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UNITED STATES DEPARTMENT OF THE INTERIOR, WALTER J. HICKEL, *SECRETARY*
Leslie L. Glasgow, *Assistant Secretary for*
Fish and Wildlife, Parks, and Marine Resources
Fish and Wildlife Service, Charles H. Meacham, *Commissioner*
Bureau of Sport Fisheries and Wildlife, John S. Gottschalk, *Director*

CATALOGUE OF HELMINTHS OF WATERFOWL (ANATIDAE)

By

Malcolm E. McDonald

Bear River Research Station
Denver Wildlife Research Center
Division of Wildlife Research



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which a parasite has been observed (one paper may report a species from many individual ducks or from several species). The status is recorded as rare (reported once or twice), infrequent (3 to 10 reports), frequent (11 to 20 reports), common (21 to 50 reports), or very common (over 50 reports). For many parasites this value may indicate the number of studies within their geographic range or taxonomic group rather than their actual abundance, but similar faults would be found with any criterion used. Statements about pathological effects and mortality are merely a guide to the literature.

Questions about the validity of a species or a name are documented in STATUS AS SPECIES. Species names which are definitely invalid or are regarded as invalid by several taxonomists, but which have been reported for waterfowl in the literature since about 1910, are listed in an INDEX OF SYNONYMS AND INVALID NAMES. Many species whose validity is in dispute are given complete coverage. Often such species probably represent only individual variations or inadequate descriptions (see Boddeke, 1960, for the genus Prosthogonimus, or comments of Stunkard and Uzmann, 1958, on Gymnophallus). About 130 names are excluded from the checklist and catalogue as synonyms, but about 100 more of the nearly 1,000 names included have been declared synonyms by someone.

In the listings under SYNONYMY, lapses and misspellings have been ignored, unless creating a distinctly new name or combination. Dates of publication are those given in the Index-Catalogue of the ARS Parasitological Laboratory. Transliteration of Cyrillic alphabets has followed the table in Circular 115, U. S. Fish and Wildlife Service (Cook, F. W., 1961, Literature Citations in Publications of the Fish and Wildlife Service). This sometimes results in spelling an author's name differently from the form in his own papers, a practice justifiably condemned recently by Skrjabin, but the only alternative seems to be chaos.

The genus Hymenolepis in the family Hymenolepididae of Cestoda is being radically revised and broken up, primarily by taxonomists of the U.S.S.R. In the earlier edition of this catalogue this revision was ignored, and the use of Hymenolepis sensu lato was retained for all forms. This revision has now gone too far to be ignored, but the recognition and division of genera is in such a state of flux that no general arrangement can yet be relied on. For each species both the most recent generic designation and the name in Hymenolepis s. l. (if one exists) are given, but the arrangement of species in the catalogue is alphabetical, as if all were still in the genus Hymenolepis. This is a poor compromise, perhaps, but seems the best arrangement for location of particular species, since many have been assigned to three, four, or five different genera in the past 10 years.

Under FINAL HOSTS, avian and mammalian hosts are listed by orders to show the range of host specificity. The arrangement of orders of

birds follows that of the AOU Checklist (American Ornithologist's Union, Check-list of North American Birds, 5th edition, 1957) with the exception that the Anseriformes are given first. The arrangement of species within each group is alphabetical, except that Anser anser and Anas platyrhynchos are placed first in their respective tribes because of their importance as the origin of domestic waterfowl. Within the Anseriformes, the degree of host specificity is further shown by grouping the species into the tribes as listed by Delacour (Waterfowl of the World, 1959-1960) and Scott (A Coloured Key to the Waterfowl of the World, Rev. Ed., 1961). Domestic waterfowl hosts are indicated "(dom.)" with no subspecific connotation; laboratory strains of rodents are similarly designated "(lab.)". Ducks used as experimental hosts in determining life cycles are assumed to be domestic ducks unless the paper specifically states otherwise; experimental hosts are designated "[exper.]". Host subspecies are ignored, except when they apply to forms frequently separated as distinct species.

An attempt has been made to bring all host names up to date and eliminate synonyms. Species names of waterfowl are those of Scott (1961); names for species of other avian groups follow Peters' check-list (Check-list of Birds of the World, 1931-1963) as far as possible. For passerine birds not yet covered by Peters, the AOU Check-list and Vaurie (Birds of the Palearctic Fauna, Order Passeriformes, 1959) were used. Since current usage in Podicipediformes differs markedly from that of Peters, the AOU Check-list and Peterson, Mountfort, and Hollom (A Field Guide to the Birds of Britain and Europe, 1959) were used for this group.

Staff members of the United States National Museum were kind enough to give suggestions concerning names of other hosts: Dr. Leonard P. Schultz and associates for fish; Dr. James A. Peters for amphibians and reptiles; Dr. Fenner A. Chace, Jr., Dr. Thomas E. Bowman, and Dr. Louis S. Kornicker for crustaceans; and Dr. Meredith L. Jones for annelids. Dr. G. E. Gates also suggested corrections for some annelid names. These men must not be held responsible in any way for errors in host names, however. Nomenclature of freshwater snails follows that of Malek (Laboratory Guide and Notes for Medical Malacology, 1962). For simplification and elimination of considerable confusion, all genera derived from Lymnaea have been ignored and their species listed under Lymnaea s. l.

DISTRIBUTION is given by continent and countries or other political divisions; the distribution by faunal regions can often be worked out from this information. The names used are mostly modern, but no doubt some errors have been made by the author--no distinction is made between East and West Germany, some Polish records may have been in what is now the U.S.S.R., and some records marked India might actually be in Pakistan. Recorded distribution in the world is sadly unbalanced, because only the U.S.S.R. and countries in central and western Europe have been adequately studied. At least 6,000 wild

waterfowl have been examined in systematic surveys in Asiatic U.S.S.R., and 1,500 in European U.S.S.R. Surveys in the rest of Europe cover about 1,100 waterfowl, and those in North America 215 to 1,220 for various classes of helminths. The rest of the world is represented only by sporadic reports. Studies of domestic waterfowl are primarily confined to the U.S.S.R. and eastern Europe, but also show extensive coverage in eastern Asia.

CHECKLIST OF HELMINTHS REPORTED FROM WATERFOWL

Classification in: Grassé, P. (Ed.) *Traité de Zoologie*, Tome IV, Fasc. 1-3, 1961, 1965, Masson et Cie, Paris. (Trematoda - Baer & Joyeux, 1961; Cestoda - Joyeux & Baer, 1961; Nematoda - Roman, 1965; Chabaud, 1965; Acanthocephala - Baer, 1961)

TREMATODA

ORDER STRIGEATOIDEA

Family Cyathocotylidae

- Cyathocotyle bushiensis Khan, 1962
- Cyathocotyle indica Mehra, 1943
- Cyathocotyle melanittae Yamaguti, 1934
- Cyathocotyle prussica Mühling, 1896
- Cyathocotyle skrjabini Petrov & Sudarikov, 1963
- Holostephanus curonensis (Szidat, 1933) Yamaguti, 1939
- Holostephanus luehei Szidat, 1936
- Holostephanus lutzi (Faust & Tang, 1938) Mehra, 1943
- Holostephanus volgensis (Sudarikov, 1962) Vojtkova, 1966
- Paracoenogonimus ovatus Katsurada, 1914
- Paracoenogonimus viviparae (Linstow, 1877) Mehra, 1947
- Mesostephanus sp.

Family Diplostomatidae

- Diplostomum gasterostei Williams, 1966
- Diplostomum gaviium (Guberlet, 1922) Hughes, 1929
- Diplostomum indistinctum (Guberlet, 1923) Hughes, 1929
- Diplostomum mergi Dubois, 1932
- Diplostomum micradenum (Cort & Brackett, 1939) Olivier, 1940
- Diplostomum parviventosum Dubois, 1932
- Diplostomum pelmatoides Dubois, 1932
- Diplostomum phoxini (Faust, 1918) Arvy & Buttner, 1954
- Diplostomum pusillum (Dubois, 1927) Dubois, 1932
- Diplostomum scudderi (Olivier, 1941) Dubois, 1966
- Diplostomum spathaceum spathaceum (Rudolphi, 1819) Olsson, 1876
- Diplostomum spathaceum flexicaudum (Cort & Brooks, 1928) Dubois, 1966 [larval cysts]
- Neodiplostomum attenuatum (Linstow, 1906) La Rue, 1926 [larval cysts]
- Neodiplostomum spathula (Creplin, 1829) La Rue, 1926
- Tylodelphys clavatum (Nordmann, 1832) Diesing, 1850
- Ornithodiplostomum ptychocheilus (Faust, 1917) Dubois, 1936
- Ornithodiplostomum ptychocheilus palaearticum Odening, 1963
- Pharyngostomum cordatum (Diesing, 1850) Ciurea, 1922 [larval cysts]
- Alaria canis La Rue & Fallis, 1936 [larval cysts]

Family Strigeidae

- Apatemon anseris Dubois, 1967
- Apatemon cobitidis cobitidis (Linstow, 1890) Vojtek, 1964

- Apatemon cobitidis pellucidus (Yamaguti, 1933) Vojtek, 1964
Apatemon cobitidis proterorhini Vojtek, 1964
Apatemon fuhrmanni Dubois, 1937
Apatemon globiceps Dubois, 1937
Apatemon graciliformis Szidat, 1928
Apatemon gracilis gracilis (Rudolphi, 1819) Szidat, 1928
Apatemon gracilis burti (Miller, 1933) Dubois & Rausch, 1960
Apatemon gracilis canadensis Dubois & Rausch, 1950
Apatemon gracilis congolense Dubois & Fain, 1956
Apatemon gracilis exilis Dubois, 1948
Apatemon gracilis fuligulae (Yamaguti, 1933) Dubois, 1953
Apatemon gracilis indicus (Vidyanthi, 1937) Dubois, 1953
Apatemon gracilis japonicus (Ishii, 1932) Dubois, 1953
Apatemon gracilis minor (Yamaguti, 1933) Dubois & Rausch, 1950
Apatemon gracilis somateriae Dubois, 1948
Apatemon intermedius (Johnston, 1904) Dubois, 1937
Apatemon parvitestis Ishii, 1935
Apatemon skrjabini (Ryzhikov, Leonov, & Tsimbaljuk, 1964) Dubois, 1966
Cotylurus brevis Dubois & Rausch, 1948
Cotylurus cornutus (Rudolphi, 1808) Szidat, 1928
Cotylurus erraticus (Rudolphi, 1809) Szidat, 1928
Cotylurus flabelliformis (Faust, 1917) Van Haitsma, 1931
Cotylurus hebraicus Dubois, 1934
Cotylurus japonicus Ishii, 1932
Cotylurus orientalis Vidyanthi, 1937
Cotylurus platycephalus (Creplin, 1825) Szidat, 1928
Cotylurus raabei (Bezubik, 1958) Dubois, 1964
Cotylurus strigeoides Dubois, 1958
Cotylurus syrius Dubois, 1934
Cotylurostrigea brandivittellata Belogurov, Maksimova, & Tolkacheva, 1966
Parastrigea robusta Szidat, 1928
Pseudapatemon mamilliformis (Tubangui, 1932) Dubois, 1936
Pseudostrigea anatis Ku, 1964
Strigea elegans Chandler & Rausch, 1947 [larval cysts]
Strigea falconis Szidat, 1928 [larval cysts]
Strigea vaginata (Brandes, 1888) Szidat, 1928 [larval cysts]

Family Schistosomatidae

- Austrobilharzia canadensis (McLeod, 1936) [Penner, 1953]
Austrobilharzia chapini (Price, 1929) [Penner, 1953]
Austrobilharzia manitobensis (McLeod, 1936) [Penner, 1953]
Austrobilharzia variglandis (Miller & Northup, 1926) Penner, 1953
Ornithobilharzia pricei Wetzel, 1930
Bilharziella indica (Lal, 1937) Mehra, 1940
Bilharziella lali Baugh, 1963
Bilharziella polonica (Kowalewski, 1895) Looss, 1899
Dendritobilharzia asiaticus Mehra, 1940
Dendritobilharzia pulverulenta (Braun, 1901) Skrjabin, 1924
Gigantobilharzia acotylea Odhner, 1910

Gigantobilharzia adami Fain, 1960
Gigantobilharzia monocotylea Szidat, 1930
Gigantobilharzia nettapi Fain, 1960
Gigantobilharzia plectropteri Fain, 1960
Gigantobilharzia suebica Dönges, 1964
Trichobilharzia adamsi Edwards & Jansch, 1955
Trichobilharzia alaskensis Harkema, 1960
Trichobilharzia anatina Fain, 1955
Trichobilharzia berghoi Fain, 1955
Trichobilharzia brantæ Farr & Blankemeyer, 1956
Trichobilharzia brevis Basch, 1966
Trichobilharzia burnetti (Brackett, 1942) McMullen & Beaver, 1945
Trichobilharzia cameroni Wu, 1953
Trichobilharzia duboisi Fain, 1959
Trichobilharzia elvae (Miller, 1923) Ameel, Van der Woude, & Cort,
1953
Trichobilharzia filiformis (Szidat, 1938) McMullen & Beaver, 1945
Trichobilharzia horiconensis (Brackett, 1942) McMullen & Beaver,
1945
Trichobilharzia indica Baugh, 1963
Trichobilharzia kegonsensis (Brackett, 1942) McMullen & Beaver,
1945
Trichobilharzia kowalewskii (Ejsmont, 1929) McMullen & Beaver,
1945
Trichobilharzia nasicola Fain, 1955
Trichobilharzia ocellata (La Valette, 1855) Brumpt, 1931
Trichobilharzia oregonensis (Macfarlane & Macy, 1946) Macy & Moore,
1953
Trichobilharzia physellæ (Talbot, 1936) McMullen & Beaver, 1945
Trichobilharzia rodhaini Fain, 1955
Trichobilharzia schoutedeni Fain, 1955
Trichobilharzia spinulata Fain, 1955
Trichobilharzia stagnicolæ (Talbot, 1936) McMullen & Beaver, 1945
Trichobilharzia szidati Neuhaus, 1952
Trichobilharzia waubesensis (Brackett, 1942) McMullen & Beaver,
1945
Trichobilharzia yokogawai (Oiso, 1927) McMullen & Beaver, 1945
Cercaria longicauda Macfarlane, 1949
Cercaria micensis Ishida, 1960

Family Cyclocoeliidae

Cyclocoelum brasilianum Stossich, 1902
Cyclocoelum mutabile (Zeder, 1800) Stossich, 1902
Cyclocoelum obscurum (Leidy, 1887) Harrah, 1922
Cyclocoelum odeningi Dubois, 1965
Cyclocoelum vanelli (Rudolphi, 1819) Dubois, 1965
Hyptiasmus arcuatus (Brandes, 1892) Kossack, 1911
Hyptiasmus oculæus Kossack, 1911
Hyptiasmus vigisi Savinov, 1960
Hyptiasmus witenbergi Tret'jakova, 1950
Prohyptiasmus robustus (Stossich, 1902) Witenberg, 1926

Ophthalmophagus magalhaesi Travassos, 1921
Ophthalmophagus nasicola Witenberg, 1923
Ophthalmophagus singularis Stossich, 1902
Neivaia cymbium (Diesing, 1850) Dubois, 1959
Typhlocoelum cucumerinum (Rudolphi, 1809) Stossich, 1902
Typhlocoelum indicum Fotedar, 1965
Typhlocoelum sisowi (Skrjabin, 1913) Dubois, 1959
Typhlocoelum sisowi acirratus (Jain, 1966) comb. nov.

