

L. 2, 1990-182

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Synopsis of the
Parasites of
Vertebrates
of Canada

Edited by Murray J. Kennedy

Cestodes
of Waterfowl
(Anseriformes)

J. Daniel McLaughlin

Alberta
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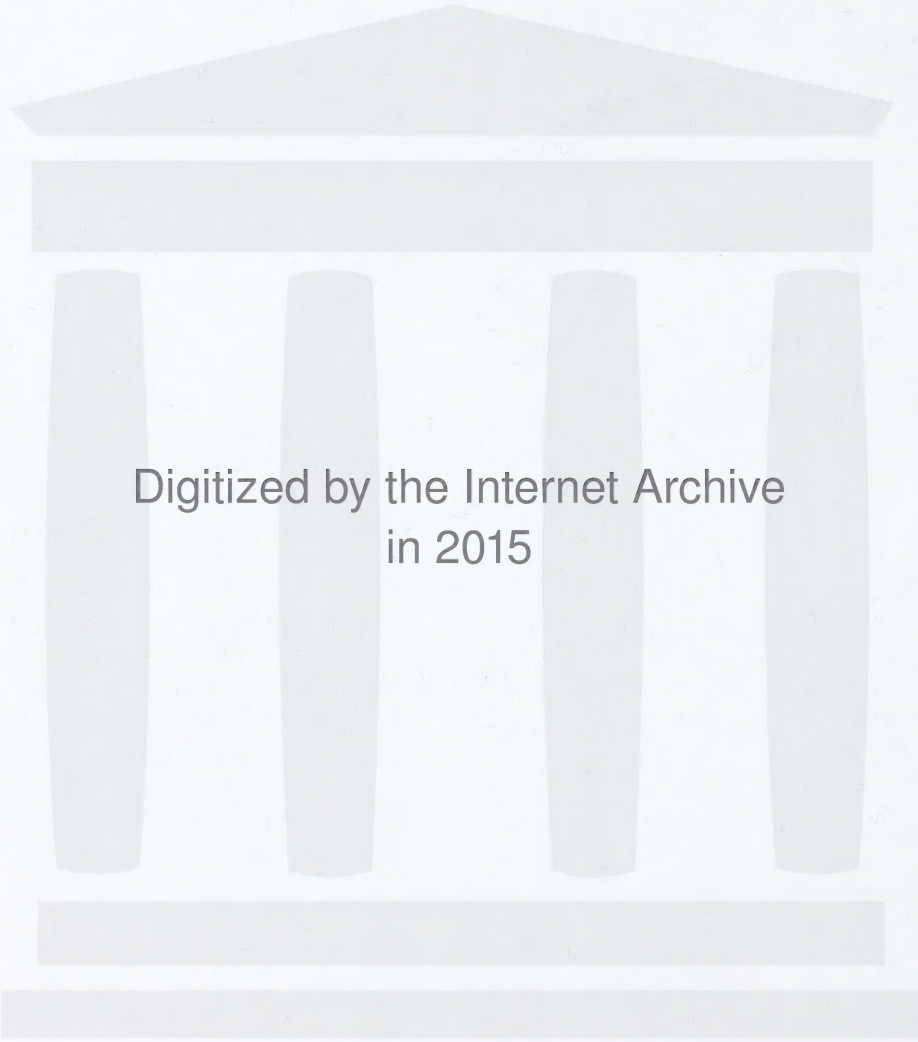
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Introduction

This synopsis includes records published in the primary literature up to December 1988. No attempt has been made to extract records from unpublished theses or from federal or provincial government reports. Additional records therefore likely exist.

The taxonomic arrangement of the cestodes listed in this synopsis generally follows that of Schmidt (1986) although the genera *Tschertkovilepis*, *Wardium* and *Wardoides* (Hymenolepididae) have been retained.

Host nomenclature (scientific and common) conforms to that in the 1983 A.O.U. checklist (Checklist of North American Birds: the species of birds of North America from the Arctic through Panama, including the West Indies and Hawaiian Islands. American Ornithologists Union Washington D.C.).

In keeping with the format of previous issues of the Synopsis the following information is provided for each parasite species listed:

1) The **current scientific name**, including author(s) and date(s), followed by any recognized synonyms that may have been used in establishing the Canadian record(s). No attempt has been made to evaluate systematically the validity of published records, but attention has been drawn to obvious errors.

2) The **site** of occurrence of the parasite in its host(s). When the site was not given in the original reference it was determined from other records.

3) The **hosts**. Only currently accepted scientific names are used. Numbers in parentheses after each host name correspond to the numbers assigned to the references establishing the particular parasite host records.

4) **Distribution (Dist.)** Species distribution is indicated by Provincial or Territorial boundaries listed in alphabetical order as follows: Alta (Alberta), BC (British Columbia), Man (Manitoba),

NB (New Brunswick), Nfld (Newfoundland and Labrador), NS (Nova Scotia), NWT (Northwest Territories), Ont (Ontario), PEI (Prince Edward Island), Que (Québec), Sask (Saskatchewan) and YT (Yukon Territory).

5) Authors responsible for **records** are listed in chronological order of published records. To enable the reader to grasp at a glance the author(s) responsible for particular parasite-host-locality records, references listed under "Records" have been numbered and the corresponding number placed after the host name. Each reference is followed by the locality or localities from which the parasite(s) was (were) reported. When only one host is listed for a particular parasite the references are not numbered and, when all records are from the same locality the latter is not listed after the Author's names.

6) Under **remarks**, explanatory comments as required are offered on systematics, nomenclature, synonyms of parasites, sites within hosts and whether immature or gravid specimens were recovered in experimental life cycle studies.

In the Host-Parasite List, only currently valid names are used. Host synonyms are included only when used in establishing Canada records.

Subfamilies, tribes, genera and species have been listed alphabetically. Sections on domestic ducks and geese have been included. The geographic distribution is given in parentheses after the name of each parasite species.

To facilitate access to information in the parasite-host and host-parasite lists, the synopsis concludes with an **INDEX** to parasite and host scientific names.

