

Horticultural Science in France

M. Georges Truffaut lectured to the Royal Horticultural Society in October of last year, on the experiments on manuring, pest control and microbiology of the soil, which have been carried out under his direction at Versailles. The text of this lecture appears in the Society's *Journal* (62, Pt. 3, March) and portrays results which are in sufficient accord with the findings of research institutes in Great Britain to warrant thankfulness, and yet are original enough to provide great stimulation. M. Truffaut and his colleagues have shown that only when the nitrogen, phosphoric acid and potash are combined upon a basis of their atomic weights will the soil yield its fullest increase in response to artificial manures. The insistence of the earlier agricultural chemists on the necessity of lime for the growth of most crops is countered vigorously by the workers at Versailles, who find that the presence of calcium ions is often undesirable in garden soil. The most welcome contribution of the lecture to the science of pest control is perhaps the description of a new spray fluid known as 'Elgetol'. This is a mixture of a synthetic yellow dye with wetting agents. It has a milder action upon the tree than lime sulphur or tar oil winter wash, but it is quite effective against the overwintering eggs of various insect pests. Workers at the Versailles laboratories have established the fact that soil bacteria can obtain their energy exclusively from carbohydrates and organic salts excreted by the root-hairs of plants. "Living green plants are thus the main source of energy for soil micro-organisms." The lecture also reviewed a wider field of work than the results here mentioned; the sections on calcium metabolism and the control of pests during winter are most informative.

The Post Office and Broadcasting

IN the *Journal of the Institution of Civil Engineers* of March, a report is given of the interesting discussion of a recent paper by Sir Noel Ashbridge on broadcasting. Sir George Lee pointed out that the Post Office acts in several ways as an auxiliary to broadcasting. An important function which it fulfils is reducing the interference which many listeners experience on their wireless sets from electrical machinery. Last year, it investigated 40,000 cases of interference. The total circuit mileage used by the B.B.C. in the P.O. network last year was about 6,000. A large number is also in use for Continental broadcasts. Every country in Europe has now these special circuits, and they are often used for the broadcasting of special events. It is estimated that if 80 per cent of the mains-operated receivers were in use during some important event, such as the coronation, when most people switched on their receivers, the load on the grid system due to this cause alone would be 250,000 kilowatts. The annual consumption of receivers is about 270 million units, quite an appreciable fraction of the load on the grid. Another interesting statistical fact which Sir George Lee gave was in connexion with the three short-wave and one long-wave station

which work to America every day. Several hundred kilowatts are radiated from Great Britain towards America but all the power picked up in America would be only sufficient to raise a fly seven inches high in one year. On land-lines, amplifiers are put in at about every fifty miles and there is therefore a large number of amplifying stations between Great Britain and San Francisco. Each amplifier receives such feeble signals that they are just distinguishable from the inherent noise in the circuit, and it amplifies them only sufficiently for the signals to be received at the next station; yet the total amplification received in that repeated process is 10^{256} , a number inconceivably great!

Electric Locomotives for the Natal Railways

FROM the Metropolitan-Vickers Electrical Company's *Gazette* of March 1937, we learn that during the year 1935 it had received orders for twenty-five new 1,200 h.p. electric locomotives for the railways of Natal from the South African Government. The new locomotives had become necessary because of the increased traffic and the doubling of the route mileage. The company had already supplied ninety-five locomotives which had been in constant service in Natal for terms varying from nine to twelve and a half years. The line from Glencoe to Pietermaritzburg is very hilly. Glencoe is situated near the centre of the Natal coal-field, and the transport of coal to Durban constitutes a large part of the traffic on the line. Power is supplied from Colenso through a three-phase 88,000 volt transmission system. The new locomotives differ from the original ninety-five in many details, but they are suitable for multiple unit working in combination with any of the ninety-five original locomotives. Each locomotive is of 1,200 h.p. capacity with four axles each driven by a 300 h.p. traction motor. The auxiliary machines in each locomotive consist of an air compressor, an exhauster and two motor generators of 16 kW. and 28 kW. capacity respectively. The compressor supplies compressed air for the operation of the locomotive brakes. The exhauster produces the vacuum for the train brakes. Of the many improvements embodied in the new locomotives the most important are in the control gear and the pantographs for collecting the current. The latter work with a line pressure of 16 lb. as against the original 26 lb. and weigh about 400 lb. less. They can now be raised to the collecting wire without mechanical shock, and similarly there is no shock when lowered to the roof.

Recent Solar Activity and Auroras

A NOTE received from MM. Eigenson and Gnevishev of the Pulkovo Observatory directs attention to the high degree of sunspot activity on and about January 31 last (when the Tashkent Observatory recorded a total spotted area of 4000 millionths of the sun's hemisphere) and a series of auroras which were extensively observed from the U.S.S.R. between January 31 and February 3. The solar activity and associated terrestrial phenomena (including the

aurora observed in England on February 3) have been described in *NATURE* (Feb. 6, p. 228; Feb. 13, p. 277; Feb. 27, p. 375; and April 17, p. 680).

