

In the later growing and fruiting stages the influence of fertilisers is under investigation, and also the effect of light, temperature, humidity, and other physiological factors. None of the artificial fertilisers produced any notable effect on the tomato crop; the withholding of phosphates caused some depression, but the withholding of nitrogen and potash had little, if any, effect. It must be remembered that the soil is virgin soil, and the results seem to be on a par with the old antagonism between vegetative growth and fruiting. Mr. Spencer Pickering obtained very similar results at Woburn in his manurial experiments with fruit trees and bushes. The result is contrary to the usual experience, and indicates that a marked distinction must be made between virgin soils and soils that have been in use for some time. The reason for the distinction, however, is not clear.

In the case of cucumbers, phosphates in some circumstances actually depressed the crop, as has been noted elsewhere with cotton and sugar-cane. The determining factor in the case of cucumbers under the conditions of the experiment was the temperature, and the experiments show in a striking way how easy it is for the leaves to become overheated in a glasshouse—a phenomenon already discussed by Francis Darwin. The cooler part of the cucumber-house gave in the first year 25, and last year 9, per cent. more fruit than the warmer part. Proper appliances have been installed for the study of this important problem, and the results will be awaited with much interest.

E. J. R.

THE NEW FOOD ORDERS.

THE reduction of the available supply of certain articles of diet, especially of meat, flour, sugar, and potatoes, has had the effect of changing to some extent the point of view with regard to economy in diet. While until recently economy in all things was desirable, it has now become necessary to exercise, in addition, special economy in the case of the four things mentioned above. This is due partly to deficiency in means of transport, but, in the case of potatoes, chiefly to bad crops. It must also be remembered that the large proportion of the population serving in the Army or Navy require more than they had in their previous occupations. For these reasons, it has been recommended by some that those who are well-to-do should endeavour to utilise the more costly articles of food, leaving a greater supply of the less costly, but restricted, articles for those who cannot afford the former. With regard to the Army rations, there is some reason to suppose that the allowance of 16 oz. of meat per day is unnecessarily large, at all events for men in the trenches; perhaps it may be the cause of certain diseases which are apt to occur, such as "trench nephritis." This affection seems to have some relation to diet. The meat allowance might, with advantage, and probably with appreciation by the

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men, be exchanged for an equal energy-value in carbohydrate.

The new arrangement of rationing by bulk, as applied to restaurants, is undoubtedly an advance. As the present writer has pointed out in another place, the old system of limiting the number of courses led to an undesirable increase in the consumption of meat, as compared with other foods. The present allowance of 12 oz. of meat per day gives about 70 grams of protein, in addition to that in bread and other articles—a perfectly adequate supply. It is, however, not quite clear why households should be allowed only about 6 oz. per head. In some cases, no doubt, the smaller consumption by children compensates. But it must always be kept in mind that children require more protein in proportion to their weight than adults, since they are forming new body-tissues, and it is only up to a certain age that children require absolutely less protein than adults. It would probably be correct to say that quite half the total number of households consist of persons requiring the protein ration of adults. Of course, meat is not the only source of protein; oatmeal especially is an excellent source, and, at present, the necessary energy-value can be made up with this, at the same time as the increase in protein.

With regard to the materials to be added to wheat-flour, would it not be better to limit them to those not readily used by themselves, such as barley and rye? Beans, especially, seem to the writer an undesirable constituent of bread. If oatmeal, for example, is to be used in large quantities for mixing with wheat-flour, is it not probable that the price will rise considerably?

The new Order with respect to hoarding of food is rather difficult to understand. Presumably, it is not intended to prevent the purchase of fairly large amounts at a time, provided that these amounts are made to last as long as if bought in small parcels; nor to prevent the storage of sugar for the purpose of making jam by the householder in the autumn.

W. M. BAYLISS.

A MINISTRY OF HEALTH.

WITH the terrible wastage of the lives of the best of the nation's manhood in the European conflict, and with a birth-rate the lowest on record, if the country is to recover after the termination of the war and to maintain its place among the nations as a great and thriving industrial Power, it will be necessary for us to conserve to the utmost those lives which we possess and those which we may expect to be born to us. While it may not be practicable at present to anticipate a definite increase in the birth-rate, though it is to be hoped there will before long be a change for the better, it is possible to do much to reduce disability and loss of life from preventable disease. The campaign against venereal disease, the crusade against tuberculosis, the care now being taken of munition and other workers, and the medical consultations at infant welfare

centres and at school clinics all aim at this and are valuable aids towards its consummation.

The most serious item of loss of life is, and always has been, infant and child mortality. For the years 1911-1914, 575,078 children died under the age of five years in England and Wales. It is true that infant and child mortality has declined during the last few years, but, even so, we are losing 100,000 lives or more annually, a large proportion of which could undoubtedly be saved to stock the country in the future. A broad and comprehensive scheme of national health service would accomplish much, and this is a problem to which the best energies of the Government should be directed without delay.