PARASITE-HOST LIST

ORDER PSEUDOPHYLLIDEA

FAMILY DIPHYLLOBOTHRIIDAE

Schistocephalus solidus (Mueller, 1776)

Site: small intestine

Hosts: *Lophodytes cucullatus* (2)

Mergus merganser (1)

Dist: BC, Ont

Records: 1. Wardle 1933 (BC); 2. Bain and Threlfall 1977 (Ont)

Ligula intestinalis (Linnaeus, 1758)

Site: small intestine

Hosts: *Anas platyrhynchos* (3)

Mergus merganser (1,2)

Dist: BC, Man, Que

Records: 1. Wardle 1933 (BC); 2. Mahon 1956 (Que); 3. Crichton and Welch 1972 (Man)

ORDER APORIDEA

FAMILY NEMATOPARATAENIIDAE

Gastrotaenia cygni Wolffhügel, 1938

Site: gizzard, under lining

Hosts: *Anas acuta* (2,3)

A. americana (3)

A. clypeata (3)

A. crecca (3)

A. discors (3)

A. platyrhynchos (2,3)

A. strepera (3)

Aythya affinis (3)

A. americana (3)

A. valisineria (1,3)

Bucephala albeola (3)

Dist: Man

Records: 1. Cornwell and Cowan 1963; 2. Crichton and Welch 1972; 3. McLaughlin and McGurk 1987

ORDER CYCLOPHYLLIDEA

FAMILY HYMENOLEPIDIDAE

SUBFAMILY FIMBRIARIINAE

Fimbriaria fasciolaris (Pallas, 1781)

Site: small intestine

Hosts: *Aix sponsa* (12)

Anas acuta (3,7,11,12)

A. clypeata (3)

A. crecca (11,12)

A. discors (4,11,12)

A. platyrhynchos (6*,7,11)

A. rubripes (8,11,12)

A. strepera (3,6*)

Anatidae (5,14)

Domestic ducks (5*)

Aythya affinis (5*,6*,9,13)

A. americana (6*)

A. collaris (11,12)

A. marila (11,12)

A. valisineria (2,6*)

Bucephala clangula (11,12)

Mergus merganser (1)

Branta bernicla (10)

Chen caerulescens (10)

Dist: Alta, BC, Man, NB, NWT, Que

Records: 1. Wardle 1933 (BC); 2. Cornwell and Cowan 1963 (Man); 3. Buscher 1965 (Man); 4. Buscher 1966 (Man); 5. Denny 1969 (Alta); 6. Podesta and Holmes 1970 (Alta); 7. Crichton and Welch 1972 (Man); 8. McLaughlin and Burt 1973 (NB); 9. Hair and Holmes 1975 (Alta); 10. Neraasen and Holmes 1975 (NWT); 11. McLaughlin and Burt 1979a (NB); 12. McLaughlin and Burt 1979b (NB); 13. Bush and Holmes 1986a,b (Alta); 14. Hoeve and Scott 1988 (Que)

Remarks: * Experimental infections producing mature cestodes.

Fimbriarioides intermedia (Fuhrmann, 1913)

Site: duodenum, small intestine

Host: *Somateria mollissima* (1,2)

Dist: Nfld, NWT

Records: 1. Cooper 1921 (NWT); 2. Bishop and Threlfall 1974 (Nfld)

Fimbriarioides sp.

Site: small intestine

Hosts: *Melanitta nigra*

M. perspicillata

Dist: BC, NB, Nfld

Record: Bourgeois and Threlfall 1982

SUBFAMILY HYMENOLEPIDINAE

Anatinella spinulosa (Dubinina, 1953)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Hair and Holmes 1975

Aploparaksis furcigera (Nitzsch in Rudophi, 1819)

Site: intestine, caecum

Hosts: *Anas acuta* (1)

A. discors (2,4)

A. rubripes (3,4)

A. strepera (1)

Aythya collaris (4)

Dist: Man, NB

Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. McLaughlin and Burt 1979a,b (NB)

Aploparaksis veitchi Baylis, 1934

Site: intestine

Hosts: *Anas clypeata*

A. strepera

Dist: Man

Record: Buscher 1965

Remarks: Spasskii and Freze (1961) listed this species as *species inquirenda*.

Aploparaksis sp.

Site: intestine

Host: *Somateria mollissima*

Dist: NWT

Record: Cooper 1921

Cloacotaenia megalops (Nitzsch in Creplin, 1829)

Syn: *Hymenolepis megalops* (Nitzsch in Creplin, 1829)

Site: cloaca; occasionally in ureter (Wobeser 1981) and bursa of Fabricius (Bourgeois and Threlfall 1982)

Hosts: *Anas acuta* (2,4,8)

A. americana (7)

A. clypeata (2)

A. discors (3,7)

A. platyrhynchos (4,8)

A. strepera (2)

Aythya affinis (5)

A. valisineria (1)

Melanitta fusca (9)

Chen caerulescens (6)

Dist: Alta, BC, Sask, Man, NB, NWT

Records: 1. Cornwell and Cowan 1963 (Man); 2. Buscher 1965 (Man); 3. Buscher 1966 (Man); 4. Crichton and Welch 1972 (Man); 5. Hair and Holmes 1975 (Alta); 6. Neraasen and Holmes 1975 (NWT); 7. McLaughlin and Burt 1979a,b (NB); 8. Wobeser 1981 (Sask); 9. Bourgeois and Threlfall 1982 (BC)

Remarks: Specimens found in ureters were immature (Wobeser 1981).

Dicranotaenia coronula (Dujardin, 1845)

Syn: *Hymenolepis coronula* (Dujardin, 1845)

Site: small intestine

Hosts: *Anas platyrhynchos* (5)

A. rubripes (2,5)

Domestic ducks (1)

Aythya affinis (3,6)

A. collaris (5)

A. marila (5)

Bucephala clangula (5)

Branta bernicla (4)

Chen caerulescens (4)

Dist: Alta, NB, NWT, Ont

Records: 1. Schofield 1932 (Ont); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. Neraasen and Holmes 1975 (NWT); 5. McLaughlin and Burt 1979a,b (NB); 6. Bush and Holmes 1986a,b (Alta)

Remarks: Schofield (1932) reported this helminth as a possible cause of mortality in a flock of domestic ducks.

