**AN IDENTIFICATION KEY TO ANTARCTIC FISH LEECHES (HIRUDINEA: PISCICOLIDAE)**

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**Abstract.** The revised list of Antarctic fish leeches (Hirudinea: Piscicolidae) is presented. It includes 21 species belonging to 13 genera. The article contains identification keys to subfamilies, genera and species, short descriptions, information on hosts and geographical distribution of leeches and images of 20 species.

**Key words:** Antarctica, Hirudinea, Piscicolidae, fish leeches

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### Key to the Subfamilies of the Family PISCICOLIDAE

The keys are based on characters peculiar to Antarctic leeches and are not intended for identifying any taxa beyond the Antarctic region.

1. **Externally visible pulsatile vesicles absent**
2. **One pair of externally visible pulsatile vesicles per somite**

#### Subfamily Piscicolinae

- **Body with large tubercles; annuli distinctly divided; pulsatile vesicles subepidermal.**
- **Body with small tubercles and papillae or smooth; annuli indistinctly divided; pulsatile vesicles absent.**

#### Subfamily Pontobdellinae

- **Number of annuli in complete somite less than 12, tubercles of varying size; not very large leeches.**

#### Subfamily Platybdellinae

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**Introduction**

Leeches of the Antarctic Seas are restricted to the family Piscicolidae, the order Rhynchobdellida. Marine fish leeches are ectoparasitic on fishes and very few species presumably parasitize on Crustaceans and Pycnogonids. The Antarctic Seas have the diverse and relatively well known fauna of leeches studied by the outstanding zoologists: C. Badham, A. Brinkmann, E.M. Burreson, R. Dollfus, V.M. Epstein, W.A. Harding, M.C. Meyer, J.P. Moore, L.R. Richardson, R.T. Sawyer, L. Szidat.

However the Antarctic leech fauna can be more diverse than considered before. This study is aimed at stimulating the interest of marine zoologists in the fish leeches.

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Subfamily Platybdellinae
1b Complete somite 12-annulate with equal large conic tubercles; very large leeches

............................................................................................................ Genus Megaliobdella (M. szidati) (fig. 1)

2a Large or medium-sized leeches, three peak eye-like spots on anterior sucker, posterior crop caeca totally fused, accessory glands absent.............................. Genus Pontobdella (P. tasmanica)

2b Not large leeches, eye-like spots without peaks, posterior crop caeca nontotally fused with fenestrae, accessory glands present ................................................................. Genus Moorebdellina

Key to the Species of the Genus Moorebdellina

1a Complete somite 2-annulate .............................................................. M. biannulata (fig. 2)

1b Complete somite more than 2-annulate .............................................. 2

2a Complete somite 4-annulate; A₁ with 6 papillae; A₂, B₅, B₆ with 8 papillae

................................................................................................. M. rugosa (fig. 3)

2b Complete somite 3-annulate .............................................................. 3

3a Annuli A₁ and A₃ with many small tubercles, A₂ with 4 papillae

................................................................................................. M. uschakovi (fig. 4)

3b Annulus A₁ with 6 papillae, A₂ and A₃ with 8 papillae ........................ M. meyeri (fig. 5)

Key to the Antarctic Genera of the Subfamily Platybdellinae

1a Body sharply divided into trachelosome and urosome, wide and flattened................................. 2

1b Body not sharply divided into trachelosome and urosome, not wide and not flattened.................. 3

2a Eye, eye-like spots, ocelli absent; tegument opaque; posterior crop caeca absent

........................................................................................................ Genus Epsteinia (E. alba) (fig. 6)

2b 2 eye-like spots on anterior sucker; tegument translucent with pigment cells; posterior crop caeca nontotally fused with 4 fenestrae ........................................ Genus Austrobdella (A. translucens) (fig. 7)

3a Body with marginal flanges .................................................................................. Genus Pleurobdella

3b Body without marginal flanges ................................................................................. 4

4a 10-12 pairs of tubercles on urosome; anterior sucker with eye-like spots; posterior sucker small,

facing directly posteriorly ......................................................................................... Genus Glyptonotobdella (G. antarctica) (fig. 8)

4b Tubercles absent; anterior sucker without eye-like spots; posterior sucker medium-sized or large,

facing ventrally ........................................................................................................ Genus Cryobdella

Key to the Species of the Genus Pleurobdella

1a Anterior sucker small, body with small tubercles ........................................ P. varituberculata (fig. 9)

1b Anterior sucker large, body with small papillae ................................................. P. australis (fig. 10)

Key to the Species of the Genus Cryobdella

1a Posterior sucker in complicated form, large, possesses two parts which just one to ones

......................................................................................................................... C. ljadovi (fig. 11)

1b Posterior sucker round form, medium-sized or small .............................................. 2

2a Ratio of posterior sucker width to maximum body width >2 ........................................ C. pallida (fig. 12)

2b Ratio of posterior sucker width to maximum body width ≤1 ..................................... 3

3a Posterior sucker centrally attached ......................................................................... C. levigata (fig. 13)

3b Posterior sucker eccentrically attached .................................................................... C. antarctica (fig. 14)

Key to the Antarctic Genera of the Subfamily Piscicolinae

1a Body wide and flattened ......................................................................................... 2

1b Body long, cylindrical or subcylindrical ..................................................................... 3

2a Pulsatile vesicles well developed; trachelosome and urosome are of the same length; surface of
Anterior sucker smooth, 1 pair of eyes, posterior sucker without ocelli

Genus *Trachelobdellina* (*T. glabra*) (fig. 15)

