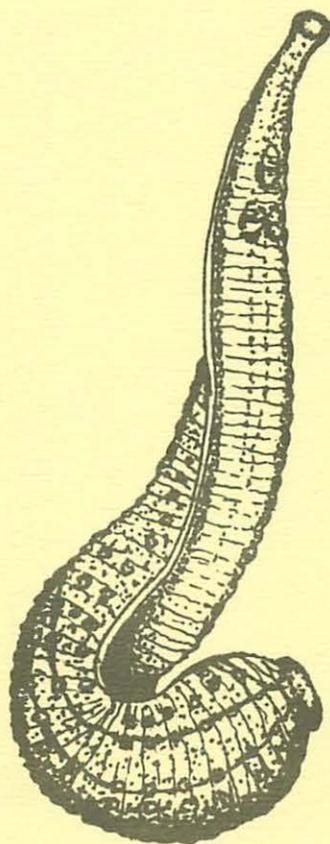


Curatorial Report Number 41

Nova Scotia Museum  
1747 Summer St.  
Halifax, Nova Scotia, Canada

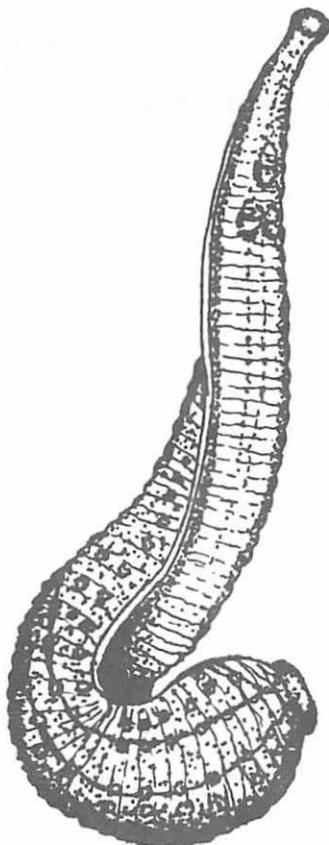
Leech  
(Hirudinoidea)  
Records  
for the  
Province of  
Nova Scotia

By Jan M. LeBlanc  
and R. Paul McClung  
March 1979



# Leech (Hirudinoidea) Records for the Province of Nova Scotia

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NOVA SCOTIA MUSEUM

*Curatorial Reports*

The *Curatorial Reports* of the Nova Scotia Museum contain information on the collections and the preliminary results of research projects carried out under the program of the museum. The reports may be cited in publications but their manuscript status should be clearly indicated.

Abstract

This report contains a catalogue of the leeches (Hirudinoidea) in the Nova Scotia Museum collection and previously published records of leeches found in Nova Scotia. Brief descriptions of the distribution, habitat and diet of each species are also included.

## INTRODUCTION

Between the years 1972 and 1975, extensive leech collecting was carried out by the science section staff of the Nova Scotia Museum. During that time, the museum's leech collection was significantly expanded from its previously inadequate state. R. Paul McClung, then a curatorial assistant of the museum, collected and identified the majority of specimens and had several determinations confirmed by Dr. Ronald W. Davies of the Department of Biology at the University of Calgary in Alberta. A curatorial report entitled "Leeches of the St. Mary's River Watershed and Leech Records of the Nova Scotia Museum" by R. Paul McClung was published in 1974 and as a further result of his work an in-depth study on the leeches of Nova Scotia was undertaken. This project, written by Mr. McClung, as yet remains in manuscript form due to new information on leeches and changes in accepted nomenclature since its preparation.

Since 1975, the museum has acquired a number of additional leech specimens but these, for the most part, remain unidentified due to the fact that the museum no longer has on its staff anyone presently qualified to determine them.

Included in this report is a complete listing of the freshwater leeches in the Nova Scotia Museum collection as well as previously published records of leeches found in Nova Scotia. For interest, descriptive passages on distribution, habitat and food preferences of each species are also included.

For each sample, the number of specimens collected is indicated in parentheses. The symbols "?" and "n" represent an unknown or an uncounted number of specimens, respectively.

## PRESENT STATUS

As of March 1979, the Nova Scotia Museum has, in its collection, approximately 1200 leech specimens, including all species known to occur in the province with the exceptions of *Batracobdella paludosa*, *Piscicola punctata*, and *Piscicola zebra*. Table 1 (p. 25) shows the recorded presence or absence of each species in the eighteen counties of Nova Scotia and Sable Island, but this reflects collecting effort and in no way indicates the actual distribution of leeches in the province.

Collectors

AHL	A. H. Leim	JEHM	J. E. H. Martin
AGH	A. G. Huntsman	JG	John Gilhen
AMR	A. M. Rick	JL	J. Lewin
BAM	B. A. Milligan	JM	J. McNeill
BH	B. Hart	JS	J. Silver
BK	B. King	JSB	J. S. Bleakney
BM	B. Merdsoy	JWR	J. W. Reynolds
BW	Barry Wright	KM	K. Moore
CG	Christopher Grantham	LAP	L. A. Purcell
CLM	C. L. Moore	LD	L. Duncanson
DB	David Blake	LJ	Lynn Johnson
DBu	D. Burleson	LKP	L. K. Pawlowski
DCF	D. C. Ferguson	MG	Mark Grantham
DL	D. Livingstone	PC	Philip Cox
DSD	D. S. Davis	PD	P. Doleman
EC	E. Claridge	PS	P. Shute
ELB	E. L. Bousfield	RB	R. Barnes
FJ	F. Johansen	RG	R. Gray
FS	Fred Scott	RM	R. Merrick
GH	G. Hardy	RPM	R. Paul McClung
HEP	H. E. Parker	RWC	R. W. Coleman
HH	H. Howden	SF	St. Felikiaka
HWT	H. W. Tremaine	TJ	T. Jaczewskiego
JC	J. Callaghan	WAS	W. A. Stearns
JCl	J. Cleveland	WJ	W. Johnston

THE LEECHES OF NOVA SCOTIA

Listed below are the leeches discussed in this report. They comprise all of the freshwater leeches found in Nova Scotia to date.

