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SOME HELMINTHS FROM MINK IN SOUTHWESTERN MONTANA, WITH A CHECKLIST OF THEIR INTERNAL PARASITES

Delbert L. Barber^{1,2} and Lawrence L. Lockard²

ABSTRACT.— Thirty-four percent of 100 mink examined from Gallatin and Madison counties, Montana, revealed the presence of *Perostrongylus pridhami* Anderson, 1962 (Anderson, 1963), in the lungs. This is the first report of *P. pridhami* in the United States. Thirteen percent of the mink were infected with *Taenia mustelae* Gmelin, 1790. This is the first report of *T. mustelae* in southwestern Montana. A checklist of internal parasites of *Mustela vison* is included.

Parasites of mink in North America have been reported by numerous authors. No previous parasite surveys have been conducted on *Mustela vison* in southwestern Montana. The mink necropsied in this study were trapped in the Madison River, upper Gallatin River, and headwaters region of the Missouri River drainages during the winters of 1969 and 1970.

A total of 100 mink were examined. These animals were eviscerated and the viscera were placed in plastic bags and frozen. An NaCl fecal flotation was prepared to determine the presence of cestode and nematode eggs or larvae prior to examination of the animals. The gastrointestinal tract was dissected using an enterotome device (Figure 1). The contents were washed onto a 200-mesh screen,

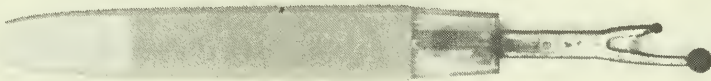


Fig. 1. Enterotome Device. Seam ripper modified with plastic bead placed on end of point to facilitate intestinal incisions.

then transferred to an illuminated tray for examination (Figure 2). Cestodes were fixed in 10 percent formalin, stained in Delafield's hematoxylin, dehydrated in ethanol, cleared in beechwood creosote, and mounted in HSR (Hartman-Leddon Co.). Lungs, liver, and kidneys were dissected and each was placed in a jar with water and agitated on a mechanical shaker for 20 minutes. The contents were poured onto a 200-mesh screen, washed, transferred to an illuminated tray, and examined. Lung tissues that appeared to contain cysts or capsules were pressed between glass plates and observed under a dissecting microscope. Adult nematodes removed from lung parenchyma were fixed in 70 percent alcohol-5 percent glycerol and mounted in glycerol. Skulls, when available, were examined for nasal nematodes.

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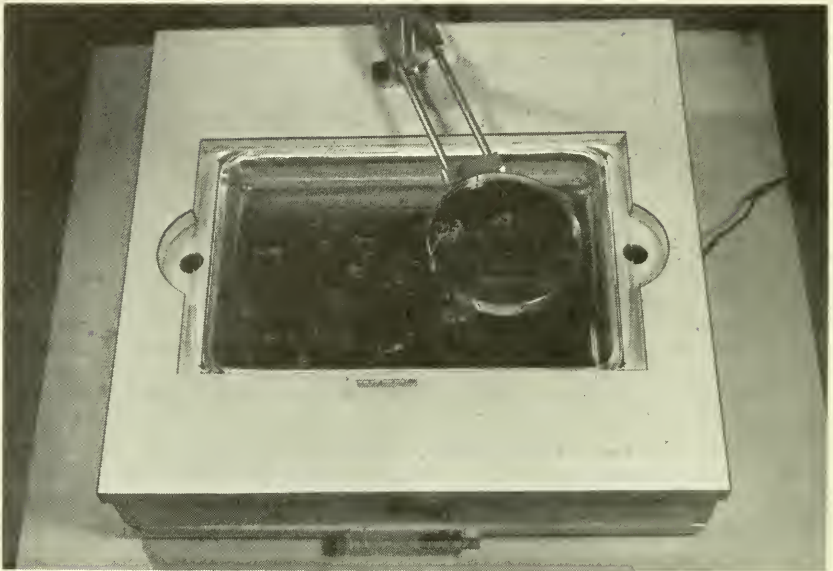


Fig. 2. Illuminated tray used in postmortem recovery of helminth parasites.

RESULTS AND DISCUSSION

Fecal examinations revealed that 34 percent of 100 mink were passing first-stage nematode larvae. Three male nematodes and portions of two females were dissected out of the lung tissue; larvae were removed from the gravid females. These larvae were compared with those found in the fecal samples and it was determined that they were of the same type. The adult males were identified as

TABLE 1. Checklist of parasites reported from mink.

