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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.

NO. 2901, VOL. 115]

An Imperial Research Committee.

MOST of Britain's tropical possessions were acquired by accident rather than by design. The home government has never exhibited any particular anxiety to undertake the obvious initial responsibilities of the administration of new territories. It has left to poorly paid local administrative officers the task of meeting expenditure on the essential services out of taxation of the populations committed to their care. The efficiency of these officers is measured by the home authorities, not by the development of the potential resources of a country, not by the happiness, health, and growth of the native populations, not by any enterprise they display in fostering the introduction of new varieties of economic crops, but solely by their success in balancing their budgets. As a general rule, the governors have been "safe" conventional-minded men, unable even in a crisis to stir the home authorities into action.

The result of this attitude of conventional indifference to progress, to the possibilities of the applications of science to the development of the vast potential resources of Nature, is nowhere more strikingly exemplified than in British tropical possessions. After thirty years of British occupation, the agricultural implements principally used by the natives of East Africa are the stick and the hoe. In a country hungry for motor-spirit, the whole of the bye-products of an immense colliery are wasted. In territories where the distances between centres of administration are great, and the difficulties of maintaining telegraph wires are many, no attempt is made to establish wireless communication.

Years elapse before discoveries made in one territory regarding the new treatment of a human disease, yaws, for example, are communicated to the neighbouring administration. Although it appears to be definitely established that the shifting cultivation practised by the native populations, involving as it does the destruction by burning and ring-marking of the primary forests, is responsible for the impoverishment of the soil and the progressive desiccation of Africa, no serious attempt has yet been made to put a stop to the practice of grass-burning. In certain territories, cotton has been introduced and its cultivation fostered, but no adequate safeguards have been taken to prevent the distribution of dirty seed to the natives, with the result that preventable diseases have been introduced. In others, where richer cattle food would vastly improve the quality and efficiency of draught oxen, cotton seed is being burned for fuel at ginneries and molasses from local sugar factories is being wasted, both of which are valuable ingredients in cattle food.

The sudden enthusiasm of an administration for the increase of a particular economic crop might, by restricting the area under food crops, bring about a disastrous famine. This kind of enthusiasm might easily result also in the crops being planted in wholly unsuitable soils. The decision to raise taxes on a commodity might, as in the case of the salt tax in India, result in such a reduced consumption of a vital commodity that the efficiency of the population be greatly reduced.

Many other problems arise in dealing with the native populations. The sudden change in the traditional habits of a tribe, for example, the restriction of their freedom of movement from one site to another, might easily be responsible for an appalling outbreak of disease. Pastoral tribesmen, encouraged to work in factories and mines, are particularly subject to tuberculosis. The incidence of taxation on a tribe which is too remote from the transport system of the country to make the production of economic crops a practical proposition results too frequently in the male members of the tribe being forced to seek work in districts far removed from their homes. This has not only a bad effect on the birth-rate of the tribe, but results also in the introduction of disease on the return of the men to their homes. Even the prevention of tribal warfare is not an unadulterated blessing. The cessation of tribal warfare has led to a marked deterioration in the domestic stock of the natives, due largely to the lack of knowledge of animal husbandry among the natives. Then again, if natives from a grain-eating district migrate in search of work to a district where the natives subsist on ox-blood and milk or bananas, there is a great deal of debility due to digestive troubles.

It can safely be said that these and many other problems and possibilities are only just being realised by the administrations in our various tropical possessions; and we are further from the solution of most of the problems than we are from the appreciation of the possibilities of the economic development of the territories.

The recent announcement, therefore, by the Prime Minister, in a characteristically eloquent speech in which he paid a tribute to the enthusiasm of the late Lord Milner for research, that in appointing the Earl of Balfour as Lord President of the Council he was giving the people of Great Britain an earnest of the intention of the Government to see that the matters of co-operation and co-ordination in scientific work throughout the Empire should be regarded as the first work of a man peculiarly fitted for the responsibility, is particularly welcome. This announcement, moreover, was followed by another by Lord Balfour himself a few days later. In the course of the debate in the House of Lords on Kenya Colony on May 20, the Archbishop of Canterbury, referring to the scientific

chapters of the "brilliant Report" of the East African Commission, pleaded for the "scientific inquiry into all the conditions of climate, soil, fauna, flora and population in all these [East African] areas" as recommended in the Report, and suggested that a certain percentage of the 10,000,000*l.* loan recommended for the development of the transport system of the territories should be "definitely devoted to such preliminary inquiries on a large and really worthy scale by competent men." In replying for the Government, Lord Balfour gave a clearer indication of its intention with regard to Imperial research.

Referring to the Report of the East African Commission, he asked, was it not clear from a study of that document that what was wanted was some machinery by which the larger problems which we now saw were presented to us by the vast area in East Africa, and other problems from other parts of the Empire, could be conveniently considered in their entirety? He stated that the Government is of the opinion that an institution bearing a resemblance to the Committee of Imperial Defence should be set up for dealing with the purely civilian problems which become more and more insistent in connexion with Imperial development. This body is to be the direct creation of the Prime Minister. It will advise the Cabinet, it will provide machinery for examining problems with which there is at present no Departmental method of dealing, and, having examined them and formed an opinion, the Cabinet will then have to decide upon the applicability of its recommendations to the necessities of the case and practical possibilities of carrying them out.

