



SATURDAY, MARCH 28, 1925.

CONTENTS.

	PAGE
Scientific Officers in Tropical Agriculture	449
Philosophy and Science. By C. A. R.	450
Chemistry and the Quantum Theory. By Prof. H. S. Allen	452
Among the Natives of East Africa. By H. L. C.	453
Our Bookshelf	453
Letters to the Editor :	
Biographical Byways: Dr. S. P. Langley.—Dr. C. G. Abbot	455
Passivity of Iron and other Metals.—Dr. A. S. Russell	455
The Compton and Duane Effects.—Prof. G. E. M. Jauncey	456
Transmission of Stimuli in Plants.—Sir J. C. Bose, F.R.S.	457
The Behaviour of Crystals and Lenses of Fats on the Surface of Water.—A. P. Cary and Dr. Eric K. Rideal	457
Ectodermal Muscles in a Crustacean.—Dr. H. Graham Cannon	458
On the Absorption Spectrum of Aluminium.—Kanakendu Majumder and Naline Kanta Swe	459
The Origin of Sponge-Spicules.—Prof. Arthur Dendy, F.R.S.	459
The Action of Silica on Electrolytes.—A. F. Joseph	460
The Reported Anti-Relativity Experiment.—Sir Oliver Lodge, F.R.S.	460
The Glow of Phosphorus.—H. J. Emeléus	460
The Structure of the Mercury Line 2536.—Prof. R. W. Wood, For. Mem. R.S.	461
Les rayons γ de haute énergie et leur effet photo-électrique.—Le Duc de Broglie	461
Radio Reception on Frame Aerials.—D. M. Ely	461
The Rotor Ship and Aeronautics. By Prof. L. Bairstow, F.R.S.	462
The Mountain Structure and Geographical Relations of South-Eastern Asia. By Prof. J. W. Gregory, F.R.S.	464
Recent Developments in the Nitrogen-fixation Industry	465
Obituary :—	
The Marquess Curzon of Kedleston, K.G., F.R.S.	466
Lord Curzon in India. By Sir T. H. Holland, K.C.S.I., F.R.S.	467
Prof. A. von Wassermann. By W. B.	468
Current Topics and Events	469
Our Astronomical Column	473
Research Items	474
Mining Research	477
Diagnosis of Ankylostomiasis. By Lieut.-Col. Clayton Lane	478
University and Educational Intelligence	479
Early Science at Oxford	480
Societies and Academies	480
Official Publications Received	484
Diary of Societies	484
Recent Scientific and Technical Books	Supp. iii

Scientific Officers in Tropical Agriculture.

MR. ORMSBY-GORE, Parliamentary Under-Secretary of State for the Colonies, speaking at the annual dinner of the National Union of Scientific Workers on March 19, emphasised the need for many more highly trained scientific officers in British colonial possessions. His recent visit to East Africa with Major Church, secretary of the Union, as members of the East African Parliamentary Commission, revealed to him some of the problems which could be solved only by the use of scientific knowledge, and developments which can come from scientific guidance alone. He regarded the present position as to officers and institutions concerned with tropical agriculture as "a disgrace to the Empire."

The earliest appointments of this class of scientific officers in tropical agriculture were the heads of the various tropical botanic gardens, usually systematic botanists, whose concern with agriculture was only a limited one, their principal duties being the introduction of possible useful plants, and the investigation of the local flora. The first officer of a more specialist type to be appointed in the British tropical colonies was the late Prof. Marshall Ward, who was sent to Ceylon in 1882 to investigate the coffee leaf disease (*Hemileia vastatrix*) and to endeavour to find some remedy for the already desperate position of affairs. But his advent upon the scene was much too late for any remedy to be applicable that was within the means of the planters, and the visit was unsuccessful, so that public opinion was set against such appointments. A little later, however, the well-known Dr. Treub obtained quite a considerable staff of specialist scientific officers at the great Dutch colonial institute in Java, to which Mr. Ormsby-Gore paid high tribute.

For a long time no further appointments were made in the British tropical colonies, and the next, so far as we are aware, was that of Mr. E. E. Green (now president of the Entomological Society), who in 1897 was made honorary government entomologist in Ceylon, with a small grant for expenses. In the following year, Mr. J. Parkin was appointed assistant in Ceylon to investigate the chemistry and physiology of the coagulation of rubber latex. Mr. Green did such valuable work in his honorary capacity that in 1899 he was appointed full-time entomologist, while in the same year the newly formed Imperial Department of Agriculture in the West Indies appointed Mr. Maxwell Lefroy (now professor at the Imperial College of Science, South Kensington) as entomologist, and Messrs. Harrison and d'Albuquerque as honorary chemists.

