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TWO NEW PARASITIC FLATWORMS

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In studying the parasites of Wisconsin fishes two new species have been discovered—a primitive tapeworm and a trematode. These are described in this paper.

CAROPHYLLAEUS O. F. Müller

Characteristics of genus: The representatives of this genus, like other Cestodaria, resemble trematodes in being without proglottids and are like cestodes in lacking an enteron. They are elongated, flattened, and possess a primitive scolex. A caudal appendix is present in larval forms but is lacking in adults. The genital pore is ventral, median, and near the posterior end. The uterus is made up of rosette-shaped coils and opens with the vagina into a genital atrium.

Lühe (1899) classifies the Carophyllidae as the first family under the order Pseudophyllidea. Other authors (Ward and Whipple, 1918, p. 429) put them in the subclass Cestodaria as distinct from the Cestoda.

Carophyllaeus laruei, new species

Type Specimen: Cat. No. 197, Museum of Zoology, University of Michigan; taken from *Catostomus commersonii* Forster, Lake Mendota, Wisconsin, August 22, 1919; M. E. Lamont, Collector.

Description: The body is oblong-ovate, flattened dorsoventrally, and measures 7 mm. by .8 mm. The anterior end is unarmed, has a poorly developed adhesive organ imperfectly set off as a scolex from the rest of the body. This primitive scolex has four poorly defined suckers with an obscure terminal disk at the anterior end. The body is not divided into proglottids. There is no trace of a digestive system.

The general arrangement of the reproductive system resembles that of other Carophyllaeids; there being no duplication of genitalia, merely a single set of organs. Aside from the poorly developed suckers, the anterior fifth of the body is without special organs. Three-fifths of the body length is occupied by small testes arranged in about two rows along the median line between the lateral vitelline glands. The vitelline glands extend in a single row along each side of the middle of the body to within about a fifth of the length from each end. They are elongated, oval in form and are readily distinguished from the testes, which are irregular and somewhat lobate.

In the posterior fifth of the body are found the cirrus, uterus, and ovary. The vas deferens leading from the testes appears just posterior to the area occupied by the testes. It coils upon itself several times and ends in a well-developed cirrus. The ovary is posterior to the testes; it is a lobate organ having the form of a capital H. The uterus coils between the arms of the ovary, extends nearly to the posterior end of the body, then anteriorly to the genital pore which is immediately posterior to the cirrus.

This species is similar to *Carophyllaeus mutabilis* Rudolphi. In *Carophyllaeus mutabilis*, however, the vitelline glands and

testes are intermingled and occupy the same regions while in *Carophyllaeus laruei* the testes and vitelline glands occupy separate areas—the vitelline glands being immediately lateral to the numerous small irregular testes.

One sucker caught in Green Lake, Wisconsin, August 25, 1919, contained twenty-four adult *Carophyllaeus laruei*. Two suckers caught in Lake Mendota, Wisconsin, were found to be infected with this same species of *Carophyllaeus*.

Larvae of *Carophyllaeus laruei* were found in the peritoneum of *Roccus chrysops* (Rafinesque) in Lake Mendota. These larval forms measure from .5 to 1 mm. in length and .2 to .3 mm. in width. *Carophyllaeus* larvae are characterized by a tail-like structure projecting from the anterior end at the point where the scolex is invaginated.

PLAGIORCHIS Lühe

Characteristics of genus: The body is elongate oval, and covered with minute spines. Pharynx and esophagus are present and of approximately equal length, crura reach to posterior end. Genital pore is anterior to acetabulum. Cirrus sac curves around and reaches posterior margin of acetabulum. Testes are round to oval and are separated by uterine braches. No receptaculum seminis. Ovary spherical, at inner end of cirrus sac. Vitellaria have many closely crowded follicles usually reaching posterior end. Eggs numerous. Found in intestine of insectivorous vertebrates, chiefly birds. Infection probably through insects.

Plagiorchis corti, new species

Type specimen: Cat. No. 198, Museum of Zoology, University of Michigan; taken from intestine of *Schilbeodes gyrinus* (Mitchill) from Lake Mendota, Wisconsin, September 24, 1919; A. S. Pearse, collector.

Description: This distome has a body which is elongated and slightly flattened; length 1 mm., width .3 mm. A short esophagus and pharynx are present. The coeca branch directly from the pharynx and extend to the posterior end of the body.