Family Orchipedidae

Orchipedum tracheicola Braun, 1901

Family Brachylaemidae

Brachylaemus fuscatus (Rudolphi, 1819) Joyeux, Baer, & Timon-David,
1932

Leucochloridiomorpha constantiae (Mueller, 1935) Allison, 1943

Leucochloridiomorpha lutea (Baer, 1927) Voelker, 1963

Leucochloridiomorpha papillata Shoemaker, 1961

Leucochloridiomorpha skrjabini Khaziev, 1963

Family Leucochloridiidae

Leucochloridium cyanocittae McIntosh, 1932

Leucochloridium holostomum (Rudolphi, 1819) Lutz, 1928

Family Fellodistomatidae

Gymnophallus bilis Brinkmann, 1956

Gymnophallus bursicola Odhner, 1900

Gymnophallus ceratostomus Tsimbaliuk & Leonov, 1963

Gymnophallus choledocus Odhner, 1900

Gymnophallus deliciosus (Olsson, 1893) Odhner, 1900

Gymnophallus minor Ryzhikov, 1963

Gymnophallus mollissima (Morozov, 1960) Ryzhikov, 1963

Gymnophallus nereicolor Rébecq & Prévot, 1962

Gymnophallus skrjabini Ryzhikov, 1963

Meiogymnophallus jamesoni Bowers, 1966

Meiogymnophallus macroporus (Jameson & Nicoll, 1913) Ching, 1965

Meiogymnophallus macrostomus (Yamaguti, 1939) Ching, 1965

Meiogymnophallus minutus (Cobbold, 1859) Bowers & James, 1967

Meiogymnophallus multigemmulus Ching, 1965

Meiogymnophallus somateriae (Levinsen, 1881) Ching, 1965

Lacunovermis conspicuus Ching, 1965

Parvatrema affine (Jameson & Nicoll, 1913) James, 1964

Parvatrema borealis Stunkard & Uznann, 1958

Parvatrema lintoni James, 1964

Parvatrema ovoplenus (Jameson & Nicoll, 1913) Stunkard & Uznann,
1958

Parvatrema timondavidi Bartoli, 1963

ORDER ECHINOSTOMIDA

Family Cathaemasiidae

Ribeiroia ondatrae (Price, 1931) Price, 1942

Family Echinostomatidae

- Echinochasmus beleocephalus (Linstow, 1873) Dietz, 1909
Echinochasmus coaxatus Dietz, 1909
Echinochasmus dietzevi Isaïchikov, 1927
Echinochasmus japonicus Tanabe, 1926
Echinochasmus mergi mergi (Cannon, 1938) Odening, 1963
Echinochasmus mergi palaearticus Odening, 1963
Echinochasmus milvi Yamaguti, 1939
Echinochasmus mirus Mendheim, 1940
Echinochasmus mordax (Looss, 1899) Price, 1931
Episthmium colymbi (Shigin, 1956) Shigin, 1956
Moliniella anceps (Molin, 1859) Hübner, 1939
Patagifer bilobus (Rudolphi, 1819) Dietz, 1909
Stephanoprora denticulata (Rudolphi, 1802) Odhner, 1910
Stephanoprora gracilis Mendheim, 1940
Stephanoprora pseudodenticulata Mendheim, 1940
Stephanoprora spinosa (Odhner, 1910) Odhner, 1910
Acanthoparyphium kurogamo Yamaguti, 1939
Acanthoparyphium marilae Yamaguti, 1934
Acanthoparyphium melanittae Yamaguti, 1939
Acanthoparyphium paracharadrii Velasquez, 1964
Acanthoparyphium spinulosum Johnston, 1917
Acanthoparyphium tyosenense Yamaguti, 1939
Cotylotretus cubanicus Artfukh, 1958
Cotylotretus grandis (Rudolphi, 1819) Odhner, 1910
Echinoparyphium aconiatum Dietz, 1909
Echinoparyphium baculus (Diesing, 1850) Lühe, 1909
Echinoparyphium bagulai Jain, 1961
Echinoparyphium clerici Skrjabin, 1915
Echinoparyphium colchicus Dzavelidze, 1957
Echinoparyphium dunni Lie & Umathevy, 1965
Echinoparyphium elegans (Looss, 1899) Dietz, 1909
Echinoparyphium ellisi (Johnston & Simpson, 1944) Johnston & Angel,
1949
Echinoparyphium flexum (Linton, 1892) McCoy, 1927
Echinoparyphium gizzardai Verma, 1936
Echinoparyphium minor (Hsü, 1935) Skrjabin & Bashkirova, 1956
Echinoparyphium nordiana Bashkirova, 1941
Echinoparyphium paracinctum Bykhovskaja-Pavlovskaja, 1954
Echinoparyphium querquedulae Ablasov & Chibichenko, 1960
Echinoparyphium recurvatum (Linstow, 1873) Lühe, 1909
Echinoparyphium recurvatum indiana Verma, 1936
Echinoparyphium sinorchis Oshmarin, 1956
Echinoparyphium spiniferum (La Valette, 1855) Ahmed, 1959
Echinoparyphium syrdariense syrdariense Burdelev, 1937
Echinoparyphium syrdariense aquaticum Bashkirova, 1941
Echinoparyphium westsibiricum Isaïchikov, 1925
Neacanthoparyphium echinatoides (Filippi, 1854) Odening, 1962
Echinostoma amurzetica Petrochenko & Egorova, 1961
Echinostoma anseris Yamaguti, 1939
Echinostoma asiatica Mendheim, 1943

Echinostoma audyi Lie & Umathevy, 1965
Echinostoma barbosai Lie & Basch, 1966
Echinostoma bhattacharyai indicus Ablasov & Chibichenko, 1960
Echinostoma chasma Lal, 1939
Echinostoma chinensis Lu, Li, & Chu, 1964
Echinostoma chloropodis (Zeder, 1800) Dietz, 1909
Echinostoma crecci Verma, 1936
Echinostoma dietzi Skrjabin, 1924
Echinostoma echinocephalum (Rudolphi, 1819) Cobbold, 1860
Echinostoma fulicae Porter, 1921
Echinostoma gotoi Ando & Ozaki, 1923
Echinostoma grandis Bashkirova, 1946
Echinostoma hortense Asada, 1926
Echinostoma katuradai Kurisu, 1930
Echinostoma koisarensis Ablasov & Iksanov, 1959
Echinostoma lindoensis Sandground & Bonne, 1940
Echinostoma longicirrus Verma, 1936
Echinostoma minimus Verma, 1936
Echinostoma miyagawai Ishii, 1932
Echinostoma novum (Verma, 1936) Baugh, 1950
Echinostoma paraulum Dietz, 1909
Echinostoma pekinensis Ku, 1937
Echinostoma revolutum (Froelich, 1802) Looss, 1899
Echinostoma robustum Yamaguti, 1935
Echinostoma rufinae Kurova, 1927
Echinostoma sarcinum Dietz, 1909
Echinostoma stromi Bashkirova, 1946
Echinostoma sudanense Odhner, 1910
Echinostoma turkestanicum Kurova, 1927
Euparyphium longitestis Verma, 1936
Euparyphium murinum Tubangui, 1931
Hypoderaeum conoideum (Bloch, 1782) Dietz, 1908
Hypoderaeum dingeri Lie, 1964
Hypoderaeum essexensis (Khan, 1960) Khan, 1962
Hypoderaeum gnedini Bashkirova, 1941
Hypoderaeum mainpuria Verma, 1936
Hypoderaeum microspina (Singh, 1954) Skrjabin & Bashkirova, 1956
Hypoderaeum skrjabini Oshmarin, 1956
Hypoderaeum vigi Bashkirova, 1941
Metechinostoma amurensis Petrochenko & Khrustaleva, 1963
Parechinostomum cinctum (Rudolphi, 1803) Dietz, 1909
Paryphostomum horai Baugh, 1950
Paryphostomum pentalobum Verma, 1936
Paryphostomum radiatum (Dujardin, 1845) Dietz, 1909
Paryphostomum testitrifolium Gogate, 1934
Petasiger coronatus Mendheim, 1940
Petasiger jubilarum (L'perin, 1937) Skrjabin & Bashkirova, 1956
Petasiger longicirratus Ku, 1938
Petasiger megacantha (Kotlan, 1922) Bashkirova, 1941
Petasiger minutissimus Gogate, 1934
Petasiger skrjabini Bashkirova, 1941

Protechinostoma mucroniseriulatum Beaver, 1943
Curtuteria grummi Odening, 1963
Himasthla elongata (Mehlis, 1831) Dietz, 1909
Himasthla incisa Linton, 1928
Himasthla militaris (Rudolphi, 1803) Dietz, 1909

Family Philophthalmidae

Cloacitrema marilae Tsimbaliuk & Leonov, 1963
Cloacitrema ovatum Yamaguti, 1935
Parorchis acanthus (Nicoll, 1906) Nicoll, 1907
Philophthalmus anatinus Sugimoto, 1928
Philophthalmus cupensis Richter, Vrazic, & Aleraj, 1953
Philophthalmus gralli Mathis & Leger, 1910
Philophthalmus hegneri Penner & Fried, 1963
Philophthalmus hovorkai Buša, 1956
Philophthalmus muraschkinzewi Tret'jakova, 1948
Philophthalmus nocturnus Looss, 1907
Philophthalmus nyrocae Yamaguti, 1934
Philophthalmus posaviniensis Richter, Vrazic, & Aleraj, 1953
Philophthalmus proboscoides Oshmarin, 1963
Philophthalmus rizalensis Tubangui, 1932
Philophthalmus sinensis Hsü & Chow, 1938

Family Psilostomatidae

Psilochasmus alii Jaiswal, 1957
Psilochasmus indicus Gupta, 1957
Psilochasmus longicirratus Skrjabin, 1913
Psilochasmus oxyurus (Creplin, 1825) Lühe, 1909
Psilochasmus skrjabini Gnedina, 1946
Psilorchis ajgainis Lal, 1938
Psilostomum anserinum Oshmarin, 1963
Psilostomum borealis Ryzhikov, 1963
Psilostomum brevicolle (Creplin, 1829) Braun, 1902
Psilostomum cygnei Southwell & Kirshner, 1937
Psilostomum marilae Price, 1942
Psilotrema acutirostris Oshmarin, 1963
Psilotrema brevis Oshmarin, 1963
Psilotrema mediopora Oshmarin, 1963
Psilotrema oligoon (Linstow, 1887) Odhner, 1913
Psilotrema simillimum simillimum (Mühling, 1898) Odhner, 1913
Psilotrema simillimum swerinensis Gräfner, 1965
Sharmaia gatesi (Sherma, 1943) Yamaguti, 1958
Sphaeridiotrema globulus (Rudolphi, 1814) Odhner, 1913
Sphaeridiotrema spinoacetabulum Burns, 1961

Family Paramphistomatidae

Zygocotyle lunata (Diesing, 1836) Stunkard, 1916

Family Notocotyliidae

- Notocotylus aegyptiacus Odhner, 1905
Notocotylus atlanticus Stunkard, 1966
Notocotylus attenuatus (Rudolphi, 1809) Kossack, 1911
Notocotylus babai Bhalerao, 1935
Notocotylus dafilae Harwood, 1939
Notocotylus duboisianus Odening, 1964
Notocotylus ephemera (Nitzsch, 1807) Harwood, 1939
Notocotylus gibbus (Mehlis, 1846) Kossack, 1911
Notocotylus imbricatus imbricatus (Looss, 1893) Szidat, 1935
Notocotylus imbricatus magniovatus (Yamaguti, 1934) Dubois, 1951
Notocotylus linearis (Rudolphi, 1819) U. Szidat, 1936
Notocotylus mamii Hsü, 1954
Notocotylus minutus Stunkard, 1960
Notocotylus naviformis Tubangui, 1932
Notocotylus pacifera (Noble, 1933) Harwood, 1939
Notocotylus parviovatus Yamaguti, 1934
Notocotylus ralli Baylis, 1936
Notocotylus seineti Fuhrmann, 1919
Notocotylus skrjabini Ablasov, 1953
Notocotylus stagnicolae Herber, 1942
Notocotylus tachyeretis Duthoit, 1931
Notocotylus urbanensis (Cort, 1914) Harrah, 1922
Uniserialis breviserialis Stunkard, 1967
Uniserialis gippyensis Beverley-Burton, 1958
Catatropis appendiculata Lutz, 1928
Catatropis cygni Yamaguti, 1939
Catatropis harwoodi Bullock, 1952
Catatropis hisikui Yamaguti, 1939
Catatropis indicus Srivastava, 1935
Catatropis orientalis Harshe, 1932
Catatropis pricei Harwood, 1939
Catatropis rauschi Singh, 1956
Catatropis verrucosa (Froelich, 1789) Odhner, 1905
Paramonostomum alveatum (Mehlis, 1846) Lühe, 1909
Paramonostomum bucephalae Yamaguti, 1935
Paramonostomum casarcum Lal, 1936
Paramonostomum chabaudi van Strydonck, 1965
Paramonostomum elongatum Yamaguti, 1934
Paramonostomum harwoodi Nath & Pande, 1962
Paramonostomum histrionici Ching, 1961
Paramonostomum malerischi Dunagan, 1957
Paramonostomum nettioni Baugh, 1958
Paramonostomum ovatum Hsu, 1935
Paramonostomum parvum Stunkard & Dunihue, 1931
Paramonostomum pseudalveatum Price, 1931
Paramonostomum querquedulum Lal, 1936
Tristriata anatis Belopol'skaïa, 1953

Family Pronocephalidae

- Paraprocephalum symmetricum Belopol'skaïa, 1952

ORDER RENICOLIDA, Family Renicolidae

- Renicola brantae McIntosh & Farr, 1952
Renicola mediovitellata Bykhovskaiā-Pavlovskaiā, 1950
Renicola mollissima Kulachkova, 1957
Renicola somateriae Belopol'skaiā, 1952

ORDER PLAGIORCHIIDA

Family Dicrocoeliidae

- Brachylecithum sp.
Lyperosomum anatis Belogurov & Leonov, 1963
Pancreatrema sp.
Wetzelitrema melanittae Rayski & Fahmy, 1962

Family Eucotylidae

- Eucotyle clangulae Walden, 1960
Eucotyle cohnii Skrjabin, 1924
Eucotyle nephritica (Mehlis, 1846) Cohn, 1904
Eucotyle popowi Skrjabin & Evranova, 1942
Eucotyle warreni Schell, 1967
Eucotyle wehri Price, 1930
Eucotyle zakharowi Skrjabin, 1920
Tanaisia fedtschenkoi fedtschenkoi Skrjabin, 1924
Tanaisia fedtschenkoi meridionalis Odening, 1964

Family Haplometridae

- Prosthogonimus anatinus Markov, 1902
Prosthogonimus cuneatus (Rudolphi, 1809) Braun, 1901
Prosthogonimus limani Gnedina, 1941
Prosthogonimus macrorchis Macy, 1934
Prosthogonimus ovatus (Rudolphi, 1803) Lühe, 1899
Prosthogonimus pellucidus (Linstow, 1873) Braun, 1901
Prosthogonimus putschkowskii Skrjabin, 1913
Prosthogonimus rudolphii Skrjabin, 1919
Prosthogonimus ryjikowi Ablasov, 1955
Prosthogonimus spinatus Shevtsov, 1965
Prosthogonimus sudarikovi Oshmarin, 1961
Schistogonimus rarus (Braun, 1901) Lühe, 1909

Family Lecithodendriidae

- Pleuropsolus somateria Morozov, 1960

Family Microphallidae

- Ascorhytis charadriiformis (Young, 1949) Ching, 1965
Atriophallophorus minutus (Price, 1934) Deblock & Rosé, 1964
Levinseniella annicolae Etges, 1953
Levinseniella belopolskoi Kuan Shen-i, 1962
Levinseniella brachysoma (Creplin, 1837) Stiles & Hassall, 1902
Levinseniella bucephalae (Yamaguti, 1935) Yamaguti, 1939
Levinseniella camtschatica Morozov, 1960
Levinseniella cruzi Travassos, 1921
Levinseniella pellucida Jägerskiöld, 1907

Levinseniella propinqua Jägerskiöld, 1907
Microphallus claviformis (Brundes, 1888) Baer, 1944
Microphallus excellens (Nicoll, 1907) Baer, 1944
Microphallus fusiformis Reimer, 1963
Microphallus longicaecus Chen, 1956
Microphallus nicolli (Cable & Hunninen, 1938) Baer, 1944
Microphallus papillorobustus (Rankin, 1940) Baer, 1944
Microphallus pirum (Afanas'ev, 1941) Rausch, 1953
Microphallus primas (Jägerskiöld, 1908) Stunkard, 1951
Microphallus pseudogonotylus (Chen, 1944) Biguet, Deblock, & Capron, 1958

Microphallus pygmaeus (Levinsen, 1881) Baer, 1944
Microphallus similis (Jägerskiöld, 1900) Baer, 1944
Microphallus somateriae (Kulachkova, 1958) Deblock & Rosé, 1964
Anacetabulitrema samarae Deblock & Rosé, 1964
Gynaecotyla jaegerskiöldi (Travassos, 1921) Yamaguti, 1939
Maritrema acadiae (Swales, 1933) Gower, 1938
Maritrema afanassjewi afanassjewi Belopol'skaia, 1952
Maritrema afanassjewi minor Chen, 1957
Maritrema gratiosum Nicoll, 1907
Maritrema inusitata Leonov & Tsimbal'uk, 1963
Maritrema japonicum (Yamaguti, 1939) Etges, 1953
Maritrema macracetabulum Deblock & Rosé, 1964
Maritrema nettiae Gower, 1938
Maritrema nicolli Travassos, 1921
Maritrema obstipum (Van Cleave & Mueller, 1932) Mueller, 1934
Maritrema raminellae (Dery, 1958) Deblock, Capron, & Biguet, 1961
Maritrema rhodanicum Carrère, 1936
Maritrema subdolum Jägerskiöld, 1908
Maritreminoides mapaensis Chen, 1957
Pseudolevinseniella cheni Tsai, 1955