Order RHYNCHOBDELLAE

Family Glossiphoniidae

- Batracobdella paludosa* (Carena) 1824
- Batracobdella picta* (Verrill) 1872
- Glossiphonia complanata* (Linn.) 1758
- Helobdella elongata* (Castle) 1900
- Helobdella stagnalis* (Linn.) 1758
- Helobdella triserialis* (Blanchard) 1849
- Placobdella ornata* (Verrill) 1872
- Placobdella parasitica* (Say) 1824
- Placobdella phalera* (Graf) 1899
- Theromyzon tessulatum* (O. F. Müller) 1774

Family Piscicolidae

- Piscicola punctata* (Verrill) 1871
- Piscicola zebra* Moore, 1898

Order ARHYCHOBDELLAE

Family Erpobdellidae

- Dina dubia* Moore and Meyer, 1951\*
- Erpobdella punctata* (Leidy) 1870
- Mooreobdella fervida* (Verrill) 1872
- Nephelopsis obscura* Verrill, 1872

Family Hirudinidae

- Macrobdella decora* (Say) 1824
- Mollibdella grandis* (Verrill) 1874
- Percymoorensis marmorata* (Say) 1824

\* *D. dubia* is represented in the Nova Scotia Museum collection but has not been found in Nova Scotia.

LEECH RECORDS OF THE NOVA SCOTIA MUSEUM

Order RHYNCHOBDELLAE

Family Glossiphoniidae

*Batracobdella paludosa* (Carena) 1824

Distribution: Europe, Afghanistan, China, Japan, North America (Soós, 1969b)

Habitat: lake shallows and muddy shores

Although L. K. Pawlowski (1948) reports that his identification of the single specimen found at Pottle Lake, Cape Breton Co. was correct (on the basis of comparison with *B. paludosa* collected in Poland), he admits that the specimen was very small, contracted and faded by preservative. Therefore, unless additional reports of this species are made, it is advised that it not be included in Nova Scotia's leech fauna.

Museum Collection:

Absent from Nova Scotia Museum collection

Other Nova Scotia Records (Pawlowski, 1948):

(1) Pottle Lake, near North Sydney, Cape Breton Co. 18 August 1938. SF & TJ

*Batracobdella picta* (Verrill) 1872

Distribution: North America (Soós, 1969b)

Habitat: found in abundance at Lake Killarney, Cumberland Co. on the undersides of rocks in shallow water

*B. picta* is reported as parasitic on *Macrobdella decora* Say (Moore, 1936 - as cited by Davies, 1973), *Rana catesbiana* Shaw (Richardson, 1949 - as cited by Davies, 1973) and *Ambystoma gracile* (Baird) (Davies, 1973). The last species does not occur in Nova Scotia.

Museum Collection:

- (1) View Lake, Annapolis Co. 20 August 1975. PM & DSD
- (23) Lake Killarney, Cumberland Co. 23 July 1975. PM & DSD
- (3) Lake Thomas, Halifax Co. 25 July 1975. PM
- (1) Highway #14, Windsor to Chester, near Wiles Settlement, Hants Co. 24 April 1975. JG

*Glossiphonia complanata* (Linn.) 1758

Distribution: Holarctic Region, Congo, ? Argentina (Soós, 1969b)

Habitat: shallows of rivers, large ponds and lakes

As suggested by its common name, the "snail leech", *G. complanata* feeds predominantly on small snails (Moore, 1920). To a lesser extent, it feeds on freshwater oligochaetes (Jarry, 1960 & Wilkialis, 1970 - as cited by Davies & Everett, 1975). This remarkably strong glossiphoniid has also been reported to attach itself to turtles but blood-sucking has not been observed in such occurrences.

Museum Collection:

- (2) tributary of Annapolis River, Paradise, Annapolis Co. 20 August 1975. RPM & DSD
- (23) Goose Sanctuary, Debert, Colchester Co. 17 September 1974. RPM
- (3) Wallace River, Middleborough, Cumberland Co. 23 July 1975. RPM & DSD
- (6) Elmsdale, Hants Co. 3 July 1973. RPM & JG
- (13) Carroll Corner, Halifax Co. 23 June 1975. RPM & DSD
- (2) tributary of Stewiacke River, Grave Yard Pool, Hants Co. 24 July 1973. RPM & RB
- (6) Lake O'Law, Inverness Co. 2 June 1975. RPM
- (13) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW
- (8) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS
- (1) Lac St. Louis, Sainte Anne de Bellevue, P.Q. 20 October 1971. BW

Other Nova Scotia Records (Pawlowski, 1948):

- (1) Annapolis Royal, Lequille [sic], Annapolis Co. 24 September 1938. SF & TJ
- (1) Pottle Lake, North Sydney, Cape Breton Co. 18 August 1938. SF & TJ
- (1) Salmon River, Truro, Colchester Co. 11 August 1938. SF & TJ
- (4) Yarmouth, Yarmouth Co. 27 September 1938. SF & TJ

*Helobdella elongata* (Castle) 1900

Distribution: North America (Soós, 1969b)

Habitat: found in abundance along the shallow shoreline of the water reservoir at Shubenacadie, Hants Co. on the undersides of rocks and on mollusc shells

The predation on molluscs by *H. elongata* is considered doubtful (Sawyer, 1972 - as cited by Klemm, 1976) but there is evidence that it feeds on aquatic insects and their larvae (Klemm, 1976).

