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THE RACCOON, A NEW HOST FOR *MICROPHALLUS* SP., WITH ADDITIONAL NOTES ON *M. OVATUS* FROM TURTLES

On September 24, 1943, a raccoon (*Procyon lotor*) was brought me for parasitological examination by Dr. Lawrence E. Hicks. It had been killed on the road the previous evening in Pickaway County, Ohio. In addition to specimens of *Ascaris columnaris* and *Physaloptera rara*, hundreds of very small trematodes were found, distributed throughout the small intestine. The trematodes were very difficult to locate and separate from the mucus and debris in the intestine, so no effort was made to count them.

The specimens were killed and fixed by immersion in hot 10% formalin and permanent slides were made of stained specimens. Several specimens were also sectioned, and a total of more than 250 specimens was examined.

These trematodes belonged to the genus *Microphallus*, but differed from *M. opacus* (Ward,

1893) Ward, 1901, and *M. ovatus* Osborn, 1919, previously described from North America, in the following ways: Body 0.726 ± 0.145 mm long, and 0.439 ± 0.097 mm wide (100 specimens measured). Integument of anterior half of body spinose; spines recurved, about 0.0014 mm long, decreasing in size posteriorly and disappearing near middle of body. Vitellaria lobate, with 3 to 7 distinct lobes; lobes more compact than those of the other two species. Uterus very voluminous, filling body posterior to the acetabulum. Egg averages 0.025×0.012 mm. Besides marked differences in measurements, the specimens differed morphologically from the previously described species, although the general appearance is the same. The seminal vesicle is relatively larger and more transverse, and the mass of the prestate is relatively smaller. The vitellaria are more anterior, and the vitelline reservoir is larger. The intestinal crura, while variable, are relatively longer and more definitely formed. The anterior half is spinose, while *M. opacus* is described as spineless, and *M. ovatus* is described as spinose throughout. No variation was noted in the arrangement of the spines in these specimens.

The status of the species of this genus in North America is indefinite. It is of interest to note, that while fish have been considered the natural host of *M. ovatus* [considered identical with *M. opacus* by Strandine (Trans. Amer. Mic. Soc. 62: 293-300) and others], this fluke appears to reach its maximum development in a turtle, *Graptemys geographica*. In 355 specimens of *M. ovatus* from 4 *Graptemys*, collected in central Ohio, the gross appearance of the worm was so different as to give the impression of a different species. The uterus was very voluminous and occluded from view all the other reproductive organs, as is the case with the specimens from the raccoon. The uterus stood out in the living specimen; was very dark in color, and extended anteriorly to the acetabulum. In these specimens the anterior end was usually much more attenuated, and the shape was, therefore, not oval, as has previously been considered typical. The eggs of these specimens measured 0.029×0.016 mm, which is intermediate between the measurements given for *M. ovatus* and *M. opacus*. It was not until these worms were sectioned that they were found to be of the same species as those taken from other turtles. Three worms from a fifth specimen of *Graptemys*, and those taken from specimens of *Chelydra* and *Chrysemys* (1946, Rausch, J. Parasitol. 32) were similar, in general, to those described from fish hosts. None of the specimens from Ohio turtles has been spinose.

No North American species of this genus has previously been recorded from a warm-blooded host, although Ochi (1928, Tokyo Iji Shsh. 2578. Biol. Abs. 4: 6043. 1930) records a species of this genus from mammalian hosts in Japan. Evidence is at present insufficient to justify describing the specimens from the raccoon as new, since it is impossible to determine whether the differences are specific, or have been brought about by development in an unusual host animal. It would be very desirable to attempt infection of different animals with metacercariae of *Microphallus ovatus* in order to gain more information concerning host specificity in this group.—ROBERT RAUSCH, Dept. of Bacteriology and Public Health, Michigan State College, E. Lansing, Mich.