LICE ON HIBERNATING AND NON-HIBERNATING MAMMALS

Lice, both sucking and biting, are found only on homioothermic hosts. All experimental work indicates that while the parasites can stand low temperatures for a short time, in order to maintain themselves and reproduce they require a temperature close to that found on their normal, active hosts. Either biting or sucking lice have been reported from all major orders of mammals with the exception of the Chiroptera.

The absence of lice of any kind on the Chiroptera may be due to the temperature factor alone, since in hibernating bats the temperature drops to approximately that of the surrounding atmosphere. With this temperature factor in mind, the study of the parasites of other hibernating mammals becomes extremely important. Unfortunately, but little is known concerning hibernation in American mammals and the term itself is loosely used. Hibernation to some means a definite drop in body temperature with the mammal becoming torpid, while to others it denotes merely a denning-up of the animal without any regard to a lowering of the body temperature or to the state of the animal. Other than bats, the woodchuck and the ground squirrel are the only American mammals studied that periodically become torpid with greatly lowered body temperature. No lice, sucking or biting, have ever been reported from a woodchuck. Only sucking lice have been reported from ground squirrels in regions where they hibernate. An interpretation of this latter case raises the following questions. Do the ground squirrels with lice, under natural conditions, undergo a drop in temperature as under experimental laboratory conditions? Is the drop in temperature under natural conditions of sufficiently short duration for the lice to survive? Does the louse pass the winter in an egg stage? Do these lice differ from the others studied in that they do not require a constant temperature to maintain the species?

Little is known concerning the body temperatures during the hibernation of porcupines, raccoons, skunks and badgers. There is much to indicate that their so-called hibernation is merely a denning-up during unfavorable weather. Lice have been reported from all of the above mentioned hosts, collected in regions where they are said to hibernate.

Host records of the lice of mammals show many peculiarities. Domestic dogs and cats are near relatives phylogenetically and generally show a fauna of identical or closely related parasites. The dog has a species of sucking louse and possibly two species of biting lice peculiar to it. On the other hand, the domestic cat is parasitized only by a species of biting louse. Nothing is known of the subject that would render predictable the absence of sucking lice on cats. It is of further interest to note that no sucking lice have been reported from wild felines, although biting lice have been reported from them. Students are in general agreement that parasites and hosts have evolved together, thus explaining why one can predict, within limits, the host or host family from which a particular louse was taken. The absence of biting or sucking lice on a particular group of wild mammals is not at present explainable, and collections of lice from wild hosts have not been sufficiently numerous to warrant the conclusion that biting lice, or sucking lice, or both are absent from any definite group of wild mammals with the exception of the Chiroptera.

It is the hope of the writer that those having the opportunity will appreciate that the collecting of ectoparasites contributes much not only to entomology but also to our knowledge of mammals. Biting and sucking lice are easily collected by combing with a fine-toothed comb, or by wrapping the dead animal or the drying skin in cotton for 24 to 48 hours following death. The lice will crawl on the cotton, become entangled in it and die. For the sake of accuracy in host records, dead animals should not be allowed to come in contact with each other, as lice tend to migrate after the death of the host.—F. H. Wilson, Department of Zoology, Tulane University, New Orleans, Louisiana.