Museum Collection:

- (8) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM
- (1) Steverman Lake, Lilydale, Lunenburg Co. 29 July 1975. BW

*Helobdella stagnalis* (Linn.) 1758

Distribution: Cosmopolitan, but as yet unrecorded for Australia (Sawyer, 1972 - as cited by Davies, 1973)

Habitat: along edges of lakes and ponds; on undersides of rocks, logs or clinging to aquatic vegetation.  
There is also evidence that *H. stagnalis* migrates seasonally - to water deeper than 2 m. in winter and from deep to shallow littoral zones in spring (Davies, 1976).

This small leech, one of the most common and most easily recognized leeches of Nova Scotia, preys on a diverse range of organisms including: small annelids (Moore, 1912), insect larvae (Hilsenhoff, 1963), ostracods (Thut, 1969 - as cited by Davies & Everett, 1975), and unnamed gastropods (Harding, 1910 - as cited by Davies & Everett, 1975). The reported feeding on molluscs, however, is considered highly doubtful (Klemm, 1976). *H. stagnalis* is also noted to be cannibalistic (Davies, 1975), to feed upon carrion and, given an abraded surface, to suck blood from fish, frogs and humans (Moore, 1912, 1920).

Museum Collection:

- (12) tributary of Annapolis River, Paradise, Annapolis Co. 20 August 1975. RPM & DSD
- (65) Goose Sanctuary, Debert, Colchester Co. 17 September 1974. RPM
- (2) Wittenburg, Colchester Co. 5 August 1975. RPM
- (5) Haggart Brook, Cumberland Co. 28 August 1975. RPM
- (10) Lake Killarney, Cumberland Co. 23 July 1975. RPM & DSD
- (7) Layton's Lake, CWS bird sanctuary, Amherst Point, Cumberland Co. 8 September 1978. DSD
- (1) River Philip, Oxford Junction, Cumberland Co. 23 July 1975. DSD & RPM
- (9) Wallace River, Middleborough, Cumberland Co. 23 July 1975. RPM & DSD
- (3) Waternish, Guysborough Co. 15 August 1973. RPM
- (7) Carroll Corner, Halifax Co. 23 June 1975. RPM & DSD
- (6) Lake Fletcher, Halifax Co. 6 August 1975. RPM
- (4) Lake Thomas, Halifax Co. 25 July 1975. RPM
- (3) 2 miles north of Meaghers Grant, Halifax Co. 13 June 1975. RPM
- (1) Musquodoboit River, 2 miles north of Musquodoboit Harbour, Halifax Co. 30 July 1975.
- (6) Elmsdale, Hants Co. 3 July 1974. RPM & JG
- (15) Maitland Millpond, Hants Co. 23 June 1975. RPM & DSD
- (8) Highway 101, 1 mile south, St. Croix River, Hants Co. 8 August 1975. RPM
- (5) water reservoir, Shubenacadie, Hants Co. 23 June 1975. RPM & DSD
- (9) Lake O'Law, Inverness Co. 2 June 1975. RPM
- (17) Rough Brook, Inverness Co. 17 July 1974. JG
- (5) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS

- (8) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW
- (2) Gaspereau River, Kings Co. 9 August 1973. RPM & RB
- (25+) Gaspereau River, Gaspereau, Kings Co. 29 July 1975. RPM
- (1) Gaspereau River, 4 miles above White Rock, Kings Co. 29 July 1975. RPM
- (1) Steverman Lake, Lilydale, Lunenburg Co. 29 July 1975. BW
- (8) head of Eden Lake, Pictou Co. 16 August 1973. RPM
- (2) French Lake, Victoria Co. 10 August 1976. DSD
- (20) Ingonish River, Victoria Co. 2 June 1975. RPM
- (1) Sable Island. 7 July 1967. JEHM
- (1) near Restawile Motel, Winsloe, Queens Co., Prince Edward Island.  
26 July 1975. RWC

Other Nova Scotia Records (Pawlowski, 1948):

- (15) Pottle Lake, North Sydney, Cape Breton Co. 18 August 1938. SF & TJ
- (2) North Sydney, Cape Breton Co. 19 August 1938. SF & TJ
- (2) Halifax, Halifax Co. 29 September 1938. SF & TJ
- (6) Lovett Lake, Halifax Co. 7 August 1938. SF & TJ
- (1) Three-Mile Plains, Hants Co. 23 September 1938. SF & TJ
- (34) Windsor, Hants Co. 23 September 1938. SF & TJ
- (2) Arcadia, Yarmouth Co. 27 September 1938. SF & TJ
- (1) Yarmouth, Yarmouth Co. 27 September 1938. SF & TJ

*Helobdella triserialis* (Blanchard) 1849\*

Distribution: North, Central and South America (Soós, 1969b)

Habitat: little ecological information due to the uncertainty of the taxonomy; however, the Nova Scotian specimens were found in ponds, lakes, rivers and streams.

*Helobdella triserialis* has been observed to feed primarily on molluscs (Klemm, 1975 - as cited by Klemm, 1976) including the snails *Helisoma* and *Lymnaea*. In Nova Scotia, this is perhaps partly substantiated by the fact that snails belonging to at least one of these genera were found to occur at each of the localities where *H. triserialis* was collected.