Family Plagiorchiidae

Plagiorchis brauni Massino, 1927
Plagiorchis casarcii (Mehra, 1937) Skrjabin & Antipin, 1959
Plagiorchis cirratus (Rudolphi, 1802) Braun, 1902
Plagiorchis elegans (Rudolphi, 1802) Braun, 1902
Plagiorchis ferrugineum (Mehra, 1937) Braun, 1902
Plagiorchis laricola Skrjabin, 1924
Plagiorchis maculosus (Rudolphi, 1802) Braun, 1901
Plagiorchis nanus (Rudolphi, 1802) Braun, 1901
Plagiorchis nyrocae Ryzhikov & Timofeeva, 1962
Plagiorchis obtusus Shtrom, 1940
Plagiorchis potanini Skrjabin, 1928
Plagiorchis russii (Mehra, 1937) Skrjabin & Antipin, 1959
Plagiorchis uhlwormi Massino, 1927

Family Stonylorematidae

Laterotrema arenula (Creplin, 1825) Dollfus, 1956

ORDER OPISTHORCHIIDA

Family Heterophyidae

- Apophallus bacalloti Morozov, 1952
Apophallus donicus (Skrjabin & Lindtrop, 1919) Price, 1931
Apophallus imperator Lyster, 1940
Ascocotyle angrense Travassos, 1916
Centrocestus formosanus (Nishigori, 1924) Price, 1932
Jubilarum skrjabini Morozov, 1959
Pygidiopsis genata Looss, 1907
Sonkulitrema kazachstanica Zhatkanbaeva, 1964
Cryptocotyle concavum (Creplin, 1825) Fiscoeder, 1903
Cryptocotyle cryptocotyloides (Isaichikov, 1923) Witenberg, 1929
Cryptocotyle jejuna (Nicoll, 1907) Ransom, 1920
Cryptocotyle lingua (Creplin, 1825) Fiscoeder, 1903
Galactosomum baylisi (Gohar, 1930) Price, 1932
Stictodora japonica Yamaguti, 1939
Stictodora mergi Yamaguti, 1939
Stictodora sawakinensis Looss, 1899
Haplorchis pumilio (Looss, 1896) Looss, 1899
Haplorchis taichui (Nishigori, 1924) Witenberg, 1930
Procerovum cheni Hsü, 1950
Procerovum varium Onji & Nishio, 1916
Procerovum sp.

Family Opisthorchiidae

- Amphimerus anatis (Yamaguti, 1933) Gower, 1938
Amphimerus elongatus Gower, 1938
Amphimerus lintoni Gower, 1939
Clonorchis sinensis (Cobbold, 1875) Looss, 1907
Eumphimerus cygnoides Ogata, 1942
Metorchis bilis (Braun, 1790) Odening, 1962
Metorchis coeruleus Braun, 1902
Metorchis elegans Belogurov & Leonov, 1963
Metorchis hovorkai Macko, 1955
Metorchis intermedius Heinemann, 1937
Metorchis nettioni Baugh, 1958
Metorchis orientalis Tanabe, 1920
Metorchis pinguinicola Skrjabin, 1913
Metorchis taiwanensis Morishita & Tsuchimochi, 1925
Metorchis tener Kowalewski, 1903
Metorchis xanthosomus xanthosomus (Creplin, 1846) Braun, 1902
Metorchis xanthosomus minor Nardelli, 1946
Metorchis zacharovi Layman, 1926
Opisthorchis choledoca (Linstow, 1883) Kowalewski, 1898
Opisthorchis geminus (Looss, 1896) Kowalewski, 1898
Opisthorchis longissimus (Linstow, 1883) Stiles & Hassall, 1896
Opisthorchis obsequens Nicoll, 1914
Opisthorchis simulans (Looss, 1896) Kowalewski, 1898
Opisthorchis skrjabini Zhukova, 1934
Pachytrema calculus Looss, 1907

CESTODA

ORDER PSEUDOPHYLLIDEA, Family Diphyllbothriidae

- Diphyllbothrium cordiceps (Leidy, 1871) Meggitt, 1924
- Diphyllbothrium dendriticum (Nitzsch, 1824) Lühe, 1910
- Diphyllbothrium ditremum (Creplin, 1825) Lühe, 1910
- Diphyllbothrium osmeri (Linstow, 1878)
- Digramma interrupta (Rudolphi, 1810) Kholodkovsky, 1914
- Digramma nemachili Dubinina, 1958
- Ligula colymbi Dubinina, 1950
- Ligula intestinalis (Goeze, 1782) Gmelin, 1790
- Schistocephalus nemachili Dubinina, 1959
- Schistocephalus pungitii Dubinina, 1959
- Schistocephalus solidus (Müller, 1776) Steenstrup, 1857

ORDER TETRABOTHRIIDEA, Family Tetrabothriidae

- Tetrabothrium immerinus (Abildgaard, 1790) Kowalewski, 1904

ORDER CYCLOPHYLLIDEA

Family Anoplocephalidae

- Cittotaenia avicola Fuhrmann, 1897

Family Amabiliidae

- Tatria acanthorhyncha (Wedl, 1855) Kowalewski, 1904

Family Davaineidae

- Cotugnia fastigata Meggitt, 1920
- Cotugnia fila Meggitt, 1931
- Ophryocotyle sp.
- Raillietina anatina Fuhrmann, 1908
- Raillietina birmanica Meggitt, 1926
- Raillietina cesticillus (Molin, 1858) Railliet, 1921
- Raillietina clerici Fuhrmann, 1920
- Raillietina cyrtus (Skrjabin, 1914) Fuhrmann, 1920
- Raillietina fecunda Meggitt, 1931
- Raillietina microcotyle (Skrjabin, 1914) Fuhrmann, 1920
- Raillietina osakensis Iwata & Tamura, 1933
- Raillietina parviuncinata Meggitt & Maung Po Saw, 1924
- Raillietina pseudocyrtus Meggitt, 1931

Family Dilepididae

- Amoebotaenia cuneata (Linstow, 1872) Cohn, 1900
- Anomotaenia ciliata Fuhrmann, 1913
- Anomotaenia citrus (Krabbe, 1869) Fuhrmann, 1908
- Chitonorecta agnosta Meggitt, 1927
- Choanotaenia bhattacharai Chatterji, 1954
- Choanotaenia infundibulum (Bloch, 1779) Cohn, 1899
- Lallum magniparuterina Johri, 1960
- Lateriporus aecophylus Oshmarin, 1960
- Lateriporus biuterinus Fuhrmann, 1908
- Lateriporus clerici (Johnston, 1912) Fuhrmann, 1932

Lateriporus destitutus (Lönberg, 1889) Hughes, 1941
Lateriporus geographicus Cooper, 1921
Lateriporus mathevossianae Ryzhikov & Gubanov, 1962
Lateriporus propeteres Fuhrmann, 1907
Lateriporus skrjabini Matevosian, 1946
Lateriporus teres (Krabbe, 1869) Fuhrmann, 1907
Liga brevis (Linstow, 1884) López-Neyra, 1952
Metroliasthes lucida Ransom, 1900
Paradilepis scolecina (Rudolphi, 1819) Hsü, 1935
Paradilepis urceus (Wedl, 1855) Joyeux & Baer, 1950
Paricterotaenia borealis (Linstow, 1905) Fuhrmann, 1932
Sphaeruterina longiceps (Rudolphi, 1819) Fuhrmann, 1932
Trichocephaloides megaloccephala (Krabbe, 1869) Clerc, 1902
Unciunia acapillicirrosa Moghe, 1933
Valipora spasskyi (Krotov, 1951) Yamaguti, 1959

Family Acoleidae

Prognotaenia evaginata Fuhrmann, 1909

Family Hymenolepididae

<u>Nematoparataenia brabantiae</u> Cotteleer & Schyns, 1961	} Probably not in Hymeno- lepididae
<u>Nematoparataenia paradoxa</u> Maplestone & Southwell, 1922	
<u>Nematoparataenia skrjabini</u> Matevosian & Okorokov, 1959	
<u>Nematoparataenia southwelli</u> Fuhrmann, 1934	
<u>Polytestilepis chitinocloacis</u> Oshmarin, 1960	
<u>Gastrotaenia cygni</u> Wolffhügel, 1938	
<u>Gastrotaenia dogieli</u> (Ginetsinskaja, 1944) Spasskii, 1958	
<u>Gastrotaenia paracygni</u> Czapliński & Ryzhikov, 1966	
<u>Diplogynia oligorchis</u> (Maplestone, 1922) Baer, 1925	
<u>Diploposthe laevis</u> (Bloch, 1872) Jacobi, 1896	
<u>Diploposthe mathevossianae</u> Ryšavý, 1961	
<u>Diploposthe sui-generis</u> Kowalewski, 1903	
<u>Fimbriaria amurensis</u> Kotel'nikov, 1960	
<u>Fimbriaria fasciolaris</u> (Pallas, 1781) Wolffhügel, 1899	
<u>Fimbriaria kubanika</u> Kotel'nikov, 1965	
<u>Fimbriariella falciformis</u> (Linton, 1927) Wolffhügel, 1936	
<u>Fimbriarioides intermedia</u> (Fuhrmann, 1913) Fuhrmann, 1932	
<u>Fimbriarioides lintoni</u> Webster, 1943	
<u>Skrjabinoparaksis tatianae</u> Krotov, 1949	
<u>Aploparaksis birulai</u> Linstow, 1905	
<u>Aploparaksis fuligulosa</u> Solov'ev, 1911	
<u>Aploparaksis furcigera</u> (Nitzsch, 1819) Fuhrmann, 1908	
<u>Aploparaksis groenlandica</u> (Krabbe, 1869) Baer, 1956	
<u>Aploparaksis murmanica</u> Baylis, 1919	
<u>Aploparaksis polystictae</u> Schiller, 1955	
<u>Aploparaksis veitchi</u> Baylis, 1934	
<u>Diorchis acicula-sinuata</u> (Rosseter, 1909) Schultz, 1940	
<u>Diorchis acuminata</u> (Clerc, 1902) Clerc, 1903	
<u>Diorchis anivi</u> Krotov, 1966	
<u>Diorchis anomala</u> Schmelz, 1941	

- Diorchis arsenjevi (Oshmarin, 1959) Spasskiĭ, 1963
Diorchis asiatica (Spasskiĭ, 1963) Spasskaĭa, 1966
Diorchis bulbodes Mayhew, 1929
Diorchis danutae Czapliński, 1956
Diorchis diorchis (Fuhrmann, 1913) Baer, 1962
Diorchis donis Azhinov, 1960
Diorchis elisae (Skrjabin, 1914) Spasskiĭ & Freze, 1961
Diorchis endacantha (Dubinina, 1954) Spasskiĭ, 1963
Diorchis excentricus Mayhew, 1925
Diorchis flavescens (Krefft, 1871) Johnston, 1912
Diorchis formosensis Sugimoto, 1934
Diorchis inflata (Rudolphi, 1819) Fuhrmann, 1932
Diorchis jacobii Fuhrmann, 1932
Diorchis kodonodes Mayhew, 1929
Diorchis lintoni Johri, 1939
Diorchis longicirrosa Meggitt, 1927
Diorchis longiovum Schiller, 1953
Diorchis markewitschi Pashchenko, 1952
Diorchis mathevossianae Krotov, 1949
Diorchis microcirrosa Mayhew, 1929
Diorchis nyrocae Yamaguti, 1935
Diorchis nyrocoides Spasskaĭa, 1961
Diorchis ransomi Johri, 1939
Diorchis sobolevi Spasskaĭa, 1950
Diorchis spasskajae Spasskiĭ, 1963
Diorchis spinata Mayhew, 1929
Diorchis spiralis Szpotanska, 1931
Diorchis stefanskii Czapliński, 1956
Diorchis tuvensis Spasskiĭ, 1963
Diorchis vigisi Krotov, 1949
Diorchis wigginsii Schultz, 1940
Hymenolepis sensu lato
Amphipetrovia biaculeata (Fuhrmann, 1909) Spasskiĭ & Spasskaĭa, 1954
Amphipetrovia inflatocirrosa Oshmarin, 1963
Amphipetrovia retracta (Linstow, 1905) Spasskaĭa, 1966
Anatinella meggitti (Shen Tseng, 1932) Spasskiĭ & Spasskaĭa, 1954
Anatinella spinulosa (Dubinina, 1954) Spasskiĭ, 1963
Anserilepis barrowensis (Schiller, 1952) Spasskiĭ & Tolkacheva, 1965
Arhynchotaenia clausovaginata Saakova, 1959
Australiolepis southwelli (Szpotanska, 1931) Spasskiĭ & Spasskaĭa, 1954
Bisaccanthes bisaccata bisaccata (Fuhrmann, 1906) Spasskiĭ & Spasskaĭa, 1954
Bisaccanthes bisaccata orientalis Khuan Shen-i, 1962
Cloacotaenia megalops (Nitzsch, 1829) Wolffhügel, 1938
Colymbilepis multistriatus (Rudolphi, 1810) Spasskaĭa, 1966
Confluarina podicipina (Szymanski, 1905) Spasskaĭa, 1966
Confluarina spasskii Ablasov, 1966

Dicranotaenia anceps (Linton, 1927) López-Neyra, 1942
Dicranotaenia coronula (Dujardin, 1845) Railliet, 1892
Dicranotaenia deglandi Skrjabin & Matevosian, 1942
Dicranotaenia echinorostrae (Schiller, 1957) Yamaguti, 1959
Dicranotaenia fallax (Krabbe, 1869) López-Neyra, 1942
Dicranotaenia kutassi Matevosian, 1945
Dicranotaenia lobata (Fuhrmann, 1906) López-Neyra, 1942
Dicranotaenia makundi (Singh, 1952) Yamaguti, 1959
Dicranotaenia querquedula (Fuhrmann, 1920) López-Neyra, 1942
Dicranotaenia riggenbachi (Mola, 1913) López-Neyra, 1942
Dicranotaenia sacciperium (Mayhew, 1925) López-Neyra, 1942
Drepanidolepis anatina (Krabbe, 1869) Spasskiĭ, 1963
Drepanidotaenia bilateralis (Linstow, 1905) López-Neyra, 1942
Drepanidotaenia lanceolata (Bloch, 1782) Railliet, 1893
Drepanidotaenia przewalskii (Skrjabin, 1914) López-Neyra, 1942
Drepanidotaenia signachiana Kurashvili, 1950
Echinatrium filosomum Spasskiĭ & Īurpalova, 1965
Echinatrium melanittae Tolkacheva, 1966
Echinatrium skrjabini Spasskiĭ & Īurpalova, 1965
Echinocotyle brachycephala (Creplin, 1829) Spasskaĭa, 1966
Echinocotyle clerici Matevosian & Krotov, 1949
Echinocotyle minutissima Singh, 1952
Echinocotyle rosseteri Blanchard, 1891
Echinocotyle ryjikovi Jogis, 1963
Echinocotyle skrjabini Matevosian & Krotov, 1949
Hamatolepis teresoides (Fuhrmann, 1906) Spasskiĭ, 1964
Hymenofimbria merganseris Skrjabin, 1914
Limnolepis amphitricha (Rudolphi, 1819) Spasskiĭ & Spasskaĭa, 1954
Microsomacanthus abortiva (Linstow, 1904) López-Neyra, 1942
Microsomacanthus acus Spasskiĭ & Īurpalova, 1965
Microsomacanthus arcuata (Kowalewski, 1904) Spasskiĭ & Spasskaĭa, 1954
Microsomacanthus borealis Ryzhikov, 1965
Microsomacanthus compressa (Linton, 1892) López-Neyra, 1942
Microsomacanthus fausti (Shen Tseng, 1932) López-Neyra, 1942
Microsomacanthus floreata (Meggitt, 1930) López-Neyra, 1942
Microsomacanthus formosa (Dubinina, 1954) Yamaguti, 1959
Microsomacanthus formosoides Spasskaĭa & Spasskiĭ, 1961
Microsomacanthus heterospinus Spasskiĭ & Īurpalova, 1964
Microsomacanthus hopkinsi (Schiller, 1951) Spasskaĭa, 1966
Microsomacanthus hystrix Spasskaĭa & Spasskiĭ, 1961
Microsomacanthus jaegerskioeldi (Fuhrmann, 1913) López-Neyra, 1942
Microsomacanthus jamunicus (Sharma, 1943) Yamaguti, 1959
Microsomacanthus macracanthissima (Oshmarin, 1950) Spasskaĭa, 1966
Microsomacanthus melanittae Ryzhikov, 1962
Microsomacanthus microskrjabini Spasskiĭ & Īurpalova, 1964
Microsomacanthus microsoma (Creplin, 1829) López-Neyra, 1942
Microsomacanthus minimus Ryzhikov, 1965
Microsomacanthus mirabilis Spasskiĭ & Īurpalova, 1964
Microsomacanthus oidemiae Spasskiĭ & Īurpalova, 1964
Microsomacanthus pachycephala (Linstow, 1872) López-Neyra, 1942

