

MR. BUSH—*Erebus odora* has been taken all along the Canadian boundary line.

MR. BLACKMORE—I can concur with Mr. Anderson in the matter of the apparent disappearance of *Neophasia menapia*. I never took one during the past summer.

MR. WILSON—And I can remember a few years ago how the dead bodies of this moth covered the waters of Esquimalt harbour they were so numerous.

MR. CHAIRMAN—I will now ask Mr. Brittain to read Mr. Venables' report on the Okanagan District.

REPORT FROM OKANAGAN DISTRICT.

During the past summer there has been a freedom from any important insect pest in the Vernon District. The summer was fairly moist and heavy crops were for the most part the rule.

H. textor, the Fall Web Worm, was more abundant than for many years. It is always present to a greater or lesser extent upon its natural food plant, the choke cherry, which is occasionally entirely defoliated by the larvae. Burning out the webs with a torch is the most simple method of extermination.

The Cherry Slug was not very numerous during 1912 and the second brood appeared very late in the season and larvae were found feeding after several sharp frosts had occurred. The larvae of this Saw Fly also feeds upon the wild thorn and are to be commonly seen upon this tree during the summer.

The Apple Aphis (*A mali*) appeared in some numbers during July and spraying had to be done in the young orchards where the new growth was in many cases covered with a mass of insects. The Black Leaf 40 Mixture was used with great success in fighting this insect as well as other species of plant lice.

Some of their natural enemies were present in large numbers. A species of *Chrysopa* the Lace Wing Fly, being numerous with their eggs, each one of which is laid at the extremity of a fine thread of silk about half an inch in length often in clusters of twenty or thirty together, resembling somewhat a cluster of delicate moss sporangiophores. They were remarked by several persons engaged in orchard work.

The *Coccinellidae* were not so abundant as in other years when Aphids were common, *Hippodamia 5 signata* being most numerous. Besides this species *Hippodamia convergens* and *Coccinella transversogutta* were noted as doing good work. I have in my collection 14 species of this family of useful insects.

Otiorrhynchus ovatus is becoming more numerous every season and the damage to strawberry plantations is considerable.

Black Flies (*Simuliidae*) were very troublesome to stock during late summer and early autumn. I have not yet determined the species.

The Horse Bot Fly (*Gastrophilus equi*) is another stock pest which was unusually abundant in 1912.