This sudden resolve of the Government, for which the scientific member of the East African Commission, Major Church, must be given no little credit, is made none too soon. The eyes of the civilised world are focussed on the British overseas territories. The attitude of dispossessed Germany and of certain of our commercial rivals is severely critical, and not without justification they consider that we have undertaken vast additional responsibilities with which our existing machinery of government is unable to cope. They consider also that among these responsibilities is that of developing the vast natural resources of the countries in our keeping.

The advantages of an Imperial Research Committee are obvious. Only those who have visited the colonies, and adjacent territories in a tropical country, can fully appreciate the isolation of the scientific workers in those territories, so complete that discoveries or activities in one territory are absolutely unknown in those adjacent to it. Then again, as is clearly indicated in the Ormsby-Gore Report, some administrations have not yet sufficiently understood or formulated their problems

to realise the services which their solution demands. Furthermore, there is no real existing over-riding authority which can effectively enforce the co-operation of the various administrations in a campaign against a common menace, be it tsetse-fly, pink boll-worm, rinderpest, or venereal disease. There are other advantages also. Unless Major Church had been a member of the East African Commission, very few of the local scientific workers would have been given the opportunity to express their views on the problems arising in the development of their respective territories. There is virtually no committee existing at the Colonial Office which acts at all adequately as a liaison and advisory body to colonial scientific officers. Still less is the present Colonial Research Committee in a position on its own initiative to make proposals embodying a research programme to the Secretary of State. It is true that the Imperial Institute does act as a consultative body to the Crown Colonies and some of the British Dominions, and that it gives advice when asked for it. But it is clear that what is envisaged, and what is needed, is an authoritative body which shall be in a position to formulate a policy and programmes for research without waiting necessarily for a stimulus from abroad.

From another point of view the proposal is most gratifying to the general body of men of science. In essence, it is a recognition of the all-important rôle of the scientific worker, not only in the development of the Empire, but also in the life of any community. We may eventually reach the stage in human development when workers in pure and applied science are at the top of the pillar of public esteem, when the fact is appreciated that science rightly used, and the scientific outlook, may not only save us from social disasters and material wants, but also lift us to hitherto unimaginable heights of life and illumination.

If the Imperial Research Committee is formed, and if it fulfils its proper functions, we shall be travelling a stage further along the road of progress. It is essential, therefore, that those of us who guard the interests of science and believe in the worth of scientific knowledge should watch with jealous care the selection of this Committee. We do not hesitate to suggest that included in this august body, charged with such grave responsibilities, should be the member of the East African Commission, to whose labours, in the main, the project is due. The Report of the Commission is made particularly distinctive from our point of view by its treatment of the scientific aspects of the problem of development of the promising territories surveyed, and the spirit of this statement is exactly what is wanted to inspire the work of an Imperial Research Committee.

River Regulation.

Regulation of Rivers without Embankments: as Applied in the Training Works at the Headwaters of the Rangoon River, Burma (locally known as the Myitmaka Training Works). By F. A. Leete, assisted by G. C. Cheyne. Pp. xii + 122 + 36 plates + 10 maps. (London: Crosby Lockwood and Son, 1924.) 30s. net.

THE practice of the science of river training and regulation is beset by so many difficulties, and success has often to be achieved in the face of obstacles and impediments of so intractable a character, that the suggestion that a river may be left to effect its own training is, at first sight, a little startling. One may even experience a slight feeling of incredulity in glancing at the title of the book forming the subject of this notice, which will be intensified, indeed, when it is found that the author includes within the term "embankments" all artificial aids to bank formation, with the exception of certain sticks of bamboo. At the same time, it must be observed that as the object of training works is to produce embankments of a permanent character, the signification of the word in the title is particular and limited.

Obviously, the title chosen is, in a sense, paradoxical, but the book certainly indicates a novel and ingenious method of river training, which is clearly demonstrated to be of the highest value and utility in the cases in which it has been employed. Before dealing with the limitations of its application, we will briefly describe the method itself.

The scene of the operations described is in Burma, among the headwaters of the Rangoon River. These streams, principally used and, in normal condition, highly serviceable for the transportation of logs of teak from the uplands to the coast, are fed by hillside torrents taking their rise in the range of mountains known as the Pegu Yomas, which form the eastern boundary of the watershed of the river Irrawaddy. These hills have an extreme altitude of about 2500 feet, and they are composed of very friable sandstones and shales. The rainfall varies from 60 to 120 inches, and during the monsoon period, when the precipitation is a maximum, the hill streams come down in high flood at frequent intervals, carrying immense quantities of sand and clay in suspension. Spreading themselves out, on reaching the foot of the hills, in a network of shallow and interlacing channels, the flood waters are dispersed over the plain, submerging the paddy fields and producing a series of swamps and *lahas* (the native term for tracts inundated annually). For log transportation, such a regimen is in the highest degree a source of trouble and expense. Before regulation was undertaken, very few logs found their way to the main