Diorchis asiatica Spasskii, 1963

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Hair and Holmes 1975

Diorchis bulbodes Mayhew, 1929

Site: small intestine

Hosts: *Anas acuta* (1)

A. rubripes (2,4)

Aythya affinis (3)

Dist: Alta, Man, NB

Records: 1. Buscher 1965 (Man); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. McLaughlin and Burt 1979a,b (NB)

Diorchis excentricus Mayhew, 1925

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Diorchis inflata (Rudolphi, 1819)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Diorchis microcirrosa Mayhew, 1929

Site: small intestine
Host: *Anas discors*
Dist: NB
Records: McLaughlin and Burt 1979a,b

Diorchis nyrocae Yamaguti, 1935

Site: small intestine
Hosts: *Anas acuta* (1,3)
A. clypeata (1)
A. discors (2)
A. platyrhynchos (3)
Dist: Man
Records: 1. Buscher 1965; 2. Buscher 1966;
3. Crichton and Welch 1972

Diorchis nyrocoides Spasskaja, 1961

Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Diorchis ransomi Schultz, 1940

Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975
Remarks: More frequently found in *Fulica americana* and recorded from this host in Manitoba (McLaughlin and Burt 1975). Schmidt (1986) has included this species in the genus *Schillerius* Yamaguti, 1959.

Diorchis spinata Mayhew, 1929

Site: small intestine
Hosts: *Anas strepera* (1)
Aythya affinis (2)
Dist: Alta, Man
Records: 1. Buscher 1965 (Man); 2. Hair and Holmes 1975 (Alta)

Diorchis stefanskii Czaplinski, 1956

Site: small intestine
Hosts: *Aythya affinis* (2)
Branta bernicla (1)
Chen caerulescens (1)
Dist: Alta, NWT
Records: 1. Neraasen and Holmes 1975 (NWT); 2. Hair and Holmes 1975 (Alta)

Diorchis spp.

Site: small intestine
Hosts: Anatidae (3)
Aythya affinis (1,2)
Dist: Alta, Que

Records: 1. Hair and Holmes 1975 (Alta); 2. Bush and Holmes 1986a,b (Alta); 3. Hoeve and Scott 1988 (Que)

Drepanidotaenia barrowensis (Schiller, 1952)

Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975
Remarks: Schmidt (1986) has included this species in both *Drepanidotaenia* and *Microsomacanthus*.

Drepanidotaenia lanceolata (Bloch, 1782)

Syn: *Hymenolepis lanceolata*
Site: small intestine
Hosts: *Branta bernicla* (2)
B. canadensis (3)
Chen caerulescens (1,2)
Dist: NB, NWT, Que
Records: 1. Mahon 1956 (Que); 2. Neraasen and Holmes 1975 (NWT); 3. McLaughlin and Burt 1979a,b (NB)

Echinocotyle rosseteri (Blanchard, 1891)

Site: duodenum, small intestine
Hosts: *Anas acuta* (2)
A. clypeata (1,2)
A. crecca (1,5)
A. discors (1,3,5)
A. rubripes (4,5)
Dist: Man, NB, Que
Records: 1. Mahon 1956 (Que); 2. Buscher 1965 (Man); 3. Buscher 1966 (Man); 4. McLaughlin and Burt 1973 (NB); 5. McLaughlin and Burt 1979a,b (NB)
Remarks: Specimens described by Mahon (1956) differ from those described by other authors and are likely not *E. rosseteri* (McLaughlin and Burt 1979a).

Hispaniolepis arcuata (Kowalewski, 1904)

Syn: *Hymenolepis arcuata* Kowalewski, 1904
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Hymenolepis albertensis Denny, 1969

Site: small intestine
Hosts: Domestic duck (1*)
Aythya affinis (1+2)

A. americana (1+)

Melanitta fusca (1)

Dist: Alta

Records: 1. Denny, 1969; 2. Bush and Holmes 1986a

Remarks: + Experimental infections producing mature cestodes. *Experimental infections producing immature cestodes.

Hymenolepis anatina (Krabbe, 1869)

Site: small intestine

Hosts: *Anas acuta* (1)

A. discors (2)

Dist: Man

Records: 1. Buscher 1965; 2. Buscher 1966

Remarks: Schmidt (1986) has listed this species in *Echinocotyle* Blanchard (1891). According to McDonald (1969), *H. anatina* is unrecognizable. Regardless, the sucker armature is quite different from that of *E. rosseteri*. See remarks on *H. rauschi*.

Hymenolepis pusilla Podesta and Holmes, 1970

Site: small intestine (posterior third)

Hosts: *Aythya affinis* (1,2,3)

A. valisineria (1)

Dist: Alta

Records: 1. Podesta and Holmes 1970; 2. Hair and Holmes 1975; 3. Bush and Holmes 1986a,b

Remarks: Podesta and Holmes (1970) also completed the life cycle of this species in *A. affinis* and *A. valisineria*.

Hymenolepis rauschi Schiller, 1950

Site: small intestine

Host: *Anas rubripes*

Dist: NB

Records: 1. McLaughlin and Burt 1973; 2. McLaughlin and Burt 1979a,b

Remarks: Yamaguti (1959) placed *H. rauschi* in the genus *Echinocotyle* Blanchard (1891) on the basis of its armed suckers. Schmidt (1986), apparently following Yamaguti, also included *H. rauschi* in *Echinocotyle*. The sucker armature in *H. rauschi* resembles that seen in many *Diorchis* species and is quite different from that of *E. rosseteri*, the type species of *Echinocotyle*. McLaughlin and Burt (1979a) suggested that *Echinocotyle* should include only those species whose sucker armature resembled that of *E. rosseteri* and returned *H. rauschi* to the genus *Hymenolepis* s.l.

Hymenolepis spinocirrosa Podesta and Holmes, 1970

Site: small intestine (posterior third)

Hosts: *Aythya affinis* (1,2,4)

A. americana (1)

A. marila (3)

A. valisineria (1)

Dist: Alta, NB

Records: 1. Podesta and Holmes 1970 (Alta); 2. Hair and Holmes 1975 (Alta); 3. McLaughlin and Burt 1979a,b (NB); 4. Bush and Holmes 1986a,b (Alta)

Remarks: Podesta and Holmes (1970) also completed the life cycle of this species in *A. affinis*, *A. americana* and *A. valisineria*.

Hymenolepis trombidacantha Podesta and Holmes, 1970

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Podesta and Holmes 1970

Remarks: Podesta and Holmes (1970) also completed the life cycle of this species in *A. affinis*.

