

curring in British Columbia, and as pointed out by Davis (1945), the presence of *O. hermsi* in the contiguous areas of northern Idaho and eastern Washington suggested that this species may have been responsible for the above cases. While at-

tempts to find it had failed, the search had been directed only towards rodent hosts and ground burrows. The final discovery of *O. hermsi* in a bird's nest in the province consequently throws an interesting light on the whole picture.

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PARASITIC COLEOPTERA

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Parasitism in the Coleoptera is so rare that when a parasitic species is discovered it is an event of considerable note. There are five known species of beetles parasitic, or suspected of being parasitic on birds and mammals. The collection of the University of British Columbia contains four of these species which is rather remarkable and a tribute to Professor G. J. Spencer who has persistently and assiduously built up this collection.

The species of parasitic Coleoptera represent three families and four genera in the super-family *Staphylinoidea*. The family *Platypsillidae* contains one species only, *Platypsillus castoris* Ritsema. This curious insect has been known since 1869 and has been taken a considerable number of times both in Europe and America, on beaver, where it is a permanent, obligate parasite.

The head of the adult is provided with a comb-like row of spines near the hind margin. There are no eyes, and the mandibles are vestigial. The maxillae are well developed and are similar to those of other Coleoptera. This insect was placed in a separate order by Westwood, but the larval characters are unmistakably coleopterous. Its place within the order is some-

what in doubt. A careful, morphological study of all stages might yield a permanent solution to the problem.

In the family *Leptinidae* there are two genera and three species. *Leptinus testaceus* Mull., often has been recorded from the nest of bumble bees and once has been recorded as occurring on mice and once from shrews. More recently J. D. Gregson took it on a species of *Sorex* from Silver Creek, B.C., April 26, 1940. This species if correctly determined, is about 2.5 mm. long, reddish brown in colour, with 11 segmented antennae and 5 segmented tarsi. There are 6 visible abdominal segments. The entire body is covered with short setae, sparsely and uniformly distributed. The mouth parts were difficult to distinguish but obviously the maxillae are well developed while the mandibles appear to be vestigial and the eyes are wanting. The front coxae are contiguous, the intercoxal piece acuminate. The elytra completely or nearly cover the abdomen, and there are no hind wings.

The genus *Leptinillus* is represented by two species, *L. validus* Horn and *L. aplo-dontiae* Ferris. The former species was described in 1872 and has been recorded from Alaskan beaver skins by C. V. Riley

(Insect Life 1, 1888). Recently this species has been received from Mr. O. French of Lempriere, B.C. These specimens also were taken from beaver skins.

The mandibles appear to be vestigial but the maxillae are well developed with a fringe of recurved spines around the margin of the galea. The antennae are 11 segmented, the abdomen with 6 visible segments as in *Leptinus* but the intercoxal piece of the prosternum separates the front coxae and the tip is blunt, not acuminate as in *Leptinus*. There is also a long tuft of hairs projecting from the tip. This species is nearly 5 mm. long. It is apparently blind as is *Leptinus*.

L. aplodontiae was described by Ferris in 1918. It was taken from a species of *Aplodontia* or mountain beaver, a genus of rodents peculiar to the Pacific Coast. The type locality is Fallen Leaf Lake, Plumas Co., California, the host animal

being taken in August, 1917, by W. R. Fisher. The fifth species here dealt with is in the family Silphidae with only one member of the genus, *Lyrosoma opaca*. Mann. It resides in the nests of certain maritime birds and may not be parasitic in the strict sense although it apparently utilizes the birds for transportation purposes. This species does not have the extreme modifications of the other forms such as excessive flattening, blindness, and vestigial mandibles. The compound eyes are well developed but the facets are rather coarse and there are only about 200 to each eye. It is suggested that this may be a species in process of acquiring a parasitic habit, but as yet not strictly parasitic.

I am indebted to Professor Spencer for making certain records available to me in connection with some of these species of parasitic Coleoptera.

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NOTES ON THE LIFE HISTORY OF *XANTHORHOE DEFENSARIA* GN. (Lepidoptera: Geometridae)

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Several specimens of the geometrid moth, *Xanthorhoe defensaria* Gn., were taken at light on September 19-21, 1947 in the Municipality of Saanich, Vancouver Island, B.C. From one of the specimens a batch of eggs was obtained and half of the resulting caterpillars were reared to maturity. Since no account of the life-history of this species was available, it is thought that the following notes may be of interest as a confirmation or supplement to what may already be known about this species.

Ovum. Laid on September 20, 1947, in a glass phial in ones and twos, or in small,

irregular groups promiscuously disposed on the sides or in the angles of the container. A total of 25 eggs was deposited. They were subsequently kept at a cool room temperature.

The egg is oval, smooth and whitish in colour with a pearly lustre, becoming darker towards hatching time. It is attached to the substratum by an adhesive substance at the small end. Length 0.75 mm. Width 0.5 mm.. The shell is not consumed by the newly emerged caterpillar.

Larva. Eggs hatched on October 8, after an average incubation period of 18 days. As I was not aware of the food plant,