Museum Collection:

- (3) water reservoir, Shubenacadie, Hants Co. 23 June 1975. RPM & DSD [*H. fusca* (Castle) 1900]
- (5) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM [(1) *H. lineata* (Verrill) 1874 and (4) *H. fusca* (Castle) 1900]
- (6) Maitland Millpond, Hants Co. 23 June 1975. RPM & DSD [*H. lineata* (Verrill) 1874]
- (2) Maitland Millpond, Hants Co. 26 June 1975. RPM [*H. lineata* (Verrill) 1874]
- (5) Highway 101, 1 mile south, St. Croix River, Hants Co. 8 August 1975. RPM [(3) *H. lineata* (Verrill) 1874 and (2) *H. fusca* (Castle) 1900]
- (1) Lake Thomas, Halifax Co. 25 July 1975. RPM [*H. papillata* (Moore) 1906]
- (5) Lake Thomas, Halifax Co. 6 August 1975. RPM [*H. fusca* (Castle) 1900]
- (1) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS [*H. lineata* (Verrill) 1874]

\*According to the key to the freshwater Hirudinoidea of Canada (Davies, 1971), the specimens recorded by the Nova Scotia Museum are all of the species *Helobdella triserialis*. However, it should be noted that the status of this species is still doubted by some investigators due to the polymorphism commonly observed within it (Klemm, 1976). The classification originally assigned to each specimen by R. Paul McClung is, therefore, indicated in brackets for each sample.

*Placobdella ornata* (Verrill) 1872

Distribution: North America, Mexico, Japan (Lake Biwa) (Soós, 1969b)

Habitat: frequently found to inhabit streams, and ponds on the undersides of stones and floating wood; also found free-living in weedy shallows of lakes

This large leech with rough papillae is commonly referred to as the "Rough Turtle Leech" or the "Rough Leech". However, although this leech is reportedly a parasite of various turtle species, including the snapping turtle, it has also been found to feed on fish and waterfowl (Moore, 1964, 1966 - as cited by Davies, 1973).

Museum Collection:

- (5) head of Lochaber Lake, Antigonish Co. 31 July 1973. RPM & JG
- (1) Lake Road, Guysborough Co. 25 June 1973. JG & RPM
- (1) Barry's Run, Port Wallis, Halifax Co. 25 July 1958. RG & JM
- (1) Barry's Run, behind Port Wallis, Halifax Co. 25 July 1958. RG & JM
- (3) Fish Lake, Oakfield, Halifax Co. 2 July 1974. RPM
- (1) 2 miles north of Meaghers Grant, Halifax Co. 13 June 1975. RPM
- (1) Russel Lake, Dartmouth, Halifax Co. 24 July 1972. BW
- (1) Elmsdale, Hants Co. 3 July 1974. RPM & JG
- (28) Hayes Cave area, Oxbow pond, South Maitland, Hants Co. 29 June 1978. JG
- (2) Maitland Millpond, Hants Co. 23 June 1975. RPM & DSD
- (1) Highway 101, 1 mile south, St. Croix River, Hants Co. 8 August 1975. RPM
- (1) water reservoir, Shubenacadie, Hants Co. 24 June 1973. RPM & RB
- (1) water reservoir, Shubenacadie, Hants Co. 23 June 1975. RPM & DSD
- (2) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM
- (1) McLellan Brook, Inverness Co. 23 August 1972. JG
- (1) Coldbrook, Kings Co. 3 May 1950. JSB
- (1) Coldbrook, Kings Co. 3 May 1951. JSB
- (1) Gaspereau River, 4 miles above White Rock, Kings Co. 29 July 1975. RPM
- (1) Steverman Lake at Lilydale, Lunenburg Co. 29 July 1975. BW

Other Nova Scotia Records (Moore, 1922):

- (?) Elmsdale. 15 August 1919, 29-30 June 1920 and 13, 20 July 1920. AHL

*Placobdella parasitica* (Say) 1824

Distribution: North America (Soós, 1969b)

Habitat: lakes, ponds, rivers and streams.  
Its habitat and general distribution are determined, to a great extent, by that of its primary host.

*P. parasitica*, one of Nova Scotia's largest leeches, displays wide variation in both colour and markings. It is chiefly parasitic on the common snapping turtle, *Chelydra serpentina*, upon which it feeds voraciously (Moore, 1912). While carrying young or eggs, other aquatic animals are fed upon, such as freshwater oligochaetes.

Museum Collection:

- (1) head of Lochaber Lake, Antigonish Co. 31 July 1973. RPM & JG
- (1) north end, Lochaber Lake, Antigonish Co. 5 June 1973. RPM
- (1) Thompson, Cumberland Co. 16 May 1972. JG, GH & RPM
- (34) Lake Road, Guysborough Co. 25 June 1973. RPM
- (1) tributary of West River St. Mary's, Lake Road, Guysborough Co. 14 August 1973. RPM
- (18) Ponhook Lake, Queens Co. 11 August 1973. LD
- (52) Ponhook Lake, Greenfield, Queens Co. 12 August 1974. LD

Other Nova Scotia Records (Pawłowski, 1948):

- (2) Three-Mile Plains, Windsor, Hants Co. 23 September 1938. SF & TJ

*Placobdella phalera* (Graf) 1899

Distribution: North America (Soós, 1969b)

Habitat: lakes, ponds, rivers and streams

The food preferences of this strikingly colourful little leech were not indicated in the available literature and have yet to be determined for Nova Scotia.