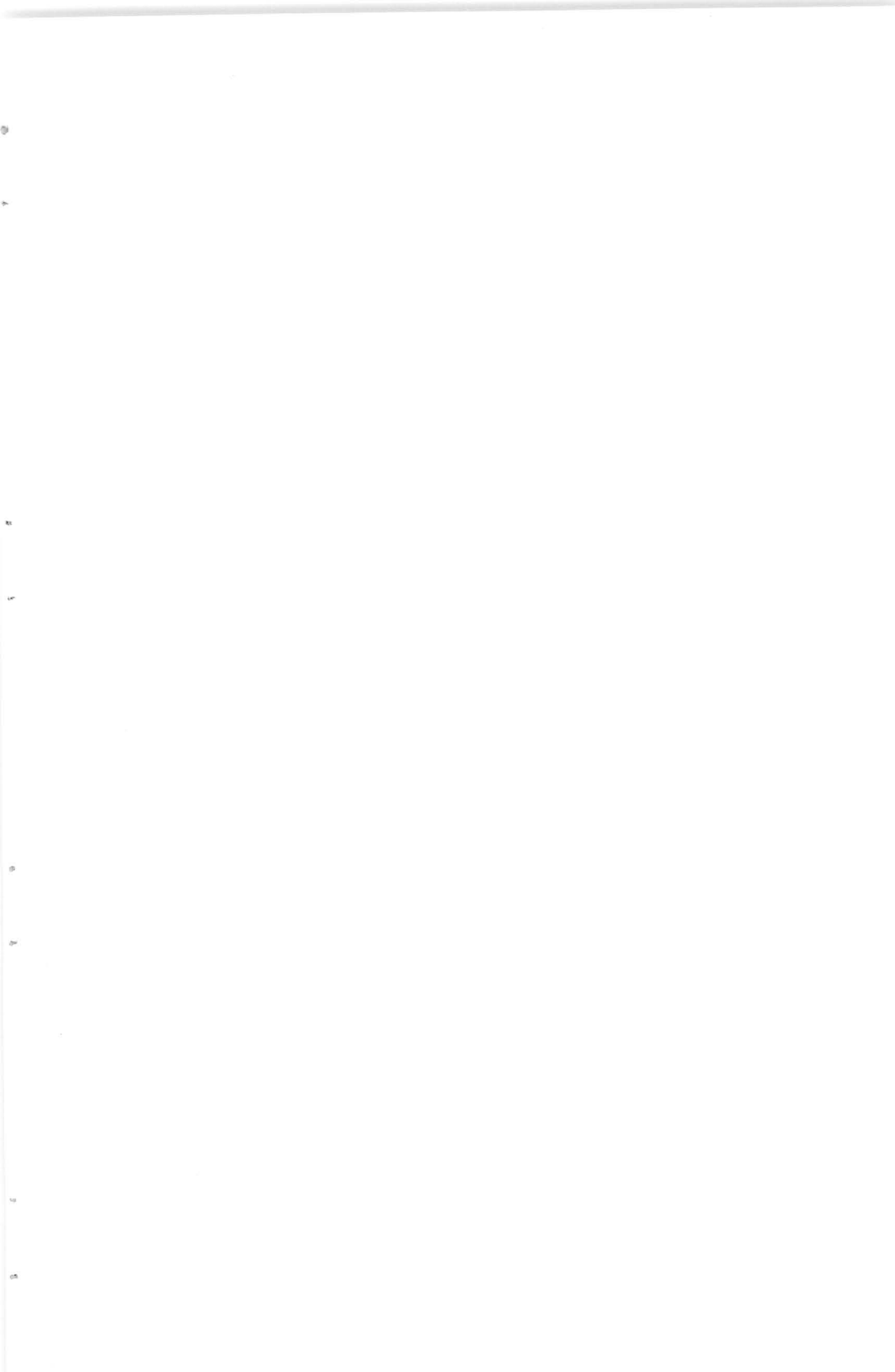
It would be interesting to hear from some member of the Society who has taken adult specimens of the Flat Headed Apple Tree Borer (*Chrysobothris femorata*) in B. C. So far I have not done so, although the damage ascribed to this species is common enough. In Henshaw's list of North American Coleoptera, seven varieties are given. Which of these, then, is our enemy?

