

NOTES ON THE OCCURRENCE OF *ORNITHODOROS HERMSI* IN BRITISH COLUMBIA, AND ITS PROBABLE RELATION TO RELAPSING FEVER. ARGASIDAE, IXODOIDEA.*

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A new distributional and host record has been established by the recent discovery of the soft tick *Ornithodoros hermsi* Wheeler, Herms and Meyer, at Summerland, British Columbia. Two engorged adult specimens of the tick were forwarded to the Dominion Livestock Insect Laboratory at Kamloops on August 4th, 1948, by Mr. C. V. G. Morgan of the Dominion Fruit Insect Laboratory, Summerland, who, in turn, had received them from a local resident. This person had been bitten some dozen times in bed since April by nocturnal creatures which she believed to be bedbugs. Finally she captured two of the culprits and opened the way for this interesting discovery.

Investigation by the writer revealed her residence to be an old building situated in an orchard on a West Summerland benchland. The occupant and her mother kept no animals and knew of no rodents being present, with the exception of a packrat that had visited her basement the previous fall, and a mouse that she had caught there recently. There was, however, a bluebird nest in an old woodpecker hole in the eaves over an upper verandah. This was examined, and yielded, besides five fledgling bluebirds, a large number of avian bedbugs, *Oeciacus vicarius* Horv., and twenty-six specimens of *Ornithodoros hermsi*. The majority of the ticks had recently fed, and were found in the main nesting material. Since this was without doubt the source of the infestation it is of interest to note that the initial specimens captured had migrated over a distance of two storeys, including accents up wooden and steel bed legs. After the contents of the nest were removed, the enclosure

was sprayed with DDT and sealed. However, it is expected that the occasional specimen may still appear in crevices in the well kept but old residence. To date, several feedings on laboratory mice have failed to reveal spirochetes. The human bites produced no effects other than a severe and prolonged local reaction.

This tick record bears two points of considerable interest. Firstly, the biotope records of *O. hermsi*, as stated by Cooley and Kohls, (1935), consist of chipmunk nests in either fir snags, stumps or hollow logs or cabins, but never ground burrows. These observations, together with the marked localization of observed infestations would suggest a possibility that the tick is primarily spread and maintained by an avian host. Secondly, this species is known to bite man, and because of known cases of relapsing fever originating from infested areas, with subsequent isolation of spirochetes from specimens captured there, it has been proven a vector of this disease in California, Colorado, Nevada, Oregon, northern Idaho and Washington (Davis 1942, 1945). In 1930 and 1932 there occurred a series of six human cases of relapsing fever in the Kootenay District of British Columbia, (Palmer and Crawford 1933). Considerable speculation arose as to what the vector could be. Hearle (1934) advanced the theory that one of the Argasid ticks must be involved, though a careful search by staff members of this laboratory failed to find any indications of these parasites. Again, in 1937 this laboratory was informed by Dr. Campbell Brown of Vernon, British Columbia, that two loggers from Okanagan Centre had been suffering from a series of relapses. A further search for vectors once more proved futile. Thus it is seen that an Argasid tick has long been suspected as oc-

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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