

## NOTES ON ECONOMIC INSECTS ON VANCOUVER ISLAND IN 1927

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The year 1927 was not marked by any severe insect outbreaks and many species ordinarily troublesome were conspicuous by their absence. Weather conditions were doubtless the cause of this in a great measure; the spring opened late with much cold and stormy weather and as the season advanced, lower temperatures than usual and increased rainfall became the rule, conditions which were not favorable to insect activity. Among fruit insects the currant fruit fly (***EPOCHRA CANADENSIS*** Loew) was noticeably scarce, a rather unusual occurrence, as this pest seldom fails to do a large amount of damage. The strawberry root weevil (***BRACHYRINUS OVATUS*** L.) seemed to maintain its usual numbers. In this connection it may be of interest to mention that new formulae and improvements in the methods of making poisoned baits for these weevils are making this means of control cheaper and more practical, and may result in solving a very difficult problem. The European leafroller (***CACOECIA ROSANA*** L.) was not quite as abundant as formerly. It is spreading slowly out into the country districts and is a major pest in many apple orchards. Three or four species of native parasites are now attacking this species with vigour and, ultimately, may greatly reduce its numbers.

The cherry fruit worm (***GRAPHOLITHA PACKARDI*** Zell.) again caused considerable damage to sour cherries. The trouble from this source has been more or less evident for a number of years, but of late has greatly increased, some growers losing as much as 30 per cent. of their crops each year for the past three seasons. The moth is a native insect allied to the lesser apple worm (***L. PRUNIVORA*** Walsh) which it closely resembles in all stages, but is decidedly smaller. The life-history has been partly worked out. Eggs are deposited singly on the fruit early in June, and the larva lives around the pit, maturing before the fruit is ready for picking in July. Upon leaving the fruit they bore down the centre of a dead cherry twig, usually choosing the dead stubs where prunings have been taken off. They have also been found in crevices of the bark and in the centre of dead bracken stems. In this situation they remain during the fall and winter, and pupate in the spring, the adults emerging in May. The native host of this species has not yet been found.

The greater bulb fly (***MERODON EQUESTRIS*** F.) was scarce this year, but in most years it causes considerable loss to some bulb growers. The lesser bulb fly (***EUMERUS STRIGATUS*** Fall) which is mainly a scavenger,

breeding in decaying bulbs already attacked by **Merodon** or by disease, was present in its usual numbers.

The cutworm (**Euxoa excellens** Grote) which usually is the source of much complaint was not much in evidence this year.

The parsnip webworm (**Depressaria heracliana** De Geer) appeared this year in large numbers and did a lot of damage in gardens by boring in the leaf stems of parsnips. It was also found abundantly in the stems of hemlock and wild parsnip growing on vacant lots.

The lilac leaf-miner (**Gracilaria syringella** Fab.) has now spread all over the city of Victoria and has been found also at Sidney.

The pine shoot moth (**Evetria buoliana** Schiff.) appears to have become established in this neighborhood, and last summer young pines, consisting of **Pinus mughus** and **Pinus densiflora nana** principally, were found heavily infested in a nursery outside Victoria. The larvae establish themselves in the centre of the terminal shoots causing serious injury to the trees. The work of the larvae distorts the young shoots which eventually die and a stunted branching growth appears below the injury. There are fortunately not many native pines in this district but if this insect became established in the interior it might cause serious damage.

The European earwig (**Forficula auricularia** Linn.) continues to spread and several new localities were discovered last summer in Victoria and Oak Bay.

In the latter district there are only two small areas at present and as poisoning operations will be carried out by the municipality every year it is hoped that they will be kept in check a long time. The new areas within the city were extensions of previous known areas which are comparatively small, but which must, as time goes on, slowly extend until the insect spreads over the entire city.

Another species of earwig (**Euborellia annulipes**, Lucas) was found last year to be established in numbers in Victoria in the gardens of the Empress Hotel. Its habits appear to be similar to those of the European earwig but whether it is capable of being equally destructive is not known. Numbers of them were caught under burlap bands that were placed on trees for collecting pupae of lacewing flies and also under pieces of board on the ground.

Considerable interest is attached to the occurrence of **Aphodius pardalis** Lec., a common scarabaeid beetle, as a pest of lawns at Powell River. During the years 1924, 1925 and 1926, serious damage was done by larvae of these beetles to the bowling green and golf greens at Powell River. The work of the larvae resembled that of the Asiatic beetle (**Anomala orientalis** Waterhouse) and it was thought at first that this was the species with which we had to deal. The sod was cut evenly

about three fourths of an inch below the surface as if it had been pared with a knife and it could be rolled up in patches like a mat. Habits of this nature have not hitherto been associated with the genus **Aphodius**, the members of which are nearly all scavengers, living on animal ordure, but this species appears to be an exception. Applications of carbon bisulphide emulsion in water had very little effect on the larvae and a reliable method of control has not yet been devised. The reason for the insect occurring in such destructive numbers is probably due to the fact that the sod of the greens in question provided the only suitable breeding ground for the beetles during the dry seasons. The surrounding country is denuded of bush and the almost barren soil supports only stunted berberis and salal and a few weeds. Such grassy spots as there are would become too dry for the larvae and the beetles would tend to concentrate upon the well-watered greens. This, at present, is the only explanation that seems to offer for the unusual destructiveness of this species.

Although not an insect, the symphylid, **Scutigera immaculata** Newport, comes within our scope. This symphylid is about one third of an inch in length when full grown and pure white in colour. They move with great rapidity and are abundant in old fields and gardens where they normally live on decaying vegetable matter, but in spring are liable to be destructive to seedling plants of various kinds. Within the last few years many complaints have been received of damage to seedling mangels, the fields having to be re-seeded in many cases. The species occurs from British Columbia to California. No practical control, other than rotation of crops, has so far been suggested.

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### AN INTERESTING MYZOCALLIS

(Hemiptera, Aphididae)

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In December, 1926, specimens of what I took to be **Myzocallis alnifoliae** Fitch were sent to Dr. W. M. Davidson at Vienna, Virginia. They were part of two collections, one from native alder **Alnus oregona** Nutt, and the other from wild strawberry, **Fragaria glauca** Wats, growing in close proximity at Agassiz.

As an alternate host for a member of the Callipterini is very unusual, especially in the case of such widely separated plants botanically as alder and strawberry, I wished to obtain confirmation of my determination