SATURDAY, AUGUST 21, 1926.

CONTENTS.

	PAGE
Educational Training for Overseas Life	253
Indian Witchcraft and Primitive Forms of Belief .	255
Storm and Stress. By R. G. G.	257
Root Habits and Growth. By W. E. B. . . .	258
Our Bookshelf	259
Letters to the Editor:	
Microstructure of Mercury.—Dr. Walter Rosenhain, F.R.S., and A. J. Murphy	261
The Damping of Pendulous Jets.—Prof. Paul Kirkpatrick	261
Another Patagonian *Lusus Naturæ*.—G. A. Gardner	262
Dwi-Manganese in Native Platinum.—O. Zvjaginstsev, M. Korsunski and Prof. N. Seljakow	262
Kaufmann's Experiment and the Spinning Electron.—Dr. L. C. Jackson	263
Liver Extracts in the Treatment of Malignant Disease.—John R. Howitt	263
Kammerer's Alytes.—Prof. E. W. MacBride, F.R.S.	264
The Birefringence of Crystalline Carbonates, Nitrates and Sulphates.—Prof. C. V. Raman, F.R.S.	264
The Reduction of Carbonic Oxide.—Prof. Henry E. Armstrong, F.R.S.	265
Operation of Fog-Signals from a Distance.—John J. Dowling; The Writer of the Note . .	265
Scientific Neglect of the Mas d'Azil.—The Abbé Breuil	265
Preservation of Mammalian Spermatozoa.—Arthur Walton	265
The Production of Single Crystals of Metals and some of their Properties. By Prof. H. C. H. Carpenter, F.R.S.	266
The Problem of the Origin of Species as it appeared to Darwin in 1859 and as it appears to us To-day. By Prof. Henry Fairfield Osborn, For. Mem. R.S.	270
The Geographical Distribution of Magnetic Observatories. By Dr. C. Chree, F.R.S.	273
Obituary:	
Sir William Ridgeway. By Dr. A. C. Haddon, F.R.S.	275
News and Views	276
Our Astronomical Column	280
Research Items	281
The International Geological Congress at Madrid .	284
Cancer Causation: Importance of Cell Physiology	284
Hæmoglobin	285
Contact Catalysis. By Dr. Eric K. Rideal . .	285
University and Educational Intelligence . . .	286
Contemporary Birthdays	287
Societies and Academies	287
Official Publications Received	288
Diary of Societies and Congresses	288

Editorial and Publishing Offices:
MACMILLAN & CO., LTD.,
ST. MARTIN'S STREET, LONDON, W.C.2.

Editorial communications should be addressed to the Editor.
Advertisements and business letters to the Publishers.

Telephone Number: GERRARD 8830.
Telegraphic Address: PHUSIS, WESTRAND, LONDON.

Educational Training for Overseas Life.

NOT the least significant feature of the third report of the Committee appointed by the British Association to consider the Educational Training of Boys and Girls for Overseas Life, presented at the Oxford meeting, is the emphasis which is laid upon the social importance of agricultural and other practical studies. The Committee rightly states that the intellectual and cultural aspects of practical studies are too often overlooked or regarded with contempt by educational authorities who fail to appreciate the clearer vision which accompanies contact with reality and the greater interest which practical work, even if vocational in aim, arouses in the pupils themselves. As Mr. H. W. Cousins aptly remarked, in the discussion on the report, the purpose of education should be to create an interest in doing things, not in merely talking about them, a sentiment which was warmly applauded by H.R.H. the Prince of Wales, who was present.

While it is true that the work of Prof. Nunn and other educationists is gradually modifying the attitude of teachers in schools towards practical work—not merely work in a chemical or physical laboratory—it is equally true that their efforts to combat 'education by book' are hampered and discouraged by most examining bodies. The capacity of the 'bookish' pupil is easier to assess than that of the pupil whose main interest lies in acquiring understanding of, and the capacity of participating in, the activities of his particular environment. A board of examiners sitting in one of the great centres of learning, however well intentioned, must find it exceedingly difficult catering for the needs of pupils in various environments, whose education is 'practical' and suited to the special environment, but of which the examiners themselves can know very little. Their difficulties would be increased if education authorities in those of our overseas territories, which are connected for examination purposes with English universities, desired to develop a schools curriculum based on the special needs of the countries they serve.

