SCIENTIFIC EVENTS

AGRICULTURAL RESEARCH AND MARKETING IN THE BRITISH EMPIRE

A CORRESPONDENT of the London *Times* reports that the British agricultural and marketing acts of 1931 and 1933, which empowered the boards concerned to make provision for education and research, provided facilities which have never existed before for securing information on practical problems.

Simultaneously with the organization of marketing, the government has established the Agricultural Research Council to exercise general oversight over the field of agricultural research. The Marketing Boards, closely associated with the Department of Agriculture, are in a position to express the problems of the industries they represent and to provide funds for their investigation. The Agricultural Research Council is in close association with the Department of Agriculture and with the Department of Scientific and Industrial Research and the Medical Research Council, and is in a position to ensure that problems that may arise are effectively attacked.

For the past two or three years the Milk Marketing Board, in addition to setting aside substantial funds for the economic investigation of milk production costs, has had an arrangement with milk buyers under which a fraction of a penny a gallon on milk bought and sold in May is allocated to research. This arrangement has made available for research purposes an annual sum of rather under £10,000. With this money investigations of practical import to the milk industry have been set on foot, after consultation with the Department of Agriculture and Agricultural Research Council. A large-scale investigation into methods of disposal of dairy effluents is being made by the Department of Scientific and Industrial Research; work on contagious abortion in dairy cattle is being carried out at certain centers under the supervision of the Agricultural Research Council; dairy cow nutrition and problems of cheese manufacture are being studied at the National Institute for Research in Dairying, Reading; and certain technical investigations of milk quality and safety are in progress at the London School of Hygiene.

In the pig and bacon marketing schemes research responsibilities are undertaken by the Bacon Development Board, which has been established only recently. One of the first acts of the board was to appoint a research officer who had extensive experience of research matters as well as considerable acquaintance with the practicable problems of the pig industry.

The board has already disbursed research money in certain directions. A food-recording scheme for pigs, in charge of the University of Cambridge, is being financed, for example, and a large-scale experiment designed to ascertain the effect of different transport distances on carcass quality is being made.

In the Sugar Industry Act the obligation is placed on the Sugar Commission to prepare and submit to the Minister for his approval a scheme of education and research into matters affecting the growing of home-grown beet, or the manufacturing, refining, marketing or consumption of sugar. The cost involved in the carrying out of such a program will be met by levies on the refiners, on the British Sugar Corporation and on home-grown beet growers, according to the extent of their interest in the scheme; it is roughly estimated that the maximum financial provision which will thus be made available may be in the neighborhood of, say, £70,000 a year. Hitherto the beet-sugar factories have been providing about £5,000 a year for education and research purposes, these funds being administered by a joint committee of the factories and the Ministry of Agriculture. The work has included research into questions of cultivation, manuring, pests and diseases, and seed strains, together with a scheme of prizes to growers.

AIRPLANE WEATHER OBSERVATION STATIONS

AIRPLANE weather observation stations have been added to the network that provides information on conditions in the upper air for use in making the daily weather forecasts, at Miami, Fla., at Sault Sainte Marie, Mich., at Salt Lake City, Utah, and at Oakland, Calif.

Each year since 1931, when kites gave way to planes for the daily sounding of the air, there has been a steady increase in the number of stations equipped to make airplane observations. The Army, the Navy and the U. S. Department of Commerce cooperate with the Weather Bureau in this work.

At the 12 airplane weather observation stations maintained by the Weather Bureau—Murfreesboro, Tenn.; Omaha, Neb.; Cheyenne, Wyo.; Billings, Mont.; Fargo, N. Dak.; Oklahoma City, Okla.; El Paso, Tex.; Spokane, Wash., and the four new ones—a pilot in a suitably equipped plane, furnished under government contract by a private flyer or flying company, goes up 16,500 feet into the air each morning, if possible. The plane carries an aerometeorograph—an instrument that automatically records the pressure, temperature and humidity of the atmosphere through which it passes. The pilot notes certain conditions, such as the time he enters or emerges from clouds, precipitation, ice formation on the plane, bumpiness

of the air and visibility. A Weather Bureau observer checks the accuracy of the aerometeorograph, fastens it to the airplane before each flight, makes the necessary meteorological observations at the earth's surface before and during the flight, and puts into usable form the records brought down by the aerometeorograph and the pilot.

