

NOTES ON SOME PTINIDAE OF BRITISH COLUMBIA (COLEOPTERA)¹

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The writer has made observations during the past year and a half on insects infesting stored products in flour warehouses, feed mills, grain elevators, and other food storage or food processing plants in British Columbia. One of the most important groups of insects found in such places are the Ptinidae, or spider beetles. This paper deals with the insects belonging to this group.

Spider beetles are important pests of cereal products and seeds in storage in Canada. They attack practically all types of cereal and animal feeds. Most of the species found in Canada are able to survive the winter in protected habitats. The adults of some species are very prolific and the females frequently oviposit through the mesh of cotton sacks (Gray, 1933). The larvae complete their development within the food material in approximately two to three months at summer temperatures. When mature, the larvae frequently leave the food product and burrow into the timbers of the warehouse before pupation. The scarring produced by the larvae is positive evidence of previous spider beetle infestation (Gray, 1942).

Hinton (1941) recorded 21 species of Ptinidae as pests, most of these causing damage to stored products of various kinds. Manton (1945) reported that 15 species had been recorded in the British Isles as infesting stored products or as present in buildings where such products are normally kept. The writer has found 11 species in British Columbia, ten determined, and one uncertain.

Ptinus ocellus Brown [= *P. tectus* auct.], the Australian spider beetle, is the most widespread and abundant of the ptinids in British Columbia. In British Columbia this species was first reported from Victoria in 1927 by W.

Downes (Brown, 1940). Spencer (1942) reported that it was sent to him in 1926 from Prince Rupert, where it was infesting fish meal on a wharf "in the thousands." In Canada this species appears to be restricted very largely to the coastal regions. It is widely distributed throughout British Columbia, including Vancouver Island, and was found in 43 per cent. of the places visited. Due to the mild climate this species is active throughout the year in this area.

P. ocellus is a pest of considerable economic importance in many parts of the world. Hinton (1941) stated that it is the most generally distributed of the warehouse pests in Great Britain, having become established there in 1901. It is also a pest of major importance in Germany and several other European countries. It has been reported from a variety of products, including cayenne pepper, chocolate powder, desiccated soup, cacao, nutmegs, almonds, ginger, figs, sultanas, dried pears, dried apricots, beans, rye, fish food, maize (Hatch, 1933), and fish meal (Brown, 1940). The writer has found it infesting pastry flour, fish meal, turkey starter, calf meal, and mixtures of oats, bran, flax, rye, and wheat. The writer has successfully reared this species on nearly all of the above mentioned products in the Vancouver laboratory and on a mixture of whole wheat flour and brewers' yeast.

The writer, in test work, has found that the larvae can complete their development on relatively small amounts of food. When food is lacking the larvae eat their excreta and the glandular material used in the formation of the pupal cells (Gunn and Knight, 1945). Both larvae and the adults can survive for a long time without access to water if the moisture content of the food is reasonably high. However, under laboratory conditions, eggs are not produced by

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the adults if free water is not available (Ewer and Ewer, 1942). The writer has also found this to be true.

Plinus fur (L.), the white-marked spider beetle, ranks second in importance in British Columbia. It is widely distributed throughout Canada, but seems to be more abundant in British Columbia than in the other provinces (Brown, 1940). In the United States this species was first reported in 1869 and losses were recorded in flour in Canada as early as 1893 (Gray, 1942). This species feeds on a variety of dried and decaying animal and vegetable matter. In this Province, *P. fur* has been found in 11.7 per cent. of the establishments inspected, usually in association with *P. ocellus*. This species has also been reared in the Vancouver laboratory on whole wheat flour and brewers' yeast.

The species that follow have been found on only a few occasions and are not widely distributed in British Columbia. *Plinus raptor* Sturm is thought to be of European origin and is now almost world-wide in distribution (Hinton, 1941). In Canada it was first taken at St. Peters, Nova Scotia, in 1930 by M. L. Prebble (Brown, 1940). Later Gray (1942) found that this species was the most abundant spider beetle in the warehouses of Nova Scotia, New Brunswick, and much of Quebec. This species was found by the writer infesting flour in warehouses at Nelson, Vancouver, and Victoria.

In Canada *Plinus villiger* (Reit.), the hairy spider beetle, was taken first in Manitoba in 1915, is well established in the Prairie Provinces, and also occurs in Ontario and Quebec and to a lesser extent in the Maritime Provinces (Gray, 1933). The losses to cereal products caused by this spider beetle far exceed those by any other member of the group (Gray, 1942). In British Columbia this species was first reported in 1933. The writer found it at three scattered points in 1950: Rossland, Creston, and Vancouver.

The writer found *Trigonogenius globulus* Solier, the globular spider beetle, infesting three warehouses in Vancouver and one in Victoria. Great numbers were found in Victoria, and in one of the warehouses in Vancouver a heavy infestation was encountered on sacks containing cracked corn. Brown (1940) reported that the species is confined largely to the Pacific region of North America. It has been reared in the Vancouver laboratory on the same medium as *P. ocellus*.

In British Columbia *Eurostus hilleri* (Reit.) [= *E. alienus* Brown] was found first by H. E. Gray at Kamloops in 1939 (Brown, 1940). During the past year the writer found it in small numbers in two warehouses: one in Victoria and one in Vancouver. Hinton (1941) recorded it only in Japan, Great Britain, and Canada. According to Manton (1945) it has become established in England in recent years and appears to feed mainly, if not entirely, on rat and mouse droppings. Where the writer found this insect, no appreciable amounts of droppings were visible. It has been reared in the Vancouver laboratory in small numbers on whole wheat flour and brewers' yeast. On this medium the time required for development for *E. hilleri* is similar to that for *P. ocellus*.