2b Pulsatile vesicles small; trachelosome no longer than urosome; anterior sucker with papillae and 2 groups of ocelli; posterior sucker with ocelli; 2 groups of ocelli on first annulus of trachelosome

Genus *Trulliobdella*

3a Posterior crop caeca absent

Genus *Galatheabdella* (*G. bruuni*) (fig. 16)

3b Posterior crop caeca present

4a Anterior and posterior suckers small; facing directly posteriorly; prepuce present

Genus *Trachelobdella* (*T. bathyrajae*) (fig. 17)

4b Anterior and posterior suckers large, facing ventrally; prepuce absent

Genus *Nototheniobdella* (*N. sawyeri*) (fig. 18)

**Key to the Species of the Genus *Trulliobdella***

1a Body yellowish gray, posterior sucker with 7 ocelli

* T. capitis* (fig. 19)

1b Body without pigment, semitransparent; posterior sucker with 15 ocelli

* T. bacilliformis* (fig. 20)

**SHORT DESCRIPTIONS OF SPECIES**

**Subfamily Pontobdellinae Llewellyn, 1966**

*Kentobdella tasmanica* Hickman, 1947.


![Fig. 1. Megaliobdella szidati](reproduced and modified from © 1990 American Geophysical Union. Reproduced by permission of American Geophysical Union and E.M. Burreson, Virginia Institute of Marine Science. M.C. Meyer and E.M. Burreson, Some leeches (Hirudinea: Piscicolidae) of the Southern oceans. Biology of the Antarctic Seas XXI, Antarctic Research Series, V. 52, p 229)

*Megaliobdella szidati* Meyer at Burreson, 1990. Very large leeches: up to 340 mm in length and 13 mm in width. Body of preserved specimen is light brown. Host data: all specimens were collected free-living. Distribution: 77°42.0'S, 167°22.0'W, Ross Sea - Pacific sector of the Antarctic region.


Moorebdellina meyeri A. Utevsky, 1997. Not large leeches. Up to 23.5 mm in length and 1.5 mm in width. Anterior sucker with two pigmented area around eye-like spots. Body with light pigment bands. Host data: all specimens were collected free-living. Distribution: S. Orkney Is.- Atlantic sector of the Antarctic region.
Subfamily Platybdellinae Epstein, 1970


Austrobdella translucens Badham, 1916. Small leeches. Up to 13 mm in length and 3.25 mm in width. Skin semitransparent with brownish-red, yellow and purple individual pigment cells. Host data: Sillago ciliata - Pacific Ocean, Notothenia sp. and Chaenocephalus sp. in the Antarctic region. Distribution: Southern Coast of Australia; Kerguelen Is. - Indian sector of the Antarctic region.


Cryobdella ljadovi Epstein at A.Utevsky, 1994. Small leeches. Up to 13.4 mm in length and 2.2 mm in width. Host data: Muraenolepis marmoratus and Muraenolepis microps (on gill rakers). Distribution: Kerguelen coastal waters - Indian sector of the Antarctic region; S. Orkney Is. - Atlantic sector of the Antarctic region.

Cryobdella pallida A.Utevsky, 1997. Small leeches. Up to 9 mm in length and 0.7 mm in width. Host data: Notothenia squamifrons (on gills). Distribution: Crozet I.- Indian sector of the Antarctic region.
Cryobdella levigata Harding, 1922. Syn. Platybdella levigala (Harding, 1922). Not large leeches. Up to 29 mm in length and 3.5 mm in width. After alcohol fixation brownish-grey or fully unpigmented. Host data: Trematomus hansoni, T. bernacchii. Distribution: Ross Sea (Victoria Land) - Pacific sector of the Antarctic region; Davis Sea, Mawson Sea, Kerguelen Is. - Indian sector of the Antarctic region.


Subfamily Piscicolineae Johnston, 1865


Galatheabdella bruuni Richardson et Meyer, 1973. Large leeches. Up to 90 mm in length, 5 mm in width. No dark pigment and pattern, Pinkish individual large cells visible trough the body wall, other body wall accepting this area dusky white. Host data: Coryphaenoides sp., Bassozetus sp. in Tasman Sea; in Antarctic no host data. Distribution: Bransfield Str. - Atlantic sector of the Antarctic region; Tasman Sea - Pacific Ocean.
Fig. 17. *Trachelobdella bathyrajae*

*Trachelobdella bathyrajae* Meyer et Burreson, 1990. Small leeches. Up to 13 mm in length and 2 mm in width. 5 yellowish bands on trachelosome and 13 band of same color on urosome, annuli B4 and B5 unpigmented. Host data: collected from *Bathyraja maccaini*. Distribution: S. Shetland Is. - Atlantic sector of the Antarctic region.

Fig. 18. *Nototheniobdella sawyeri*

*Nototheniobdella sawyeri* A.Utevsky, 1993. Medium-sized leeches. Up to 60 mm in length and 5 mm in width. Segmental bands present. Host data: *Neopagetopsis ionah* (on body, mouth and gill cavity), *Cryodraco antarcticus*, *Chaenodraco wilsoni*, *Chionodraco kathleenae*, *C. hamatus*, *Parachaeonichthys georgianus*, *Harpagiferidae* (?). Distribution: Palmer Coast, S. Shetland Is., Filchner Ice Shelf (Weddell Sea) - Atlantic sector of the Antarctic region; Clarie Coast - Indian sector of the Antarctic region; Scott Coast, Franklin I. (Ross Sea) - Pacific sector of the Antarctic region.

Fig. 19. *Trulliobdella capitis*


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