- Microsomacanthus paracompressa (Czapliński, 1956) Spasskaïa & Spasskiï, 1961
- Microsomacanthus paramicrosoma (Gasowska, 1932) Ablasov, 1957
- Microsomacanthus parvula (Kowalewski, 1904) Spasskaïa, 1957
- Microsomacanthus praeputialis (Oshmarin, 1950) Spasskaïa, 1966
- Microsomacanthus rangdonensis Spasskiï, Dang Van-Ngy, & Īurpalova, 1963
- Microsomacanthus recurvata Spasskaïa & Spasskiï, 1961
- Microsomacanthus skrjabini Spasskaïa, 1963
- Microsomacanthus sobolevi Spasskiï & Īurpalova, 1964
- Microsomacanthus somateriae Ryzhikov, 1965
- Microsomacanthus spasskii Tolkacheva, 1965
- Microsomacanthus spiralibursata (Czapliński, 1956) Belokobylenko, 1963
- Microsomacanthus spiralicirrata Maksimova, 1963
- Microsomacanthus trichorhynchus (Yoshida, 1908) Spasskiï & Spasskaïa, 1954
- Microsomacanthus trifolium (Linstow, 1905) Spasskiï & Spasskaïa, 1954
- Microsomacanthus tuvensis Spasskaïa & Spasskiï, 1961
- Monosaccanthes andrejewoi (Matevosian, 1945) Czapliński, 1967
- Monosaccanthes curiosa (Szpotanska, 1931) Czapliński, 1967
- Monosaccanthes kazachstanica (Maksimova, 1963) Czapliński, 1967
- Monosaccanthes tenuirostris (Rudolphi, 1819) Czapliński, 1967
- Myxolepis collaris (Batsch, 1786) Spasskiï, 1959
- Nadejdolepis cambrensis (Davies, 1939) Spasskiï & Spasskaïa, 1954
- Nadejdolepis lauriei (Davies, 1939) Spasskiï & Spasskaïa, 1954
- Nadejdolepis nitidulans (Krabbe, 1882) Spasskiï & Spasskaïa, 1954
- Parabisaccanthes bisacculina (Szpotanska, 1931) Maksimova, 1963
- Parabisaccanthes philactes (Schiller, 1951) Spasskiï & Reznik, 1963
- Retinometra bulbocirrosus (Pfeiffer, 1960) Czapliński, 1965
- Retinometra clausa (Linstow, 1906) Spasskiï, 1963
- Retinometra cyrtoides (Mayhew, 1925) Spasskiï, 1963
- Retinometra fimula (Meggitt, 1933) Spasskiï, 1963
- Retinometra fista (Meggitt, 1933) Spasskiï, 1963
- Retinometra giranensis (Sugimoto, 1934) Spasskiï, 1963
- Retinometra guberiana Czapliński, 1965
- Retinometra hamulacanthos (Linton, 1927) Spasskiï, 1963
- Retinometra kenaiensis (Schiller, 1952) Spasskiï, 1963
- Retinometra lintoni (López-Neyra, 1932) Spasskiï, 1963
- Retinometra longicirrosa (Fuhrmann, 1906) Spasskiï, 1963
- Retinometra longistylosa (Shen Tseng, 1932) Spasskiï, 1963
- Retinometra longivaginata (Fuhrmann, 1906) Spasskaïa, 1966
- Retinometra macracanthos (Linstow, 1877) Spasskiï, 1963
- Retinometra macrocephala (Fuhrmann, 1913) Spasskiï, 1963
- Retinometra meggitti (Sharma, 1943) Spasskiï, 1963
- Retinometra oshimai (Sugimoto, 1934) Spasskiï, 1963
- Retinometra oxyuri Maksimova, 1966
- Retinometra pittalugai (López-Neyra, 1932) Spasskiï, 1963
- Retinometra rangoonica (Sharma, 1943) Spasskiï, 1963

- Retinometra skrjabini (Matevosian, 1945) Spasskiĭ, 1963
Retinometra venusta (Rosseter, 1897) Spasskaĭa, 1966
Sobolevicanthus aspirantica (Zaskind, 1961) Maksimova, 1963
Sobolevicanthus dafilae (Polk, 1942) Yamaguti, 1959
Sobolevicanthus filumferens (Brock, 1942) Yamaguti, 1959
Sobolevicanthus flagellata (Fuhrmann, 1906) Spasskiĭ & Spasskaĭa,
1954
Sobolevicanthus fragilis (Krabbe, 1869) Czapliński, 1956
Sobolevicanthus gladium Spasskiĭ & Bobova, 1962
Sobolevicanthus gracilis (Zeder, 1803) Spasskiĭ & Spasskaĭa, 1954
Sobolevicanthus javanensis (Davis, 1945) Spasskiĭ & Spasskaĭa, 1954
Sobolevicanthus krabbeella (Hughes, 1940) Czapliński, 1956
Sobolevicanthus octacantha (Krabbe, 1869) Spasskiĭ & Spasskaĭa,
1954
Sobolevicanthus octacanthoides (Fuhrmann, 1906) Spasskiĭ & Spas-
skaĭa, 1954
Sobolevicanthus papillata (Fuhrmann, 1906) Spasskiĭ & Spasskaĭa,
1954
Sobolevicanthus stollī (Polk, 1942) Czapliński, 1956
Sobolevicanthus terrae-reginae (Johnston, 1911) Spasskiĭ & Spas-
skaĭa, 1954
Sobolevicanthus wizniewskii Czapliński, 1956
Tschertkovilepis krabbei (Kowalewski, 1895) Czapliński & Jarecka,
in press
Tschertkovilepis setigera (Froelich, 1789) Spasskiĭ & Spasskaĭa,
1954
Variolepis farciminosa (Goeze, 1782) Spasskiĭ & Spasskaĭa, 1954
Wardium aequabilis (Rudolphi, 1810) Spasskiĭ & Spasskaĭa, 1954
wardium arctica (Schiller, 1955) Spasskiĭ, 1959
Wardium creplini (Krabbe, 1869) Spasskiĭ & Spasskaĭa, 1954
Wardium nyrocae Ryzhikov & Gubanov, 1959
Wardium pingi (Shen Tseng, 1932) Ablasov, 1955
Wardium yukonensis (Schiller, 1954) Spasskiĭ, 1963
wardoides nyrocae (Yamaguti, 1935) Spasskiĭ, 1964
Wardoides oidemiae Spasskaĭa, 1966
Hymenolepis angularostris Sugimoto, 1934
Hymenolepis bisacculata Krotov, 1949
Hymenolepis crecca Singh, 1952
Hymenolepis cuneata Mayhew, 1925
Hymenolepis echinocotyle Fuhrmann, 1907
Hymenolepis fona Meggitt, 1933
Hymenolepis foveata Meggitt, 1933
Hymenolepis fruticosa Meggitt, 1927
Hymenolepis fructifera Meggitt, 1927
Hymenolepis infrequens Sharma, 1943
Hymenolepis kowalewskii Baczynska, 1914
Hymenolepis lamellata Woodland, 1930
Hymenolepis lineae (Goeze, 1782) Wolffhügel, 1899
Hymenolepis liophallos (Krabbe, 1869) Railliet, 1899
Hymenolepis malaccensis Lee, 1966

Hymenolepis mandabbi Beverley-Burton, 1960
Hymenolepis mehrai Chatterji, 1940
Hymenolepis micrancristrota (Wedl, 1855) Railliet, 1899
Hymenolepis monoposthe Dubinina, 1954
Hymenolepis neomeggittilis Hughes, 1940
Hymenolepis orthocantha Fuhrmann, 1906
Hymenolepis oweni Moghe, 1933
Hymenolepis pauciannulata Meggitt, 1927
Hymenolepis pigmentata (Linstow, 1872) Fuhrmann, 1906
Hymenolepis pseudosetigera Baer, 1962
Hymenolepis rapida Szpotanska, 1931
Hymenolepis rarus Skrjabin, 1914
Hymenolepis rauschi Schiller, 1950
Hymenolepis robertsi Baylis, 1934
Hymenolepis sibirica (Linstow, 1905) Fuhrmann, 1908
Hymenolepis simplex Fuhrmann, 1906
Hymenolepis smythi Singh, 1960
Hymenolepis solowiowi Skrjabin, 1914
Hymenolepis tenerrima (Linstow, 1882) Fuhrmann, 1906
Hymenolepis vistulae Czapliński, 1960
Hymenolepis wardlei Dubey & Pande, 1964
Hymenolepis yosnidai (Yamaguti, 1956) McDonald, 1965

NEMATODA

ORDER ENOPLIDA

Family Trichuridae

Capillaria anatis (Schrank, 1790) Travassos, 1915
Capillaria annulata (Molin, 1858) Cram, 1926
Capillaria bursata Freitas & Almeida, 1934
Capillaria cairinae Freitas & Almeida, 1935
Capillaria caudinflata (Molin, 1858) Travassos, 1915
Capillaria contorta (Creplin, 1839) Travassos, 1915
Capillaria ellisi Johnston & Mawson, 1945
Capillaria exilis (Dujardin, 1845) Travassos, 1915
Capillaria gigantotecta Liubimova, 1947
Capillaria longifila (Dujardin, 1845) Travassos, 1915
Capillaria mergi Madsen, 1945
Capillaria nyrocinarum Madsen, 1945
Capillaria obsignata Madsen, 1945
Capillaria pudendotecta Liubimova, 1947
Capillaria skrjabini (Liubimova, 1947) Yamaguti, 1961
Capillaria spinulosa (Linstow, 1890) Travassos, 1915

Family Dioctophymatidae

- Eustrongylides mergorum (Rudolphi, 1809) Cram, 1927
Eustrongylides papillosus (Rudolphi, 1802) Diesing, 1851
Eustrongylides tricolor Sugimoto, 1931
Eustrongylides tubifex (Nitzsch, 1819) Jägerskiöld, 1909
Eustrongylides wenrichi Canavan, 1929
Hystrichis coronatus Molin, 1861
Hystrichis cygni (Molin, 1858) Diesing, 1861
Hystrichis neglectus Jägerskiöld, 1909
Hystrichis orispinus Molin, 1858
Hystrichis tricolor Dujardin, 1845
Hystrichis varispinosus Jägerskiöld, 1909

ORDER RHABDITIDA, Family Strongyloididae

- Strongyloides avium Cram, 1929
Strongyloides minimus Travassos, 1950

ORDER STRONGYLIDA

Family Syngamidae

- Syngamus skrjabinomorpha Ryzhikov, 1949
Syngamus trachea (Montagu, 1811) Chapin, 1925
Cyathostoma brantae Cram, 1928
Cyathostoma bronchialis (Muehling, 1884) Chapin, 1925
Cyathostoma coscorobae Chapin, 1925
Cyathostoma sarcidiornis Kreis, 1953
Cyathostoma tadornae Chatin, 1874
Cyathostoma variegatum (Creplin, 1849) Chapin, 1925

Family Amidostomatidae

- Amidostomum acutum (Lundahl, 1848) Seurat, 1918
Amidostomum anseris (Zeder, 1800) Railliet & Henry, 1909
Amidostomum biziurae Johnston & Mawson, 1947
Amidostomum cygni Wehr, 1933
Amidostomum fulicae (Rudolphi, 1819) Seurat, 1918
Amidostomum henryi Skrjabin, 1915
Amidostomum monodon (Linstow, 1882) Skrjabin, 1915
Amidostomum spatulatum Baylis, 1932
Paramidostomum skrjabini Ryzhikov & Romanova, 1959
Pseudamidostomum boulengeri Maplestone, 1930
Epomidiostomum crami Wetzell, 1931
Epomidiostomum orispinum (Molin, 1861) Seurat, 1918
Epomidiostomum petalum Yen & Wu, 1959
Epomidiostomum querquedulae Boulenger, 1926
Epomidiostomum uncinatum (Lundahl, 1848) Seurat, 1918
Epomidiostomum vogelsangi Travassos, 1937

Family Trichostrongylidae

- Trichostrongylus medius Olgier, 1954
Trichostrongylus tenuis (Mehlis, 1846) Railliet & Henry, 1909

Family Metastrongylidae

Aelurostrongylus abstrusus (Railliet, 1898) Cameron, 1927 [larval
cysts]

ORDER ASCARIDIDA

Family Anisakidae

Contracaecum anasi Mawson, 1956

Contracaecum microcephalum (Rudolphi, 1809) Baylis, 1920

Contracaecum micropapillatum (Stossich, 1890) Baylis, 1920

Contracaecum spasskyi Mozgovoi, 1950

Contracaecum spiculigerum (Rudolphi, 1809) Railliet & Henry, 1912

Contracaecum yamaguti Mawson, 1956

Family Ascarididae

Porrocaecum crassum (Deslongchamps, 1824) Railliet & Henry, 1912

Porrocaecum depressum (Zeder, 1800) Baylis, 1920

Porrocaecum ensicaudatum (Zeder, 1800) Baylis, 1920

Porrocaecum heteroura (Creplin, 1829) Baylis, 1920

Porrocaecum semiteres (Zeder, 1800) Baylis, 1920

Family Heterakidae

Heterakis altaica Spaul, 1929

Heterakis beramporia Lane, 1914

Heterakis chenonettae Johnston, 1912

Heterakis dispar dispar (Schrank, 1790) Dujardin, 1845

Heterakis dispar brevispiculatis (Fetrochenko & Kotel'nikov, 1962)
comb. nov.

Heterakis gallinarum (Schrank, 1788) Madsen, 1952

Heterakis isolonche Linstow, 1906

Heterakis parva Maplestone, 1931

Heterakis yani Hsü, 1960

Family Ascaridiidae

Ascaridia dissimilis Perez Viguera, 1931

Ascaridia galli (Schrank, 1788) Freeborn, 1923

Family Subuluridae

Subulura brumpti (López-Neyra, 1922) Cram, 1926

Subulura sp.

ORDER SPIRURIDA

Family Dracunculidae

Avioserpens bifidus Olsen, 1952

Avioserpens taiwana (Sugimoto, 1919) Chitwood, 1935

Family Thelaziidae

Oxyspirura mansoni (Cobbold, 1879) Ransom, 1904

Family Spiruridae

Gongylonema congolense Fain, 1955

Gongylonema sp.