Museum Collection:

- (1) head of Lochaber Lake, Antigonish Co. 31 July 1973. RPM & JG
- (2) Haggart Brook, Cumberland Co. 28 August 1975. RPM
- (3) Lake Killarney, Cumberland Co. 23 July 1975. RPM
- (1) Waternish, Guysborough Co. 15 August 1973. RPM
- (2) Fish Lake, Oakfield, Halifax Co. 2 July 1974. RPM
- (2) Lake Fletcher, Halifax Co. 6 August 1975. RPM
- (2) Lake Thomas, Halifax Co. 6 August 1975. RPM
- (1) 2 miles north of Meaghers Grant, Halifax Co. 13 June 1975. RPM
- (2) Maitland Millpond, Hants Co. 23 June 1975. RPM & DSD
- (6) Highway 101, 1 mile south of St. Croix River, Hants Co. 8 August 1975. RPM
- (3) water reservoir, Shubenacadie, Hants Co. 23 June 1975. RPM & DSD
- (7) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM
- (24) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW
- (2) head of Eden Lake, Pictou Co. 16 August 1973. RPM

Other Nova Scotia Records (Moore, 1922):

- (?) Elmsdale. 15 August 1919, 6 & 20 July 1920, 23-28 May 1921. AHL

*Theromyzon tessulatum* (O. F. Müller) 1774

Distribution: Holarctic Region, South America (Soós, 1969b)

Habitat: ponds, lakes, rivers and streams

In Europe, this species acquired the common name, "bird leech", due to the parasite/host relationship that it temporarily maintains with birds such as ducks and geese. In Canada, however, *T. tessulatum* has only been found to occur in a free-living state (Davies, 1973).

Museum Collection:

- (4) Haggart Brook, Cumberland Co. 28 August 1975. RPM
- (2) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW

The following collections have been identified only as *Theromyzon* sp.:

- (4) Goose Sanctuary, Debert, Colchester Co. 11 September 1974. DSD
- (1) north end of Glenelg Lake, Guysborough Co. 10 September 1973. RPM
- (1) Fish Lake, Oakfield, Halifax Co. 2 July 1974. RPM
- (1) water reservoir, Shubenacadie, Hants Co. 23 June 1975. RPM & DSD
- (52) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS

*Piscicola zebra* (Moore) 1898

Distribution: known only from Arichat, Nova Scotia

Habitat: Unknown

The only recorded host of *P. zebra* is the lamprey, *Petromyzon marinus* Linn. (Moore, 1898).

Museum Collection:

Absent from Nova Scotia Museum collection

Other Nova Scotia Records (Moore, 1898):

(4) Arichat, Richmond Co. 1890. WAS

Family Piscicolidae

*Piscicola punctata* (Verrill) 1971

Distribution: North America (Meyer, 1945; Moore, 1912; and Verrill, 1874)

Habitat: unknown for Nova Scotia

With the knowledge that the taxonomy of piscicolids has been somewhat confused in the past, and the fact that there is only one record (Moore, 1922) of its occurrence in Nova Scotia, the inclusion of *P. punctata* among the leech fauna of this province must be considered tentative.

*P. punctata* is known from other localities to be an ectoparasite chiefly on various species of small fish, such as brook trout, whitefish and perch (Moore, 1924; Meyer, 1945).

Museum Collection:

absent from Nova Scotia Museum collection

Other Nova Scotia Records (Moore, 1922):

(?) Elmsdale. 5 June and 23-28 May 1921. AHL

Order ARHYCHOBDELLAE

Family Erpobdellidae

*Erpobdella punctata* (Leidy) 1870

Distribution: throughout North America (Moore, 1912)

Habitat: lakes, rivers, ponds and streams.  
"Almost every spring, brook and river, ditch, pond and lake, no matter how pure and cold or how warm and foul, is its home" (Moore, 1912).

Moore (1912) reports the diet of *E. punctata* to primarily consist of aquatic insects, insect larvae and aquatic oligochaetes and he also notes that they will attack fish and frogs, or draw blood from humans. As stated by Davies (1973), however, it seems unlikely that *E. punctata* has the mechanical ability to actually perforate human skin. Sawyer (1970) has observed *E. punctata* to often leave the water for food but he believes there to be no evidence that it is a parasite despite reports by Moore (1920) and other investigators. Obviously, there is some controversy as to the precise range of this leech's food preferences but they are, nonetheless, known to be diverse.

Museum Collection:

- (1) View Lake, Annapolis Co. 20 August 1975. RPM & DSD
- (1) New Waterford, Cape Breton Co. 23 July 1975. BW
- (1) Pottle Lake, Cape Breton Co. 4 June 1975. RPM
- (1) Goose Sanctuary, Debert, Colchester Co. 17 September 1974. RPM
- (5) Haggart Brook, Cumberland Co. 28 August 1975. RPM
- (1) Lake Killarney, Cumberland Co. 23 July 1975. RPM & DSD
- (2) Wallace River, Middleborough, Cumberland Co. 23 July 1975. RPM & DSD
- (1) Crows Nest, Guysborough Co. 14 August 1973. DSD
- (1) north end, Glenelg Lake, Guysborough Co. 10 September 1973. RPM
- (2) North Caledonia, Guysborough Co. 15 August 1973. RPM
- (22) Waternish, Guysborough Co. 31 May 1972. JS & BJ
- (4) Waternish, Guysborough Co. Summer 1972. JS & BJ
- (9) Waternish, Guysborough Co. 15 August 1973. RPM
- (2) West Branch, Caledonia, Guysborough Co. 15 August 1973. DSD
- (5) Carroll Corner, Halifax Co. 23 June 1975. RPM & DSD
- (2) Dutch Settlement, Halifax Co. 23 June 1975. RPM & DSD
- (2) Fall River bridge, Lake Thomas, Halifax Co. 6 August 1975. RPM
- (4) Fish Lake, Oakfield, Halifax Co. 2 July 1974. RPM
- (1) Hatchet Lake, Halifax Co. 23 May 1975. HEP
- (1) run between Lake Charles and Rocky Lake, Halifax Co. 6 August 1975. RPM
- (4) Lake Fletcher, Halifax Co. 6 August 1975. RPM

