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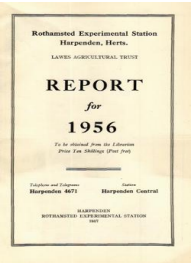
Report for 1956

Full Table of Content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Tropical Soils

H. Greene

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TROPICAL SOILS

H. GREENE

Cecil Frederick Charter died in London after a brief illness on 27 January 1956. He was then director of the Soil and Land-Use Survey in the Gold Coast. That country has lost a good friend and an outstanding scientist. We have also to record with deep regret the untimely death on 7 April 1956 of Vivian John Weston, a member of the soil-survey staff in Nigeria.

The need for soil surveyors in British territories overseas has been recognized by creation of a pool of six soil surveyors, of whom four are associated with Rothamsted. During 1956 A. O. Ballantyne has continued his work in Northern Rhodesia and G. F. M. Murdoch has been surveying land for irrigation in Swaziland. J. Stark has been seconded to British Guiana for two years, and will be working with T. A. Jones and other members of the team supplied by the Caribbean Regional Research Centre. Mr. R. F. Loxton of the University College of the Gold Coast spent some months with this team and has made an interim report on the survey of the Rupunnuni savannah. In preparation for secondment to Sierra Leone J. C. Chisnall, another member of the pool, has spent six months in the swampy coastal region of British Guiana. He was working with soil surveyors supplied by the University of Maryland under contract with the International Co-operation Administration of the U.S.A. Two members of the pool of soil surveyors, C. Grant and D. M. Lang, are associated with the Macaulay Institute, and have been training under Dr. R. Glentworth. C. Grant has been seconded for two years to Hong Kong, being accompanied at the start by Dr. Glentworth; D. M. Lang has begun soil survey in Malta in support of the geographical studies being made there under direction of Professor H. B. Fisher of the University of Durham. D. A. Osmond briefly visited Malta to give Lang a flying start. It is hoped to recruit a chemist as seventh member of the pool of soil surveyors and to give to some members of the pool additional training in irrigation problems.

After training in the Chemistry Department at Rothamsted, R. K. Cunningham has joined the staff of the West African Cocoa Research Institute and A. Pinkerton is about to begin his duties with the Department of Agriculture in Kenya.

Mr. D. Rhind of the Colonial Office and H. Greene visited British Guiana in February 1956 and were shown the notable improvement of pasture at Ebini following application of basic slag to the impoverished soil of the white sand sediments. The work was in charge of Mr. J. R. Goode, who had been supplied by the Food and Agriculture Organization of the United Nations. His observations confirm analyses of fodder and of soil samples that had been carried out at Rothamsted. Sugar cane and rice are grown in British Guiana on the more recent coastal sediments, consisting of marine clay with some peat. H. Paul and J. K. R. Gasser have obtained

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important responses to phosphate by rice when grown on the more acid, peaty soils. There was an indication, not yet confirmed, that the sulphate of ammonium sulphate reduced yields of rice.

H. Greene also visited Trinidad, British Honduras and Jamaica. Discussions in Trinidad led to agreement that rehabilitation of non-swampy areas, more detailed soil survey and improvement in the physical condition of the soil called for urgent attention and additional staff. In British Honduras one can still see striking responses to phosphate obtained in small experiments laid down by A. C. S. Wright of the New Zealand Soil Bureau and D. H. Romney. Their example has been followed with success in some poorly-drained acid soils of Trinidad also. There is need in British Honduras for extension of this work; it is thought that pastures offer promise. Very satisfactory progress has been made in the soil survey of Jamaica by the close and successful co-operation between men supplied by the Jamaica Department of Agriculture and by the Caribbean Regional Research Centre. In Jamaica the work is led by C. W. Hewitt and K. C. Vernon respectively. A new set of aerial photographs will facilitate the work and the recording of data; although the need for rehabilitation of upland areas is urgent, there is also need for vigilant scrutiny of recommendations made to peasant farmers. It is a case of more haste, less speed, for the upland areas have not yet received detailed investigation comparable to that given to the fertile lowland areas.

The British tax-payer seems to be getting good value for the considerable sums of money allocated for the Caribbean Regional Research Centre. In Trinidad cocoa has continued to present many problems, including soil problems. An excellent series of reports is being issued. Information of lasting value may be expected from spectrographic analysis and from the statistics section, to which G. E. Hodnett has been appointed.

E. W. Russell was chairman of Commission IV (soil fertility) and H. C. Pereira was vice-chairman of Commission I (soil physics) at the Sixth Congress of the International Society of Soil Science (Paris, 29 August–8 September 1956). The printed transactions include papers by B. Anderson, W. E. Calton, W. N. M. Foster, J. K. R. Gasser, D. J. Greenland, T. A. Jones, J. S. G. McCulloch, P. H. Nye, W. P. Panton, H. Paul, C. J. Piggott and J. W. Vail. Some other papers from British territories overseas will appear in a later volume of the Transactions of the Congress.

J. P. Fox of the New Zealand Soil Bureau has made a draft report on the soils of Viti Levu, the largest of the Fiji islands. There has been progress also with soil survey in North Borneo (T. R. Paton; A. W. Allen) and in Malaya (A. R. McWalter; W. P. Panton). Several memoirs have been issued from the Gold Coast (H. Bramner, C. F. Charter, A. J. Crosbie, R. Hamilton, J. M. Hotson, M. F. Purnell, S. A. Radwanski).

Among studies of soil fertility involving various crops the following may be mentioned: rice in Zanzibar (G. E. Tidbury); maize in Basutoland (A. C. Venn); ground nuts in Sierra Leone (C. J. Piggott); cocoa in Trinidad (G. A. Havord, G. K. Maliphant, F. W. Cope); sugar cane in British Guiana (H. Evans); sugar cane in Jamaica (R. F. Innes, T. Chinloy); pine-apples in Kenya (J. B. D.

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Robinson). Micronutrients have been receiving attention in Uganda (E. M. Chenery), in Tanganyika (W. E. Calton) and in the Gambia (R. A. Webb). Elaborate fertilizer experiments with oil palm in West Africa have been discussed by W. B. Haines and Blanche Benzian. There are also valuable reports from the West African Institute for Oil Palm Research.

In the severely eroded island of St. Helena preparations are being made for spray irrigation of a small area. During the past few years remarkable success has been achieved in the Abyan irrigation scheme in Aden Protectorate, but some severe difficulties have yet to be overcome. J. E. A. Ogborn has begun to study the water-logging and salinity that affect part of the irrigated area.

In October 1956 H. Greene visited Australia to attend the symposium on arid-zone climatology organized jointly by the Commonwealth Industrial and Scientific Research Organization and by the United Nations Educational Scientific and Cultural Organization. In Australia conservation of water is of obvious importance. Since evaporation from plants and soil depends on air movement near ground level, great interest was shown in the detailed studies of turbulent transfer that are being carried out by the Australian Division of Meteorological Physics. There was discussion also on the physiological factors, possibly genetic, that enable animals to withstand heat and drought. Experiments are in progress on the use of cetyl alcohol to reduce evaporation from reservoirs.

Returning from Australia, H. Greene visited North Borneo, Sarawak and Aden. In Sarawak Mr. T. W. G. Dames, who was supplied by the Food and Agriculture Organization of the United Nations, has been studying humus podzols under poor forest vegetation. Plans are being made for additional soil-survey and fertility studies in Sarawak.

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