The point might well have been made by the Committee on Overseas Training that the education of boys and girls in our Dominions, Dependencies, and Crown Colonies is more 'bookish' and less adapted to make them capable of 'deliberate adjustment to their environment'—after all, the true purpose of education—than that which is given at home. There, those who are charged with the responsibility for the evolution of a system of education have generally accepted unreservedly the system evolved to suit a very different environment. Instead of basing their system upon the needs of the many, they have subordinated it to

© 1926 Nature Publishing Group

the English examination system in order to cater for the needs of the very small number of pupils who may proceed to England to pursue their further studies. Certain education authorities in Ceylon, it is stated, send to a biological station in England for specimens of British marine and other material prescribed for study by one of our examining bodies. It would seem obviously the better course for the examining body to prescribe for study some of the specimens which abound in Ceylon.

Kenya Colony, the only East African territory where public provision is made for the education of European children, is an abject slave to the tyranny of the London Matriculation and the Oxford and Cambridge Local (so called) examinations. Most of the children educated in the State schools in Kenya will certainly never leave East Africa for a further course of study in Great Britain. The environment to which they have to adjust themselves is essentially agricultural; an environment which demands an understanding of the black races, and a sound knowledge of the elementary principles of social and personal hygiene, and human, animal, and plant diseases; in other words, an education where the bias should be agricultural and otherwise practical, where work in the field and workshop and laboratory should be the basis of the instruction in science and elementary anthropology the basis of the 'humanistic' studies. Nothing of the kind has been attempted. The syllabus of instruction is that prescribed for the 'literary' side of the English examinations; there are no workshops, there are no laboratories, there is no provision for practical work in the field. Where 'science' instruction is given at all it is 'out of the text-book.' What knowledge the children have of the native races is acquired in a school of experience which is calculated to breed contempt for them, and sow seeds of racial antagonism. Both the blacks who come within the sphere of influence of the State schools, and the Indian children, are being better educated than the children of the Europeans.

The most obvious commentary upon the type of instruction given in schools in Australia is the disproportionate size of its cities. Appeals for immigrants are made to compensate for the flight of colonial-born agriculturists from the land to the social amenities of towns, and the reluctance of Australia's urban unemployed to transfer to the land. Much the same problem faces all our self-governing dominions. This problem of education is of world-wide significance and of especial importance to the British nation, which bears a grave burden of responsibility for the development of so great a proportion of the world's natural resources and of the backward races. It is sufficiently important to command much of the attention of the statesmen of the Empire who will shortly be gathered together for another Imperial Conference. Education is not a subject remote in its bearings upon Imperial policy; it lies at the root of it. Upon the type of instruction which is given in our educational institutions at home will depend largely the character and outlook of the administrators of the scientific and technical experts in tropical possessions, and of the settlers in British dominions. Administrators could be produced whose training and educational achievements would be a guarantee that they would combine understanding of the problems inherent in the development of the natural resources of a country and the development of the soul of a people; and the scientific and technical services could be manned by those who combined knowledge of their craft with understanding of primitive crafts and a realisation of the social and political significance of the introduction of European ideas and processes among backward peoples.

If the needs of the better instructed elements among the Britons who proceed overseas are such as to demand considerable changes in the education which is given them as a preliminary training, the needs of the secondary school boys and girls destined for overseas work is greater. Whether they go to the tropics, where they must perforce have intimate contact with backward peoples, or to the self-governing dominions, there are certain obstacles which 'personality' alone cannot overcome, but 'character' based upon knowledge, capacity, and grit can. Prejudice against a newcomer wishing to introduce new methods into production is the commonest of diseases. But prejudice is not best overcome by pandering to the 'oldest inhabitants' fixed notions of what is right, but by proving the greater efficiency of the new. It is doubtless true, as Mr. Ormsby-Gore said at Oxford, that overseas farmers prefer to deal with 'raw' rather than instructed new settlers, that they prefer a man who has had no agricultural training in England to the man who has, because the methods overseas are vastly different from those at home. It does not follow, however, that the overseas man on the spot is sound in his prejudices. His methods may be thoroughly unsound. The home-trained man's methods, even applied in a new country, may be thoroughly sound in principle.