- (5) Lake Thomas, Halifax Co. 25 July 1975. RPM
- (4) Lake Thomas, Halifax Co. 6 August 1975. RPM
- (7) Miller Lake, Halifax Co. 2 May 1968. JG & PD
- (2) 6 miles north of Musquodoboit Harbour, Halifax Co. 13 June 1975. RPM
- (1) Elmsdale, Hants Co. 3 July 1974. RPM & JG
- (16) Highway 101, 1 mile south of St. Croix River, Hants Co. 8 August 1975. RPM
- (1) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM
- (1) Lake O'Law, Inverness Co. 2 June 1975. RPM
- (1) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW
- (17) Gaspereau River, Gaspereau, Kings Co. 29 July 1975. RPM
- (4) Gaspereau River, Kings Co. 9 August 1973. RPM & RB
- (7) Gaspereau River, 4 miles above White Rock, Kings Co. 29 July 1975. RPM
- (3) Lake Torment, Kings Co. 18 August 1975. CG & MG
- (6) Lawson Lake, Lunenburg Co. 1 August 1975. RPM
- (10) head of Eden Lake, Pictou Co. 16 August 1973. RPM

Other Nova Scotia Records:

(Pawlowski, 1948)

- (21) Pottle Lake, Cape Breton Co. 18 August 1938. SF & TJ
- (1) Truro, Colchester Co. 11 August 1938. SF & TJ
- (1) Halifax, Halifax Co. 29 September 1938. SF & TJ
- (1) Lovetts Lake, Halifax Co. 7 August 1938. SF & TJ
- (4) Yarmouth, Yarmouth Co. 27 September 1938. SF & TJ

(Moore, 1922)

- (?) Elmsdale. 2 July 1920, 23-28 May 1921. AHL
- (1) Solomon Lake, near Yarmouth, Yarmouth Co. 4 October 1920. AGH

*Dina dubia* Moore and Meyer, 1951

Distribution: North America (Moore & Meyer, 1951; Moore, 1966 - as cited by Davies, 1973)

Habitat: *D. dubia* is not found in Nova Scotia

Museum Collection:

- (4) from Ward's Natural Science Establishment, Inc. New York

*Mooreobdella fervida* (Verrill) 1871

Distribution: North America - center of abundance appears to be around the the Great Lakes region (Meyer, 1954)

Habitat: ponds, lakes, rivers and streams

Included in the diet of *M. fervida* are such small organisms as insect larvae and tubificid worms (Moore, 1912).

Museum Collection:

- (7) New Waterford, Cape Breton Co. 23 July 1975. BW
- (3) Lake Killarney, Cumberland Co. 23 July 1975. RPM & DSD
- (1) Wallace River, Middleborough, Cumberland Co. 23 July 1975. RPM & DSD
- (7) Lake Thomas, Halifax Co. 25 July 1975. RPM
- (3) Lake Thomas, Halifax Co. 6 August 1975. RPM
- (1) Sackville, Halifax Co. 11 June 1975. DB
- (3) water reservoir, Shubenacadie, Hants Co. 26 June 1975. RPM
- (1) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS

Other Nova Scotia Records (Moore, 1922):

- (1) Elmsdale. 14 June 1920. AHL

*Nephelopsis obscura* Verrill, 1872

Distribution: nearctic distribution - widespread and common throughout Canada (Meyer, 1954); the extreme northern United States and Rocky Mountain regions (Sawyer, 1972) but also recorded as far south as Alabama (Moore, 1912)

Habitat: lakes, streams, ponds; undersides of rocks and stones in shallow water.  
In Alberta, *N. obscura* has been found to overwinter in water zones deeper than 1.5 m down to a depth of 3 m and to inhabit shallow water zones during most of the open water season (Davies & Everett, 1977).

Insect larvae are the basic source of nourishment for this large erpobdellid but carrion and various species of oligochaetes and snails are also consumed (Moore, 1912).

Museum Collection:

- (3) 3 miles southeast of Shinimicas, Cumberland Co. 17 July 1975. DSD
- (9) John Smith Brook, 3 miles southeast of Shinimicas Bridge, Cumberland Co. 23 July 1975. RPM & DSD
- (2) Lake Wabamun, Alberta. 29 September 1973. DSD & BW

Family Hirudinidae

*Macrobdella decora* (Say) 1824

Distribution: widely distributed throughout North America (Soós, 1969a)

Habitat: most commonly found in small, shallow, weedy lakes but also found in larger lakes, slow rivers, permanent ponds and ditches

This well-known pest of swimmers and waders is the only true "blood-sucker" in that it feeds primarily on blood. Birds, fish, frogs, tadpoles, turtles, wading animals and man are among the most common hosts but small aquatic annelids, larval insects and the contents of frogs' eggs may also be consumed (Moore, 1912).

Of historical interest is the use of leeches, as long ago as the first century B. C. for local blood-letting. In the 19th century, it became a principal therapeutic treatment to apply leeches and, with relatively little blood loss, to relieve congested blood vessels or inflamed areas of the body. *M. decora*, the "North American Medicinal Leech", was used for blood-letting but was not considered to be as efficient as the European species of medicinal leeches.

Although the use of leeches is no longer conventional among modern medical practitioners, the sale of 65 to 70 thousand live leeches per year was reported as recently as 1969 (Hartnett, 1972).