There is reason to believe that the Bill dealing with health questions which it is the intention of Lord Rhondda, the President of the Local Government Board, to introduce, will provide for the creation of a Ministry of Health, in which the supervision of many of the public health and medical services of the country will be concentrated. At present the national health is dealt with by several Government Departments—it is stated, by as many as *fourteen!* Thus, the general public health is administered by the Local Government Board, the health of workers by the Home Office, the health of school children by the Board of Education, the health of ships by the Board of Trade; and the Board of Agriculture, the National Insurance Committee, and other Departments share in various ways. Such a multiplicity of authorities naturally leads to much overlapping, want of co-ordination, and waste.

The establishment of a Ministry of Health, with a Minister of Cabinet rank in charge of it, which would bring under its ægis the whole of the health service and administration of the country, would be a measure of the highest importance at the present time. Wisely conceived and wisely administered, such a Ministry would be welcomed by the medical profession and by health workers generally, the public would gain by increased efficiency and diminished waste, and the national health would be placed on a surer foundation of control than is at present the case.

NOTES.

WE are informed that the South-Eastern Union of Scientific Societies will hold its twenty-second annual congress in the rooms of the Linnean Society, Burlington House, from Wednesday, June 6, to Saturday, June 9, under the presidency of Dr. W. Martin. Arrangements will be facilitated if those proposing to join the congress will communicate with the hon. treasurer, Mr. R. Adkin, 4 Lingards Road, Lewisham, S.E. The Wednesday evening will be devoted to the president's address, and on the Thursday evening the attendance of the congress at the "Hooker lecture" by Prof. F. O. Bower will be invited by the Linnean Society. The union may be congratulated on maintaining its accustomed course at a time when the claims of science are being brought prominently before the public mind.

WE learn from *Science* that the Academy of Natural Sciences of Philadelphia has, on the recommendation of

the council and the special committee on the award, voted the gold Hayden memorial geological medal to Prof. W. M. Davis, emeritus professor of geology in Harvard University, in recognition of his distinguished work in the science of geology. The medal, says *Science*, is awarded every third year "for the best publication, exploration, discovery, or research in the sciences of geology and palæontology, or in such particular branches thereof as may be designated." The award as first defined in 1888 took the form of an annual bronze medal and the balance of the income of the fund. The deed of gift was modified in 1900 so as to provide for a gold medal every third year.

DR. J. O. HESSE, director of the Associated Quinine Factories of Zimmer and Co., died at Feuerbach, near Stuttgart, on February 10, in his eighty-second year. Dr. Hesse devoted almost the whole of his scientific career to the extraction and examination of the active constituents of drugs, particularly of cinchona bark, coca leaves, and opium, and was for many years the leading authority on the chemistry of quinine and other cinchona alkaloids. He isolated physostigmine from Calabar beans, cotoin, paracotoin, and other principles from coto and paracoto barks, ditaine from dita bark, and also the active principles from a number of other drugs. Many of his researches were published in the *Journal of the Pharmaceutical Society*, of which he was elected honorary member in 1879. The value of his original investigations gained for him in 1891 the Hanbury gold medal, the highest honour that the Pharmaceutical Society can bestow.

THE death is announced of Mr. Arthur Brooker, joint-author of Slingo and Brooker's "Electrical Engineering" and of other works. From the *Electrician* we learn that Mr. Brooker joined the telegraph department of the Post Office Service in 1878. In 1889 he became an instructor in the Telegraphists' School of Science in mathematics and laboratory practice, and the following year he was made chief instructor. He was also on the staff of the People's Palace and the Currie School of Engineering as instructor in electrical engineering. His scientific attainments procured for him rapid promotion in the Post Office Service. He was largely responsible for the development of the present testing branch. It was his association in the production of Slingo and Brooker's "Electrical Engineering" in 1890 which brought his name before the public. After the publication of the book the authors entered into journalism, and contributed largely to the pages of the *Electrical Review*. In 1898 Brooker severed his connection with the Post Office, and became works manager of the Peel works of the General Electric Co., where he spent seven years in organising the factory and devoting himself to the manufacture of telegraph and telephone apparatus. In 1906 he joined the British Insulated and Helsby Cables, Ltd., and on the formation of the Automatic Telephone Manufacturing Co. in 1912 he became its general manager, a position he retained until shortly before his death.

THE March number of the *Scientific Monthly* contains a series of articles by well-known American authorities on the question of the metric system of weights and measures. During the last sixteen years the movement for the compulsory adoption of the metric system in the United States has made considerable progress, thanks, in great measure, to the stimulus given by the Bureau of Standards at Washington. The enormous quantity of war material at present being manufactured to metric sizes in America is rendering the workmen as familiar with grams