

the Ministry of Labour and of other organizations; also that another organization is contemplating the provision of facilities which may offer arrangements for periodical meetings of allied scientific workers.

Carrots for Domestic Animals

WAR conditions have established the merits of carrots as an ingredient of the human dietary: that they are no less excellent as a food for farm animals, is shown in a recent article by Mr. H. E. Woodman, of the School of Agriculture, Cambridge (*J. Min. Agric.*, 48, No. 3, 185; 1941). Indeed, all kinds of stock are fond of carrots, and although their importance in animal feeding is overshadowed by that of the other root crops—swedes, mangolds and turnips—this is not due to any inferiority in feeding quality, but rather to price considerations and to the fact that when the human requirements in Great Britain have been met, the supply of carrots left over for animals has usually been quite small. This year it seems there will be a large surplus. On the basis of starch equivalents, 80 lb. of carrots should be able, on an average, to replace 100 lb. of mangolds, or 90 lb. of swedes. With the more watery turnips, however, two parts by weight may be replaced by one part of carrots. Carrots are not so rich as swedes in vitamin C, the anti-scurvy factor, but are distinguished from all other roots by their high content of carotene. Since this yellow pigment is convertible into vitamin A in the body of the animal, it follows that carrots are a good source of this important health factor.

Raw carrots have always been a favourite food for horses. The allowance should not exceed 20 lb. per head per day, but smaller amounts may be fed with benefit to condition. They should be used in partial replacement of oats, 7 lb. of carrots being equal to 1 lb. of the cereal. Dairy cows may receive up to 40 lb. of sliced carrots per head per day and fattening bullocks up to 60 lb. The carotene in the carrots enriches the colour of winter milk and improves its content of vitamin A, and for this reason, carrots are specially valuable when the dairy ration contains neither kale nor silage. They may be used to replace dried sugar-beet pulp (7 lb. of carrots = 1 lb. of dried beet pulp) or cereals (8 lb. of carrots = 1 lb. of crushed barley). Pigs may also be given carrots with advantage to health and condition; and cereal meal, up to one fifth of the total ration, may be replaced by this succulent food, of which 8 lb. should be fed for every lb. of cereal meal replaced. The carrots form a useful source of vitamin A for pigs that are kept entirely indoors. Some authorities recommend cooking or steaming them for pigs, but the full beneficial effect is only obtained when they are fed raw. Grated or shredded carrots, when mixed with the meal ration, provide a palatable and health-promoting feed. Carrots form a useful supplement to the growing and laying mashes of poultry during winter, and their vitamin A potency is particularly beneficial in these cases. They are best fed raw. Grated or shredded carrots may replace cereals up to one fifth of the total mash, 8 parts by weight being used to replace 1 part of cereal.

Carnegie Corporation of New York

In the report of the president of the Carnegie Corporation of New York, covering the year ended September 30, 1941, Mr. Frederick P. Keppel, who

retired from the presidency on November 18, states that of grants totalling 2,706,834 dollars made during the year, 500,000 dollars were allocated for matters relating directly to the national emergency. Special stress is laid upon the importance of timing in enterprises involving effective co-operation between public and private agencies, public offices, and private citizens or groups. Besides contributions to the National Academy of Sciences totalling 100,000 dollars, emergency grants were made to the Institute of Public Administration for special studies undertaken at the request of Government agencies, to Harvard University for training supply officers, to the National Bureau of Economic Research and the Institute of Pacific Relations, as well as to other agencies. Of other grants, 398,511 dollars was allotted for library interests, including support of the *Journal of Documentary Reproduction*, 566,930 dollars for adult education and 906,956 dollars for research and studies. The Committee on Scientific Aids to Learning has steadily proceeded with its work in the fields selected for intensive study, namely, the problems of microphotography, including visual fatigue, and the development of the best visual and auditory equipment for classroom use. From the special fund set aside by Mr. Carnegie for the Dominions and Colonies, 70,000 dollars was allotted for library and educational services in Trinidad and the Windward and Leeward Islands, 30,000 dollars for the research activities of the International Labour Office at McGill University, 14,800 dollars to the Canadian Research Council in the Social Services and 7,500 dollars to the Royal Institute of International Affairs for a study of the internal economy and external relations of Newfoundland; a further grant has also been made to the Carnegie Endowment for International Peace.

Mr. Keppel's report includes a review of developments and changes in the field of activity of the Carnegie Corporation during his nineteen years of office, in which he emphasizes the possibility of a foundation adjusting itself to meet sharply changing conditions if its house is in order financially and otherwise. Its trustees should not only represent financial judgment and experience but also lay opinion, and they should possess a true understanding of the importance of education in a civilized society. He also stresses the value of a closely knit programme in each field of activity, and the necessity of being prepared to withdraw from a field in which the law of diminishing returns begins to operate, and finally the importance of timing, of endeavouring to have the idea, the man and the setting in perfect conjunction: the idea, vital and timely; the scholar or executive at the peak of his powers; and the organization at flood tide.

