FIRST OCCURRENCE OF THE LEECH, *ACTINOBDELLA TRIANNULATA* IN ILLINOIS

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ABSTRACT.—The first occurrence of the leech, *Actinobdella triannulata* Moore, in Illinois is reported, along with a new host record in the United States. A full describtion of this leech is included. The literature on this fish parasite is vague and contains a number of discrepancies.

According to previous records, *Actinobdella triannulata* Moore, is a permanent fish parasite although on one occasion it has been reported as free-living. Moore (1924), who first described this species, reported that several were recovered from mud, sand and gravel dredgings taken from Lake Nipigon, Ontario, Canada. The presence of vertebrate blood in some of the specimens indicated they had been parasitic. *A. triannulata* is of special interest for it and *Placobdella pediculata* Hemingway are the only leeches of the Family Glossiphonidae (Rhynchobdellida) which are permanent parasites on fishes.

On June 18, 1971, eight specimens of this unusual and rare leech were collected from four hogsuckers, *Hypentelium nigricans* (LeSueur). The collection location was Owens Creek in the southwest quarter of Section 27, township 42 north, Range 3 East, DeKalb County, Illinois. Owens Creek flows north into the south branch of the Kishwaukee River, which flows into the Rock River, a tributary of the Mississippi.

The new specimens were attached to the inside of the opercula of the fish. Blood oozed profusely from the area of attachment when the leeches were removed. Closer inspection showed deep wounds, circular to bulbous cavities, caused by penetration and anchoring of the caudal sucker within the opercular tissue. The depth of these wounds, about 1.5 mm, indicated the leeches had probably parasitized the hogsuckers for a considerable time. A short distance from and around these holes were also smaller perforations which undoubtedly were sites where the leech had opened wounds with its proboscis and sucked blood and body juices.

Collections of fishes from the same location at a later date yielded three more specimens, from *H. nigricans*, and one from the common white sucker, *Catostomus commersoni* (Lacépède). All leeches were found on mature, good-sized fishes, the smallest being 25 cm standard length (about 10 inches).

A. triannulata has never been reported from Illinois, nor has it been recorded anywhere as a parasite of *H. nigricans*. Previous host records, though, show that it has a predilection for parasitizing fishes of the Family Catostomidae. At the present, records indicate that *A. triannulata* has been taken from: *Catostomus fecundus*, Wyoming, Bangham (1951); *C. catostomus*, *C. macrocheilus*, British Columbia, Bangham and Adams (1954); *C. commersoni*, Ontario, Meyer and Moore (1954); *C. catostomus*, *C. commersoni*, Lake Huron, Bangham (1955); *C. commersoni*, New Hampshire (U. S.) and Ontario, Meyer (1962).

DESCRIPTION OF *A. triannulata*

To the authors' knowledge this is the first time living specimens have been used in describing this species. Moore (1924) based his original description of this species on preserved specimens.

Size: small, normally extended living forms range from 4 mm to around 10 mm long (about three-eighths to less than one-half inch); unextended forms and most preserved specimens tend to be somewhat smaller due to abnormal contraction.

Shape and form (Fig. 1A): generally more ovoid and broadly blunt at anterior end, rather than flattened, roughly "spindly-shaped" or pear-shaped as is usual of glossiphonid leeches. The live specimens taken from the host were gorged with blood; they were convex dorsally, somewhat flattened ventrally. They tended to roll into a ball, a typical behavioral characteristic of several other glossiphonids.

Caudal sucker (Fig. 1B): in living forms bulbous and cup-shaped, considerably wider than the short, obvious sucker peduncle but narrower than posterior region of body; when preserved and sucker has been spread and flattened, it is large, nearly as wide as widest part of the body; inside lip of sucker possesses about 30 transparent papillae arranged concentri-

FIGURE 1.—*Actinobdella triannulata*. A, entire animal, B, caudal sucker.

cally; these papillae appear conical or finger-like, and are clearly evident in well-fixed specimens in which the sucker has been partially spread open and preserved in its characteristic bulbous shape; otherwise, they are often vague and difficult to see; one must use 20-30 magnifications and proper illumination to see them clearly.

Eyes: one pair, paramedial (as in several other glossiphonids), on segment III, dark pigmented and cupped.

Coloration: in living, adult forms, dark green to brown; in young specimens, lighter green to light brown and somewhat transparent; preserved specimens vary with killing and preserving techniques and length of time preserved; they range from light to dark greens or browns; dorsum with about 30 faint brownish, narrow, longitudinal lines, their clarity variable, usually evident but sometimes vague in living and recently preserved specimens, usually waning to obsolete in long-time preserved specimens.

Papillae (Fig. 1A): dorsum with conical, sharp-pointed papillae in five longitudinal rows, each papilla of the series being located segmentally; the median row the most obvious, the intermediate and submarginal rows less prominent; also arranged similarly are papillae which protrude marginally or dorso-marginally; the rows of papillae are clearly evident in living and well-fixed, naturally extended specimens, vague to indiscrete in poorly fixed and abnormally extended or flattened specimens.

Annulation: 3-annulate (as its name suggests); in the mid body region dorsally and ventrally the intersegmental furrows are very distinct, the intervening annular furrows less distinct and thus the annuli appear in distinct groups of three.

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