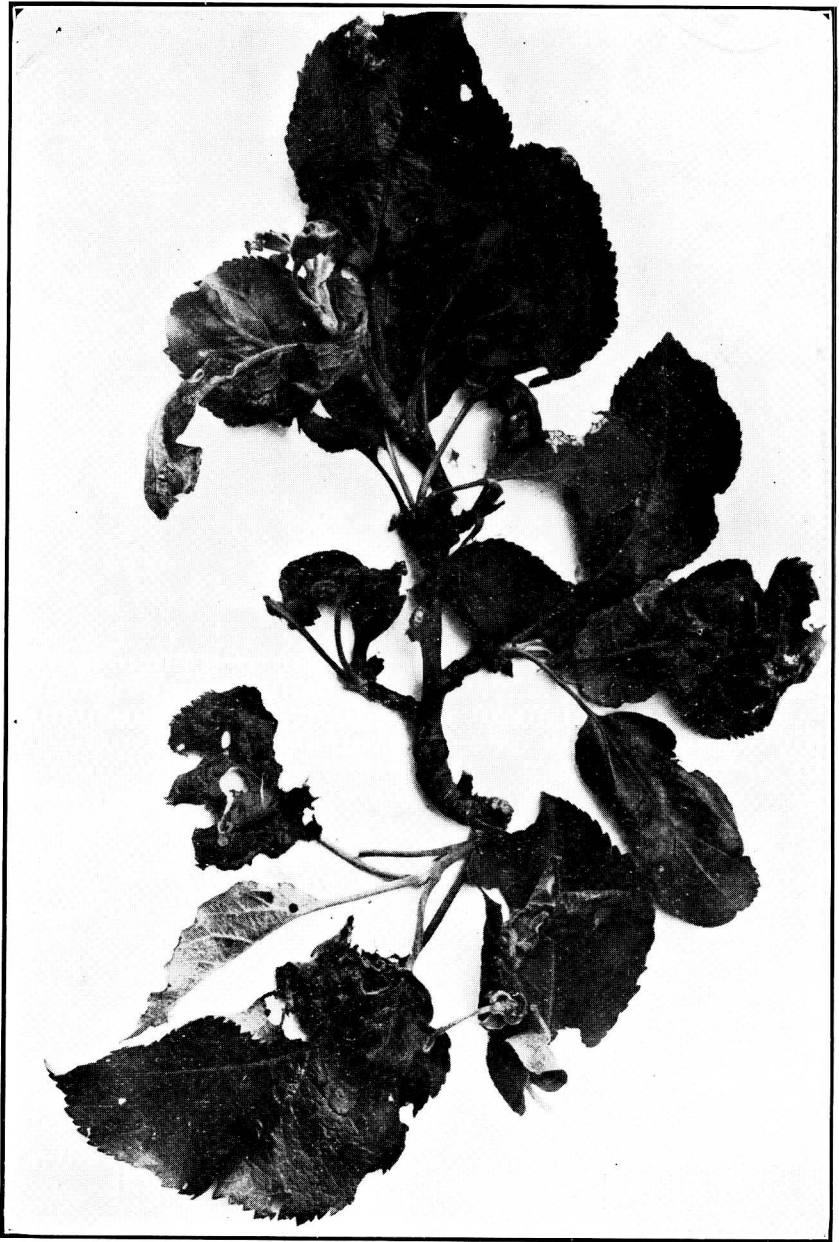
A subject about which there is much to be learnt, is the manner in which various species of insects pass the winter. Many new facts are no doubt observed by collectors at various times, but probably they are not recorded because it is thought that the observation would not be new. In a back number of the Entomological News, I noticed an account of the finding of adult specimens of a species of *Lachnosterna* hibernating at the depth of four feet in sandy soil. The specimens were in fresh condition and must have emerged in the autumn from the pupa and were awaiting till spring to appear above ground. This was the first week in March and the ground was frozen for the depth of some inches. I have taken the larvae of this genus in early spring in grass land. The beetles mentioned above must, from their appearance, have emerged late in the autumn from the pupae.

Another species that I have always found somewhat rare in its usual surroundings during the summer is the beetle *Agabus clavatus*. This insect is taken by dredging ponds and streams during spring and summer, but I always considered it uncommon until last November when dredging for Hydrophylidae and other aquatic forms. But in this instance finding but few specimens after a short time I went ashore to try for other things under stones, logs, etc. I had broken open a rotten log on the edge of the swamp and there was *clavatus* in large numbers among the ruins.

A careful search brought many more to light in similar situations. They had evidently left the water and retired to pass the winter beneath the dead bark and in the crevices of the dead wood lying near the water. Besides *Agabus clavatus* I found *Agabus semipunctatus* in some numbers. Other members of this family are to be taken by dredging at all seasons, even in winter. Another insect that I have detected in partial hibernation is the butterfly *Vanessa Milberti*. This butterfly is the earliest to

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WORK OF THE BUD MOTH (*TMETOCERA OCELLANA*)

By courtesy of the Ont. Ent. Soc.

appear in the spring and is often to be seen before the snow has all melted from the hillsides. Some few years ago in early spring after a warm period, during which this insect was observed flying along the warm slopes round Long Lake, which locality is the usual one for most of the early species to first appear and this often long before the snow further inland has begun to melt. After a few bright days during which *Milberti* was often seen, there came a lowering of the temperature with two or three inches of snow which lasted several days. I was anxious to observe *Milberti* under these conditions. After a good deal of searching among the piles of loose rock lying on the lake shore, I found two individuals beneath a projecting flat stone in the shelter of which they had taken refuge. They were hanging with their wings folded together and were quite dormant, but on bringing them to the warmth they began in a short time to move about.