Hymenolepis spp.

Site: intestine

Hosts: *Aix sponsa* (12)

Anas acuta (1,6)

A. discors (1)

A. platyrhynchos (6)

A. rubripes (7,12)

Anatidae (11,16)

Aythya affinis (8,15)

A. valisineria (4)

Bucephala albeola (12)

Lophodytes cucullatus (10)

Melanitta fusca (14)

M. nigra (14)

M. perspicillata (14)

Branta bernicla (9)

B. canadensis (12)

Domestic goose (3)

Cygnus buccinator (2,5,13)

C. columbianus (13)

Dist: Alta, BC, Man, NB, Nfld, NWT, Ont, Que

Records: 1. Swales 1933 (Alta); 2. Cowan 1946 (BC); 3. Schad 1962 (Que); 4. Cornwell and Cowan 1963 (Man); 5. MacNeill 1970 (BC); 6. Crichton and Welch 1972 (Man); 7. McLaughlin and Burt 1973 (NB); 8. Hair and Holmes 1975 (Alta); 9. Neraasen and Holmes 1975 (NWT); 10. Bain and Threlfall 1977 (Ont);

11. MacNeil and Barnard 1978 (BC);
12. McLaughlin and Burt 1979b (NB);
13. McKelvey and MacNeill 1980 (BC);
14. Bourgeois and Threlfall 1982 (BC,NB,Nfld);
15. Bush and Holmes 1986a,b (Alta); 16. Hoeve and Scott 1988 (Que)

Microsomacanthus abortiva (von Linstow, 1904)

Syn: *Hymenolepis abortiva* von Linstow, 1904

Site: small intestine, caecum

Hosts: *Anas discors* (3)

A. platyrhynchos (3)

A. rubripes (1,3)

Aythya affinis (2,4)

Dist: Alta, NB

Records: 1. McLaughlin and Burt 1973 (NB);
2. Hair and Holmes 1975 (Alta); 3. McLaughlin and Burt 1979a,b (NB); 4. Bush and Holmes 1986a,b (Alta)

Remarks: All specimens from *Anas* spp. found in caecum; those from *Aythya affinis* occurred in the small intestine.

Microsomacanthus compressa (Linton, 1892)

Syn: *Hymenolepis compressa* (Linton, 1892)

Site: small intestine

Hosts: *Anas acuta* (1)

Aythya affinis (2)

Dist: Alta, Man

Records: 1. Buscher 1965 (Man); 2. Hair and Holmes 1975 (Alta)

Remarks: Specimens identified as *H. compressa* by McLaughlin and Burt (1973) are *H. paracompressa*.

Microsomacanthus collaris (Batsch, 1786)

Syn: *Hymenolepis collaris* (Batsch, 1786)

Site: small intestine

Hosts: *Anas rubripes* (1,2)

Aythya collaris (2)

Dist: NB

Records: 1. McLaughlin and Burt 1973;
2. McLaughlin and Burt 1979a,b

Microsomacanthus fausti (Tseng-Shen, 1932)

Syn: *Hymenolepis fausti* (Tseng-Shen, 1932)

Site: small intestine

Hosts: *Aythya affinis* (1,3)

A. collaris (2)

Dist: Alta, Ont

Records: 1. Hair and Holmes 1975 (Alta);
2. Noseworthy and Threlfall 1978 (Ont); 3. Bush and Holmes 1986a,b (Alta)

Remarks: Bush and Holmes (1986a,b) found only immature forms. Czaplinski and Vaucher

(1977), on re-examination of the original specimens, concluded that the original description was based on fragmentary material consisting of strobilae of *Microsomacanthus paramicrosoma* Gasowska, 1931 and scolices of a different species, possibly *Microsomacanthus spiralibursata* Czaplinski, 1956. They renamed *Microsomacanthus fausti* of Spasskaja and Spasskii (1961) *Microsomacanthus baeri*.

Microsomacanthus formosoides Spasskaja and Spasskii, 1961

Syn: *Hymenolepis (Microsomacanthus)*

formosoides (Spasskaja and Spasskii, 1961)

Site: small intestine

Host: *Somateria mollissima*

Dist: Nfld

Record: Bishop and Threlfall 1974

Microsomacanthus hopkinsi (Schiller, 1951)

Syn: *Hymenolepis hopkinsi* Schiller, 1951

Site: caecum

Hosts: *Aix sponsa* (7)

Anas acuta (1,6)

A. platyrhynchos (6+,7)

A. rubripes (2,4,7)

A. strepera (1)

Domestic duck (2*)

Aythya affinis (3+,5)

A. americana (3*)

A. valisineria (3+)

Dist: Alta, Man, NB

Records: 1. Buscher 1965 (Man);
2. McLaughlin and Burt 1970 (NB); 3. Podesta and Holmes 1970 (Alta); 4. McLaughlin and Burt 1973 (NB); 5. Hair and Holmes 1975 (Alta); 6. McLaughlin 1975 (Man);
7. McLaughlin and Burt 1979a,b (NB)

Remarks: *Experimental infections only.
+Natural and experimental infections yielding mature specimens.

Microsomacanthus melaniittae Ryjikov, 1962

Syn: *Hymenolepis melaniittae* (Ryjikov, 1962)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: Bush and Holmes 1986a,b

Remarks: Only immature specimens were found.