Museum Collection:

- (1) Liverpool Head Lake, Annapolis Co. 20 August 1975. RPM & DSD
- (1) McLean Brook, Colchester Co. 15 July 1972. JC
- (4) Lake Killarney, Cumberland Co. 23 July 1975. RPM & DSD
- (8) Wentworth Centre, Cumberland Co. 26 May 1972. JG & GH
- (1) Cumminger Lake, Guysborough Co. 26 June 1973. FS & RPM
- (2) Frazer's Gully, Guysborough Co. 15 June 1972. JS & BJ
- (1) head of Glenelg Lake, Guysborough Co. 19 June 1972. JS & BJ
- (2) head of Lochaber Lake, Guysborough Co. 9 July 1973. RPM
- (1) brook at head of Lochaber Lake, Guysborough Co. 10 July 1973. RPM
- (2) between Lochaber Lake and Two Mile Lake, Guysborough Co. 10 July 1973. RPM
- (2) Sherbrooke Lake, Guysborough Co. 6 June 1972. JS & BJ
- (1) South Caledonia, Guysborough Co. 15 August 1973. RPM
- (1) Bicentennial Highway, Halifax Co. 11 June 1975. DB
- (2) 2 miles north of Kearney Lake on Bicentennial Highway, Halifax Co. 11 June 1975. DB
- (1) Oat Hill Lake, Halifax Co. 1 August 1909. LAP
- (1) Oat Hill Lake, Halifax Co. 8 August 1909. LAP
- (1) 2 miles north of Meaghers Grant, Halifax Co. 13 June 1975. RPM
- (2) Enfield, Hants Co. 3 July 1974. RPM & JG
- (1) Maitland Millpond, Hants Co. 26 June 1975. RPM
- (1) Uniacke Lake, Hants Co. Summer 1969. PD

- (1) 11 miles north of Cheticamp, Inverness Co. 20 May 1962. AMR
- (1) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS
- (2) Southeast Margaree River, Scotsville, Inverness Co. 8 August 1975. BW
- (1) Gaspereau River, 4 miles above White Rock, Kings Co. 29 July 1975. RPM
- (1) Lake Torment, Kings Co. 18 August 1975. CG & MG
- (1) Big Mushamush Lake, Lunenburg Co. 30 June 1975. BW
- (5) Big Mushamush Lake, Lunenburg Co. 13 July 1975. BW
- (1) Colpton, Lunenburg Co. 7 May 1972. JG
- (1) Pine Lake, Lunenburg Co. 12 June 1975. EC
- (1) head of Eden Lake, Pictou Co. 16 August 1973. RPM
- (1) Pubnico Lake, Yarmouth Co. 27 June 1956. ELB
- (1) 31 miles west of Winnipeg, Manitoba. 12 May 1969. JG

Other Nova Scotia Records:

(Moore, 1922)

- (?) Pembroke Lake, Grand Etang, Inverness Co. 2 September 1917. FJ
- (?) Elmsdale. 11 August 1919. AHL
- (?) Enfield. 12, 15 July 1920. AHL

(Pawlowski, 1948)

- (5) Lily Lake, Hants Co. 14 July 1947. JL & DL

*Mollibdella grandis* (Verrill) 1874

Distribution: North America (Soós, 1969a)

Habitat: usually found by the sides of ponds, pools and lakes; also free-living in water and in bottom mud

The diet of *M. grandis*, North America's largest leech, basically consists of freshwater oligochaetes, smaller leeches (particularly the nephelids), snails, insect larvae and organic mud (Moore, 1912).

Museum Collection:

- (1) Crows Nest, Guysborough Co. 14 August 1973. DSD
- (2) St. Mary's River, near Waternish, Guysborough Co. 11 July 1973. JG
- (1) Musquodoboit River, 7 miles north of Musquodoboit Harbour, Halifax Co. 14 June 1975. RPM & RB
- (1) Southeast Margaree River, Scotsville, Inverness Co. 23 July 1975. BW & PS

*Percymoorensis marmorata* (Say) 1824

Distribution: widespread throughout North America (Soós, 1969a)

Habitat: small ponds and ditches, both permanent and seasonal; lakes and streams; also may be found in mud several feet from the water's edge; abundant on undersides of rocks.

By its popular name, the "horse leech", *P. marmorata* may mistakenly be assumed to chiefly parasitize horses. In actual fact this amphibious leech more commonly consumes aquatic insects and their larvae, gastropods, pelecypods and mud enriched with organic matter. Blood of vertebrates, including cattle and horses, will be taken opportunistically. *P. marmorata* will also actively scavenge for a blood meal from dead vertebrates if other food is not available (Moore, 1912).

Museum Collection:

- (2) Antigonish, Antigonish Co. 30 April 1973. JG & GH
- (4) Beaver Pond, near James River, Antigonish Co. 23 April 1973. JG & JC
- (1) Delap Cove, Annapolis Co. 29 April 1972. JG & GH
- (2) Pottle Lake, Cape Breton Co. 4 June 1975. RPM
- (2) Brookfield, Colchester Co. 5 May 1972. JG
- (1) Riversdale, Colchester Co. 17 August 1973. LF
- (2) LaPlanche Lake, Cumberland Co. 23 April 1974. JG
- (1) Crows Nest, Guysborough Co. 23 June 1972. JS & BS
- (1) St. Mary's River at forks (east and west branch), Guysborough Co. 14 May 1975. DB & BAM
- (1) Two Mile Lake, Guysborough Co. 30 April 1973. JG
- (3) Waternish, Guysborough Co. Summer 1972. JS & BJ
- (1) Elmsdale, Hants Co. 5 May 1972. JG
- (3) tributary of Stewiacke River, Hants Co. 24 July 1973. RPM & RB
- (1) 11 miles north of Cheticamp River, Inverness Co. 20 May 1962. AMR
- (3) Lake Ainslie, Inverness Co. 23 May 1975. JG
- (4) McLellan Brook, Inverness Co. 7 May 1973. JG & RM
- (8) Rough Brook, Inverness Co. 14 May 1975. JG
- (13) Garden of Eden, Pictou Co. 9 June 1972. JG
- (1) Jeremy Bay, Kejimikujik Lake, Queens Co. 14 July 1971. JG
- (2) Sable Island. 15 July 1967. JEHM
- (1) Sable Island. 6 June 1966. HH
- (1) Highway 11, 0.6 miles south of Ensmore, Prince Edward Island. 7 June 1974. JWR
- (10) Ile Havre-aux-Maisons, P.Q. 16 June 1974. JWR