Physocephalus sexalatus (Molin, 1860) Diesing, 1861 [larval cysts]
Physocephalus sp.
Spirocerca sanguinolenta (Rudolphi, 1819) Railliet & Henry, 1911
[larval cysts]

Family Hedroridae

Cyrnea eurycerca Seurat, 1914
Hadjelia neglecta (Lent & Freitas, 1939) Chabaud, 1958
Histiocephalus laticaudatus (Rudolphi, 1819) Diesing, 1851

Family Tetrameridae

Tetrameres americana Cram, 1927
Tetrameres australis Johnston & Mawson, 1941
Tetrameres biziurae Johnston & Mawson, 1941
Tetrameres confusa Travassos, 1919
Tetrameres cordoniferens Rasheed, 1960
Tetrameres crami crami Swales, 1933
Tetrameres crami asiatica Ryzhikov, 1963
Tetrameres cygni Ryzhikov & Kozlov, 1960
Tetrameres fissispina (Diesing, 1861) Travassos, 1914
Tetrameres galericulatus Oshmarin, 1956
Tetrameres gigas Travassos, 1919
Tetrameres hagenbecki Travassos & Vogelsang, 1929
Tetrameres mohtedai Bhalerao & Rao, 1944
Tetrameres pavonis Chertkova, 1954
Tetrameres plectropteri (Thwaite, 1926) Wehr, 1933
Tetrameres puchovi Gushanskaja, 1949
Tetrameres ryjikovi Khuan Shen-i, 1961
Tetrameres somateriae Ryzhikov, 1963
Tetrameres spinosa (Maplestone, 1931) Wehr, 1933
Tetrameres striatus Oshmarin, 1956
Tetrameres zakharowi Petrov, 1926

Family Acuariidae

Paracuaria somateriae (Ryzhikov, 1960) Leonov, Tsimbaliuk, &
Belogurov, 1963
Paracuaria tridentata (Linstow, 1877) Leonov, Tsimbaliuk, &
Belogurov, 1963
Syncuaria ciconiae (Gil'bert, 1927) Gushanskaja, 1950
Decorataria decorata (Cram, 1927) Skrjabin, Sobolev, & Ivashkin,
1965
Chevreuxia revoluta (Rudolphi, 1819) Seurat, 1918
Dispharynx sp.
Skrjabinoclava decorata (Solonitsyn, 1928) Sobolev, 1943
Skrjabinoclava horrida (Rudolphi, 1809) Sobolev, 1943
Echinuria borealis borealis Mawson, 1956
Echinuria borealis asiatica Ryzhikov, 1962
Echinuria borealis pamirica Ryzhikov, 1965
Echinuria cygni Morini, Colombo, & Martin, 1961
Echinuria heterobrachiata Wehr, 1937

Echinuria hypognatha Wehr, 1937
Echinuria minor Sandground, 1937
Echinuria nodulosa McDonald, in press
Echinuria parva Cram, 1928
Echinuria quercuedulae Johnston & Mawson, 1942
Echinuria skrjabiniana Liubimova, 1947
Echinuria uncinata (Rudolphi, 1819) Solov'ev, 1912
Cheilospirura sp.
Cosmocephalus aduncus (Creplin, 1846) Yorke & Maplestone, 1926
Cosmocephalus obvelatus obvelatus (Creplin, 1825) Seurat, 1919
Cosmocephalus obvelatus magnus Vasil'kova, 1926
Streptocara californica (Gedoelst, 1919) Yorke & Maplestone, 1926
Streptocara cirrohamata (Linstow, 1888) Skrjabin, 1916
Streptocara crassicauda (Creplin, 1829) Skrjabin, 1916
Streptocara dogieli Belopol'skaia, 1952
Streptocara formosensis Sugimoto, 1930
Streptocara incognita Gibson, 1968
Streptocara recta (Linstow, 1879) Skrjabin, 1916
Rusguniella arctica Ryzhikov, 1960
Rusguniella kofoidi Williams, 1937
Schistorophus sp.

Family Gnathostomatidae

Gnathostoma spinigerum Owen, 1836

[larval cysts]

Family Physalopterae

Physaloptera sp.

Family Desmidocercidae

Desmidocercella incognita Solonitsyn, 1932

Family Diplotriaeidae

Dicheilonema rheae (Owen, 1843)

Diplotriaeana microphallos Li, 1933

Family Cchocercidae

Pelecitus helix (Linstow, 1899) Skrjabin & Shikhobalova, 1948

Sarconema anseris Sultanov, 1963

Sarconema eurycerca Wehr, 1939

Sarconema pseudolabiata Belogurov, Daïña, & Sonin, 1966

Ornithofilaria fallisensis Anderson, 1954

Incertae sedis

Microfilaria guillemeti Pons, 1920

Microfilaria legeri Pons, 1920

Microfilaria plectropteri van den Berghe, 1942

ACANTHOCEPHALA

ORDER ARCHIACANTHOCEPHALA, Family Oligocanthorhynchidae
Prosthenorchis avicola Travassós, 1917

ORDER PALAEACANTHOCEPHALA

Family Echinorhynchidae

Acanthocephalus anguillae (Müller, 1780) Lühe, 1911
Acanthocephalus lucii (O.F. Müller, 1776) Lühe, 1911
Acanthocephalus ranae (Schrank, 1788) Lühe, 1911

Family Polymorphidae

Corynosoma anatarium Van Cleave, 1945
Corynosoma constrictum Van Cleave, 1918
Corynosoma enriettii Molfi & Fernandes, 1953
Corynosoma iheringi Machado Filho, 1961
Corynosoma longilemniscatus Machado Filho, 1961
Corynosoma mandarinca Oshmarin, 1963
Corynosoma mergi Lundström, 1942
Corynosoma molfi-fernandesi Machado Filho, 1962
Corynosoma peposacae (Porta, 1914) Travassós, 1926
Corynosoma phalacrocoracis Yamaguti, 1939
Corynosoma semerme (Forssell, 1904) Lühe, 1911
Corynosoma strumosum (Rudolphi, 1802) Lühe, 1904
Corynosoma sudsuche Belopol'skaja, 1959
Filicollis anatis (Schrank, 1788) Lühe, 1911
Hexaglandula paucihamatus (Heinze, 1936) Petrochenko, 1956
Polymorphus actuganensis Petrochenko, 1949
Polymorphus acutis Van Cleave & Starrett, 1940
Polymorphus altmani (Perry, 1942) Van Cleave, 1947
Polymorphus arcticus (Van Cleave, 1920) Van Cleave, 1937
Polymorphus biziurae Johnston & Edmonds, 1948
Polymorphus botulus (Van Cleave, 1916) Van Cleave, 1937
Polymorphus contortus (Bremser, 1821) Travassós, 1926
Polymorphus corynoides Skrjabin, 1913
Polymorphus cucullatus Van Cleave & Starrett, 1940
Polymorphus diploinflatus Lundström, 1942
Polymorphus formosus Schmidt & Kuntz, 1967
Polymorphus kostylewi Petrochenko, 1949
Polymorphus magnus Skrjabin, 1913
Polymorphus major Lundström, 1942
Polymorphus marilis Van Cleave, 1939
Polymorphus mathevossianae Petrochenko, 1949
Polymorphus meyeri Lundström, 1942
Polymorphus miniatus (Linstow, 1896) Travassós, 1926
Polymorphus minutus (Goeze, 1782) Lühe, 1911
Polymorphus obtusus Van Cleave, 1918
Polymorphus phippsi Kostylev, 1922
Polymorphus striatus (Goeze, 1782) Lühe, 1911
Polymorphus strumosoides Lundström, 1942

Polymorphus swartzi Schmidt, 1965
Polymorphus trochus Van Cleave, 1945
Prosthorhynchus gracilis Petrochenko, 1958
Prosthorhynchus pupa (Linstow, 1905) Meyer, 1931
Arhythmorhynchus frassoni (Molin, 1858) Lühe, 1911
Arhythmorhynchus longicollis (Villot, 1875) Travassos, 1926
Centrorhynchus aluconis (Müller, 1780) Lühe, 1911

HIRUDINEA

ORDER RHYNCHOBDELLIDA, Family Glossiphoniidae

Theromyzon maculosum (Rathke, 1862) Autrum, 1936
Theromyzon occidentale (Verrill, 1874) Bere, 1929
Theromyzon rude (Baird, 1869) Moore & Meyer, 1951
Theromyzon sexoculatum (Moore, 1898) Moore, 1924
Theromyzon tessulatum (O.F. Müller, 1774) Autrum, 1936

INDEX OF SYNONYMS AND INVALID NAMES REPORTED FROM WATERFOWL

(Since publication of subject indexes of Index-Catalogue of Medical and Veterinary Zoology: Trematoda - Stiles & Hassall, 1908; Cestoda - Stiles & Hassall, 1912; Nematoda and Acanthocephala - Stiles & Hassall, 1920.)

TREMATODA

Name reported -- Valid name or reason for invalidation

acadiae Swales, 1933; Streptovitella -- Maritrema acadiae
acanthocephalum Stossich, 1887; Distomum -- Unidentified
actitis McIntosh, 1932; Leucochloridium -- Leucochloridium cyano-
cittae
afanassjewi Tsimbaliuk & Muchina, 1965; Microphallus -- Nomen nudum
agilis Travassos, 1921; Psilochasmus -- Psilochasmus oxyurus
alveatum Mehlis, 1846; Monostoma -- Paramonostomum alveatum
americanum Manter & Williams, 1928; Typhlocoelum -- Typhlocoelum
cucumerinum
amphicrus Tubangui, 1933; Diplodiscus -- Erroneous citation
anati Bykhovskaja-Pavlovskaja & Zhukov, 1953; Parastrigea --
Parastrigea robusta
anatarum Cheatum, 1941; Dendritobilharzia -- Dendritobilharzia
pulverulenta
anatis Yamaguti, 1933; Opisthorchis -- Amphimerus anatis
anatis Ku, 1937; Notocotylus -- Notocotylus imbricatus
anatis, Hypoderaeum of Lapage, 1961 -- Erroneous citation
anteroporis Singh, 1955; Catatropis -- Citation not available
arcuatum Brandes, 1892; Cyclocoelum, Monostomum -- Hyptiasmus arcuatus
ardeae Matáre, 1910; Tetracotyle -- Strigea falconis
asiaticus Skrjabin, 1913; Notaulus -- Opisthorchis longissimus
asperiductus Royce, 1937; Notocotylus -- Nomen nudum
attenuatum Rudolphi, 1809; Monostoma -- Notocotylus attenuatus
babai Bhalerao, 1935; Hindia, Hindolana -- Notocotylus babai
baculus Diesing, 1850; Echinostoma -- Echinoparyphium baculus
baylisi Gohar, 1930; Cercarioides -- Galactosomum baylisi
bogoriensis Muchlis, 1960; Amphimerus -- Provisional species
brachysomum Creplin, 1837; Distomum -- Levinseniella brachysoma
brantae Bullock, 1952; Paramonostomum -- Paramonostomum alveatum
bucephalae Yamaguti, 1935; Neoparamonostomum -- Paramonostomum
bucephalae
bucephalae Yamaguti, 1935; Spelophallus -- Levinseniella bucephalae
burnetti Brackett, 1942; Pseudobilharziella, Pseudobilharzia --
Trichobilharzia burnetti
calderoni Africa & Garcia, 1935; Procerovum of Chen, 1949 --
Procerovum varium
canadensis McLeod, 1936; Microbilharzia -- Austrobilharzia cana-
densis
capellae Khan, 1935; Cyclocoelum of authors -- Cyclocoelum odeningi
casarcii Mehra, 1937; Lepoderma -- Plagiorchis casarcii

casarcus Vidyarthi, 1937; Apatemon -- Apatemon gracilis indicus
ceratosa Stunkard, 1916; Zygocotyle -- Zygocotyle lunatum
chankensis Oshmarin & Dotsenko, 1951; Echinochasmus beleocephalus var.
-- Echinochasmus beleocephalus
chapini Price, 1929; Microbilharzia -- Austroilharzia chapini
chenis Royce, 1937; Notocotylus -- Nomen nudum
chionis Baylis, 1928; Notocotylus of authors -- Notocotylus parvi-
ovatus
choledocus Linstow, 1883; Distomum -- Opisthorchis choledocus
choledocus, Gymnocephalus of Lapage, 1961 -- Lapsus for Gymnophallus
choledocus
cinctum Rudolphi, 1803; Echinoparyphium -- Parechinostomum cinctum
claviforme Brandes, 1888; Spelotrema -- Microphallus claviformis
coelonodus Witenberg, 1926; Hyptiasmus -- Hyptiasmus arcuatus
compascua Kowalewski, 1898; Metorchis xanthosomus -- Metorchis bilis
concava Creplin, 1825; Tocotrema -- Cryptocotyle concavum
constrictum Mehlis in Creplin, 1846; Distoma -- Unidentified
continua Loos-Frank, 1967; Himasthla -- Accidental, immature only
crassiusculus Rudolphi, 1809; Metorchis, Parameterchis -- Metorchis
bilis
crenulatum Cobbold, 1860; Holostomum -- Unidentified
cruzi Travassos, 1921; Cornucopula -- Levinseniella cruzi
cryptocotyloides Isačhikov, 1923; Ciureana -- Cryptocotyle
cryptocotyloides
cucumerinum Rudolphi, 1809; Tracheophilus -- Typhlocoelum
cucumerinum
curonensis Szidat, 1933; Cyathocotyloides -- Holostephanus curonensis
cymbium Diesing, 1850; Typhlocoelum, Tracheophilus -- Typhlocoelum
sisowi
dapsilis Nicoll, 1907; Gymnophallus -- Gymnophallus bursicola
delicatum Rudolphi, 1809; Distomum -- Unidentified
desouzai Lalitha & Alwar, 1960; Opisthorchis -- Nomen nudum
donicum Skrjabin & Lindtrop, 1919; Rossicotrema -- Apophallus donicum
duboisii Stunkard, 1966; Notocotylus -- Notocotylus imbricatus
echiniferum La Valette, 1855; Echinostoma -- Neoacanthoparyphium
echinatoides
elongata Hsü, 1935; Echinostoma -- Echinostoma asiatica
elongatum Yamaguti, 1934; Neoparamonostomum -- Paramonostomum
elongatum
elongatus Gower, 1938; Opisthorchis -- Amphimerus elongatus
erratica Rudolphi, 1809; Strigea -- Cotylurus erraticus
eurysternum, Dicrocoelium of Lapage, 1961 -- Lapsus for Dicrocoelium
eurystomum
eurystomum Linstow, 1877; Distoma, Dicrocoelium -- Unidentified
excavata Rudolphi, 1803; Tylodelphys of Bezubik, 1957 -- Tylodelphys
clavatum
exiguum, Holostomum -- Unidentified
falconispalumbi, Strigea of Odening, 1967 -- Citation not available
ferrugineum Mehra, 1937; Lepoderma -- Plagiorchis ferrugineus
filiformis Ishii, 1935; Amphimerus -- Amphimerus anatis

filiformis Szidat, 1938; Pseudobilharziella -- Trichobilharzia
filiformis
flavum Mehlis, 1831; Monostomum, Typhlocoelum -- Typhlocoelum
cucumerinum
flexicaudum Cort & Brooks, 1928; Diplostomum -- Diplostomum
spathaceum flexicaudum
flexum Linton, 1892; Distomum, Echinostoma -- Echinoparyphium flexum
fraterna Odhner, 1902; Cyathocotyle -- Erroneous citation
fuligulae, Amphimerus of Lapage, 1961 -- Lapsus for Apatemon
fuligulae
fuligulae Yamaguti, 1933; Apatemon -- Apatemon gracilis fuligulae
fusa Ishii & Matsuoka, 1935; Cyathocotyle -- Cyathocotyle prussica
gambense Dubois, 1930; Typhlocoelum -- Typhlocoelum cucumerinum
gastroporus Lühe, 1901; Pleurogenoides -- Erroneous citation
gatesi Sharma, 1943; Mehlisia -- Sharmaia gatesi
gibbus, Notocotylus of Stunkard & Dunihue, 1931 -- Notocotylus
minutus
glacialis, Apatemon of Gower, 1939 -- Lapsus for Apatemon gracilis
globulus Rudolphi, 1814; Distomum -- Sphaeridiotrema globulus
gracilis Rudolphi, 1819; Strigea -- Apatemon gracilis
gracilis Mendheim, 1940; Mesorchis -- Stephanoprora gracilis
graciosum, Maritrema of Lapage, 1961 -- Lapsus for Maritrema
gratiosum
gravieri Mathias, 1935; Cyathocotyle -- Cyathocotyle prussica
halli Harrah, 1922; Cyclocoelum -- Cyclocoelum brasilianum
hepaticus Sugimoto, 1919; Tracheophilus, Typhlocoelum -- Typhlo-
coelum sisowi
hoffmani Rébecq, 1964; Microphallus -- Nomen nudum
horai, Paraphystomum of Lapage, 1961 -- Lapsus for Paryphostomum
horai
horiconensis Brackett, 1942; Pseudobilharziella, Pseudobilharzia --
Trichobilharzia horiconensis
horiuchii Morishita & Tsuchimochi, 1925; Prosthogonimus -- Prostho-
gonimus ovatus
hsui Yamaguti, 1958; Echinostoma -- Echinostoma asiatica
huronensis Najim, 1950; Gigantobilharzia -- Erroneous citation
indica Lal, 1937; Chinhuta -- Bilharziella indica
indicum Mehra, 1944; Pseudechinostomum -- Nomen nudum
indicus Lal, 1935; Notocotylus -- Notocotylus babai
indicus Vidyarthi, 1937; Apatemon -- Apatemon gracilis indicus
insigne Looss, 1899; Leucochloridium -- Leucochloridium holostomum
intermedius Johnston, 1904; Hemistomum, Proalaria, Diplostomum,
Australapatemon -- Apatemon intermedius
intermedius Semenov, 1927; Schistogonimus -- Schistogonimus rarus
intestinalis Tubangui, 1932; Notocotylus -- Notocotylus attenuatus
jaegerskioeldi Travassos, 1921; Cornucopula -- Gynaecotyla
jaegerskioeldi
japonicum Yamaguti, 1939; Pseudospelotrema -- Maritrema japonicum
japonicus Braun, 1901; Prosthogonimus -- Prosthogonimus ovatus
japonicus Ishii, 1932; Apatemon -- Apatemon gracilis japonicus