Microsomacanthus microskrabini Spasskii and Jurpalova, 1964

Syn: *Hymenolepis (Microsomacanthus)*

microskrabini (Spasskii and Jurpalova, 1964)

- Hymenolepis microskrabini* (Spasskii and Jurpalova, 1964)
 Site: small intestine
 Hosts: Domestic duck (1*)
Aythya affinis (1+,2,4)
A. americana (1+)
Somateria mollissima (3)
 Dist: Alta, Nfld
 Records: 1. Denny 1969 (Alta); 2. Hair and Holmes 1975 (Alta); 3. Bishop and Threlfall 1974 (Nfld); 4. Bush and Holmes 1986a,b (Alta)
Remarks: *Experimental infection; only immature forms recovered. + Experimental infections producing mature cestodes.
- Microsomacanthus paracompressa* (Czaplinski, 1956)
 Syn: *Hymenolepis paracompressa* Czaplinski, 1956 *Hymenolepis compressa* of McLaughlin and Burt (1973)
 Site: small intestine
 Hosts: *Anas acuta* (2)
A. platyrhynchos (2)
A. rubripes (1,2)
Aythya affinis (3)
 Dist: Alta, NB
 Records: 1. McLaughlin and Burt 1973 (NB); 2. McLaughlin and Burt 1979a,b (NB); 3. Bush and Holmes 1986a,b (Alta)
Remarks: Bush and Holmes (1986b) reported immature specimens only.
- Microsomacanthus parvula* (Kowalewski, 1904)
 Syn: *Hymenolepis parvula* Kowalewski, 1904 *Kowalewski parvula* (Kowalewski, 1904)
 Site: small intestine
 Hosts: *Anas rubripes* (1,4)
Aythya affinis (2,5)
A. collaris (3)
 Dist: Alta, NB, Ont
 Records: 1. McLaughlin and Burt 1973 (NB); 2. Hair and Holmes 1975 (Alta); 3. Noseworthy and Threlfall 1978 (Ont); 4. McLaughlin and Burt 1979a,b (NB); 5. Bush and Holmes 1985a (Alta)
- Microsomacanthus recurvata* Spasskaja and Spasskii, 1961
 Syn: *Hymenolepis recurvata* (Spasskaja and Spasskii)
 Site: small intestine
 Host: *Aythya affinis*
 Dist: Alta
 Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b
- Microsomacanthus somateriae* Ryjnikov, 1965
 Syn: *Hymenolepis (Microsomacanthus) somateriae* (Ryjnikov, 1965)
 Site: small intestine
 Host: *Somateria mollissima*
 Dist: Nfld
 Record: Bishop and Threlfall 1974
- Microsomacanthus spiralibursata* (Czaplinski, 1956)
 Syn: *Hymenolepis spiralibursata* Czaplinski, 1956
 Site: small intestine
 Hosts: Domestic duck (1*)
Aythya affinis (1,2)
 Dist: Alta
 Records: 1. Denny 1969; 2. Hair and Holmes 1975
Remarks: *Experimental infection producing mature specimens.
- Microsomacanthus teresoides* (Fuhrmann, 1906)
 Syn: *Hymenolepis teresoides* Fuhrmann, 1906
 Site: small intestine
 Host: *Anas strepera*
 Dist: Man
 Record: Buscher 1965
- Microsomacanthus tuvensis* Spasskaja and Spasskii, 1961
 Syn: *Hymenolepis tuvensis* (Spasskaja and Spasskii, 1961)
 Site: small intestine
 Hosts: Domestic duck (1*)
Aythya affinis (1+,2,3,5)
A. americana (2)
A. marila (4)
A. valisineria (2)
Melanitta fusca (2)
 Dist: Alta, NB
 Records: 1. Denny 1969 (Alta); 2. Podesta and Holmes 1970 (Alta); 3. Hair and Holmes 1975 (Alta); 4. McLaughlin and Burt 1979a,b (NB); 5. Bush and Holmes 1986a,b (Alta)
Remarks: *Experimental infection; only immature specimens recovered. +Mature specimens from natural and experimental infections.

Parabisaccanthes philactes (Schiller, 1951)

Site: small intestine

Hosts: *Anser albifrons*

Branta bernicla

Chen caerulescens

Dist: NWT

Record: Neraasen and Holmes 1975

Retinometra cyrtoides (Mayhew, 1925)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Bush and Holmes 1986a,b

Remarks: Immature specimens only.

Retinometra longivaginata (Fuhrmann, 1906)

Site: small intestine

Hosts: *Anser albifrons*

Branta bernicla

Chen caerulescens

Dist: NWT

Record: Neraasen and Holmes 1975

Retinometra macracanthos (von Linstow, 1877)

Site: small intestine

Host: *Bucephala clangula*

Dist: NB

Record: McLaughlin and Burt 1979a,b

Remarks: Immature specimen only.

Retinometra macrocephala (Fuhrmann, 1913)

Syn: *Hymenolepis macrocephala* Fuhrmann, 1913

Site: small intestine

Hosts: *Anas clypeata* (1)

A. discors (2)

Dist: Man

Records: 1. Buscher 1965; 2. Buscher 1966

Remarks: Synonym of *Retinometra venusta* according to Spasskaja (1966).

Retinometra pittalugai (Lopez-Neyra, 1932)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Retinometra venusta (Rosseter, 1897)

Site: small intestine

Host: *Anser albifrons*

Dist: NWT

Record: Neraasen and Holmes 1975

Sobolevicanthus filumferens (Brock, 1942)

Syn: *Hymenolepis filumferens* Brock, 1942

Site: small intestine

Hosts: *Anas clypeata* (1)

A. crecca (4)

A. discors (2,4)

A. rubripes (3,4)

Dist: Man, NB

Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. McLaughlin and Burt 1979a,b (NB)

Sobolevicanthus gracilis (Zeder, 1803)

Syn: *Hymenolepis gracilis* (Zeder, 1803)

Site: small intestine

Hosts: *Aix sponsa* (6)

Anas acuta (1)

A. americana (6)

A. discors (6)

A. rubripes (2,6)

Aythya affinis (3,7)

A. collaris (5)

Branta bernicla (4)

Chen caerulescens (4)

Dist: Alta, Man, NB, NWT, Ont

Records: 1. Buscher 1965 (Man); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. Neraasen and Holmes 1975 (NWT); 5. Noseworthy and Threlfall 1978 (Ont); 6. McLaughlin and Burt 1979a,b (NB); 7. Bush and Holmes 1986a (Alta)

Remarks: Bush and Holmes (1986a) recorded only immature specimens.

Sobolevicanthus kenaiensis (Schiller, 1952)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Bush and Holmes 1986a

Sobolevicanthus octacantha (Krabbe, 1869)

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Bush and Holmes 1986a

Remarks: Immature specimens only.

Sobolevicanthus stollii (Brock, 1941)

Syn: *Hymenolepis stollii* Brock, 1941

Site: small intestine

Host: *Anas acuta*

Dist: Man

Record: Buscher 1965

Sobolevicanthus sp.