Other Nova Scotia Records (Moore, 1922):

- (?) Elmsdale. 22 May, 1 June and 2 July 1921. AHL
- (1) Cheticamp, Inverness Co. 1 July 1917. FJ
- (1) Pembroke Lake, Grand Etang, Inverness Co. 2 September 1917. FJ
- (1) Neil Harbour, Victoria Co. 29 July 1917. PC

Unidentified Hirudinoidea

Also included in the Nova Scotia Museum collection are a number of unidentified leeches from various localities throughout the province. Tentative identifications made by R. P. McClung are noted in brackets for several specimens.

- (n) head of Lochaber Lake, Antigonish Co. 31 July 1973. RPM & JG
- (2) Haggart Brook, Cumberland Co. 28 August 1975. RPM [*Placobdella ornata*]
- (2) Ibbitson Brook, Shinimecas, Cumberland Co. 18 July 1978. JG & EC
- (n) Lake Killarney, Cumberland Co. 19 July 1975. DSD [*Batracobdella picta*]
- (2) west end of Lake Killarney, Cumberland Co. 17 July 1975. DSD [*Batracobdella picta*]
- (1) tributary of LaPlanche River, Cumberland Co. 5 August 1978. JG
- (2) Beacham Road, near Tidnish, Cumberland Co. 9 August 1978. JG
- (6) Layton's Lake, CWS migratory bird sanctuary, Amherst Point, Cumberland Co. 8 September 1978. DSD
- (1) Upper Spectacle Lake, Digby Co. 26 July 1949. JL & DL [*Placobdella ornata*]
- (1) Newtown Ridge, Guysborough Co. 19 June 1972. JS & BJ
- (1) stream above second Dartmouth Lake, Halifax Co. 15 October 1910. CLM [*Glossiphonia* sp.]
- (1) near Dutch Village Road, Halifax, Halifax Co. Summer 1899. HWT [*Glossiphonia* sp.]
- (2) Fish Lake, Oakfield, Halifax Co. 2 July 1974. RPM
- (3) Lake William, Waverly conservation area, Halifax Co. 7 May 1973. BH, KM, BK & DB
- (10) Sandy (Fink) Cove, Halifax Co. 16 June 1969. DSD & BM
- (3) Cockscomb Lake, Hants Co. 17 May 1977. JG
- (1) Maitland Millpond, 2 miles south of Maitland, Hants Co. 27 August 1974. DSD
- (3) McCormack, Lake Ainslie, Inverness Co. 3 June 1977. BW
- (1) south of Sable Island, Nova Scotia Continental Shelf. 16 April 1973. DSD
- (11) French Lake, Victoria Co. 10 August 1976. DSD
- (2) Freshwater Lake, Ingonish, Victoria Co. 12 August 1976. DSD
- (9) Jigging Cove Lake, Victoria Co. 11 August 1976. DSD
- (2) Two Island Lake, Victoria Co. 12 August 1976. DSD
- (1) Warren Lake, Victoria Co. 12 August 1976. DSD
- (1) Elliot River (West River), Bonshaw Provincial Park, Queens Co., Prince Edward Island. 31 July 1975. RWC
- (1) Lac St. Louis, Ste. Anne de Bellevue, P. Q. 20 October 1971. BW
- (4) Ringwood, Dryden New York, U.S.A. 21 April 1961. DCF

Table 1. The leeches of Nova Scotia as recorded for each county and Sable Island.\*

SPECIES	COUNTY	Inverness	Victoria	Cape Breton	Richmond	Guysborough	Antigonish	Pictou	Halifax	Colchester	Cumberland	Hants	Kings	Annapolis	Lunenburg	Queens	Shelburne	Digby	Yarmouth	Sable Island
Order RHYNCHOBDELLAE																				
Family Glossiphoniidae																				
<i>Batracobdella paludosa</i>				+																
<i>Batracobdella picta</i>									+		+	+		+						
<i>Glossiphonia complanata</i>		+		+					+	+	+	+		+						+
<i>Helobdella elongata</i>												+			+					
<i>Helobdella stagnalis</i>		+	+	+		+		+	+	+	+	+	+	+	+				+	+
<i>Helobdella triserialis</i>		+							+			+								
<i>Placobdella ornata</i>		+				+	+		+			+			+					
<i>Placobdella parasitica</i>		+				+			+		+	+				+				
<i>Placobdella phalera</i>		+				+	+	+	+		+	+			+					
<i>Theromyzon tessulatum</i> **		+				+			+	+	+	+								
Family Piscicolidae																				
<i>Piscicola punctata</i>												+								
<i>Piscicola zebra</i>					+															
Order ARHYCHOBDELLAE																				
Family Erpobdellidae																				
<i>Erpobdella punctata</i>		+		+		+		+	+	+	+	+	+	+	+					+
<i>Mooreobdella fervida</i>		+		+					+		+	+								
<i>Nephelopsis obscura</i>											+									
Family Hirudinidae																				
<i>Macrobdella decora</i>		+				+		+	+	+	+	+	+	+	+					+
<i>Mollibdella grandis</i>		+				+			+											
<i>Percymoorensis marmorata</i>		+	+	+		+	+	+		+	+	+		+		+				+

\* a plus sign "+" indicates the presence of the specified leech species

\*\**Theromyzon* sp. is also included

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