Insect Pests in England and Wales.

THE establishment of an advisory entomologist in each of the fourteen provinces of England and Wales as delimited by the Ministry of Agriculture, has provided means for recording the incidence of insect pests that were non-existent at the time the Development Fund Act was passed. Information obtained from such sources, supplemented by that supplied by the Ministry's own officers and other observers, is collated and digested and issued at intervals in the form of reports.[1] The method of presentation aims at chronicling the events of the period under review in such a way as to render them comparable with similar events in the past and future. Observations on the prevalence of a number of the more important insect pests have now been recorded since 1917. Many of the species appear to vary considerably in numbers over long or short periods, conditions being favourable in most years to certain pests and inimical to others. The fundamental causes of these fluctuations are, as yet, not understood, but it is almost certain that climatic factors, with rises or falls in the prevalence of parasites and other biological agencies, play an exceedingly important part. The collection of records of insect abundance or scarcity continued over a period of years, and correlated with meteorological data and such biological factors as can be reasonably accurately evaluated, should be productive of significant information relative to such fluctuations.

The present Report covers the years 1925–27, and during that period certain developments in control measures are noteworthy. The repression of Leather Jackets by the broadcasting of poisoned bran has been tested in many areas in the British Isles, generally with satisfactory results. The Protection of Animals Act, 1911, has been a serious deterrent to the use of this measure, but the passing in 1927 of an amending Act has rendered its application more satisfactory from the legal point of view. The use of naphthalene vapour in glasshouses for the control of red spider attack with special reference to cucumbers and carnations, is an important development from the Lea Valley Research Station. Messrs. Speyer and Owen of the latter institution propose a new method of using sodium cyanide for the fumigation of tomato houses. The mixing of one part by weight of cyanide with three parts of sodium bicarbonate avoids the older method of using sulphuric acid. Paradichlorbenzene, now coming so much to the fore in America, has been found effective for treating dormant bulbs, notably against aphides, while the wider application of this fumigant has evident possibilities. Tar oil winter washes have come much to the fore, but so far they have not given satisfactory control of Apple Capsids and appear to favour an increase of the Red Spider (*Oligonychus ulmi*). The work of Tattersfield and Gimingham at Rothamsted has shown that 3 : 5-dinitro-*o*-cresol has powerful egg-killing properties, but this substance and its salts are yellow dyes, which may prove an objection to their general application.

One of the most difficult problems facing the economic entomologist is the exclusion of pests from other lands. During the period under review, one of the most serious pests that has got accidentally introduced is the Potato Moth (*Phthorimœa operculella*), which occurred chiefly in consignments of new potatoes from the Canaries; fortunately, the insect has not obtained a footing in the British Isles. The frequency of consignments of French cherries infested with the Cherry Fruit Fly (*Rhagoletis cerasi*) has led to the prohibition in 1927 of such importations between June 24 and Sept. 30. Among other importations, the Chrysanthemum Midge (*Diarthronomyia hypogea*) has almost certainly been introduced from the United States, but adequate measures of repression have been taken. The Colorado Potato Beetle, although established in the Bordeaux district of France, happily finds no mention in this Report as occurring in Britain.

Among the various resident pests recorded, a notable feature has been the relatively slight injuries to cereals due to Frit Fly, while Wireworms are not mentioned. In 1925, Leather Jackets were the most serious of cereal pests, but their attacks were less pronounced in the two succeeding years: in 1926, Wheat Midges were especially destructive, 100 per cent of the ears being attacked in one case in Kent. Among root crops, mangolds suffered to a considerable degree from the minute beetle *Atomaria linearis*, which also attacked sugar beet. Attacks of turnips, rape, and swedes by the Swede Midge (*Contarinia nasturtii*) were, on the whole, above normal, while the Mangold Fly (*Pegomyia hyoscyami*) was severe in 1925, its attacks afterwards declining. The Diamond Back Moth seems to be mainly in evidence along coastal regions, and in 1926 destroyed a considerable area of swedes. This species is frequently checked by parasites, but climatic conditions seem to be the most potent restraint; heavy rain, particularly if accompanied by cold weather for two or three days, serves to prevent any notable increase. The disorder known as 'strangle' in mangolds is becoming more generally recognised and is often associated with the presence of Springtails, especially the minute species *Bourletiella hortensis*. At Rothamsted the pest was controlled by dragging tarred sacks over the field, the Springtails being caught on the tar as they leapt from the rows. Peas suffered considerably from the Pea Moth (*Cydia nigricana*) and the Pea Thrips (*Frankliniella robusta*), both species being extremely difficult to control. Vegetables suffered relatively little from aphides, but the Gall Weevil (*Ceutorrhynchus pleurostigma*) attacked *Brassica* crops severely over the greater part of Great Britain during the three years under review.

Among the numerous fruit pests recorded, Capsid bugs merit special mention. The Apple Capsid (*Plesiocoris rugicollis*) is the most serious pest of that fruit in Britain, and is especially prevalent in the Wisbech district. It is, however, assuming greater importance in other fruit areas, and at the present time the only remedy is very thorough nicotine spraying. Another Capsid, *Lygus pabulinus*, has in late years become a serious enemy of bush fruits and quite recently taken to injuring apple shoots; in the past this insect restricted itself mainly to herbaceous plants and weeds, and its spread to bush and top fruits on a large scale is apparently a new development. Among greenhouse pests, an interesting and important development by Speyer at the Lea Valley Station is experiments on the control of the White Fly by intensive breeding of the Chalcid parasite, *Encarsia formosa*.

The Report concludes with a table showing the approximate annual fluctuations in the incidence of some of the major insect pests during the past ten years, with a list of all the pests of chief commercial importance upon which future attention should be concentrated. Mr. J. C. F. Fryer, the Director of the Ministry's Plant Pathology Laboratory, who is responsible for this Report, is to be commended for its practical value and scientific accuracy.

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[1] Ministry of Agriculture and Fisheries. Miscellaneous Publications No. 62: Insect Pests of Crops, 1925-27. (London: Ministry of Agriculture, 1928.) 2*s*. net.