The Royal Veterinary College and Hospital

THE new governing body of the Royal Veterinary College has now been set up according to the constitution granted by the new Royal Charter of 1936, by which its name has been changed to the Royal Veterinary College and Hospital. The government of the college is now vested in a court of governors and an executive council. The Duke of Gloucester is president of the court, which consists of eighteen members nominated by the Royal College of Veterinary Surgeons, the Royal Agricultural Society of England, the National Veterinary Medical Association, the County Councils Association, the Medical Research Council and the Corporation of London.

Colonial Officers and Scientific Research

A FURTHER series of grants have been made by the Trustees of the Carnegie Corporation of New York to the Secretary of State for the Colonies to enable selected officers of the Colonial Service to spend a period of absence from their official duties in study, research and travel. Those who have received grants include the following: H. L. Collett, agricultural and soil erosion officer, Basutoland, for the purpose of investigating methods for the prevention of soil erosion in the United States; H. R. Phillpotts, assistant superintendent of public works, Jamaica, for a course of study in water purification and chlorination in the United Kingdom, and in sanitary engineering; W. Fotheringham, veterinary research officer, Kenya, for a course of study in pathology and bacteriology at the University of Edinburgh, and at the Royal Veterinary College, Camden Town, particularly in relation to the respiratory diseases of sheep; W. C. Gee, assistant engineer, Wireless, Posts and Telegraphs Department, Malaya, for the study of short-wave telephony transmission and ultra-short wave transmission and reception at various institutions in the United Kingdom, in the United States, and elsewhere; A. G. Beattie, agricultural officer, Nigeria, for a visit to India for the purpose of studying peasant husbandry, dairying and cattle breeding, and irrigation from wells; H. M. O. Lester, deputy director of Sleeping Sickness Service, Nigeria, for visits to the Congo, Tanganyika, the southern Sudan, and other parts of Africa, to study methods of sleeping sickness control; J. D. Martin, assistant conservator of forests, Northern Rhodesia, for a course in silviculture and ecology at the Imperial Forestry Institute, Oxford; J. G. M. King, district agricultural officer, Tanganyika, for a visit to Nigeria to study methods of mixed farming introduced in that colony; R. A. M. Mackay, assistant inspector of mines, Tanganyika, for a course of study connected with the ore bodies of the Lupa Gold Field at the Royal School of Mines, London; A. C. G. Palmer, science master, Grenada Boys' Secondary School, Windward Islands, for a course in education with particular reference to agriculture.

Announcements

LIEUT.-COLONEL J. H. M. GREENLY has been elected chairman of the British Non-Ferrous Metals Research Association in succession to the late Mr. Thomas Bolton.

PROF. L. A. ORBELI of Leningrad, who is in charge of the late Prof. Pavlov's laboratories, has been appointed a member of the Permanent International Committee of Physiological Congresses in succession to Prof. Pavlov.

SIR HUMPHRY ROLLESTON has been appointed chairman in succession to the late Lord Moynihan of the Medical Board of the Eichholz Clinic, 204 Great Portland Street, W.1, which employs a staff of blind chartered masseurs, and is administered by the National Institute for the Blind.

THE February issue of *Forschungen zur Alkoholfrage* is dedicated to Dr. Emil Abderhalden, professor of physiology in the University of Halle, on the occasion of his sixtieth birthday.

THE Health Section of the League of Nations has nominated Prof. Giuseppe Bastianelli, director of the Institute of Malariotherapy at Rome, as president of the Special Committee for Malaria.

THE second Rumanian Congress of Radiology and Medical Electricity will be held at Cluj on May 21-23 under the presidency of Prof. Negru. Further information can be obtained from the secretary, M. Hananut, Calea Motitol 7a, Cluj, Roumania.

THE first International Congress of Infantile Psychiatry will be held at La Maison de la Chimie, 28 rue Saint-Dominique, Paris 7^e on July 27-August 1. Further information can be obtained from the treasurer, M. Gimbert, 11 rue Duroc, Paris 7^e.

THE twenty-sixth Congress of the German Society for Historical and Social Medicine will be held at Breslau on May 12-14, the subject for discussion being the present state of our knowledge of electropathology. Further information can be obtained from Prof. Gerhard Schrader, Lahnstrasse 9, Marburg.

AN International Congress for a discussion on short waves in physics, biology and medicine will be held in Vienna under the honorary presidency of Dr. Arsonval, Marconi and Zonnek on July 12-17. Further information can be obtained from the Secretariat, Alserstrasse 4, Wien IX.

THE Paris laboratory known as "La Biothérapie" has founded a Besredka prize of 15,000 francs for an essay on the therapeutic applications of local immunity. The first award will be made in June 1938. Further information can be obtained from La Biothérapie, 5 rue Paul-Barruel, Paris XV^e, before December 31.