Gryllus pennsylvanicus I have found under a log in February. Some ten or a dozen individuals were closely packed together in a small excavation in the soil. These crickets were quite coated with frost, but soon showed signs of life when placed near the fire. The common Wasp, *Polistes bellicosus*, is commonly found, frequently as many as 50 or 60 individuals together underneath the bark of decaying pine trees in the depth of winter. On one occasion I discovered a large gathering of these insects under the bark of a pine and among them a large number of adult Lace Wing Flies (*Chrysopa sp.*). Evidently these flies had taken refuge among the wasps in the autumn and had been allowed to settle down unmolested by *Polistes* in their winter quarters. The flies and wasps were mixed up in some confusion.

Some of these notes may be common knowledge to some of us but they may, on the other hand, be of interest to others who have not paid attention to this phase of insect life.

I regret not being present at the meeting as I have no doubt there will be interesting discussion on the part of the members over some of the subjects on the programme.

E. P. VENABLES,
Vernon.

It might interest some of the members to hear of some few of the insects noted in the Okanagan during the past season and not mentioned, I believe, by Mr. Venables in his report.

Budworm (*Tmetocera ocellana*)—Both broods very common at Victoria, rare in the Okanagan. Capable of doing considerable damage and apt to become one of our most serious pests.

Woolly Apple Aphis (*Eriosoma (Schizoneura) lanigera*)—Fairly common everywhere throughout this season. Winged forms quite common in the fall. No roots forms seen. Not a serious pest in well-cared-for orchards.

Plant Bugs (*Capsidae*)—Injuries resembling those done by various *Capsids* were very common to the young apples of some varieties. In some cases this caused an extensive drop of the young apples and in others the fruit remained on the tree, but became badly distorted. Injuries of this kind caused quite a little loss in some places and the subject demands further study.

Red Spider (*Tetranychus bimaculatus*)—Quite common everywhere. Doing appreciable damage to plums in some cases.

Oyster Shell Scale (*Lepidosophes ulmi*)—A little of this pest almost everywhere but only of importance in uncared for orchards.

Cutworms (species undetermined)—Very abundant and injurious, chief damage being the defoliation of young apple trees. Many growers report poisoned bran ineffective; should be further tested.

Click Beetle (*Corymbites inflatus*)—Very abundant in nearly all parts of the valley, feeding upon the buds and young leaves of young apple trees. Damage done in many instances was considerable and some control measures should be worked out.

Click Beetle (*Corymbites hieroglyphicus*)—Similar to the preceding.

Bud Weevil (*Cercopeus artemiseae*)—Not widespread, but doing considerable damage to young apple trees in isolated cases, by boring into buds and tender foliage. Deserves further attention.

Bud Weevil (*Mimetus setulosus*)—Similar to preceding.

Ants (species undetermined)—Boring into nectaries of peach blossoms, destroying pistil. More a matter of interest than anything else.

Flat Headed Cherry Tree Borer (*Dicerca divaritica*)—Only one adult female found, Long Lake, Vernon.

Pear Leaf Blister Mite (*Eriophyes pyri*)—Quite common, injuring pears only. Liable to increase in destructiveness.

Apple Leaf Hopper (*Empoasca mali*)—Very common everywhere; does some damage and is rather difficult to control.

Apple Tree Tent Caterpillar (*Malacosoma sp*)—Quite common during the month of May. Subject to periodic epidemics, but is easy to control.

The Pear Slug (*Eriocampoides limacina*)—Very common and did considerable damage. No need for this, however, as control is simple.

