

PISCIAMPHISTOMA REYNOLDSI (Paramphistomatidae)
A New Trematode Parasite of Lepomis spp. in Virginia.

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During a recent survey of the helminth parasites of the fish of Albemarle County, Virginia, the authors recovered five specimens of an amphistome trematode from the small intestine of the fishes, *Lepomis macrochirus* Raf. and *L. gibbosus* L. Morphological studies revealed that this worm is closely related to members of the genus *Paramphistomum* Fischöeder, 1901, which are strictly parasites of mammals. Holl (1929) described *Paramphistomum stunkardi* which was the only species of this genus parasitic in fish. Later Yamaguti (1953) erected a new genus, *Pisciamphistoma*, with *P. stunkardi* (Holl, 1929) as the genotype, basing his decision on the criterion that "*Pisciamphistoma* differs distinctly from *Paramphistomum* parasitic in mammals in the possession of a muscular esophageal bulb." The authors' specimens definitely conformed to these generic characteristics.

The type and paratype specimens of *P. stunkardi*, U.S. N.M. Helminth. Coll. Nos. 8059 and 8060, were loaned to the authors by Mr. Allen McIntosh, Animal Disease and Parasite Research Division, Agricultural Research Center, Beltsville, Md., and carefully studied. Although the authors' specimens closely resemble the genotype, they could be consistently distinguished from *P. stunkardi* and hence these specimens are assigned to a new species as *Pisciamphistoma reynoldsi*. The new specific name is given in memory of the late Dr. Bruce D. Reynolds, Professor of Zoology, University of Virginia. All measurements are given in millimeters.

Pisciamphistoma reynoldsi n. sp.

Diagnosis: Elongate amphistome measuring 1.53 long (max. 2.27, min. 1.11); 0.55 wide (max. 0.71, min. 0.44). Anterior sucker terminal, measuring 0.105 - 0.27 by 0.09 - 0.27 (mean, 0.21 by 0.18). No recognizable pharynx; long muscular esophagus, 0.21 in length, terminating in a muscular bulb measuring 0.06 in diameter. Crural bifurcation immediately posterior to esophageal bulb, intestinal caeca extending to near anterior margin of posterior sucker, averaging 0.76 in length. Posterior sucker subterminal, 0.35 - 0.48 by 0.35 - 0.46. Suboval testes lying side by side; left testis 0.06 - 0.19 by 0.06 - 0.14, right testis, 0.16 - 0.27 by 0.06 - 0.09. Respective efferent ducts arising from anterior margins of testes, extending anteriorly to level of caecal bifurcation where they unite to form common vas deferens which

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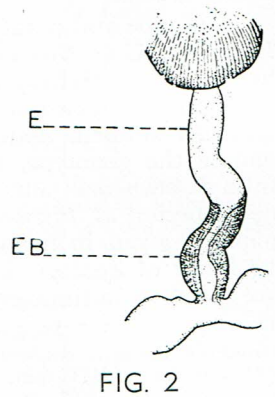
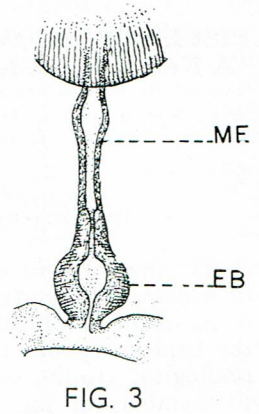
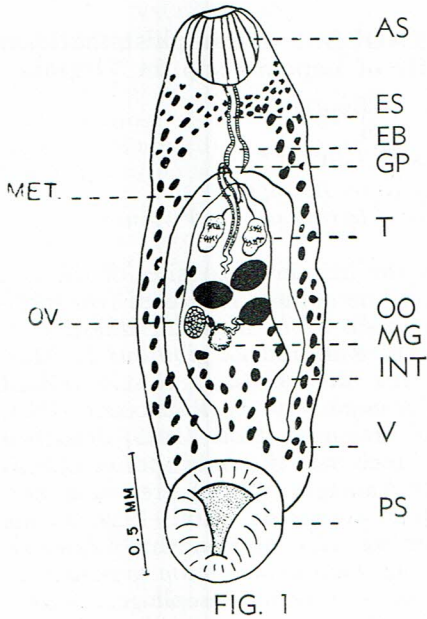


Figure 1. *Pisciamphistoma reynoldsi* n. sp. Ventral view. Camera lucida drawing.