Parasite	Bibliography number
Trematoda (Flukes)	
<i>Alaria freundi</i>	85
<i>A. minuta</i>	18
<i>A. mustelae</i>	14, 15, 30, 31, 61
<i>Apophallus muehlingi</i>	86
<i>Baschkirovitrema incrassatum</i>	61
<i>Cephalophallus obscurus</i>	53
<i>Cryptocotyle concava</i>	57
<i>C. lingua</i>	57, 58
<i>Enhydridiplostomum alarioides</i>	61
<i>Euparyphium beaveri</i>	61
<i>E. inerme</i>	1, 51, 69, 90
<i>E. melis</i>	11, 30, 31, 38, 39, 46, 51
<i>Euryhelmis monorchis</i>	4, 30, 31, 61
<i>E. pacificus</i>	61, 80
<i>E. pyriformis</i>	61
<i>E. squamula</i>	38, 54, 61
<i>Fasciola hepatica</i>	58

TABLE 1 (continued)

<i>Fibricola cratera</i>	73
<i>Metagonimoides oregonensis</i>	47, 61, 81
<i>Metorchis conjunctus</i>	30, 31, 35
<i>Nanophyetus salmincola</i>	10, 38, 46, 78
<i>Neodiplostomum lucidum</i>	73
<i>Paragonimus kellicotti</i>	2, 3, 12, 30, 31, 35, 38, 49, 61, 79, 93
<i>P. westermani</i>	37
<i>Parametorchis canadensis</i>	38
<i>Procyotrema marsupiformis</i>	61
<i>Sellacotyle mustelae</i>	30, 31, 61, 94
<i>S. vitellosa</i>	61, 84
<i>Tocotrema lingua</i>	86
<i>Troglootrema acutum</i>	38
Cestoda (Tapeworms)	
<i>Diplogonoporus tetraapterus</i>	71
<i>Mesocestoides litteratus</i>	30, 31
<i>Moniezia</i> sp.	58
<i>Taenia mustelae</i> (= <i>tenuicollis</i>)	5, 29, 30, 31, 32, 33, 44, 45, 52, 59, 61, 66, 70, 72, 77, 83, 92
Acanthocephala	
<i>Centrorhynchus conspectus</i>	61
<i>Corynosoma hadweni</i>	58
<i>C. semerme</i>	28, 67
<i>C. strumosum</i>	28, 58, 67
<i>C.</i> sp.	9
<i>Macracanthorhynchus ingens</i>	17, 61
Protozoa	
<i>Eimeria mustelae</i>	43
<i>Isospora bigemina</i>	79
Nematoda (Roundworms)	
<i>Aelurostrongylus falciformis</i>	6, 8
<i>Ascaris</i> sp.	1, 35, 51, 61, 90
<i>Capillaria mustelorum</i>	30, 31, 35, 58, 61, 68, 79
<i>Crenosoma hermani</i>	6, 26
<i>Dictyocaulus filaria</i>	58
<i>Diocotophyme renale</i>	1, 12, 21, 24, 30, 31, 35, 36, 40, 50, 55, 56, 60, 61, 75, 76, 79, 95, 96, 97, 98
<i>Dranunculus insignis</i>	19, 22, 35, 42
<i>D. medinensis</i>	13, 20, 30, 31, 62
<i>Epomidiostomum</i> sp.	61
<i>Eustrongylus gigas</i>	38
<i>Filaroides bronchialis</i>	34, 79
<i>F. mustelarum</i> (= <i>martis</i>)	1, 6, 25, 30, 31, 40, 48, 61, 88, 89
<i>Gnathostoma spinigerum</i>	17, 38, 40, 99
<i>Heterakis isolonche</i>	61
<i>Molinueus patens</i>	30, 31, 46, 61, 64, 82
<i>Mustelivingylus skrjabini</i>	46, 74
<i>Muellerius capillaris</i>	58
<i>Perostrongylus pridhami</i> (= <i>Aelurostrongylus</i>)	6, 7, 8, 87, 88
<i>Physaloptera</i> sp.	30, 31, 63, 65
<i>Seurocyrnea</i> sp.	61
<i>Skrjabinigylus nasicola</i>	34, 41, 79, 91
<i>Soboliphyme baturini</i>	46
<i>Strongyloides</i> sp.	1, 51, 58, 90
<i>Trichinella spiralis</i>	16, 23, 27, 35, 40, 100

Perostrongylus pridhami Anderson, 1962 (Anderson, 1963), by Dr. Roy C. Anderson (personal correspondence). This parasite was previously reported by Anderson (1962) in Ontario, Canada. To our knowledge this is the first report of this species in the United States.

Thirteen percent of the *M. vison* were infected with the cestode *Taenia mustelae* Gmelin, 1790. Identification of these specimens was confirmed by Dr. Gerald D. Schmidt (personal correspondence). This is the first report of adult *T. mustelae* in mink from Gallatin and Madison counties in southwestern Montana.

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