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## A Simplified Key To The Leeches of Minnesota

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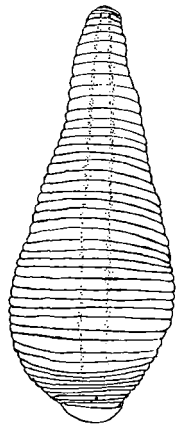
ZOOLOGY

A SIMPLIFIED KEY TO  
THE LEECHES OF MINNESOTA

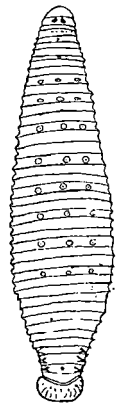
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- I. Mouth small, pore-like in disc of anterior sucker through which a muscular pharyngeal proboscis is protruded when feeding. . 1  
Mouth large, anterior sucker forming rounded lips; no protrusible pharynx . . . II
1. One pair of eyes . . . . . 2  
More than one pair of eyes . . . . . 7
2. Eyes distinctly separated . . . . . 3  
Eyes confluent, or very close together . . 6
3. Body more or less flattened . . . . . 4  
Body rounded . . . . . 5
4. (a) Slender, translucent; about same size as *H. stagnalis*; eyes widely separated on somite IV; skin smooth; no nuchal papillae as on *H. stagnalis* . . . . *Helobdella nepheloidea* (Graf)  
(Fig. 1)  
Scavenger, also feeds on blood of vertebrates.
- (b) Broad; gray or brown; three rows of papillae on dorsum; transverse rows of white dots on annulus a2 . . . . .  
. . . . . *Helobdella fusca* (Castle)  
(Fig. 2)  
Feeds chiefly on snails; eggs carried in capsules on ventral surface.

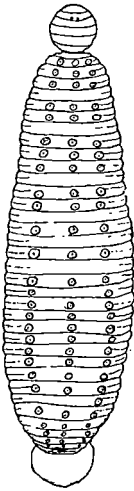


*Helobdella nepheloidea*  
Figure 1



*Helobdella fusca*  
Figure 2

<sup>1</sup>The author wishes to acknowledge the financial assistance of the National Science Foundation in the above study as well as of the Graduate School, University of Minnesota.



*Placobdella montifera*  
Figure 3

- (c) Anterior segments constricted from rest of body so as to form a "head"; dorsum marked by three strongly papillated keels; much branched gastric caeca . . . *Placobdella montifera* (Moore) Feeds chiefly on frogs; eggs carried on ventral surface.

(Fig. 3)

5. Suckers weakly developed, small, or not much larger in diameter than body at its greatest width and usually not distinctly separated from rest of body.

- (a) Body thin, devoid of pigment; eyes at posterior half of sucker . . . . .  
 . . . . . *Illinobdella alba* (Meyer)

(Fig. 4)

Has been collected from yellow perch.



*Illinobdella alba*  
Figure 4



*Illinobdella richardsoni*  
Figure 5

- (b) Eyes present or absent; if present they are located on posterior half of spatulate sucker; clitellum rounded anteriorly and posteriorly by slight constrictions; anal opening at about 15 rings anterior to posterior sucker; ratio about 15:1 . . . . .  
 . . . *Illinobdella richardsoni* (Meyer)

(Fig. 5)

Has been collected from brown bullhead, smallmouth bass, black crappie.



*Illinobdella elongata*  
Figure 6

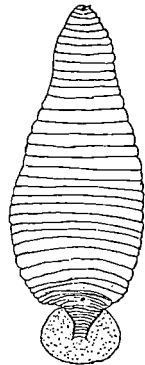
- (c) Body divided into two regions, a smaller anterior trachalosoma region occupying the first X or XI somites, and a larger posterior urosomal region; eyes on posterior half of spatulate sucker . . . . .  
 . . . . . *Illinobdella elongata* (Meyer)

(Fig. 6)

6. Eyes confluent, or very close together; body flattened. Has been collected from white crappie.

- (a) Posterior sucker distinctly supported by a slender pedicle; body rather high dorsally; highly contractile; color brownish; no dorsal papillae . . . . .

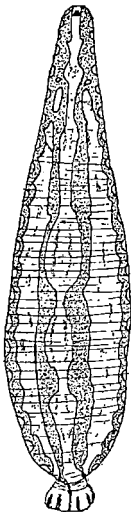
*Placobdella pediculata*  
(Hemmingway)



*Placobdella pediculata*  
Figure 7

(Fig. 7)

Little is known of its habits. Has been collected from gills of sheep-head.