japonicus Ishii, 1935; Psilochasmus -- Psilochasmus oxyurus
karausiaki Layman, 1926; Prosthogonimus -- Prosthogonimus ovatus
katsuradai Lyster, 1940; Paracoenogonimus -- Ornithodiplostomum
ptychocheilus
kegonsensis Brackett, 1942; Pseudobilharziella, Pseudobilharzia --
Trichobilharzia kegonsensis
koidzumii Tsuchimochi, 1924; Echinoparyphium -- Echinoparyphium
recurvatum
koisarensis Ablasov & Iksanov, 1959; Echinoparyphium -- Echinostoma
koisarensis
kossarewi Skrjabin & Zakharov, 1920; Trichobilharzia -- Trichobil-
harzia ocellata
kowalewskii Ejsmont, 1929; Pseudobilharziella -- Trichobilharzia
kowalewskii
laevigatus Kossack, 1911; Hyptiasmus -- Hyptiasmus arcuatus
lecithosus Otte, 1926; Psilochasmus -- Hypoderaeum conoideum
leei Hsu, 1935; Prosthogonimus -- Prosthogonimus ovatus
lintoni Gower, 1939; Erschoviorchis, Opisthorchis -- Amphimerus
lintoni
longissimus Linstow, 1883; Hepatiarius -- Opisthorchis longissimus
lucknowensis Lal, 1935; Hindia, Notocotylus, Hindolana -- Notocotylus
imbricatus
lunatum Diesing, 1836; Amphistoma -- Zygocotyle lunatum
lutzi Faust & Tang, 1938; Linstowiella, Cyathocotyle -- Holostephanus
lutzi
macrocotyle Gower, 1938; Leucochloridiomorpha -- Leucochloridio-
morpha constantiae
macroporus Jameson & Nicoll, 1913; Gymnophallus, Gymnophalloides --
Meiogymnophallus macroporus
macrostomus Yamaguti, 1939; Gymnophallus, Gymnophalloides --
Meiogymnophallus macrostomus
magalhaesi Travassos, 1921; Spaniometra -- Ophthalmophagus magalhaesi
magniovatus Yamaguti, 1934; Notocotylus -- Notocotylus imbricatus
magniovatus
magniproles Witenberg, 1926; Hyptiasmus -- Hyptiasmus arcuatus
magnocirrusa Verma, 1936; Hypoderaeum -- Hypoderaeum conoideum
magnum Johnston, 1917; Stossichium, Hyptiasmus -- Prohyptiasmus
robustus
malissimus Morozov, 1960; Cestotrema -- Gymnophallus mollissima
manitobensis McLeod, 1936; Microbilharzia -- Austrobilharzia
manitobensis
marginatum Molin, 1858; Distoma -- Unidentified
massinoi Witenberg, 1923; Ophthalmophagus -- Ophthalmophagus
singularis
mathevossianae Shakhtakhtinskaiā, 1957; Echinochasmus, Episthmium --
Episthmium colymbi
mehrai Pande, 1937; Diplodiscus -- Erroneous citation
melanittae Yamaguti, 1934; Linstowiella, Paracyathocotyle --
Cyathocotyle melanittae
mendax Dietz, 1909; Echinostoma -- Echinostoma revolutum

mergi Yamaguti, 1933; Proalaria -- Diplostomum mergi
mergi Cannon, 1938; Mesorchis -- Stephanoprora mergi
microspina Singh, 1954; Echinostoma -- Hypoderaeum microspina
microstomum Creplin, 1829; Cyclocoelum -- Cyclocoelum mutabile
minor Yamaguti, 1933; Apatemon -- Apatemon gracilis minor
minor Hsu, 1935; Echinostoma -- Echinoparyphium minor
minuta Price, 1934; Levinseniella -- Atriophallophorus minuta
minutissimum Stossich, 1896; Monostoma -- Unidentified
mordax Looss, 1899; Heterechinostomum -- Echinochasmus mordax
multispinosus Perez Vigueras, 1944; Echinostoma -- Echinostoma
revolutum
mutabile Zeder, 1800; Monostoma -- Cyclocoelum mutabile
mutadomum Wallace, 1937; Diplostomulum -- Pharyngostomum cordatum
nathipandei Odening, 1964; Notocotylus -- Erroneous citation
naviformis Tubangui, 1932; Naviformis - Notocotylus naviformis
neivai Travassos, 1921; Typhlocoelum, Neivaia, Cyclocoelum --
Neivaia cymbium
nettae Gower, 1938; Maritreminoides -- Maritrema nettae
nicolli Cable & Hunninen, 1938; Spelotrema -- Microphallus nicolli
novum Verma, 1936; Paryphostomum -- Echinostoma novum
obovale Neumann, 1909; Typhlocoelum, Tracheophilus -- Typhlocoelum
cucumerinum
obtortum Caballero, 1942; Paramonostomum -- Notocotylus pacifera
odhneri Skrjabin & Zakharov, 1920; Dendritobilharzia --
Dendritobilharzia pulverulenta
oidemia Belopol'skaia, 1952; Spelotrema, Microphallus -- Micro-
phallus pygmaeus
oidemiae Jameson & Nicoll, 1913; Gymnophallus, Gymnophalloides,
Meiogymnophallus -- Meiogymnophallus minutus
ondatrae Price, 1931; Psilostomum -- Ribeiroia ondatrae
orientale Yamaguti, 1934; Diplostomum, Neodiplostomum -- Diplostomum
mergi
orientalis Faust, 1922; Linstowiella, Cyathocotyle, Paracyathocotyle
-- Cyathocotyle prussica
orientalis Yamaguti, 1933; Prosthogonimus -- Prosthogonimus ovatus
orientalis Ku, 1937; Notocotylus -- Notocotylus parviovatus
orientalis Ablasov & Chibichenko, Diplostomum of McDonald, 1965 --
Diplostomum mergi
ovolepens Jameson & Nicoll, Gymnophallus of Morozov, 1955 -- Lapsus
for Gymnophallus ovoplenus
ovoplenus Jameson & Nicoll, 1913; Gymnophallus -- Parvatrema
ovoplenus
oxycephalum Rudolphi, 1819; Echinostoma -- Echinostoma revolutum
oxyurum Creplin, 1825; Distomum, Psilostomum -- Psilochasmus oxyurus
papillorobusta Rankin, 1940; Spelotrema -- Microphallus papillorobusta
paraulum Dietz, 1909; Echinoparyphium -- Echinostoma paraulum
parviventosum Dubois, 1932; Tylodelphys -- Diplostomum parviventosum
parvum Stunkard & Dunihue, 1931; Neoparamonostomum -- Paramonostomum
parvum
parvulum, Echinostoma of Skrjabin, 1915 -- Lapsus for Echinostoma
paraulum

pellucidus Yamaguti, 1933; Apatemon, Apatemon gracilis pellucidus --
Apatemon cobitidis pellucidus
penni Ku, 1940; Prosthogonimus -- Prosthogonimus ovatus
petrowi Nevostrueva, 1954; Echinoparyphium, Neoacanthoparyphium --
Neoacanthoparyphium echinatoides
pianae Galli-Valerio, 1898; Opisthorchis -- Hypoderaeum conoideum
pileatum, Hemistomum -- Unidentified
pirajai Travassos, 1932; Schistosoma -- Unidentified
piriforme Odhner, 1913; Distomum -- Psilostomum brevicolle
platyurum Mühlhng, 1896; Distomum, Psilostomum -- Psilostomum
brevicolle
plectropteri Dubois, 1930; Ophthalmophagus -- Ophthalmophagus
magalhaesi
polonica Kowalewski, 1895; Ornithobilharzia -- Bilharziella polonica
primas Jägerskiöld, 1908; Spelotrema, Spelotrema -- Microphallus
primas
pseudodenticulata Mendheim, 1940; Mesorchis -- Stephanoprora
pseudodenticulata
pseudoechinatus Olsson, 1876; Mesorchis -- Stephanoprora denticulata
pseudogonotyla Chen, 1944; Spelotrema, Carneophallus -- Microphallus
pseudogonotyla
pseudomacrostromum, Cyclocoelum of Gower, 1939 -- Lapsus for
Cyclocoelum pseudomicrostromum
pseudomicrostromum Harrah, 1922; Cyclocoelum -- Cyclocoelum mutabile
ptychocephalus, Ornithodiplostomum of Lapage, 1961 -- Lapsus for
Ornithodiplostomum ptychocheilus
ptychocheilus Faust, 1917; Paradiplostomum -- Ornithodiplostomum
ptychocheilus
pulverulenta Braun, 1901; Bilharziella -- Dendritobilharzia
pulverulenta
pusillum Dubois, 1928; Hemistomum -- Diplostomum pusillum
pusillum, Distomum of Lapage, 1961 -- Lapsus for Diplostomum pusillum
pygmaeum Levinsen, 1881; Levinsenia; Spelotrema -- Microphallus
pygmaeus
querquedulae Yamaguti, 1933; Prosthogonimus -- Prosthogonimus ovatus
querquedulae McLeod, 1937; Pseudobilharziella -- Trichobilharzia
physellae
raabei Bezubik, 1958; Strigea, Cotylurostrigea -- Cotylurus raabei
raminellae Dery, 1958; Maritreminoides, Pseudospelotrema --
Maritrema raminellae
rarus Braun, 1901; Prosthogonimus -- Schistogonimus rarus
ravieri, Cyathocotyle of Lapage, 1961 -- Lapsus for Cyathocotyle
gravieri
razalensis, Philophthalmus of Gower, 1939 -- Lapsus for Philophthal-
mus riazalensis
recurvatum Linstow, 1873; Echinostoma -- Echinoparyphium recurvatum
reticulare Johnston, 1913; Typhlocoelum -- Typhlocoelum cucumerinum
revolutum, Echinoparyphium of Lapage, 1961 -- Echinostoma revolutum
robustus Stossich, 1902; Monostomum, Ophthalmophagus, Hyptiasmus --
Prohyptiasmus robustus

russii Mehra, 1937; Lepoderma -- Plagiorchis maculosus or P. potanini
sarcidiornicola Mégnin, 1890; Tracheophilus, Typhlultimum --
Typhlocoelum cucumerinum
sarcogyponis Vidyarthi, 1937; Pseudostrigea -- Erroneous citation
shovellus Lal, 1936; Typhlophilus, Typhlocoelum -- Typhlocoelum
cucumerinum
simillimum Mühling, 1898; Psilostomum, Psilochasmus -- Psilotrema
simillimum
sinensis Hsu, 1935; Hypoderaeum -- Hypoderaeum conoideum
sinensis Ku, 1940; Prosthogonimus -- Prosthogonimus ovatus
sisowi Skrjabin, 1913; Tracheophilus -- Typhlocoelum sisowi
skrjabini Zakharov, 1920; Prosthogonimus -- Prosthogonimus ovatus
skrjabini, Philophthalmus of Akhumiān, 1966 -- Citation not available
sobolevi Ryzhikov, 1963; Euparyphium -- Nomen nudum
solitaria Singh, 1954; Notocotylus -- Notocotylus babai
somateriae Levinsen, 1881; Lecithodendrium, Gymnophallus, Gymno-
phalloides -- Meiogymnophallus somateriae
somateriae Kulachkova, 1958; Levinseniella -- Microphallus somateriae
sphaerocephalus Brandes, 1888; Apatemon, Holostomum -- Apatemon
globiceps
spiculigerum Mühling, 1898; Psilostomum, Psilotrema -- Psilotrema
oligoon
spinulosus, Momilifer of Dietz, 1909; Echinochasmus -- Stephanoprora
spinosa
strictus Endrigkeit, 1940; Cotylurus -- Cotylurus platycephalus
suzugamo Yamaguti, 1939; Acanthoparyphium spinulosum var. --
Acanthoparyphium spinulosum
szidatiana Faust & Tang, 1938; Cyathocotyle -- Cyathocotyle prussica
tachyeretis Duthoit, 1931; Hindia, Hindolana -- Notocotylus
tachyeretis
tarda Steenstrup, 1842; Strigea -- Cotylurus cornutus
tenuicollis Bashkirova, 1941; Echinostoma revolutum var. --
Echinostoma revolutum
theodori Witenberg, 1928; Hyptiasmus, Ophthalmophagus -- Hyptiasmus
arcuatus
thienemanni L. & U. Szidat, 1933; Notocotylus -- Notocotylus ephemera
thomasi McMullen, 1938; Ribeiroia -- Ribeiroia ondatrae
triserialis Diesing, 1839; Notocotylus -- Notocotylus attenuatus
tsingkiangpuensis Hsu & Chow, 1938; Opisthorchis -- Amphimerus anatis
tumidus Kossack, 1911; Hyptiasmus -- Hyptiasmus arcuatus
vanbenedeni Witenberg, 1923; Promptenovum -- Nomen nudum
variegata, Strigea -- Unidentified
variglandis Miller & Northup, 1926; Microbilharzia -- Austrobilharzia
variglandis
verrucosum Froelich, 1789; Monostomum -- Catatropis verrucosa
vesicaudus Nickerson, 1912; Cephalogonimus -- Spurious parasite
viviparae Linstow, 1877; Linstowiella -- Paracoenogonimus viviparae
viviparae, Linstowiella, Paracoenogonimus of Szidat, 1936, & Sudarikov,
1956 -- Paracoenogonimus ovatus
waubesensis Brackett, 1942; Pseudobilharziella, Pseudobilharzia --
Trichobilharzia waubesensis

CESTODA

Note: Names within the many genera into which Hymenolepis has been divided are not indexed; all such names are listed alphabetically in the catalogue as if the species were in Hymenolepis s. l. These genera with species in waterfowl are:

Abortilepis	Drepanidolepis	Myxacanthus
Allohaploparaxis	Drepanidotaenia	Myxolepis
Amphipetrovia	Dubininolepis	Nadejdolepis
Anatinella	Echinatrium	Orlovilepis
Armadoskrjabinia	Echinocotyle	Parabisaccanthes
Arhynchotaenia	Fuhrmaniella	Retinometra
Anserilepis	Hamatolepis	Sobolevicanthus
Australiolepis	Hispaniolepidoides	Sphenacanthus
Bisaccanthes	Hispaniolepis	Staphylepis
Chelacanthus	Hymenosphenacanthus	Stylolepis
Cloacotaenia	Kowalewskius	Tschertkovilepis
Colymbilepis	Limnolepis	Variolepis
Confluaria	Mayhewia	Wardium
Decacanthus	Microsomacanthus	Wardoides
Dicranotaenia	Monosaccanthes	Weinlandia