Lesser Apple Worm (*Enarmonia prunivora*)—A little present in most districts, but not in alarming numbers.

Fall Webworm (*Hyphantria cunea*)—Abundant on apples and wild shrubs. Easy to control.

Common or Gray Hair Streak (*Uranotes melinus*)—Larva boring into a small apple at Salmon Arm. As far as I know this is the first record of the insect feeding on the apple.

The Gray Bug (*Glyptoscelis pubescens*)—Said to be doing considerable damage by feeding upon the unfolding leaves of young apple trees. Did not see it actually at this work, but found upon trees the leaves of which had been badly chewed. Should be watched.

Banded Purple (*Basilarchia lorquinii*)—Larvae quite common, feeding upon foliage of apple. Little importance.

Red Humped Apple Tree Caterpillar (*Schizura concinna*)—Fairly numerous in July. Little importance.

Yellow Necked Apple Tree Caterpillar (*Datana ministra*)—Some specimens of half grown larvae sent in by Mr. Middleton from Nelson.

Apple Saw Fly—A green larvae, about 3 cm. long, making burrows in the mature or nearly mature apples on the tree. Did considerable damage in a few cases. It burrows in the apple apparently for the purpose of hibernation, as the larva remains quiescent after making its burrow. Regular food is probably some wild plant and injury to apple only incidental. More information required.

Peach Tree Borer (*Sanninoidea* sp.)—Quite common where peaches are grown and a number of trees were killed.

Peach Twig Borer (*Anarsia lineatella*)—Common, the chief damage being done to the fruit.

OTHER INSECT PESTS.

White Marked Tussock Moth (*Hemerocampa leucostigma*)—Not common this season, but often a serious pest of shade trees.

Mealy Bug (*Pseudococcus*, probably n. sp.)—Injuring spruce; easily destroyed by lime-sulphur.

Spruce Gall Louse (*Chermes similis*)—A common and serious enemy of the spruce.

Pine Leaf Scale (*Chionaspis pinifolia*)—Common everywhere on the pines.

Forest Tent Caterpillar (*Malacosoma disstria*)—Fairly numerous.

Rose Leaf Hopper (*Typhlocyba rosae*)—Common and fairly injurious.

Cabbage Aphis (*Aphis brassicae*)—Common.

Cabbage Worm (*Pontia rapae*)—Common.

False Wire Worm (*Eleodes obscura* var *sulcipennis* and *E. punielodcs*)—Adults of these two species were very numerous. Damage was done to potatoes in several districts by *Eleodes* larvae, probably belonging to these two species.

Rose Weevil (*Rhynchites bicolor*)—Common.

Cottony Grass Scale (*Eriopeltis festucae*)—Reported.

The following records were made during the past summer:

AMONG THE *Buprestidae*—

Chalcophora angulicollis, Lec, Larkin, B. C.

Buprestis confluenta, Say, Swan Lake, B. C.

Cypriacis brevis, Casey, Swan Lake, B. C.

Dicerca prolongata, Lec, Vernon, B. C.

Dicerca divaricata, Say, Vernon, B. C.

Melanophila drummondi, Kirby, Larkin, B. C.

Anthaxia aeneogaster, L. & G., Fintry, B. C.

Chrysobothris dentipes, Germ, Larkin, B. C.

Chrysobothris trinervia, Kirby, Larkin, B. C.

AMONG THE *Etateridae*—

Alaus melanops, Lec, Vernon, B. C.

AMONG THE *Meloidae*—

Epicauta maculata, Fab, Vernon, B. C.

THE FOLLOWING *Ipidae* ARE RECORDED—

Pithyogener carinulatus.

Ips perturbans and other species undescribed.

A number of insect enemies of the Douglas fir and the bull pine were taken during the summer belonging chiefly to the families *Buprestidae* and *Cerambycidae*. A few *Ipidae* were also captured and among them I am informed by Mr. Swaine, Dominion Forest Entomologist, were some new to science.

W. H. BRITAIN,
Vernon, B. C.