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Hair and Holmes 1975

Tschertkovilepis krabbei (Kowalewski, 1895)

Site: small intestine

Hosts: *Anser albifrons*

Branta bernicla

Chen caerulescens

Dist: NWT

Record: Neraasen and Holmes 1975

Remarks: Schmidt (1986) considered the genus *Tschertkovilepis* a synonym of *Microsomacanthus*. *T. krabbei* was not listed. Yamaguti (1959) listed it as a synonym of *Tschertkovilepis conscripta* Railliet et Henry, 1909.

Tschertkovilepis setigera (Froelich, 1789)

Site: small intestine

Hosts: *Anser albifrons*

Branta bernicla

Chen caerulescens

Dist: NWT

Record: Neraasen and Holmes 1975

Remarks: Transferred by Schmidt (1986) to *Microsomacanthus*.

Wardium creplini (Krabbe, 1869)

Site: small intestine

Hosts: *Anser albifrons* (1)

Branta canadensis (2)

Dist: NB, NWT

Records: 1. Neraasen and Holmes 1975 (NWT); 2. McLaughlin and Burt 1979a,b (NB)

Remarks: Schmidt (1986) listed the genus *Wardium* (Mayhew, 1925) as a synonym of *Dicranotaenia* (Railliet, 1892) and transferred this species to it.

Wardium sp.

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Hair and Holmes 1975

Wardoides nyrocae (Yamaguti, 1935)

Site: small intestine

Hosts: *Branta bernicla*

Chen caerulescens

Dist: NWT

Record: Neraasen and Holmes 1975

Remarks: Schmidt (1986) has included this species in *Drepanidotaenia*.

FAMILY ACOLEIDAE

Diploposthe laevis (Bloch, 1782)

Site: small intestine

Hosts: *Aythya marila* (1)

A. collaris (2,3)

Dist: NB, Ont, Que

Records: 1. Mahon 1956 (Que); 2.

Noseworthy and Threlfall 1978 (Ont); 3.

McLaughlin and Burt 1979a,b (NB)

FAMILY DILEPIDIDAE SUBFAMILY DILEPIDINAE

Anomotaenia sp.

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Record: Hair and Holmes 1975

Lateriporus geographicus Cooper, 1921

Site: small intestine

Hosts: *Clangula hymealis* (2)

Somateria mollissima (1)

Dist: NWT, Que

Records: 1. Cooper 1921 (NWT); 2. Mahon 1956 (Que)

Lateriporus mathevossianae Ryjikov and Gubanov, 1962

Site: small intestine

Hosts: *Aythya affinis**

Melanitta fusca

Dist: Alta

Record: Denny, 1969

Remarks: Denny (1969) also recovered immature specimens from experimentally exposed *M. fusca* and *A. affinis*.

*Immature specimens in natural infections.

Lateriporus skrjabini Mathevossian, 1946

Site: small intestine

Hosts: *Anas acuta* (1*)

A. americana (1*)

A. discors (1*)

A. platyrhynchos (1+)

A. strepera (1*)

Domestic duck (1+)

Aythya affinis (1', 2, 3)

A. americana (1')

A. valisineria (1)

Bucephala albeola (1*)

B. clangula (1*)

Melanitta fusca (1*)

Oxyura jamaicensis (1*)

Dist: Alta

Records: 1. Denny 1969; 2. Hair and Holmes 1975; 3. Bush and Holmes 1986a,b

Remarks: *Immature specimens only from natural infections. +Immature specimens only following experimental infections. †Mature specimens from natural and experimental infections.

Lateriporus teres (Krabbe, 1869)

Site: duodenum and small intestine

Host: *Somateria mollissima*

Dist: Nfld

Records: 1. Threlfall 1968; 2. Bishop and Threlfall 1974

Oligorchis sp.

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: Bush and Holmes 1986a,b

Remarks: Immature specimens only; apparently an undescribed species (Bush and Holmes 1986a).

Platyscolex ciliata (Fuhrmann, 1913)

Syn: *Anomotaenia ciliata* Fuhrmann, 1913

Site: small intestine

Hosts: *Anas acuta* (1)

A. clypeata (1)

A. discors (2)

A. rubripes (3,5)

A. strepera (1)

Bucephala clangula (5)

Branta bernicla (4)

Chen caerulescens (4)

Dist: Man, NB, NWT

Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. Neraasen and Holmes 1975 (NWT); 5. McLaughlin and Burt 1979b (NB)

Unciunia sp.

Site: small intestine

Host: *Aythya affinis*

Dist: Alta

Records: Bush and Holmes 1986a,b

Remarks: Apparently an undescribed species (Bush and Holmes 1986a).

Unidentified Cestodes

Site: intestine

Hosts: *Anas acuta* (2)

A. americana (2)

A. clypeata (2)

A. crecca (2,4)

A. discors (2,4)

A. platyrhynchos (2,3)

A. rubripes (7)

A. strepera (2)

Anatidae (6)

Aythya affinis (2,9)

A. collaris (8)

Bucephala clangula (7)

Cygnus columbianus (1)

Lophodytes cucullatus (5)

Melanitta fusca (2)

Dist: Alta, BC, NB, Ont, Sask

Records: 1. Wickware 1930 (Ont); 2. Swales 1934 (Alta); 3. Wobeser 1974 (Sask); 4. Turner and Threlfall 1975 (NB); 5. Bain and Threlfall 1977 (Ont); 6. MacNeil and Barnard 1978 (BC); 7. Mahoney and Threlfall 1978 (NB,Ont); 8. Noseworthy and Threlfall 1978 (Ont); 9. Bush and Holmes 1986a,b (Alta)

HOST PARASITE LIST

ORDER ANSERIFORMES SUBORDER ANSERES

FAMILY ANATIDAE SUBFAMILY ANATINAE

Tribe Anatini

Anas acuta L.