The genital pore is median and immediately anterior to the ventral sucker. The genital bursa is elongated, slender, and cylindrical, it lies dorsally and extends posterior to the margin of the ventral sucker. The testes are posterior to the ovary, they are oval in form and are situated obliquely.

The ovary is found slightly posterior and to the left of the ventral sucker. It is oval and is about one-half the diameter of a testis. The uterus coils extensively, winding between the testes, to the posterior end of body, then anteriorly to the genital pore. Many eggs are present in the uterus.

The vitelline glands extend from the region of the pharynx to the posterior testis. They are arranged in a line of single follicles lateral to coeca and do not extend across the body.

This species is similar to *Plagiorchis notabilis* Nicoll, found in the intestine of *Anthus obscurus* (rock pipit). The genus *Plagiorchis* has not been reported from fishes. It is found chiefly in birds. Perhaps the life-cycle may alternate between birds and fishes; this remains for further research.

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PLATE I

FIG. 1.—*Plagiorchis corti*: adult seen from ventral surface *as*, anterior sucker; *at*, anterior testis; *ci*, cirrus; *co*, coeca; *es*, esophagus; *go*, genital opening; *ov*, ovary; *ph*, pharynx; *ps*, posterior sucker; *pt*, posterior testis; *ut*, uterus; *vt*, vitelline glands.

FIG. 2.—*Carophyllaeus laruei*: adult seen from ventral surface *ci*, cirrus sac; *cu*, coiled uterus; *ov*, ovary; *sx*, scolex; *ts*, testes; *vd*, vas deferens; *vt*, vitelline glands.

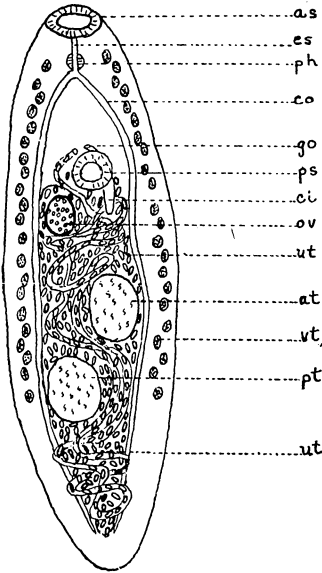


Figure 1

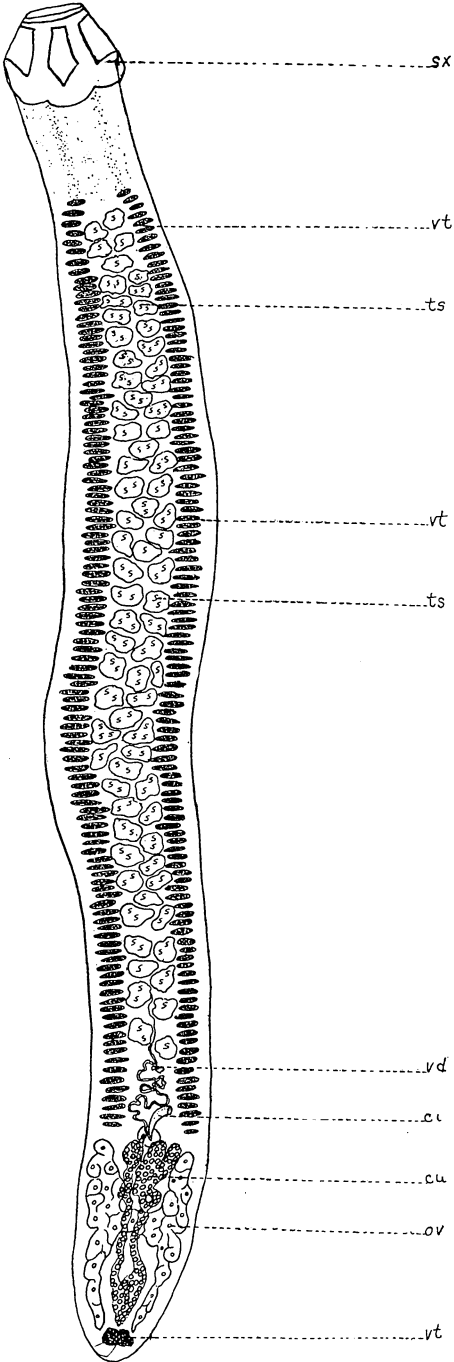


Figure 2

