their series of Indian History. That part was written by a reputed scholar of our Presidency, Prof. K. V. Rangaswami Aiyangar. Several years have elapsed since the publication of the pre-Musalman period of Indian History and it was even feared that the series would not be completed for one reason or another. It is now gratifying to note that not only the series is about to be completed but that both in matter and style. Part II of the series, now under review, maintains the high excellence of the previous publication. Nor is the delay in bringing out Part II to be regretted, as the authors Garrett and Kohli have been able to incorporate the latest researches on the subject in the course of their narrative.

The period dealt with in this volume treats somewhat comprehensively of the rise, growth and decay of Muslim power in India. There are no doubt many excellent publications on the subject that will still serve as mines of information. Lane-Poole's *Medieval India* will at all times retain its own charm. Elphinstone, Erskine, Owen, Holden, Orme and Keene have still to be depended on to a great extent. V. A. Smith, notwithstanding his partial conclusions and incorrect judgment, has to be admired for his inimitable mastery of details and a very pleasant way of telling history out of dry dead stuff. But the great usefulness of this book lies in the fact that it is up-to-date. Unlike many publications, even of the standard type, the authors of this volume have shown a marked tendency to acknowledge the work done by Indian scholars and wherever possible they have adopted their views. Nor have the learned authors forgotten the very sound principle of

narrating history from original sources which are plenty for the Muhamadan period.

The subject-matter of the book is too well-known to be mentioned in detail. The general scheme of the book may however be noted. It is divided into four books with rather disproportionate chapters. Book I deals with the period of Musalman invasion and the opening chapter is a masterly survey of the political condition of India on the eve of foreign conquest. A little more detailed account of Muhammad and his work, the career of conquest and conversion by his successors, and the establishment of the Caliphate, would however be a good background for the story of the Ghaznavites and Ghoris. Book II contains an account of the Sultanate of Delhi (1206-1526), the various chapters dealing with the administrative system of Musalmans from time to time, forming excellent matter, not organically treated before. Book III is devoted mainly to an account of the Bhamani Kingdom and the Hindu Empire of Vijayanagar. The details so far as they are given are highly interesting but, for the Empire of Vijayanagar, they are deemed to be inadequate. More information on the subject can usefully be added. A very interesting account of the cultural movements of the period in general and of the Bhakti Movement in special, brings this portion of the book to a close. Book IV treating of the Moghul sovereigns has been written exceptionally well. All the recent authorities on the subject have been quoted and the copious writings of Prof. Sarkar are made use of in a most judicious way. For the history of the Maharattas, Grant-Duff is no longer the undisputed authority that he once was considered to be and it is highly refreshing to find the authors basing their account on the more convincing researches of Ranade, Sarkar and Kitchaid. The book ends with a neat analysis of the causes that brought about the decline of the Moghul Empire.

A chronological chart and a good index complete the general scheme of the book.

The printers are to be praised for the excellent get-up of the book.

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The Educational Review.

We congratulate the Government of Madras on the recent order regarding the Medical Inspection of pupils in Secondary Schools. We had complained on more than one occasion that the Government had not taken steps to make medical inspection compulsory, insisting on arrangements for the purpose being one of the conditions for obtaining recognition. We are glad to find that the suggestion has been acted upon and the Government has directed that with effect from June 1926, medical inspection should be introduced compulsorily in all Government schools and school departments of Government colleges. Local bodies are also being asked to make arrangements from the same date. Schools under private management are being given some more time to fall into line with this state of things, the compulsion to begin with effect from May 1927. We hope that steps will be taken to see that this order is properly enforced and every school will ensure a periodical examination of the young people who have been entrusted to their charge. The Government of the United Provinces have just resolved upon appointing full-time medical inspectors in the bigger cities where there is work enough for them. We should commend the example to the Government of Madras. Besides helping the schools to find suitable doctors, it will have two advantages. A number of doctors who have specialised in the medi-

cal inspection of pupils will have come into existence and they will be an asset to the Presidency. Besides, there will be a standardisation of the principles and practice of medical inspection, instead of its being left to scattered agencies, each pursuing its own methods. We have however no idea of how the financial responsibilities implied in the subject are going to be met in Madras.

