

larval stage, mines the leaves of both celery and parsnip. Owing to the concealed mode of life pursued during this period of its development, the insect is exceedingly difficult to kill by means of any feasible insecticide. Mr. J. C. M. Gardner, who is responsible for the section on the celery-fly, suggests the use of a spray containing chlororthocresol as a deterrent preventing the insect from egg-laying on the plant. He also suggests that a certain number of plants (presumably he means those of the parsnip) should be left in the ground to continue growth for a second year. Plants thus left were found, in a private garden, to be heavily infested, while neighbouring seedlings were only slightly attacked. It is, therefore, possible that the two-year-old plants might serve as a trap crop which, when heavily infested, could be pulled up and burnt. The idea, however, needs testing thoroughly on a practical scale.

Mr. K. M. Smith's account of the metamorphoses of the carrot-fly is a useful contribution, and the only complete description available. As regards control measures, he suggests the application of 1 part of green tar-oil to 99 parts of precipitated chalk, scattered between the rows as a deterrent to egg-laying. Since the eggs are deposited on the soil, and not on the plant, it will be seen that a thin application of this mixture may possibly also deter the young larvæ from reaching the plant, should it fail to act as a deterrent to egg-laying. Other repellent substances have also been tried by Mr. Smith, against both this insect and the onion-fly, with varying results. The book is suggestive, but it leaves the control of the pests with which it deals still in the experimental stage. It is clearly printed, and the illustrations are accurate.

*The Feeding of Dairy Cattle.* By Prof. A. C. McCandlish. Pp. xix+281. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1922.) 12s. 6d. net.

In no branch of the art of feeding live-stock does practice tend to follow more closely the advance of nutritional knowledge than in the feeding of the milch-cow. The ease with which output can be measured, and the consequent facility of assessment of food requirements and economic returns, have rendered feasible a systematisation of this branch of feeding practice which is so far ahead of present possibilities in dealing with other classes of live-stock as to justify a specialised literature. The American student of agriculture has been well catered for in this respect in recent years, and the volume under review represents the latest addition to a list already long enough to warrant a critical attitude towards further additions. The justification of its issue does not rest on any appreciable novelty of material or method of presentation, but on the skilful manner in which the author has succeeded in giving in so few pages a thoroughly practical, lucid, and trustworthy survey of the subject, which cannot fail to be most useful to the practical man and practically minded agricultural student, for whom it is intended. The book is divided into five sections, the earlier sections being essentially scientific and leading up to the more detailed exposition of feeding practice, to which the last, and largest, section is devoted. The most recent developments in the science of nutrition receive adequate notice, and their

possible bearing upon practice is treated with commendable judgment and restraint. The book worthily fulfils the purpose for which it was intended, and may be cordially commended to progressive dairy-farmers and students in "farm institutes."

*Lehrbuch der anorganischen Chemie.* Von Prof. Dr. Karl A. Hofmann. Vierte Auflage. Pp. xx+751 +7 Tafeln. (Braunschweig: F. Vieweg und Sohn, 1922.) 300 marks; 24s.

THE fact that successive editions of Dr. Hofmann's "Inorganic Chemistry" have been issued in 1917, 1919, 1920, and 1921, is sufficient evidence of the popularity which it has achieved in German-speaking countries. The scope is very similar to that of English text-books of similar price, although it differs from these in containing a large amount of matter in small type and very few illustrations. Characteristic features are the postponement to the end of the book of a series of special subjects, which include explosives, co-ordination-compounds, the structure of crystals, radio-active substances, the structure of the atom, and the distribution of the elements. The theoretical introduction is therefore extremely brief, and the periodic classification of the elements is discussed in the body of the book without any reference to atomic numbers or isotopes. In view of the scantiness of the illustrations it is remarkable to find six figures given up to pictures of burettes, pipettes, and measuring flasks and cylinders in a section dealing with caustic potash. The seven plates which illustrate the flame-spectra of the elements, the line-spectra of the principal gases, and the absorption spectra of the rare earths are, however, excellently reproduced, and form a very pleasing appendix. It is, however, doubtful whether English readers will care to face the handicap of a foreign language in order to obtain instruction which they can assimilate with much greater ease from text-books in their own language.

*Radio for Everybody.* By A. C. Lescarbourea. Edited by R. L. Smith-Rose. Pp. xii+308. (London: Methuen and Co., Ltd., 1922.) 7s. 6d. net.

MOST people are interested at present in radio-broadcasting, and there are many who are contemplating the purchase of a receiving-set. It will be of interest to them, therefore, to know how broadcasting has fared in America and the kind of programmes which are daily issued to the public. Specimen copies of these programmes are given. It appears that vocal and instrumental music, speeches and "talks," sermons and stories for children are the most popular items. The book contains an interesting chapter on the development and present position of radio-telephony in Great Britain. It is anticipated that radio-broadcasting will soon be as popular in this country as it is in America. We think, however, that the user of a receiving-set will find that on about one of every five days in this country receiving will be seriously interfered with by atmospherics. The rest of the book gives a popular but accurate account of the various kinds of radio-apparatus. There is no doubt that the mystery and fascination of the art of radio-communication is attracting many boys to take up applied electricity as a career.