- Northern Pintail
- Syn: *Dafila acuta* (L.)
- Aploparaksis furcigera* (Man)
- Cloacotaenia megalops* (Man, Sask)
- Diorchis bulbodes* (Man)
- D. nyrocae* (Man)
- Echinocotyle rosseteri* (Man)
- Fimbriaria fasciolaris* (Man, NB)
- Gastrotaenia cygni* (Man)
- Hymenolepis anatina* (Man)
- Hymenolepis* sp. (Man)
- Lateriporus skrjabini* (Alta)
- Microsomacanthus compressa* (Man)
- M. hopkinsi* (Man)
- M. paracompressa* (NB)
- Platyscolex ciliata* (Man)
- Sobolevicanthus gracilis* (Man)
- S. stolli* (Man)
- Cestodes (Alta)

Anas americana Gmelin

- American Wigeon (Gmelin)
- Syn: *Mareca americana*
- Cloacotaenia megalops* (NB)
- Gastrotaenia cygni* (Man)
- Lateriporus skrjabini* (Alta)
- Sobolevicanthus gracilis* (NB)
- Cestodes (Alta)

Anas clypeata L.

- Northern Shoveler
- Syn: *Spatula clypeata* (L.)
- Aploparaksis veitchi* (Man)
- Cloacotaenia megalops* (Man)
- Diorchis nyrocae* (Man)
- Echinocotyle rosseteri* (Man, Que)
- Fimbriaria fasciolaris* (Man)
- Gastrotaenia cygni* (Man)
- Platyscolex ciliata* (Man)
- Retinometra macrocephala* (Man)
- Sobolevicanthus filumferens* (Man)
- Cestodes (Alta)

Anas crecca L.

- Green-winged Teal
- Syn: *Anas crecca carolinensis*
- Echinocotyle rosseteri* (NB, Que)
- Fimbriaria fasciolaris* (NB)
- Gastrotaenia cygni* (Man)
- Sobolevicanthus filumferens* (NB)
- Cestodes (Alta, NB, Que)

Anas discors L.

- Blue-winged Teal
- Syn: *Querquedula discors* (L.)
- Aploparaksis furcigera* (Man, NB)
- Cloacotaenia megalops* (Man, NB)
- Diorchis microcirrosa* (NB)
- D. nyrocae* (Man)
- Echinocotyle rosseteri* (Man, NB, Que)
- Fimbriaria fasciolaris* (Man, NB)
- Gastrotaenia cygni* (Man)
- Hymenolepis anatina* (Man)
- Lateriporus skrjabini* (Alta)
- Microsomacanthus abortiva* (NB)
- Platyscolex ciliata* (Man)
- Retinometra macrocephala* (Man)
- Sobolevicanthus filumferens* (Man, NB)
- S. gracilis* (NB)
- Cestodes (Alta, NB, Que)

Anas platyrhynchos L.

- Mallard
- Cloacotaenia megalops* (Man, Sask)
- Dicranotaenia coronula* (NB)
- D. nyrocae* (Man)
- Fimbriaria fasciolaris* (Alta, Man, NB)
- Gastrotaenia cygni* (Man)
- Hymenolepis* sp. (Man)
- Lateriporus skrjabini* (Alta)
- Ligula intestinalis* (Man)
- Microsomacanthus abortiva* (NB)
- M. hopkinsi* (Man, NB)
- M. paracompressa* (NB)
- Cestodes (Alta, Sask)

Anas rubripes Brewster

- American Black Duck
- Aploparaksis furcigera* (NB)
- Dicranotaenia coronula* (NB)
- Diorchis bulbodes* (NB)
- Echinocotyle rosseteri* (NB)
- Fimbriaria fasciolaris* (NB)
- Hymenolepis rauschi* (NB)
- Hymenolepis* sp. (NB)

Microsomacanthus abortiva (NB)
M. collaris (NB)
M. hopkinsi (NB)
M. paracompressa (NB)
M. parvula (NB)
Platyscolex ciliata (NB)
Sobolevicanthus filumferens (NB)
S. gracilis (NB)
Cestodes (NB, Que)

Anas strepera L.

– Gadwall
Aploparaksis furcigera (Man)
A. veitchi (Man)
Cloacotaenia megalops (Man)
Diorchis spinata (Man)
Fimbriaria fasciolaris (Alta, Man)
Gastrotaenia cygni (Man)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (Man)
M. teresoides (Man)
Platyscolex ciliata (Man)
Cestodes (Alta)

Domestic ducks

– (Includes *Anas platyrhynchos domesticus*;
most represent experimental infections)

Dicranotaenia coronula (Ont)
Fimbriaria fasciolaris (Alta)
Hymenolepis albertensis (Alta)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (NB)
M. microskrjabini (Alta)
M. spiralibursata (Alta)
M. tuvensis (Alta)

Tribe Aythyini

Aythya affinis (Eyton)

– Lesser Scaup
Anomotaenia sp. (Alta)
Anatinella spinulosa (Alta)
Cloacotaenia megalops (Alta)
Dicranotaenia coronula (Alta)
Diorchis asiatica (Alta)
D. bulbodes (Alta)
D. excentricus (Alta)
D. inflata (Alta)
D. nyrocoides (Alta)
D. ransomi (Alta)
D. spinata (Alta)
D. stefanskii (Alta)
Diorchis sp. (Alta)
Fimbriaria fasciolaris (Alta)
Gastrotaenia cygni (Man)
Hispaniolepis arcuata (Alta)

Hymenolepis albertensis (Alta)
H. pusilla (Alta)
H. spinocirrosa (Alta)
H. trombidacantha (Alta)
Hymenolepis sp. (Alta)
Lateriporus mathevossianae (Alta)
L. skrjabini (Alta)
Microsomacanthus abortiva (Alta)
M. compressa (Alta)
M. fausti (Alta)
M. hopkinsi (Alta)
M. melanittae (Alta)
M. microskrjabini (Alta)
M. paracompressa (Alta)
M. parvula (Alta)
M. recurvata (Alta)
M. spiralibursata (Alta)
M. tuvensis (Alta)
Oligorchis sp. (Alta)
Retinometra cyrtoides (Alta)
R. pitalugai (Alta)
Sobolevicanthus gracilis (Alta)
S. kenaiensis (Alta)
S. octacantha (Alta)
Sobolevicanthus sp. (Alta)
Uncinia sp. (Alta)
Wardium sp. (Alta)
Cestodes (Alta)

Aythya americana (Eyton)

– Redhead
Fimbriaria fasciolaris (Alta)
Gastrotaenia cygni (Man)
Hymenolepis albertensis (Alta)
H. spinocirrosa (Alta)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (Alta)
M. microskrjabini (Alta)
M. tuvensis (Alta)

Aythya collaris (Donovan)

– Ring-necked Duck
Aploparaksis furcigera (NB)
Dicranotaenia coronula (NB)
Diploposthe laevis (NB, Ont)
Fimbriaria fasciolaris (NB)
Microsomacanthus collaris (NB)
M. fausti (Ont)
M. parvula (Ont)
Sobolevicanthus gracilis (Ont)
Cestodes (Ont)

Aythya marila (L.)