Howe (1949) reported that the fertility of this species is very low, less than 50 eggs per female being laid in the laboratory. Results in the Vancouver laboratory confirm Howe's findings. This insect is not likely to become a serious pest in this province.

Plinus bicinctus Sturm was recorded by Hinton (1941) from Europe, North Africa, and North America. It was taken by the writer in association with *P. fur* at Rossland, B.C., in June, 1950, infesting flour in a warehouse. According to Brown (1940), it is rarely taken on this continent and the capture reported here appears to be the first record of *P. bicinctus* in British Columbia. It has been found previously in Alberta, Ontario, Quebec, and Nova Scotia (Brown, 1940).

Specimens of *Niptus hololeucus* (Fald.), the golden spider beetle, were

found by the writer in four Vancouver warehouses. Spencer (1942) reported that this species was found by H. B. Leech in 1936 at Fernie, B.C. Brown (1940) reported that it had been taken in Nova Scotia, New Brunswick, Quebec, Ontario, and Alberta, and at Fernie and Victoria in British Columbia. Hinton (1941) recorded it as nearly cosmopolitan but absent in the tropics. It has been a pest of importance in Europe for some time.

Ptinus latro Fab. has been taken by the writer on three occasions. The exact locality of specimens taken in 1950 is uncertain, but others were found in 1951 in warehouses in Vancouver and in Mission, B.C. These appear to be the first records of this insect in British Columbia. In Canada this species was first taken in Montreal in 1937. It was found again in Montreal in 1939 and in Toronto in 1940 (Brown, 1940). It is similar in appearance to *P. hirtellus*, the brown spider beetle. Hinton recorded it as cosmopolitan in distribution.

One specimen of *Mezium affine* Boiel. was found in a warehouse in Vancouver by the writer. In the same area in the warehouse were several of three other species, namely, *Trigonogenius globulus*, *Niptus hololeucus*, and *Ptinus ocellus*. *M. affine* was reported previously by Prof. G. J. Spencer, University of British Columbia (verbal communication, 1951), as having been taken in dwelling places and being reared in his laboratory on fox chow.

Hinton (1941) reported the distribution of *M. affine* as being restricted to Europe and North Africa. Brown (1944) recorded that it occurred in the United States as early as 1904 and is convinced that all specimens from Canada that have been recorded as of *M. americanum* (Lap.) should be referred to as *M. affine* Boiel. The latter species is found in northeastern United States as well, whereas *M. americanum* has a more southern distribution, being recorded from Texas and Florida.

Spencer (1942) also reported having taken *Sphaericus gibboides* (Boiel.) in British Columbia and rearing it successfully in the laboratory. Hinton (1941) reported this species from California, southern Europe, and North Africa.

There is some doubt as to the identity of the other species of spider beetle found in British Columbia. Two specimens were taken in Vancouver by the writer, which have been tentatively identified by W. J. Brown as of *Ptinus* sp., probably *hirtellus* Sturm, possibly *latro* Fab. If it is the brown spider beetle, *P. hirtellus*, it is a cosmopolitan species (Hinton, 1941), reported from many localities in the United States but previously recorded in Canada only from Toronto and Kingsville, Ontario, and at Lunenburg, Nova Scotia (Brown, 1940).

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THE ENTOMOLOGICAL SOCIETY OF CANADA¹

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I believe members of the Entomological Society of British Columbia are aware that at the 87th Annual Meeting of the Entomological Society of Ontario, held at Guelph on November 1-3, 1950, it was decided to form a national society to be called The Entomological Society of Canada. This very important event in the history of Canadian Entomology was the outcome of several years of study by a committee set up to implement the oft-expressed desire of Canadian entomologists to have a truly national association in this country. I shall not take the time to discuss the problems the committee encountered; suffice is it to say that all of them were happily solved.

Although the constitution of The Entomological Society of Canada has not yet been written and approved, I can give you, on the basis of the resolution adopted at the Guelph meeting, an outline of the important functions of the association.

The new society will serve not as the parent of but simply as the link between the Acadian Entomological Society, the Entomological Society of Quebec, the Entomological Society of Ontario, the Entomological Society of Manitoba, the Entomological Society of British Columbia and any others that may be established. It seemed evident to those of us who had given careful thought to the advancement of the science of entomology by learned societies, that such advancement

could be brought about most successfully in this country of ours, with its great distances and with its many local variations and needs, by placing the greatest emphasis on the fostering of regional societies. Therefore, each regional society will be autonomous, with authority to set up its own constitution and by-laws and its membership and annual dues, and to publish, if it so desires, its own annual report, *e.g.*, the annual reports of the Entomological Society of Ontario, the Entomological Society of Manitoba, and the Entomological Society of British Columbia. (There is a little matter in connection with annual reports which I should deal with here. All members of the Entomological Society of Canada as well as subscribers to the Canadian Entomologist will continue to receive the Annual Report of the Entomological Society of Ontario. We have to thank the Ontario Society and the Ontario Department of Agriculture for this generous arrangement. But it does not follow that other regional societies will want or be able to do the same sort of thing. What they do with their annual reports in the matter of distribution, etc., will be entirely their own business.) The national organization will promote the welfare of the regional entomological societies and will encourage the formation of others. It will do nothing that might conceivably weaken them and in no sense will it dominate them. In brief, it will serve as the link in a Canadian commonwealth of regional autonomous societies.

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