

on this account, the Foundation has generously granted the sum of 20,000 dollars to assist the Institute to adjust the publication program to the new circumstances." In the preparation for, and prosecution of, wars the nations seem to have no difficulty in finding huge sums of money. Yet the bulk of research is still carried on by the aid of charity. The dearth of physicists and the financial difficulties of publication are not therefore surprising. On consideration, it is an odd state of affairs that the publication of scientific work benefiting, or at least used by, the whole world should still be paid for largely by the research workers themselves through their subscriptions to scientific societies.

## BANANA FERTILIZER INVESTIGATIONS IN JAMAICA

INVESTIGATIONS of the effect of fertilizers on bananas are few in number, particularly in the great producing areas in the Caribbean region. In Jamaica, where many estates have been long under cultivation, and where Panama disease and soil erosion are tending to force cultivation on to new areas of lower fertility, a full knowledge of fertilizer requirements is rapidly becoming of paramount importance. The results of recent investigations by Croucher and Mitchell (*Bull.* 19, Dept. Sci. and Agr., Jamaica, 1940) are of both theoretical and practical interest, touching as they do on several aspects of the growth requirements of the Gros Michel banana.

The experiments under discussion were begun in 1932, but a succession of hurricanes and droughts prevented the reaping of several of the earlier crops, affording, incidentally, some impression of the difficulties with which the tropical investigator has to contend. The experiments undertaken were of a qualitative type, designed to give information on the general reaction of the banana to applications of the main plant nutrients. In the four different areas selected for experimental plots, different results were obtained: in one a growth response was obtained from nitrogen applications alone; in a second, response was obtained only when potash was applied, but phosphate improved production in the presence of potash; on the other hand, excess phosphate in the absence of potash adversely affected the quality of the fruit produced; in a third area, response was obtained only when phosphate was applied, but, in the presence of this nutrient, further response resulted from applications of potash and nitrogen; in a fourth area, absence of potash precluded the possibility of obtaining commercial fruit.

This brief statement of some of the results so far obtained indicates the wide and useful field that awaits further exploration. The assessment of yield of bananas is not a simple matter, in that it involves a consideration of (a) the number of 'hands' per bunch, (b) the quality of the individual fruits, (c) the rate of production, and (d) the population of plants per acre. In some areas nitrogen applications produced an increase in the length of individual fruits—a desirable commercial feature; in others, applications of nitrogen and phosphate also increased the length of fruits, whereas adverse results were obtained elsewhere; potash applications tended to offset undesirable effects resulting from phosphate fertilizers.

## FORTHCOMING EVENTS

[Meeting marked with an asterisk is open to the public.]

Monday, May 19

ROYAL GEOGRAPHICAL SOCIETY (at Kensington Gore, London, S.W.7), at 5 p.m.—Dr. Hugh Scott, F.R.S.: "Highlands of Central Ethiopia".

Tuesday, May 20

ROYAL INSTITUTION OF GREAT BRITAIN (at 21 Albemarle Street, London, W.1), at 5.15 p.m.—Sir Joseph Barcroft, F.R.S.: "The Development of Function in the Mammalian Organism".\*

Saturday, May 24

LINNEAN SOCIETY OF LONDON (at Burlington House, Piccadilly, London, W.1), at 3 p.m.—Anniversary Meeting.

## APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

MAINTENANCE ENGINEER by the British Guiana Government Transport and Harbours Department—The Crown Agents for the Colonies, 4 Millbank, London, S.W.1 (quoting M/9393).

ASSISTANT ENGINEER for the Government Federated Malay States Railways—The Crown Agents for the Colonies, 4 Millbank, London, S.W.1 (quoting M/9618).

## REPORTS AND OTHER PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

- Liverpool Observatory and Tidal Institute. Annual Report, 1940. Pp. 12. (Birkenhead: Liverpool Observatory.) [284]
- How to Make Good Silage: an Illustrated Guide for Dairy Farmers. Pp. 32. (Nottingham: Boots The Chemists.) [15]
- Tin Research Institute. Publication No. 103: Report for 1940, summarising Recent Researches and Developments in the Uses of Tin in Industry. Pp. 24. Publication No. 104: Protective Films on Tinplate by Chemical Treatment. By Dr. R. Kerr. Pp. 14+4 plates. (Greenford: Tin Research Institute.) [15]
- South-West Essex Technical College and School of Art. Annual Report, Session 1939-40. Pp. 52+12 plates. (London: South-West Essex Technical College and School of Art, Walthamstow.) [15]
- Proceedings of the Royal Society of Edinburgh. Section B (Biology), Vol. 61, Part 1, No. 3: The Structure of Tulach Hill, Blair Atholl, Perthshire. By Dr. William J. McCallien. Pp. 43-54. (Edinburgh and London: Oliver and Boyd.) 1s. 6d. [15]

### Other Countries

- Southern Rhodesia Geological Survey. Short Report No. 34: Geology and Mines of the Mashaba District. By R. Tyndale-Biscoe. Pp. 8. (Salisbury: Geological Survey.) [244]
- Gold Coast Colony. Report on the Forestry Department for the Year 1939-40. Pp. 8. (Accra: Government Printing Department: London: Crown Agents for the Colonies.) [284]
- Commonwealth of Australia: Council for Scientific and Industrial Research. Bulletin No. 136: Experimental Studies of Ephemeral Fever in Australian Cattle. By I. M. Mackerras and M. J. Mackerras; with a Section in collaboration with Dr. F. M. Burnet. Pp. 116+2 plates. Bulletin No. 137: A Soil Survey of the Red Cliffs Irrigation District, Victoria. By G. D. Hubble and R. L. Crocker. Pp. 63. (Melbourne: Government Printer.) [284]
- New Zealand Air Department. Meteorological Observations for 1939. Prepared in the Meteorological Office, Wellington. Pp. 39. (Wellington: Government Printer.) [284]
- Report of the Aeronautical Research Institute, Tôkyô Imperial University. No. 200: Investigation on the Mechanism of the Cementation of Metals. By the late Masaji Goto, Hiroshi Asada and Toneyosi Okamoto. Pp. 429-476. 90 sen. No. 201: Studies on the Subsonic Flow of a Compressible Fluid past an Elliptic Cylinder. By Susumu Tomotika and Kô Tamada. Pp. 477-552. 1.05 yen. No. 202: Acoustical Studies of the Flutter of an Airscrew (Experiments with Actual Airscrew) (Investigations of Airscrew Flutter, Part 2). By Jûichi Obata, Major Yûzô Matsumura, Ryô Kanayama and Yâhei Yoshida. Pp. 553-590. 70 sen. No. 203: On the Mechanism of a New Transformation, and some Associated New-Reactions in the Iron-Nickel Aluminium System. By Syûiti Kiuti. Pp. 591-720. 2.60 yen. (Tôkyô: Kôgyô Tosho Kabushiki Kaisha.) [15]