Name reported -- Valid name or reason for invalidation

abuladze Krotov, 1949; Diorchis -- Diorchis nyrocae
acicula, Hymenolepis of Gower, 1939 -- Lapsus for H. acicula-sinuata
acicula-sinuata Rosseter, 1909; Hymenolepis -- Diorchis acicula-sinuata
acicula-sinuata, Aploparaksis of Lapage, 1961 -- Lapsus for Diorchis
acicula-sinuata
acuminata Clerc, 1902; Drepanidotaenia, Hymenolepis -- Diorchis
acuminata
acuminata (Clerc) of Ransom, 1909; Diorchis -- Diorchis ransomii
acuminata (Clerc) of Linton, 1927; Diorchis -- Diorchis lintoni
acuminata (Clerc) of Spasskaia, 1961; Diorchis -- Diorchis spasskajae
aecophylus Oshmarin, 1950; Diagonaliporus -- Lateriporus aecophylus
agnosta Meggitt, 1927; Anomotaenia -- Chitonorecta agnosta
alternans Rudolphi, 1810; Digramma -- Digramma interrupta
americana Ransom, 1909; Diorchis -- Diorchis inflata
anatina Fuhrmann, 1908; Davainea -- Raillietina anatina
anatina Krabbe, 1869; Taenia -- Hymenolepis anatina
anseris Skrjabin & Matevosian, 1942; Hymenolepis -- Hymenolepis
setigera
anserum Frisch, 1727; Hymenolepis -- Hymenolepis lanceolata
apcaris Sharma, 1943; Hymenolepis, Dicranotaenia -- Hymenolepis
coronula

arcticum Linstow, 1901; Tetrabothrium -- Tetrabothrius immerinus
arcticum Linstow, 1905; Notobothrium -- Fimbriaria fasciolaris
arcuata Kowalewski of Dubinina, 1950; Hymenolepis -- Hymenolepis
arsenjevi Oshmarin, 1959; Skrjabinoparaksis -- Diorchis arsenjevi
asiatica Spasskiĭ, 1963; Diorchis danutae -- Diorchis asiatica
avicola Fuhrmann, 1897; Ctenotaenia -- Cittotaenia avicola
bairdii Kreffft, 1871; Taenia -- Hymenolepis collaris
birmanica Meggitt, 1927; Hymenolepis -- Hymenolepis neomeggittilis
borcalis Linstow, 1905; Aporina, Choanotaenia -- Paricterotaenia
brachysoma Setti, 1899; Taenia -- Taenia brauni, erroneous citation
cameroni Singh, 1960; Hymenolepis -- Hymenolepis coronula
ciliata Fuhrmann, 1913; Platyscolex, Unciunia -- Anomotaenia ciliata
compressa Linton, 1892; Taenia -- Hymenolepis compressa
conica Molin, 1858; Taenia -- Aploparaksis furcigera
conscripta Railliet & Henry, 1909; Taenia, Hymenolepis -- Hymenolepis
cygni Maksimova, 1963; Parabisacanthos, Hymenolepis -- Hymenolepis
cylindrica Kreffft, 1871; Taenia -- Hymenolepis megalops
cyrtus Skrjabin, 1914; Davainia -- Raillietina cyrtus
danutae Czapliński of Spasskaia, 1961; Diorchis -- Diorchis asiatica
destituata; Taenia, Lateriporus -- Lapsus for Lateriporus destitutus
destituata Lönnberg, 1889; Taenia -- Lateriporus destitutus
digonopora Pasquale, 1790; Cotugnia -- Probably erroneous record
dimorphus Creplin, 1829; Schistocephalus -- Schistocephalus solidus
diorchis Fuhrmann, 1913; Hymenolepis, Weinlandia, Microsomacanthus --
Diorchis diorchis
ditremus Creplin, 1825; Bothriocephalus -- Diphyllobothrium ditremum
dogieli Ginetsinskaia, 1944; Apora -- Gastrotaenia dogieli
elisae Skrjabin, 1914; Aploparaksis -- Diorchis elisae
endacantha Dubinina, 1954; Skrjabinoparaksis, Aploparaksis --
Diorchis endacantha
falciformis Linton, 1927; Fimbriaria, Fimbriarioides -- Fimbriariella
falciformis and Fimbriarioides lintoni
fasciata Krabbe, 1869; Taenia, Hymenolepis, Drepanidotaenia --
Hymenolepis longicirrosa
fasciata, Cotugnia of Lapage, 1961 -- Lapsus for Cotugnia fastigata
fasciculata Ransom, 1909; Hymenolepis, Sphenacanthus, Retinometra --
Hymenolepis longicirrosa
fausti, Fimbriaria of Lapage, 1961 -- Lapsus for Hymenolepis fausti
filum Goeze, 1782; Haploparaxis -- Probably erroneous citation
flavescens Kreffft, 1871; Taenia -- Diorchis flavescens
flavescens Kreffft, Diorchis of Asia and N. America of authors --
Diorchis inflata
fragilis Krabbe, 1869; Hymenolepis e.p. -- Hymenolepis krabbeella
fructicosa, Hymenolepis of Fuhrmann, 1932 -- Lapsus for Hymenolepis
fuliginosa, Haploparaxis of Fuhrmann, 1932 -- Lapsus for Aploparaksis
fuligulosa

furcigera Nitzsch, 1819; Hymenolepis -- Aploparaksis furcigera
fusus Krabbe, 1869; Hymenolepis -- Aploparaksis fusus, erroneous
citation
gasterostei Fabricius, 1780; Schistocephalus -- Schistocephalus
solidus
ginezinskaya, Apora dogieli of Lapage, 1961 -- Lapsus for Apora
dogieli
globosa, Hymenolepis of Lapage, 1961 -- Lapsus for Hymenolepis
globulosa
globulosa Szpotanska, 1931; Hymenolepis -- Hymenolepis teresoides
gracilis Zeder, 1803; Taenia -- Hymenolepis gracilis
groenlandica Krabbe, 1869; Dicranotaenia, Hymenolepis -- Aploparaksis
groenlandica
hylae Johnston, 1912; Ophiotaenia -- Spurious infection
imbutiformis Polonio, 1860; Mesocestoides -- Unrecognizable, invalid
infundibulum Bloch, 1779; Monopylidium -- Choanotaenia infundibulum
insignis Lönnerberg, 1890; Ophryocotyle -- Ophryocotyle sp.
intermedia Fuhrmann, 1913; Fimbriaria -- Fimbriarioides intermedia
interrupta Rudolphi, 1810; Ligula -- Digramma interrupta
introversa Mayhew, 1925; Weinlandia, Hymenolepis -- Hymenolepis
coronula
japonicus, Haploparaxis of Lapage, 1961 -- Lapsus for Aploparaksis
japonensis
japonensis Yamaguti, 1935; Haploparaxis -- Aploparaksis furcigera
krabbei Kowalewski, 1895; Taenia -- Hymenolepis krabbei
laevis Bloch, 1782; Taenia, Drepanidotaenia -- Diploposthe laevis
laevis, Diorchis of Lapage, 1961 -- Lapsus for Diploposthe laevis
lintoni, Fimbriariella of Lapage, 1961 -- Lapsus for Fimbriarioides
lintoni
lobata Szpotanska, 1931; Drepanidotaenia lanceolata, Drepanidotaenia
-- Hymenolepis lanceolata
longae Schmelz, 1941; Diorchis -- Diorchis wigginsi
longiceps Rudolphi, 1819; Biuterina -- Sphaeruterina longiceps
longiovum Schiller, 1953; Schillerius -- Diorchis longiovum
luengoi López-Neyra, 1942; Drepanidotaenia -- Hymenolepis fulvicicola,
erroneous citation
macracantha (Linton) of Fuhrmann, 1932; Taenia -- Taenia macracantha
macracanthoides López-Neyra, 1932; Hymenolepis -- Hymenolepis
macracanthos
macracanthos Linstow, 1877; Taenia -- Hymenolepis macracanthos
macracanthos (Linstow) of Linton, 1927; Hymenolepis -- Hymenolepis
lintoni
macracantha Linton, 1892; Taenia -- Unidentified
macrostrobiloides Mayhew, 1925; Hymenolepis -- Hymenolepis coronula
mastigopraedita Polk, 1942; Hymenolepis -- Hymenolepis stollii
mayhewi Shen Tseng, 1932; Weinlandia -- Mixture of forms
megalhystera Linstow, 1905; Hymenolepis -- Hymenolepis coronula
megarostellis Solov'ev, 1911; Hymenolepis -- Hymenolepis compressa
meggitti Sharma, 1943; Hymenolepis -- Hymenolepis sharmi
mergi Yamaguti, 1940; Hymenolepis -- Hymenolepis coronula

micracantha Matevosian, 1945; Dicranotaenia coronula -- Hymenolepis coronula
microcotyle Skrjabin, 1914; Davainea -- Raillietina microcotyle
minutum Endrigkeit, 1940; Ophriocotyle -- Nomen nudum, Nematopara-taenia sp.
monoposthe Dubinina, 1954; Diploposthe -- Hymenolepis monoposthe
moschata Kreffft, 1871; Taenia -- Unidentified
nana Maplestone & Southwell, 1922; Echinorhynchotaenia -- Hymenolepis southwelli
neomeggitti, Hymenolepis of Lapage, 1961 -- Lapsus for Hymenolepis neomeggittilis
nyrocae Long & Wiggins, 1939; Diorchis -- Diorchis wigginsii
nyrocae (Yamaguti) of Spasskaia, 1965; Wardoides -- Wardoides oidemiae
oligorchis Maplestone, 1922; Cotugnia -- Diplogynia oligorchis
otidis Krabbe, 1868; Idiogenes -- Probably erroneous record
pachycephala Linstow, 1872; Taenia -- Hymenolepis pachycephala
parviceps Linstow, 1872; Taenia, Diorchis, Hymenolepis -- Invalid, unidentified
parvisaccata Shepard, 1943; Hymenolepis -- Hymenolepis coronula
parvogenitalis Matevosian, 1945; Diorchis, Schillerius -- Diorchis ransoni
parvogenitalis Matevosian of Spasskaia, 1961; Diorchis -- Diorchis tuvensis
pauciovata Meggitt, 1927; Hymenolepis -- Hymenolepis floreata
pediformis Kreffft, 1871; Taenia -- Fimbriaria fasciolaris
penelopina Fuhrmann, 1908; Raillietina -- Erroneous citation
pigmentata Linstow, 1872; Taenia -- Hymenolepis pigmentata
plana Linstow, 1905; Fimbriaria -- Fimbriaria fasciolaris
plicatus Linton, 1892; Epision, Fimbriaria -- Fimbriaria fasciolaris
pseudocoronula Matevosian, 1945; Dicranotaenia -- Hymenolepis coronula
pseudofurcigera Matevosian, 1945; Aploparaksis -- Aploparaksis furcigera
rhomboidea Dujardin, 1845; Taenia, Aploparaksis -- Aploparaksis furcigera
sagitta Rosseter, 1906; Drepanidotaenia -- Unrecognized, invalid
sandgroundi Davis, 1944; Cittotaenia, Diplogynia -- Diplogynia oligorchis
setigera Froelich, 1789; Taenia -- Hymenolepis setigera
sibirica Linstow, 1905; Diorchis -- Hymenolepis sibirica
singhi Ryzhikov of Khuan Shen-i, 1962; Echinocotyle -- Nomen nudum, Echinocotyle ryjikovi
sinuosa Zeder, 1800; Taenia, Drepanidotaenia -- Hymenolepis collaris
skrjabini Udintzev, 1937; Diorchis, Schillerius -- Diorchis nyrocae
skrjabini Matevosian, 1942; Diploposthe -- Diploposthe sui-generis
skrjabini Matevosian, 1945; Hymenolepis -- Hymenolepis macracanthos
spasskyi Krotov, 1951; Diagonaliporus -- Valipora spasskyi
sphenocephala Rudolphi, 1810; Hymenolepis -- Hymenolepis columbae, erroneous citation

sphenoides, Anomotaenia of Lapage, 1961 -- Lapsus for Amoebotaenia
sphenoides
stefanski Czapliński, 1955; Aploparaksis -- Diorchis nyrocae
szpotanskaica Hughes, 1940; Hymenolepis lanceolata -- Hymenolepis
lanceolata
tenuirostris Rudolphi, 1819; Taenia -- Hymenolepis tenuirostris
tenuirostris (Rudolphi) of Fedúshin, 1937; Dubinina, 1948; and
Ryšavý, 1961; Hymenolepis -- Hymenolepis krabbei
testiculata, Hymenolepis of Lapage, 1961 -- Lapsus for Hymenolepis
tritesticulata
tetragona Molin, 1858; Raillietina -- Probably erroneous report
trichosoma Linstow, 1882; Taenia, Hymenolepis -- Diploposthe laevis
tritesticulata Fuhrmann, 1907; Hymenolepis, Weinlandia -- Hymenolepis
tenuirostris
tritesticulata Fuhrmann of Linton, 1927; Hymenolepis -- Unidentified
tshanensis Krotov, 1949; Diorchis -- Diorchis formosensis
tuberculata Kreff, 1871; Taenia, Ophryocotyle, Diploposthe --
Diploposthe laevis
upsilon Rosseter, 1911; Hymenolepis -- Hymenolepis abortiva
villosoides Solov'ev, 1911; Hymenolepis -- Hymenolepis arcuata
voluta Linstow, 1904; Taenia, Hymenolepis -- Hymenolepis abortiva

NEMATODA

Name reported -- Valid name or reason for invalidation

acuticaudatus Cobbold, 1861; Heterakis -- Unidentified
americana Cram, 1927; Tropisurus -- Tetrameres americana
anatinis (Schrank); Capillaria -- Lapsus for Capillaria anatis
anatinum Skrjabin, 1916; Epomidiostomum -- Epomidiostomum uncinatum
anatinum Sugimoto, 1928; Amidostomum -- Amidostomum acutum
anatis Schrank, 1790; Thominx -- Capillaria anatis
anatis Rudolphi, 1819; Filaria -- Unidentified
anatis, Ascaridia of Lapage, 1961 -- Lapsus for Capillaria anatis
anserinum, Amidostomum -- Lapsus for Amidostomum anseris
anseris Schwartz, 1925; Ascaridia -- Ascaridia galli
anseris Madsen, 1945; Capillaria -- Capillaria obsignata
australis Johnston & Mawson, 1941; Tropisurus -- Tetrameres australis
bispinosa Molin, 1860; Tetrameres -- Erroneous citation
biziurae Johnston & Mawson, 1941; Tropisurus -- Tetrameres biziurae
boschadis Petrov & Fedúshin, 1949; Amidostomum -- Amidostomum acutum
brantae Cram, 1928; Syngamus -- Cyathostoma brantae
bronchialis Muehlig, 1884; Syngamus -- Cyathostoma bronchialis
cairinae Freitas & Almeida, 1935; Eucoleus -- Capillaria cairinae
californica Gedoelst, 1919; Yseria, Skrjabinobronema -- Streptocara
californica
caudata Linstow, 1906; Heterakis, Ganguleterakis -- Heterakis dispar

certa Leidy, 1886; Tetrameres -- Erroneous citation
chevreuxi Seurat, 1918; Amidostomum -- Amidostomum acutum
circumvallata Linstow, 1906; Heterakis, Ganguleterakis -- Heterakis
dispar
circumvallata, Capillaria of Lapage, 1961 -- Lapsus for Heterakis
circumvallata
collaris Linstow, 1873; Thominx -- Capillaria anatis
contorta Creplin, 1839; Eucoleus, Thominx -- Capillaria contorta
coscorobae Chapin, 1925; Syngamus -- Cyathostoma coscorobae
crami Swales, 1933; Tropisurus -- Tetrameres crami
cygni Morini, Colombo, & Martín, 1960; Echinuria -- Echinuria
uncinata
cygni, Epomidiostomum of Shen & Wu, 1964 -- Unidentified; lapsus?
decorata Cram, 1927; Syncuaria -- Decorataria decorata
denticulophasma Wehr & Chitwood, 1934; Avioserpens -- Avioserpens
taiwana
dispar Schrank, 1790; Ganguleterakis -- Heterakis dispar
droumondii Travassos, 1915; Capillaria -- Capillaria obsignata
elegans Olfers, 1816; Eustrongylides -- Eustrongylides mergorum
ellisi Johnston & Mawson, 1945; Thominx -- Capillaria ellisi
ensicaudata Zeder, 1800; Ascaris -- Porrocaecum ensicaudatum
eurycerca Seurat, 1914; Seurocyrnea -- Cyrnea eurycerca
fissispina Diesing, 1861; Tropisurus -- Tetrameres fissispina
fissispina, Echinuria of Lapage, 1961 -- Lapsus for Tetrameres
fissispina
fuligulae Maplestone, 1930; Amidostomum -- Amidostomum acutum
gallinae Gmelin, 1790; Heterakis -- Heterakis gallinarum
gigas Travassos, 1919; Tropisurus -- Tetrameres gigas
globosa Linstow, 1879; Tetrameres -- Erroneous citation
gusi Oshmarin, 1950; Korjakinema -- Streptocara californica
gynaecophila Molin, 1858; Tetrameres -- Probably erroneous citation
horrida Rudolphi, 1809; Echinuria -- Skrjabinoclava horrida
hyperborea Swinyard, 1931; Heterakis, Ganguleterakis -- Heterakis
dispar
inermis Linstow, 1879; Tetrameres -- Erroneous citation
inflata Mehlis, 1846; Tetrameres -- Eustrongylides mergorum
inflexa Rudolphi, 1819; Capillaria -- Probably erroneous citation
jugadornata Solov'ev, 1912; Echinuria -- Echinuria uncinata
leucopareiae Solonitsyn, 1918; Amidostomum -- Nomen nudum
lineata Schneider, 1866; Ascaridia, Heterakis -- Ascaridia galli
merulae Baylis, 1926; Syngamus -- Probably Syngamus trachea
neglecta Lent & Freitas, 1939; Parhadjelia -- Hadjelia neglecta
nodulosum Rudolphi, 1803; Amidostomum -- Amidostomum anseris
nyrocinarum Madsen, 1945; Thominx -- Capillaria nyrocinarum
orientale Ryzhikov & Pavlov, 1959; Amidostomum -- Amidostomum acutum
pachicephalus Molin, 1861; Hystriichis -- Hystriichis cygni
papilloides, Eustrongylides of Lapage, 1961 -- Lapsus for Eustron-
gylides papillosus
papillosa Bloch, 1782; Heterakis -- Heterakis gallinarum or H. dispar
paradoxa Diesing, 1835; Tetrameres -- Probably Eustrongylides mergorum