From that time onwards the number of scientific men employed in the tropical colonies has steadily increased,

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though at first public opinion was opposed to such appointments, on the supposition that scientific work was unlikely to have much bearing upon practice in agricultural matters. This expansion is to some slight extent due to an element of good fortune which attended these pioneers, who were markedly successful in their early work, of which that of the first two may be quoted as an example. Mr. Green, with years of practical experience as a tea planter, made recommendations for the treatment of disease which were at once practical, economical, and successful, while Mr. Parkin devised the method of coagulation of rubber latex which is still followed. At first, the appointments were chiefly of officers to deal with diseases, or of chemists to deal with soil questions, and in this and other ways the old botanic gardens in some of the most important tropical colonies developed into Departments of Agriculture.

There are several essentials in the equipment of a scientific officer for the tropics, though naturally the training of each must vary with the duties which he is to undertake. These essentials are well set forth by Prof. Farmer in a pamphlet recently issued.¹ In the first place, the officer must, of course, have a thorough knowledge of the science with which he is to be concerned, a knowledge best obtained at one of the universities, where he should have taken a good degree in honours. Next in importance is a good general knowledge of tropical agriculture, and (especially in the case of officers like entomologists, who have to make recommendations which involve the outlay of money) of the economics of the various cultivations. Such knowledge is best obtained in a tropical country, and if the individual cannot afford to spend some time at such a place as the Imperial College of Tropical Agriculture in Trinidad, he should learn his work by being attached as assistant to some officer with long experience of the tropics. In the third place, the man should have a capacity for research, sufficient at any rate to enable him to find out the life-history of a disease, to test new plants or new conditions, to advise as to the best manures for unfamiliar soils, and such matters. While this capacity is largely inborn, it may be much improved by work under a capable and experienced chief, under whom he may carry out definite pieces of research. Finally, a most desirable part of the equipment is a capacity for giving—in speaking or in writing—clear and easily understood accounts of any work that has been carried out, whether his own or that of other workers. It is through the work of men of this type, adequately trained and reasonably paid, that, as Mr. Ormsby-Gore remarked, “we shall be justified in history as a great Imperial Power.”

¹ “On the Training of Scientific Officers for Tropical Plantation Industry,” by Prof. J. B. Farmer. Reprinted from the Official Report of the Brussels Conference, 1924; published by the Rubber Growers’ Association, Inc.

Philosophy and Science.

The Scientific Approach to Philosophy: Selected Essays and Reviews. By Prof. H. Wildon Carr. Pp. viii + 278. (London: Macmillan and Co., Ltd., 1924.) 12s. net.

FOR centuries past, science and philosophy, in spite of their common origin in the evolution of human thought, in spite, also, of the continuous (and inevitable) influence of each upon the other, have slowly but steadily drifted apart, both as regards their method and supposed subject-matter and as regards the avowed aims and general attitude of mind of their respective exponents. During the past twenty years, however, there has been a marked reversal of this tendency; and it is fitting that Prof. Wildon Carr should be one of the first to publish a systematic explanation of the causes and significance of the new movement, for he has done as much as any man to foster and encourage it.

Prof. Wildon Carr begins by pointing out that science and philosophy differ, not in their subject-matter, but in the mind's attitude towards it. Philosophy seeks to see reality as a whole, but science is more concerned with particulars. Philosophy proceeds from the whole to the parts, regarding the latter as significant only in their relation to the whole. Science, on the other hand, considers the parts as having reality in their own right, and proceeds, not to a systematic whole, but to invariable laws. It should perhaps be remarked that this view of the relation between science and philosophy is in fundamental contrast to that held, for example, by Mr. Bertrand Russell. For Mr. Russell, science and philosophy start from the same point and with the same material, namely, the particular facts of experience, and it is these particulars and the relations which subsist between them which are the essential concern of both. The difference between them lies in the fact that they proceed from their starting-point in opposite directions.

Prof. Wildon Carr considers that science and philosophy have reapprached through biology and electromagnetism; or, more particularly, through evolution and relativity. The dichotomy of Nature as objective reality and mind as ideal representation, assumed by science, has turned out unworkable. Progress in science has raised, in connexion with science itself, metaphysical problems which are compelling us to reconstruct the whole basis of scientific thought. The reproach, so often levelled at philosophy, that it is concerned with mere speculation regarding a transcendent reality, whereas science provides comparative certainty, is held by Prof. Wildon Carr to be due to the nature of the older idealisms. The “New Idealism,” on the contrary, is the consciousness that the problems of science and philosophy arise from the