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ECTOPARASITIC ARTHROPODS COLLECTED FROM SOME NORTHERN OHIO MAMMALS

C. Lee Rockett and Scott A. Johnston¹

ABSTRACT

Ectoparasitic arthropods were collected from some fur-bearing mammals in northern Ohio. Specimens representing seven mammalian species were examined and found to collectively harbor acarines, fleas, and biting lice. Species determinations were made and new host and state records noted.

An extensive variety of ectoparasitic arthropods occurs on mammals. However, comprehensive studies on mammalian ectoparasites in the North Central states are surprisingly limited and often confined to small, rodent-like mammals. Lawrence et al. (1965) collected and identified arthropod ectoparasites from some northern Michigan mammals. While many smaller mammals such as microtine rodents and shrews were collected, the study also involved larger mammals such as mink, muskrat, beaver, and raccoons. Whitaker (1982) published a comprehensive study on mammalian ectoparasites in Indiana; both large and small mammals were included.

The purpose of this study was to investigate ectoparasitic arthropods occurring on some "larger" fur-bearing mammals in northern Ohio. The specific site chosen was Erie county which borders Lake Erie. The majority of mammals were actually collected on the Huron River which traverses through the county. All collections were taken in 1985-87.

The authors wish to acknowledge the assistance of the following individuals in providing assistance in species identification of the following groups: R.E. Lewis, Siphonaptera and R.D. Price, Trichodectidae.

MATERIALS AND METHODS

Mammals were trapped with steel traps and collected the day following trap placement. If not already dead, the trapped mammals were subsequently killed. The collected mammals were then placed into separate, plastic bags and taken to the laboratory for ectoparasitic examination. Arthropod removal was accomplished by simply combing the fur with a fine-toothed comb and visually examining the skin surface. This procedure could have resulted in some species not being collected. The plastic bags which held the trapped mammals were also checked. The arthropods to be identified were subsequently cleared and mounted on slides. Voucher specimens were deposited in the entomology collection at Bowling Green State University. This study was intended to be primarily a qualitative endeavor; consequently, no special attempts were made to meticulously quantify or statistically evaluate the collected arthropods. Since the trapped mammals

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TABLE 1 Mammalian Ectoparasites and Hosts

Ectoparasite	Host	No. Hosts Examined
ACARINA		
<i>Androlaelaps fahrenheitsi</i> (Berlese)	Raccoon, <i>Procyon lotor</i> (Linn.)	2
	Opossum, <i>Didelphis virginiana</i> Kerr	2
<i>Zibethacarus ondatrae</i> (Rupes & Whitaker) ⁺	Muskrat, <i>Ondatra zibethica</i> (Linn.)	7
<i>Laelaps multispinosus</i> (Banks)	<i>Procyon lotor</i>	2
	<i>Ondatra zibethica</i>	7
<i>Listrophorus americanus</i> Radford		
<i>L. dozieri</i> Radford	<i>Ondatra zibethica</i>	7
<i>L. faini</i> Dubinina		
<i>Ixodes cookei</i> Packard	<i>Procyon lotor</i>	1
	Gray Fox, <i>Urocyon cinereoargenteus</i> Schreber	1
	Red Fox, <i>Vulpes vulpes</i> (Linn.)	1
SIPHONAPTERA		
<i>Orchopeas howardii</i> (Baker)	Red Squirrel, <i>Tamiasciurus hudsonicus</i> Erxleben	1
	<i>Vulpes vulpes</i>	1
<i>Cediopsylla simplex</i> (Baker)	<i>Urocyon cinereoargenteus</i>	2
	<i>Vulpes vulpes</i>	3
	Rabbit, <i>Sylvilagus floridanus</i> (Allen)	3
<i>Ctenocephalides felis</i> (Bouche)	<i>Didelphis virginiana</i>	2
<i>Chaetopsylla lotoris</i> (Steward)	<i>Procyon lotor</i>	5
MALLOPHAGA		
<i>Trichodectes octomaculatus</i> Paine	<i>Procyon lotor</i>	5

+ Phoretic hypopi.

often died in the traps (as previously mentioned), many of the ectoparasites would have already deserted their host prior to the mammals being removed from the traps.

RESULTS AND DISCUSSION

A listing of ectoparasites and their mammal hosts is noted (Table 1). No new significant host records for the North Central states were noted. The authors were unable to find records denoting *Laelaps multispinosus* occurring on raccoon or *Orchopeus howardii* occurring on red foxes; however, neither association is very surprising. Since only two specimens of *L. multispinosus* were found on two raccoons, it is suspected that this occurrence of *L. multispinosus* was only a temporary acquisition for the raccoon and was possibly obtained by the raccoons scavenging on muskrat carcasses. This mite has been commonly reported from muskrats in other studies such as Whitaker (1982) and was a common muskrat ectoparasite in this study. *Orchopeas howardii* is primarily a squirrel flea and could be expected to occur on potential predators such as red foxes, even though red foxes are not considered to be common predators of squirrels. Whitaker (1982) reports this flea's occurrence in Indiana on the gray fox but not the red fox.

All three species of listrophorid mites were found coexisting on individual muskrats. In Indiana, Bauer and Whitaker (1981) found that *Listrophorus faini* and *L. validus* Banks occurred primarily on the rump and ears respectively, *L. americanus* ventrally and *L. dozieri* laterally. The authors further commented that the species displayed a degree of isolation and seemed to adhere to Gause's Rule. *Listrophorus validus* was not noted in this

study; however, additional muskrat collections in northern Ohio are anticipated to further clarify the presence or absence of *L. validus* in this area. Particular emphasis will be placed on ear examinations.

To the authors' knowledge, the three collected species of listrophorid mites and *Laelaps multispinosus* are new records for Ohio. All collected species of ectoparasites, excluding *I. cookei* and *O. howardii*, are new records for Erie County. It should be stressed that this is not due to any rarity of collected species but simply to a general lack of reporting in the state and county. All collected species are relatively common in the North Central states.

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