Rodent Pests in War-time

MR. A. D. MIDDLETON has given some useful information for the control of the rabbit population of Great Britain (*J. Min. Agric.*, 48, No. 2). He believes the best prospects for success depend upon better co-ordination of effort with county pest officers instead of individual efforts at control without co-operative schemes, but that it is unreasonable to commercialize it and to expect a profit from rabbit control. However, the high price of rabbits and the

intensive efforts of gamekeepers and trappers appear to have reduced the rabbit to comparative scarcity over most parts of Great Britain, a position approaching that of the end of the War of 1914-18, when wild rabbits became very scarce. On the other hand, the position of the rat is still serious, and in some 'blitzed' centres and ports with bigger food stores than usual, conditions have encouraged its increase. In an article on rat control (*Lancet*, 1, No. 5, 1942), Mr. Eric Hardy directs attention to the value of asbestos and three-ply wood as rat-proofing materials when many usual materials are unobtainable. White arsenic is the most useful of the poisons permitted by the law. Attention is also directed to the need for using more traps—even ten times as many traps as rats—and to using unbaited traps, and the encouragement of those predatory enemies of rats in the countryside usually destroyed by game-preservation, namely, stoats, foxes, badgers, owls, herons, otters, buzzards and polecats. The Ministry of Food's Infestation Order 1941, which came into force in January, gives added power for compulsory control of rats and other warehouse vermin.

Wood Pigeon Investigation

THE British Trust for Ornithology is organizing a winter wood pigeon investigation in the British Isles which ought to shed much light upon the habits of this serious agricultural pest. Although organized from the natural history point of view, the investigation may well provide information of considerable value in the control of this pest. Explanatory forms and recording cards for field counts and roost positions have been circulated, and the inquiry will also include the examination of crop-contents of shot birds and post-mortems upon diseased birds. The field counts will make observation upon the sizes of the local flocks at every opportunity when they perch, feed, roost or are in flight, and in addition to recording the day and place, the hour of the count will be noted. Record will also be made of their daily feeding, drinking and resting times, and the influence, if any, of fog, mist, rain and increasing daylight, and if special fields are favoured for feeding and resting. Observations will be made to see if the flocks remain intact throughout the day or break up, and if pairing takes place in flocks. The roost observations will count or estimate the number of birds using the roosts, the type of wood, the trees most favoured, the period in use, and whether it is used annually and if the size of the roosting flock is increasing or decreasing. An effort will also be made to get experienced people to weigh, measure and determine the sex of shot wood pigeons. The field counts will be returned to the Edward Grey Institute at Oxford monthly, and the rest of the winter stage of the investigation will be completed by the end of May.

The Swedish Botanical Garden

THE January issue of the *Anglo-Swedish Review* announces that the Bergianska Trädgården or Bergianum, the botanical garden of Stockholm, is to mark its hundred and fiftieth anniversary this year. It was founded in 1791 by Peter Jonas Berg, a doctor of medicine and a botanist, who bequeathed it to the Swedish Academy of Science. It consists of a purely scientific botanical section and a practical section, which in peace-time carries on a large

exchange of seeds with most of the botanical gardens abroad. Among the latter is the botanical garden of Tokyo, which had to place considerable orders to complete its collections, part of which were destroyed in the earthquake ten years ago. The Bergianum is also in close touch with the United States, and some plants from the salt steppes of Russian Turkestan recently came from Russian botanical gardens. Most of the seeds received are of purely scientific interest, but sometimes seeds and plants of commercial value are also received. The results of experiments on the effects of the vigorous cold of the last two years on different plants will shortly be published in *Acta Horti Bergiani*, which contains the results of research work in systematics, cytology and embryology. The celebrated collection known as "Iconotheca Botanica Bergiana" contains 10,000 photographs by most of the botanists in the world. A large room in the main building is filled with cupboards which originally belonged to Bergius and contain his collections of plants and insects. Thanks to a donation, the Bergianum will soon have a winter garden where all the flora of the Mediterranean will be grown.

Public Health in India

ACCORDING to the annual report for 1940 of the Public Health Commissioner with the Government of India, there were no abnormal outbreaks of disease in that year, and the common epidemic diseases such as malaria, smallpox and plague had been less prevalent than in 1939. The most important public health event was the third meeting of the Advisory Board of Health at Poona, where reports were made on the compulsory inoculation of pilgrims at festival centres against cholera and on the control of food adulteration. The Board recommended a plan for the provision of laboratories, including for each Province or State a central laboratory, regional laboratories for groups of districts and others for individual districts. The low incidence or complete absence of the common infectious diseases such as cholera, smallpox and plague in the prisons, of which the daily population was more than 13,000, showed the efficacious control of these infections. The report also contained a chapter on medical research, especially on nutrition, by the Indian Research Fund Association, field studies on cholera, plague and malaria, leprosy research carried out mainly at the Calcutta School of Tropical Medicine, and maternal mortality investigated at Calcutta, Bombay, Delhi and Madras. Cerebrospinal fever had occurred in sporadic form in many provinces.

Radio Receiver Design

IN the past few years radio manufacturers in Great Britain have awakened to the fact that the export industry has been very much neglected. This is shown clearly in a paper read before the Students and Graduates Sections of the Institution of Electrical Engineers by Mr. J. H. Lemmon, on "Tropical Receiver Design" (*Quart. J. Inst. Elec. Eng.* of December 1941). In British colonies, the majority of radio receivers in use until about 1938 were of either American or Dutch origin. British manufacturers had sent out to India or other tropical countries receivers which differed very little from those sold in the home market, and little attention was paid to the internal parts of the receiver. Mr. Lemmon takes India as the basic country, since a fairly comprehensive