The organisers of the Seventeenth Provincial Educational Conference, which recently met at Srivilliputtur in the Madras Presidency, deserve to be congratulated on the success which has attended their efforts. In the unavoidable absence of Mr. C. R. Reddi, the Vice-Chancellor of the Andhra University, who was to have presided over the Conference, Prof. S. K. Yagnanarayana Aiyar, the President of the South India Teachers' Union, presided over the Conference and delivered an address not only surveying some of the important educational problems of the Madras Presidency, but also dwelling on the ideals which ought to dominate the teacher's mission in life. A number of resolutions were passed at the Conference and we trust they will receive the sympathetic attention of the Government and the profession. We are glad the members of the teaching profession are realising the need for supporting teachers and those standing by them when contesting seats in the Legislative Council or in the Senate. A request was made that the South India Teachers' Union

should be recognised as a separate constituency for election to the Legislative Council and that the franchise should be extended to Oriental title-holders for the Legislative Council and the Senate. Other resolutions related to the better representation of the teaching profession on Secondary Education Boards, the standardisation of teachers' salaries all over the Presidency, the securing of a decent minimum interest for Teachers' Provident Funds and so on. One of the interesting resolutions at the Conference was the grant of the title "Kulapathi" to some veteran educationists: Mr. Sesha Iyengar, the devoted founder of the National High School of Trichinopoly; Prof. P. T. Srinivasa Iyengar, the well-known scholar, formerly the Principal of the Mrs. A. V. N. College, Vizagapatam, and at present Prof. of Teaching at St. Joseph's College, Trichinopoly; Mr. P. V. Parameshwara Iyer to whose labours the Native High School of Palghat is due; Sir Venkataratnam Naidu, the present Vice-Chancellor of the Madras University, and the Rev. Father Bertram of St. Joseph's College, Trichinopoly, who has guided the affairs of the institution for nearly a quarter of a century. The distinction is well-deserved in every case, though the names of some very deserving educationists are not included in the list and there is the curious circumstance that three out of the five recipients hail from the single city of Trichinopoly.

A step in the right direction which has just been taken by the Education Department of the Government of Madras is the order, placing a sum of money at the disposal of local bodies, for distribution as aid to libraries. The Library Movement can hardly be said to have taken any strong hold on the Madras Presidency and this decision of the Government should go some way in securing the benefits of libraries to towns which do not now possess them. The sum available is not large and the restriction that the grant will be limited only to Rs. 400 cannot go a long way in helping the movement, but it is hoped that many local bodies will avail themselves of this facility and there will soon be a net-work of public libraries spread over the whole Presidency.

The examination results of the Calcutta University had attained such notoriety in recent years that the University could not afford to continue to view them with indifference, if it was to escape the contempt of all enlightened educationalists in the country. Time was when the University did not admit that the examinations were at a low level of efficiency. In fact, it prided itself on its liberality and did not mind producing a larger number of passes in the first division than in the second and third divisions. A welcome change has however come over the affairs of the University and the official organ of the University, the *Calcutta Review*, has been at pains in

Aid to Libraries.

The Calcutta University.

the current number to demonstrate that the University "is gradually stiffening up the standard of the Matriculation and Intermediate examinations." The percentages for the last five years are as follow :

	1922.	1923.	1924.	1925.	1926.
Matriculation ...	79'09	74'08	77'5	73'8	57'2
Intermediate in Arts ...	70'5	63'3	51'9	50'02	51'1
Intermediate in Science ...	78'05	73'2	65'2	57'7	56'45

We hope that a similar stiffening up will take place at the B.A. and M.A. examinations and the Calcutta University examinations will cease to be the laughing-stock of the country. It is true that the importance of examinations may be exaggerated and there may be considerable injustice in judging the value of education entirely by examination results. But unless high standards are kept up in the examinations, the best efforts of the students are not likely to be drawn out and examinations have thus a direct bearing on the intellectual expansion and progress of the students. The baneful results of Calcutta examinations were evident in the conspicuous absence of Calcutta products among the successful candidates of Indian competitive examinations.