At the eight army stations—Mitchel Field, Long Island, N. Y.; Selfridge Field, near Detroit, Mich.; Wright Field, Dayton, Ohio; Scott Field, Belleville, Ill.; Kelly Field, San Antonio, Tex.; Maxwell Field, Montgomery, Ala.; Barksdale Field, Shreveport, La., and Boston, Mass.—Air Corps pilots and planes, using Weather Bureau instruments, make the daily flights. Weather Bureau observers do the rest of the work. At the seven other stations—Lakehurst, N. J.; Anacostia, D. C.; Norfolk, Va.; Pensacola, Fla.; San Diego, Calif.; Pearl Harbor, Hawaii, and Seattle, Wash.—the navy provides all equipment and does all the work.

A country-wide teletype and radio communication service—nearly all operated by the Bureau of Air Commerce, U. S. Department of Commerce—make it possible to transmit airplane weather observations instantaneously to the stations where they are to be used. From two stations not yet on one of these circuits—Sault Sainte Marie and Maxwell Field—the observations are telegraphed to the nearest point on the teletype circuits. Observations taken at Pearl Harbor go by navy radio to San Francisco, where they are put on teletype circuits.

Airplane observation flights are made at about the same time all over the country—4:00 A. M., Eastern Standard Time, except when the weather is unfavorable, particularly when the ceiling (base of the clouds) is lower than 800 feet or when visibility is less than 2 miles. At each station the information compiled at the end of the flight is coded and sent out over a teletype or radio circuit, or first by telegraph, to the six district forecast centers and other stations of the Weather Bureau. Reaching these stations by 8:30 A. M., E. S. T., the data are plotted on various kinds of charts, which, in conjunction with charts of surface, pilot balloon and cloud observations, give the forecasters the information they need in making the daily weather forecasts.

COLLECTIONS OF WOODS OF THE WORLD AT YALE UNIVERSITY

PROGRESS in tropical forestry and the world-wide study of woods by the Yale Forest School is the subject of a report recently issued. The Yale wood collections now contain over 32,500 specimens, representing more than 10,400 named species of 2,548 genera and 225 families. The additions during the last two years alone almost equalled the total number of specimens on hand a decade ago.

The principal addition made to the collections was secured as a result of the visit of Professor Samuel J. Record to Holland. This consisted of a gift from the Commercial Museum of the Colonial Institute at Amsterdam of 2,215 Javanese wood specimens collected with herbarium material by Koorders during the years 1888–1894. This material was studied for more than 30 years by Dr. Janssonius of Holland, and the results of his work were published in six volumes. Students can now examine the actual material which is described in the text.

More attention in the future will be given to increasing the number of preparations for microscopic study. Last year, cross, radial and tangential sections of 973 specimens were added to the slide collections. These collections now contain slides of 5,235 specimens. Most of the slides have been received in exchange for wood samples, many of them coming from the Forest Research Institute, the Federated Malay States, the Imperial Forestry Institute, Oxford, the Biological Laboratories, Harvard, and the botanical department of the University of Michigan.

One of Professor Record's major projects has been the study of the timbers of British Honduras. The work was begun ten years ago in cooperation with the forestry department of the colony and with the Field Museum of Natural History. He collaborated in the authorship of a volume on this subject, published this year by the museum.

For the work in timber testing, it has been found advantageous to use specimens of little known but potentially important tropical trees, as the data thus obtained are contributions to science. Professor George A. Garratt has finished a paper on the trees known in British Honduras as "Waika Chewstick." It is planned to continue this work through arrangements with logging operators in tropical America.

Other activities include the building up of the herbarium, the identification of wood samples and the supplying of information to scientific men, timber dealers, wood users and to the general public.

MEETING OF THE FOUNDER SOCIETIES OF THE AMERICAN INSTITUTE OF PHYSICS

A JOINT meeting of the American Physical Society, the Optical Society of America, the Acoustical Society of America, the Society of Rheology and the American Association of Physics Teachers will be held in New York, from October 29 to 31.

This meeting, held at the time of the fifth anniversary of the American Institute of Physics, will consist partly of the regular papers of the separate societies and partly of sessions in which all the societies