The most important aspect of the problem of land-settlement is the outlook of the settlers upon their work. Not the least significant feature of the flight from the land is the material sacrifices which those who are forsaking agriculture are prepared to make for the greater amenities of town life. The only apparent remedy lies in an education system which will bring greater contentment to the comparatively

© 1926 Nature Publishing Group

isolated land worker. It is not easy to prescribe the exact form which this remedy must take, but it is fairly clear that it must depend upon the quickening interest of the workers in their vocation. No greater harm could be done to the cause of agriculture than by ceaseless reiteration of the material benefits arising from its pursuit. There is a limit to credulity and gullibility.

What is wanted is for the Imperial Conference to take an intelligent interest in this problem. It is more vital than tariffs; without even a partial solution much of the work of the politician and financier and trader will be wasted. An Imperial Education Committee is of more importance even than an Empire Marketing Board. It will not suffice to refer the problem of education to a committee of expert educationists; the responsible leaders among the statesmen of the various dominions and Crown colonies must be prepared to consider the whole problem with the experts and to make their own contribution to the discussions. They must let the educationists know what they hope from them: they must be prepared to fight for the necessary changes in educational policy in the countries for which they are responsible. Above all, they must assist the true educationist to rid himself of the examination blight. They must encourage a spirit of experimentation in educational method and realise that a stereotyped Prussian system of instruction, towards which we have been retrogressing while even the Prussians themselves have commenced to react against it, will kill the soul of any people.

The eminent persons who spoke at Oxford, ostensibly in support of the recommendations of the Overseas Training Committee, cannot be said to have laboured the essential features of the report. They gave the impression that a social veneer was a greater attribute to a man than social qualities. It cannot be overemphasised that the latter depend upon knowledge based upon a sound education system. According to one speaker, it was more important for a man proceeding overseas to have gone to the right type of school than it was for him to have acquired the right kind of knowledge, based upon an intensive technical training. It is a pity it is not more generally recognised that this curious snobbery is responsible for more of the defects in our administration system and our comparative failures in Imperial affairs than any other factor.

One other point which emerged in the discussion is of some interest, and this is the one which was raised by Mr. Ormsby-Gore in connexion with the staffing of the education and scientific services in the Crown Colonies. He stated that the Crown Colonies are in the greatest need of expert educationists and first-class scientific advisers. At present the demand exceeds the supply and it is impossible to fill many of the vacancies which existed. This he contrasted with the ease with which the late German administration in East Africa had built up its wonderful research institutions. It can only be hoped that this was not special pleading on the part of Mr. Ormsby-Gore to justify the chronic neglect of the British administration of once world famous institutions. The fact is that it is only within the last two years that the slightest appreciation has been displayed, either by the local governments of East Africa or by the Colonial Office, of the obvious fact that upon the education and scientific services the whole future of East Africa will depend. There would be no difficulty in obtaining the personnel for either of the services if the proper inducements were offered, and if the Colonial Office and the other governments would realise that it is not merely material inducements which will make the East African services attractive; conditions of service are just as important as salary, and the Colonial Office should realise that it is sometimes possible to offer a large salary without attracting candidates, because the acceptance of the post would rob the man appointed of all title to the respect of his fellows.

Indian Witchcraft and Primitive Forms of Belief.

Religion and Folklore of Northern India. By William Crooke. Prepared for the Press by R. E. Enthoven. Pp. iv.+471. (London: Oxford University Press, 1926.) 21*s*. net.

WHEN the history of the study of 'things Indian' is written, the name of the late William Crooke will rank high. His erudition was vast, and his range of reading immense, while his sanity of outlook and grasp of matters of fact guided him among the many pitfalls which have beset the paths of theory in Indian ethnology. It was these qualities which made him a particularly safe guide to the student and accounted largely for the high repute of the pioneer work in his little book "An Introduction to the Popular Religion and Folklore of Northern India," first published in 1894. It was reissued in 1896, and is now published posthumously in a third edition, but entirely rewritten in the light of further information.

It is scarcely necessary to stress the importance of Crooke's work in the study of the primitive religions of India. His contact with the village population in the course of his duties as an official of the Civil Service led him to the study of their beliefs and ritual. These he found represented a type very different from those of the priestly class and those described in the sacred books of the Brahmans. His investigations ranged

© 1926 Nature Publishing Group