Our readers are perfectly familiar with some of the serious problems affecting the relations between teachers and managers of educational institutions. Attempts have been made from time to time to formulate definite suggestions

for the avoidance of friction between school-masters and the members of managing committees. At the last session of the All-India Teachers' Federation, a Committee was appointed to conduct an All-India enquiry and make definite suggestions for the purpose. A resolution somewhat similar in effect was also adopted by the Bihar and Orissa Educational Conference at the last session held in Gaya. The creation of Arbitration Boards might be tried with chances of success. We are glad to find that the Government of Bengal has recently prepared a draft* laying down a standard constitution and a statement of functions of the Managing Committees of non-Government High schools. Guardians, members of the teaching staff, donors and the founders of a school, it is suggested, should elect members of the Managing Committee; and teachers should be appointed on definite contracts with a right of appeal to tribunals called District Arbitration Committees which should come into existence. The headmaster's powers are limited and it is laid down that he should consult his colleagues on all important matters affecting the school. The most important provision is the suggestion for constituting Central and District Arbitration Boards. Each district should have an Arbitration Board consisting of five members, two of whom shall be teachers, one at least being a head-master elected by the High School teachers of the district other than those in Government schools, a local edu-

* Published elsewhere in this number.

cationist appointed by the Syndicate of the Calcutta University and one nominated by the District Board and the District Inspector of Schools. Provision is also made for a Central Arbitration Board for the whole Presidency consisting of nine members, of whom three shall be Head-masters of High Schools in or around the Presidency town nominated by the Syndicate of the University and four members nominated by the University (two by the Syndicate and two by the Senate) and two Inspectors of Schools nominated by the Syndicate with the consent of the Director of Public Instruction. Perhaps the scheme has the defect of concentrating too much power in the hands of the Syndicate and there is no reason why some representatives of the Legislative Council may not also be associated with a Central Board of the kind described. The scheme is, however, interesting and is likely to be welcomed by members of the teaching profession. Efforts must be made to press on the Government of other Provinces, the adoption of a similar constitution for the management of High Schools as one of the fundamental conditions of recognition. The draft made by the Government of Bengal is being circulated to various schools and to the All-Bengal Teachers' Association for eliciting public opinion.

In view of the recent inauguration of the Andhra University and the possibility of even more Universities coming into existence in the Madras

Presidency, we should like to invite the attention of our readers to some interesting observations contained in the latest report of Public Instruction in the United Provinces of Agra and Oudh. There are now four Universities in the United Provinces in place of the one University of Allahabad which used to function for the whole area at one time and a fifth one is also in prospect as a Bill for the establishment of an affiliating University at Agra is to be introduced into the next session of the Legislative Council, and it is feared there has probably been a reduction of examination standards. In any case, there is a good deal of variation in the percentage of passes in the four Universities. "The chief features in University education," says the report, "are the continued increase in numbers and the persistent disparity in standards. Each of the two Provincial Universities of Lucknow and Allahabad have more than 1,000 Post-Intermediate students. In the Aligarh Muslim University, the number of such students is over 800 and in the Benares Hindu University, including students in the Intermediate classes, the total number is over 1,900. In the examination for the B. A. Pass degree, the percentage of successful candidates varied from 55 to 91.4. It is to the Universities primarily that the province must look for its future leaders of thought and of action and unless a high standard of intellectual attainment is maintained and quality is not sacrificed to quantity, the Universities will have failed of their purpose. It is for them to take concerted action to prevent

the lowering of standards." We hope Madras will benefit by this experience and the creation of the Andhra University will not mean a lowering of academic efficiency as is already feared in certain quarters.