- Greater Scaup
- Syn: *Nyroca marila* (L.)
- Dicranotaenia coronula* (NB)
- Diploposthe laevis* (Que)
- Fimbriaria fasciolaris* (NB)
- Hymenolepis spinocirrosa* (NB)
- Microsomacanthus tuvensis* (NB)

Aythya valisineria (Wilson)

- Canvasback
- Cloacotaenia megalops* (Man)
- Fimbriaria fasciolaris* (Alta, Man)
- Gastrotaenia cygni* (Man)
- Hymenolepis pusilla* (Alta)
- H. spinocirrosa* (Alta)
- Hymenolepis* sp. (Man)
- Lateriporus skrjabini* (Alta)
- Microsomacanthus hopkinsi* (Alta)
- M. tuvensis* (Alta)

Tribe Cairini

Aix sponsa (L.)

- Wood Duck
- Fimbriaria fasciolaris* (NB)
- Hymenolepis* sp. (NB)
- Microsomacanthus hopkinsi* (NB)
- Sobolevicanthus gracilis* (NB)

Tribe Mergini

Bucephala albeola (L.)

- Bufflehead
- Gastrotaenia cygni* (Man)
- Lateriporus skrjabini* (Alta)
- Hymenolepis* sp. (NB)

Bucephala clangula (L.)

- Common Goldeneye
- Dicranotaenia coronula* (NB)
- Fimbriaria fasciolaris* (NB)
- Lateriporus skrjabini* (Alta)
- Platyscolex ciliata* (NB)
- Retinometra macracanthos* (NB)
- Cestodes (Ont)

Clangula hymealis (L.)

- Oldsquaw
- Lateriporus geographicus* (Que)

Lophodytes cucullatus (L.)

- Hooded Merganser
- Hymenolepis* sp. (Ont)
- Schistocephalus solidus* (Ont)
- Cestodes (Ont)

Melanitta fusca (L.)

- White-winged Scoter
- Syn: *Melanitta deglandi* (Bonaparte)
- Cloacotaenia megalops* (BC)
- Hymenolepis albertensis* (Alta)
- Hymenolepis* sp. (BC, NB, Nfld)
- Lateriporus mathevossianae* (Alta)
- L. skrjabini* (Alta)
- Microsomacanthus tuvensis* (Alta)
- Cestodes (Alta)

Melanitta nigra (L.)

- Black Scoter
- Fimbriarioides* sp. (BC, NB, Nfld)
- Hymenolepis* sp. (BC, NB, Nfld)

Melanitta perspicillata (L.)

- Surf Scoter
- Fimbriarioides* sp. (BC, NB, Nfld)
- Hymenolepis* sp. (Alta, BC, NB, Nfld)

Mergus merganser L.

- Common Merganser
- Syn: *Mergus americanus* Cassin
- Mergus merganser americanus* Cassin
- Fimbriaria fasciolaris* (BC)
- Ligula intestinalis* (BC, Que)
- Schistocephalus solidus* (BC)

Somateria mollissima (L.)

- Common Eider
- Syn: *Somateria mollissima* var. *nigra* Bonaparte
- Aploparaksis* sp. (NWT)
- Fimbriarioides intermedia* (Nfld, NWT)
- Lateriporus geographicus* (NWT)
- L. teres* (Nfld)
- Microsomacanthus formosoides* (Nfld)
- M. microskrjabini* (Nfld)
- M. somateriae* (Nfld)

Tribe Oxyurini

Oxyura jamaicensis (Gmelin)

- Ruddy Duck
- Lateriporus skrjabini* (Alta)

SUBFAMILY ANSERINAE

Tribe Anserini

Anser albifrons (Scopoli)

- Greater White-fronted Goose
- Drepanidotaenia barrowensis* (NWT)
- Parabisacanthus philactes* (NWT)
- Retinometra longivaginata* (NWT)

R. venusta (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardium creplini (NWT)

Branta bernicla (L.)

– Brant
– Syn: *Branta bernicla nigricans* (Lawrence)
Dicranotaenia coronula (NWT)
Diorchis stefanskii (NWT)
Drepanidotaenia barrowensis (NWT)
D. lanceolata (NWT)
Fimbriaria fasciolaris (NWT)
Hymenolepis sp. (NWT)
Parabisacanthus philactes (NWT)
Platyscolex ciliata (NWT)
Retinometra longivaginata (NWT)
Sobolevicanthus gracilis (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardoides nyrocae (NWT)

Branta canadensis (L.)

– Canada Goose
Drepanidotaenia lanceolata (NB)
Hymenolepis sp. (NB)
Wardium creplini (NB)

Chen caerulescens (L.)

– Snow Goose
– Syn: *Chen caerulescens caerulescens* (L.)
Chen hyperborea atlantica Kennard
Cloacotaenia megalops (NWT)
Dicranotaenia coronula (NWT)
Diorchis stefanskii (NWT)
Drepanidotaenia barrowensis (NWT)

D. lanceolata (NWT, Que)
Fimbriaria fasciolaris (NWT)
Parabisacanthus philactes (NWT)
Platyscolex ciliata (NWT)
Retinometra longivaginata (NWT)
Sobolevicanthus gracilis (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardoides nyrocae (NWT)

Domestic geese

Hymenolepis sp. (Que)

Tribe Cygnini

Cygnus buccinator Richardson

– Trumpeter Swan
– Syn: *Cygnus cygnus buccinator* Richardson
Hymenolepis sp. (BC)

Cygnus columbianus (Ord)

– Tundra Swan
– Syn: *Cygnus columbianus columbianus* (Ord)
Hymenolepis sp. (BC)
Cestodes (Ont)

Unspecified Anatidae

Hymenolepis sp. (BC, Que)
Fimbriaria fasciolaris (Alta, Que)
Diorchis sp. (Que)
Cestodes (BC)

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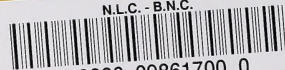
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