*Placobdella parasitica*  
Figure 8

- (b) Body depressed; few papillae; integument opaque; color variable, light background with darker brown pattern; longitudinally striped ventrally; 3-4 inches long . . . . .  
 . . . . . *Placobdella parasitica* (Say)

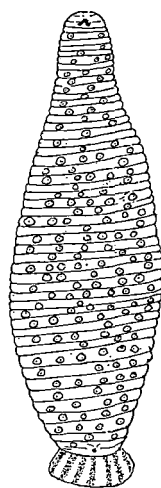
(Fig. 8)

Feeds chiefly on snapping turtles; carries eggs on ventral surface.

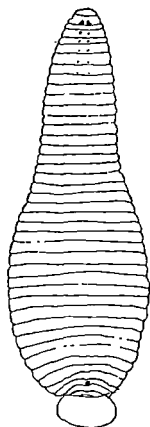
- (c) Numerous large dermal papillae on dorsum giving it a rough appearance; no ventral striping; over 2 inches long; integuments translucent .....

(Fig. 9)

Feeds on various animals.



*Placobdella rugosa*  
Figure 9



*Placobdella hollensesis*  
Figure 10

- (d) Eyes followed by a series of paired eye-like structures separated by 1 or 2 segments; papillae mostly at posterior end; seven pairs of gastric caeca ....  
.. *Placobdella hollensesis* (Whitman)

(Fig. 10)

Feeds on fresh water tortoise.

- (e) Posterior sucker very large and provided with a marginal circle of contractile papillae; color greenish ....  
*Actinobdella iniaquannelata* (Moore)

(Fig. 11)

Habits not well known.



*Actinobdella iniaquannelata*  
Figure 11



*Helobdella stagnalis*  
Figure 12

- (f) Color pale-brown, gray, pink, green; less than 1 inch long; very contractile; dark brown nuchael papillae on dorsum of somite VIII . . . . .  
 . . . . .*Helobdella stagnalis* (Linn.)

(Fig. 12)

Scavenger, occasionally feeds on invertebrates, dead or alive; eggs carried on ventral surface in sac.

7. Two pairs of eyes . . . . . 8  
 Three pairs of eyes . . . . . 9  
 Four pairs of eyes . . . . . 10  
 8. (a) Anterior sucker possesses two pairs of well defined, crescent-shaped eyes; body devoid of pigmentation; posterior sucker eccentrically placed, strongly discoid . . . . .  
 . . . . .*Piscicola punctata* (Verrill)



*Piscicola punctata*  
Figure 13

(Fig. 13)

Has been collected from walleye pike.

- (b) Eyes arranged in the form of a tripe-zoid; eccentrically attached posterior sucker with 10-12 ocliform spots near margin; yellowish colored body with brownish stellate flecks depressed in five longitudinal rows . . . . .  
 . . . . .*Piscicola milneri* (Verrill)

(Fig. 14)

Has been collected from whitefish and smelt.

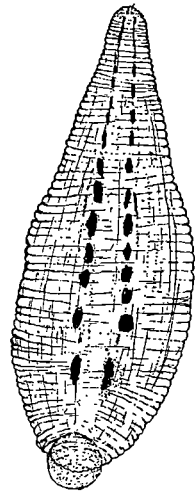


*Piscicola milneri*  
Figure 14

9. Eyes arranged in a row on somites II, III, IV, first pair in contact; two parallel pigmented lines both above and below; greenish to brown; length about 1 inch . . . . .  
 . . . . . *Glossiphonia complanata* (Linn.)

(Fig. 15)

Feeds on snails and other invertebrates.  
 Eggs carried on ventral surface.



*Glossiphonia complanata*  
 Figure 15



*Theromyzon occidentale*  
 figure 16

10. Eyes conspicuous near middle; body gelatinous, flat.

- (a) Eyes situated on somites II to V, first pair smallest and very close together, third pair largest, first and second directed forward and outward, the third and fourth backward and outward; upper lip mobile; numerous scattered sense organs over gelatinous body; 1 to 2 inches in length . . .  
 . . *Theromyzon occidentale* (Verrill)

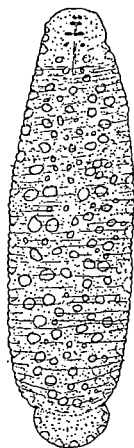
(Fig. 16)

Feeds on water fowl. May be found under stones and sticks.