**The Prince of
Wales College,
Dehra Dun.**

It is not surprising that Indians should complain about the slow pace of Indianisation of the Army in the country when we examine the number of officers recruited through the Prince of Wales College, Dehra Dun, last year. The Prince of Wales College at Dehra Dun is a very costly institution, as expensive to the students who seek education there, as it is to the taxpayer. Its establishment was announced with a flourish of trumpets and we have been told more than once that it was going to mark an epoch in the history of the country. But it is somewhat disappointing to find that in 1925, only five candidates were sent up for the entrance examination at Sandhurst, out of whom only two have come out successful. It means that as the result of all these elaborate steps to prepare Indian officers of the Army, two have found entrance into Sandhurst during last year, and they may be expected ultimately to become officers of the Army. We hope something will be done at an early date to improve this state of affairs and the number of recruits to the officer's grade will grow largely in number.

**Secondary School
Re-organisation in
Madras.**

More than the actual accomplishments of the Educational Ministry in Madras, its intentions find their way into the press periodically.

An Associated Special Service message from Ootacamund announces some impending changes in Secondary School re-organisation about which we have heard on more than one occasion. We are told that the expansion of education has been secured. Therefore, the Minister of Education will now enter on its consolidation and re-organisation, particularly in the Secondary sphere. In the matter of High School education, it is proposed to emphasise practical instruction from the Fourth to Sixth Forms and to revise the curriculum for the Secondary School Leaving Certificate Examination with a view to giving more prominence to practical education and minimise the difficulty of early specialisation. It is the aim of the Government to provide two courses of education in the Secondary Schools and give option to the students and parents to choose whether they would pursue practical courses which would help them for higher training in technical schools, or purely literary or academic training which would lead to a University degree. We hope these pious intentions will be realised. The message also informs us that the great congestion in the colleges is proposed to be relieved by providing the instruction in such a manner as would induce the average youth to pursue more profitable courses by going for pre-vocational training which would create a bias in his

mind to take to technical instruction in arts and industries. Manual training will therefore be compulsory in this branch of the Secondary section. The Committee which made recommendations in the matter and the Secondary School Leaving Certificate Board will meet, it would appear, in the middle of July, to consider these questions and the University of Madras will also be consulted. We hope that the expectations raised by this message will not be falsified and the Presidency of Madras will be able to add a bright chapter to its history of educational expansion and progress which is not second to that of any other province in India.

Educationalists all over the Madras Presidency will be particularly interested in a new volume entitled

"The Education of India," by Mr. Arthur Mayhew, C.I.E., who will be remembered as a distinguished member of the Indian Educational Service for several years in this part of the country. Mr. Mayhew has given an admirable account of the progress of Indian education in all its branches during the years 1835-1920. The book is very ably written being up-to-date in its knowledge of educational statistics and development in India and marked by a real sympathy with Indian aspirations and the advancement of Indian culture and civilisation. Even if the book was only a record of the Progress of Indian education during this long period of contact with the British

* Faber & Gwyer, Ltd., London.

Government and Western culture and civilisation, it should be particularly valuable. But Mr. Mayhew has gone further and has tried to discuss such important questions as the influence of Western Education on Indian Life. He is probably unduly pessimistic in thinking that Western education has not exercised much influence on Indian life, and it has made only a three-fold contribution to India's civilisation in European sports and games, in Shakespeare and in the life of Christ presented in the English version of the Bible. The influence is undoubtedly deeper and more all-pervading and many Indians would gladly testify to the priceless effects of the contact with the Western culture and civilisation on Indian life. It is too late in the day for Mr. Mayhew to protest against the "transfer" of education into Indian hands. With the growth of democracy the transfer of education under the control of popular bodies cannot be resisted and whatever mistakes may be made by the representatives of public opinion in the earlier years, we have no doubt that ultimately things will take a proper shape and an effective contribution will be made to the progress of Indian education by the chosen representatives of the people. Mr. Mayhew has many very valuable observations to make on almost every aspect of Indian education and we have great pleasure in recommending it to the notice not only of members of the teaching profession, but also of all those interested in the problems of Indian education.

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

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

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

Education (Allahabad), March 1925.

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

XXXII—4

The Madras Christian College Magazine, January 1926.

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.

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

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

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