AS: Anterior sucker; EB: Esophageal bulb; ES: Esophagus; GP: Genital pore; INT: Intestinal cecum; MET: Metraterm; MG: Mehlis' Gland; OO: Oötype; OV: Ovary; PS: Posterior sucker; T: Testis; V: Vitelline gland.

Figure 2. Enlarged free-hand drawing of esophagus and esophageal bulb of *P. stunkardi* (Holl, 1929) from specimen designated as U.S.N.M. Helminth. Coll. No. 8060.

Figure 3. Enlarged free-hand drawing of esophagus and esophageal bulb of *P. reynoldsi* n. sp.

continues to genital pore. Subglobular ovary, on right and posterior to level of testes, in posterior half of body, measuring 0.04 — 0.11 by 0.05 — 0.08. Inconspicuous oviduct arising from left anterior margin of ovary leading to inconspicuous oötype which measures 0.007 by 0.008. Uterus leads transversely to left prior to ascending. Long metraterm, measuring 0.37, opening at genital pore which is distinctly situated above level of crural bifurcation on right side of esophageal bulb. Large operculate eggs, 0.09 by 0.04, in upper section of uterine tract. Irregularly shaped Mehlis' gland situated postero-mesial to ovary, measuring 0.58 by 0.66. Vitelline follicles single and large, extracaecal, caecal and intracaecal, extending from lateral margins of anterior sucker to anterior margin of posterior sucker, joining dorso-medially at level of esophagus. Excretory pore ventral, immediately anterior to posterior sucker. Types hosts: *Lepomis machochirus* Raf. and *L. gibbosus* L. Type locality: Albemarle Co., Va. Type specimens: U.S.N.M. Helm. Coll. No. 38249.

Discussion

The dimensions of *P. reynoldsi* agree with those of *P. stunkardi* Holl, 1929; the only deviations were in the dimensions of the suckers which are certainly insignificant as discussed by Cheng (1957) in his work with *Acanthatrium*. The present critical morphological studies revealed that *P. reynoldsi* differs from *P. stunkardi* in possessing an extracaecal genital pore rather than an intercaecal pore as pictured by Holl (1929) and as clearly seen on the type and paratype specimens. In addition, a careful comparison of the esophagus of *P. stunkardi* and *P. reynoldsi* revealed that the former possesses a wider (0.046 mm.) non-muscular esophagus, while the latter possesses a thinner (0.026 mm.) distinctly muscular esophagus. Furthermore, the esophageal bulb of *P. reynoldsi*, measuring 0.06 by 0.09 mm., appears as a distinct spherical muscular structure, while that of *P. stunkardi*, measuring 0.08 by 0.15 mm., is not bulbous in appearance but rather is a muscular portion of the esophagus. An oötype is described together with the ducts of the reproductive organs. The extent of the vitellaria varies within specimens, but they are definitely not limited to the extracaecal areas as described in *P. stunkardi* by Yamaguti (1953).

The authors agree with Yamaguti (1953) in transferring this piscine species to *Pisciamphistoma* since the presence of the unusually long esophagus and esophageal bulb and the conspicuous absence of a pharynx all contribute to the differentiation between this genus and *Paramphistomum*. However, the extra-cecal genital pore of *P. reynoldsi* suggests a close relationship between the two genera since most members of *Paramphistomum* possesses extracaecal genital pores. The new species represents the second member of *Pisciamphistoma* to be reported, both species being parasites of fish.

Literature Cited

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