- (b) Eyes arranged as in *T. occidentale*; body greenish, flecked with brown; semigelatinous; size 1 inch long by a third of an inch broad . . . . .  
 . . . . . *Theromyzon rude* (Baird)

(Fig. 17)

Feeds on water fowl.



*Theromyzon rude*  
 Figure 17

II. Mouth large, sucker appearing as its rounded lips; pharynx not protrusible.

1. (a) Three pair of eyes; one pair on somite II, two pairs on sides of annulus IV ..... 2
- (b) Three or four pairs of eyes, first pair chiefly on somite III ..... 3
- (c) Four pairs of eyes of equal size ... 4
- (d) Four pairs of eyes, first pair largest 5
- (e) Five pairs of eyes arranged in an arc on somite II to VI ..... 6
  
2. First pair of eyes not conspicuously larger and situated close together on somite II and directed forward; others more widely separated on sides of somite IV and looking backward; mature animals plumbus to light brown, lighter ventrally; young specimens nonpigmented; two to four longitudinal lines at middle of back ..... *Erpobdella punctata* (Leidy)

(Fig. 18)

Scavenger, or on aquatic insects, may attack fishes; may eat its own species.



*Erpobdella punctata*  
Figure 18

3. Resembles *Erpobdella punctata* except that the first pair of eyes is conspicuously larger and lies chiefly in somite III; body depressed posteriorly, but rounded anteriorly; mouth large with lips broadly rounded. Very large posterior sucker .....  
..... *Dina fervida* (Verrill)

(Fig. 19)

Food consists of worms and insect larvae.



*Dina fervida*  
Figure 19



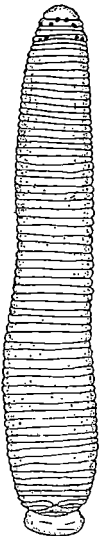
4. Anterior two pairs of eyes situated nearly side by side on somite II, or the more lateral pair may be slightly more caudad on furrow II/III, both directed laterally; other two pairs close together at sides of oral annulus IV, usually on posterior part; mouth smaller than *E. punctata*; ground color generally gray, thickly mottled on entire dorsum; hard and firm . . . . .  
.....*Nephelopsis obsura* (Verrill)

(Fig. 20)

Feeds on aquatic insects.



*Nephelopsis obsura*  
Figure 20



*Dina parva*  
Figure 21

5. Usually with four conspicuous eyes though anterior lateral may be lacking; anterior eyes larger than posterior with bases almost in contact; posterior pair smaller and are directed backward and lateral . . . . .  
.....*Dina Parva*

(Fig. 21)

Little is known of its habits.



*Macrobdella decora*  
Figure No. 22

6. (a) Dorsum marked with median red and marginal black metameric spots; genital pores separated by 5 annuli . . . . .  
 . . . . . *Macrobdella decora*  
 (Fig. 22)

This is the American blood sucker which will attack almost any animal.

- (b) Color variable, usually brown more or less thickly flecked with black blotches; 12-16 teeth in each jaw . . . . .  
 . . . . . *Haemopsis marmorata*  
 (Fig. 23)

Semi-aquatic, living in mud beside ponds, pools and lakes; feeds on insects, earthworms, aquatic insects and their larvae.



*Haemopsis marmorata*  
Figure 23



*Haemopsis lateralis*  
Figure 24

- (c) More slender than *H. marmorata*; small posterior sucker; color nearly uniform with median dorsal stripe; paler marginal stripe; few or no blotches . . . . .  
 . . . . . *Haemopsis lateralis*  
 (Fig. 24)

Food habits much like *H. marmorata*.

- (d) Color, grayish background with close or distant blotches of black; ventral surface lighter than dorsal; 6 to 12 inches long; no teeth . . . . .  
. . . . . *Haemopsis grandis*

(Fig. 25)

Feed on small snails and clams.



*Haemopsis grandis*  
Figure 25



*Haemopsis plumbeus*  
Figure 26

- (e) Dorsal slightly or not blotched; ventral with no blotches and not lighter than dorsal; rufus or orange marginal stripe . . . . .  
. . . . . *Haemopsis plumbeus*

(Fig. 26)

Nothing distinctive is known of its food habits.