parovatum, Oxyspirura of Gower, 1939 -- Lapsus for Oxyspirura parvovum
parvovum Sweet, 1910; Oxyspirura -- Oxyspirura mansoni
pectinifera Neumann, 1900; Streptocara -- Streptocara crassicauda
perspicillata Rudolphi, 1803; Ascaridia -- Ascaridia galli
plectropteri Thwaite, 1926; Echinurioides, Tropisurus -- Tetrameres
plectropteri
puchovi Gushanskaja, 1949; Tropisurus -- Tetrameres puchovi
raillieti Skrjabin, 1915; Amidostomum -- Amidostomum fulicae
raillieti López-Neyra, 1947; Thominx, Capillaria, Eucoleus --
Capillaria contorta
retusa Railliet, 1895; Capillaria -- Probably Capillaria anatis
sarcidiornis Kreis, 1953; Syngamus -- Cyathostoma sarcidiornis
similis Freitas & Medonça, 1954; Amidostomum -- Amidostomum cygni
skrjabini Boulenger, 1926; Amidostomum -- Amidostomum acutum
skrjabini Petrov, 1926; Epomidiostomum -- Epomidiostomum orispinum
skrjabini Ljubimova, 1947; Thominx -- Capillaria skrjabini
somateriae Ryzhikov, 1960; Streptocara -- Streptocara formosensis
spiculigerum Rudolphi, 1809; Ascaris -- Contracaecum spiculigerum
spinosa Maplestone, 1931; Echinuria, Tropisurus -- Tetrameres
spinosa
spinulosa Linstow, 1890; Echinocoleus, Thominx -- Capillaria
spinulosa
staphlocerca, Ascaridia of Gower, 1939 -- Lapsus for Ascaridia
staphlocerca
streparae Johnston & Mawson, 1947; Oxyspirura -- Erroneous citation
streperae Johnston & Mawson, 1941; Porrocaecum -- Erroneous citation
streperina Johnston & Mawson, 1941; Acuaria -- Erroneous citation
staphlocerca Stossich, 1904; Ascaridia -- Ascaridia galli
suctoria Molin, 1860; Allodapa, Subulura -- Subulura brumpti
tadornae Chatin, 1874; Syngamus -- Cyathostoma tadornae
tadornae, Streptocara of Lapage, 1961 -- Erroneous citation, nomen
nudum
taiwana Sugimoto, 1919; Filaria, Oshimaia -- Avioserpens taiwana
tenuis Diesing, 1861; Tetrameres -- Tetrameres fissispina
trachealis Siebold, 1836; Syngamus -- Syngamus trachea
tridentata Linstow, 1877; Streptocara -- Paracuaria tridentata
tumida Zeder, 1803; Capillaria -- Capillaria anatis?
turkestanicum Skrjabin, 1923; Contracaecum -- Contracaecum
spiculigerum
uncinata Rudolphi, 1819; Acuaria, Filaria -- Echinuria uncinata
vesicularis Froelich, 1791; Heterakis -- Heterakis gallinarum
zakharowi Petrov, 1926; Tropisurus -- Tetrameres zakharowi

ACANTHOCEPHALA

Name reported -- Valid name or reason for invalidation

altmani Perry, 1942; Filicollis, Parafilicollis, Falsifilicollis -- Polymorphus altmani
aluconis O.F. Müller, 1780; Echinorhynchus -- Centrorhynchus aluconis
anatis Schrank, 1788; Echinorhynchus, Polymorphus -- Filicollis anatis
arcticus Van Cleave, 1920; Filicollis, Profilicollis -- Polymorphus arcticus
boschadis Schrank, 1788; Polymorphus, Filicollis -- Polymorphus minutus
botulus Van Cleave, 1916; Filicollis, Profilicollis -- Polymorphus botulus
cornutus, Polymorphus of Lapage, 1961 -- Lapsus for Polymorphus contortus
filicollis Rudolphi, 1809; Echinorhynchus -- Filicollis anatis
frassoni Molin, 1858; Echinorhynchus -- Arhythmorhynchus frassoni
hystrix, Echinorhynchus of authors -- Corynosoma semerme and C. strumosum
laevis Linstow, 1905; Echinorhynchus -- Filicollis anatis
lendix, Echinorhynchus -- perhaps Polymorphus phippsi
longicollis Villot, 1875; Echinorhynchus -- Arhythmorhynchus longicollis
major Lundström, 1942; Parafilicollis, Profilicollis, Falsifilicollis -- Polymorphus major
mergi Lundström, 1941; Hemiechinosa -- Corynosoma mergi
mergorum, Echinorhynchus of Lapage, 1961 -- Lapsus for Eustrongylides mergorum
peposacae Porta, 1914; Echinosa -- Corynosoma peposacae
polymorphus, Echinorhynchus of authors -- Filicollis anatis and Polymorphus minutus
pupa Linstow, 1905; Echinorhynchus, Polymorphus, Filicollis -- Prosthorhynchus pupa
sphaerocephalus de Marval, 1905; Echinorhynchus -- Filicollis anatis
striatus Linton, 1892; Echinorhynchus -- Corynosoma constrictum

HIRUDINEA

Name reported -- Valid name or reason for invalidation

granata Mégnin; Protocleipsis -- Theromyzon tessulatum
maculosa Rathke, 1862; Protocleipsis -- Theromyzon maculosa
meyeri Livanow, 1902; Protocleipsis -- Theromyzon sexoculatum?
occidentalis Verrill, 1874; Hemicleipsis -- Theromyzon occidentale
ornata Verrill, 1872; Placobdella -- Spurious infection
parva Moore, 1912; Dina -- Spurious infection
tessulata O.F. Müller, 1774; Protocleipsis -- Theromyzon tessulatum

SPECIES SUMMARIES

TREMATODA

Cyathocotyle bushiensis

STATUS AS WATERFOWL PARASITE: Accidental; reported once as experimental infection in domestic duck. Natural host unknown.

DESCRIPTION: Khan, 1962a.

SYNONYMY:

Cercaria bushiensis Khan, 1962

Cyathocotyle bushiensis Khan, 1962

LIFE CYCLE: Eggs passed in feces, hatch in water in 14 days; miracidia penetrate fresh-water snails, develop into cercariae; metacercariae encyst in same species of snail; mature in 5 days after ingestion by final host. (Khan, 1962a)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Bithynia tentaculata, Valvata piscinalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Ceca.

DISTRIBUTION: Europe (England).

Cyathocotyle indica

STATUS AS WATERFOWL PARASITE: Rare, reported once in wild duck. Type host a passerine bird.

DESCRIPTION: Mehra, 1943.

SYNONYMY:

Cyathocotyle (Neocyathocotyle) indica Mehra, 1943

LIFE CYCLE: Unknown; probably similar to that of C. prussica.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Passeriformes - Sturnopastor capensis

HABITAT: Small intestine.

DISTRIBUTION: Asia (India, Amur).

Cyathocotyle melanittae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, once experimentally in domestic duck.

DESCRIPTION: Yamaguti, 1934, 1939. Copy: Dubois, 1938b; Sudarikov, 1962.

SYNONYMY: Dubois, 1938b.

Cyathocotyle melanittae Yamaguti, 1934

Paracyathocotyle melanittae (Yamaguti, 1934) Szidat, 1936

Linstowiella (?) melanittae (Yamaguti, 1934) [Faust & Tang, 1938]

Cyathocotyle (Cyathocotyle) melanittae Yamaguti, 1934 of Mehra, 1943

LIFE CYCLE: Metacercariae (prohemistomulum) encysted in muscles of fresh-water fish. (Yamaguti, 1939)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Pseudoperilampus typus, Pseudorasbora parva

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Melanitta fusca

HABITAT: Small intestine.

DISTRIBUTION: Asia (Japan).

Cyathocotyle prussica

STATUS AS WATERFOWL PARASITE: Frequent; reported 17 times in wild ducks, 5 times (3 times experimentally) in domestic ducks. Mortality during epizootic due to Cyathocotyle sp. reported by Shevtsov, 1958a.

DESCRIPTION: Mühling, 1896; Bykhovskaja-Pavlovskaja, 1954a; Dubois, 1964. Copy: Dubois, 1938b; Sudarikov, 1962.

SYNONYMY: Dubois, 1938b.

Cyathocotyle prussica Mühling, 1896

Cyathocotyle (Cyathocotyle) prussica Mühling, 1896 of Mehra, 1943

Distoma pyriforme Creplin, 1837, nomen nudum

Cyathocotyle orientalis Faust, 1922 - [Dubois, 1964]

Paracyathocotyle orientalis (Faust, 1922) Szidat, 1936

Linstowiella orientalis (Faust, 1922) Wiśniewski, 1934

Cyathocotyle gravieri Mathias, 1935 - [Dubois, 1953b; Sudarikov, 1962]

Cyathocotyle fusa Ishii & Matsuoka, 1935 - [Dubois, 1964]

Cyathocotyle szidatiana Faust & Tang, 1938 - [Dubois, 1964]

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae (prohemistomulum) encysted in muscles and in tissue near eye of fresh-water fish and frogs, infective in 2-3 months; mature in final host 80 hours after ingestion. (Dubinin, 1952; Faust, 1922; Komiya & Murase, 1951, 1952; Mathias, 1935; Vojtkova, 1962; Yamaguti, 1940b)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata, Bulinus striatulus, Parafossarulus manchouricus, Viviparus lapillorum

SECOND INTERMEDIATE HOSTS: Abramis brama, Acheilognathus lanceolata, Alburnus alburnus, Carassius carassius, Gobio gobio [exper.], Leucaspis delineatus, Nemachilus barbatulus, Phoxinus phoxinus [exper.], Pseudorasbora parva, Rutilus rutilus, Sarcocheilichthys sinensis, Zacco temminckii, Rana esculenta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Netta rufina

Mergini - Clangula hyemalis, Melanitta fusca, Mergus albellus, Mergus serrator

Pelecaniformes - Pelecanus crispus, Pelecanus oncorotalus, Phalacrocorax aristotelis, Phalacrocorax carbo

Falconiformes - Falco tinnunculus [exper.], Milvus migrans [exper.]

Gruiformes - Fulica atra, Gallinula chloropus

Charadriiformes - Larus argentatus, Larus ichthyaetus, Larus ridibundus, Sterna hirundo, Sterna paradisaea

Strigiformes - Asio flammeus

HABITAT: Small intestine - posterior portion, ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Amur, Primorsk, China, Japan).

Cyathocotyle skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Petrov & Sudarikov, 1963.

SYNONYMY:

Cyathocotyle skrjabini Petrov & Sudarikov, 1963

LIFE CYCLE: Unknown; probably similar to that of C. prussica.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ukraine).

Holostephanus curonensis

STATUS AS WATERFOWL PARASITE: Rare; reported 3 times (once experimentally) in domestic ducks.

DESCRIPTION: Szidat, 1936. Copy: Sudarikov, 1962.

SYNONYMY:

Cercaria curonensis Szidat, 1933

Cyathocotyloides curonensis (Szidat, 1933) Szidat, 1936

Holostephanus curonensis (Szidat, 1933) Yamaguti, 1939

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae in fresh-water fish. (Olivier, 1940; Szidat, 1933b, 1936)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Leucaspius delineatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR - Kaliningrad, Germany), Asia (Kazakhstan).

Holostephanus luehei

STATUS AS WATERFOWL PARASITE: Accidental, normally in lariform birds; reported once in domestic duck from experimental infection.

DESCRIPTION: Szidat, 1936; Erasmus, 1962b; Öhman, 1966b. Copy: Dubois, 1938b; Sudarikov, 1962.

SYNONYMY: Erasmus, 1962b.

Holostephanus luehei Szidat, 1936

Holostephanus bursiformis Szidat, 1936

Cyathocotyloides dubius Szidat, 1936

Holostephanus dubius (Szidat, 1936) Mehra, 1943 - [Erasmus, 1962]

Cyanocotyloides dubius (Szidat) of Erasmus, 1962, lapsus

LIFE CYCLE: Metacercariae encysted in body musculature of fresh-water

fish; mature in 3 days after ingestion by final host. (Erasmus, 1962b; Ohman, 1966b)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Gasterosteus aculeatus, Pungitius pungitius

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Charadriiformes - Larus fuscus, Sterna hirundo, Sterna paradisaea

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Large intestine, ceca, cloaca.

DISTRIBUTION: Europe (Great Britain, USSR - Kaliningrad).

Holostephanus lutzi

STATUS AS WATERFOWL PARASITE: Rare; reported once in probably a domestic goose.

DESCRIPTION: Faust & Tang, 1938. Copy: Sudarikov, 1962.

SYNONYMY: Dubois, 1953b.

Linstowiella (?) lutzi Faust & Tang, 1938

Holostephanus lutzi (Faust & Tang, 1938) Mehra, 1943

Cyathocotyle lutzi (Faust & Tang, 1938) Dubois, 1945

Linstowiella bambusicolae Faust & Tang, 1938

Holostephanus bambusicolae (Faust & Tang, 1938) Mehra, 1943

Cyathocotyle bambusicolae (Faust & Tang, 1938) Dubois, 1945

LIFE CYCLE: Unknown; probably similar to that of H. luehei.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser sp.

Galliformes - Bambusicola thoracica, Gallus gallus (dom.)

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (China).

Holostephanus volgensis

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection. Natural host not known.

DESCRIPTION: Vojtkova, 1966.

SYNONYMY:

Prohemistomulum volgensis Sudarikov, 1962

Holostephanus volgensis (Sudarikov, 1962) Vojtkova, 1966

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae in tadpoles and adults of amphibia; mature in final hosts after ingestion. (Vojtkova, 1966)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Bombina bombina, Bufo bufo, Rana arvensis, Rana esculenta, Rana temporaria, Salamandra salamandra, Triturus vulgaris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Falconiformes - Falco tinnunculus [exper.]

Gruiformes - Fulica atra [exper.]

Charadriiformes - Larus ridibundus [exper.]

Strigiformes - Athene noctua [exper.]

Passeriformes - Corvus monedula [exper.], Pica pica [exper.]

HABITAT: Small intestine

DISTRIBUTION: Europe (Czechoslovakia).

Paracoenogonimus ovatus

STATUS AS WATERFOWL PARASITE: Infrequent; normally in Falconiformes; reported 3 times in wild ducks, once in captive duck.

DESCRIPTION: Katsurada, 1914; Szidat, 1936 (as Linstowiella viviparae); Sudarikov, 1956 (as P. viviparae); Odening, 1963. Copy: Sudarikov, 1962.

SYNONYMY: Sudarikov, 1962.

Paracoenogonimus ovatus Katsurada, 1914

Prohemistomum ovatus (Katsurada, 1914) Sprehn 1932

Linstowiella viviparae (Linstow) of Szidat, 1936

Paracoenogonimus viviparae (Linstow) of Sudarikov, 1956

Cercaria wolgensis Skvortsov, 1924

Prohemistomulum circulare Ciurea, 1933

Diplostomulum hughesi Markevich, 1934

Neodiplostomum hughesi (Markevich, 1934) Barysheva & Bauer, 1958

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae

(prohemistomulum) encysted in musculature and other organs of fresh-water fish; mature in final host 5-7 days after ingestion. (Askanazy, 1906; Ciurea, 1933; Ginetsinskaiã, 1958a; Ginetsinskaiã & Kosheva, 1959; Katsurada, 1914; Komiya, 1938; Kozicka & Niewiadomska, 1958; Niewiadomska, 1958; Schuurmans-Stekhoven, 1931; Vojtek, 1959)

FIRST INTERMEDIATE HOSTS: Viviparus contectus, Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Abramis ballerus, Abramis brama, Abramis sapa, Acerina cernua, Acipenser sturio, Alburnus alburnus, Aspius aspius, Barbus barbus, Blicca bjoerkna, Carassius carassius, Coregonus lavaretus, Cottus quadricornis, Cyprinus carpio, Esox lucius, Leuciscus cephalus, Leuciscus idus, Leuciscus leuciscus, Lota lota, Lucioperca lucioperca, Lucioperca volgensis, Osmerus eperlanus, Pelecus cultratus, Perca fluviatilis, Pungitius pungitius, Rhodeus sericeus, Rutilus rutilus, Salmo salar, Scardinius erythrophthalmus, Silurus glanis, Thymallus thymallus, Tinca tinca, Vimba vimba

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Mergus merganser

Podicipediformes - Podiceps cristatus

Felecaniformes - Pelecanus occidentalis

Falconiformes - Aquila nipalensis, Buteo buteo, Circus aeruginosus, Falco tinnunculus, Haliaeetus albicilla, Milvus migrans, Pandion haliaetus

Charadriiformes - Larus ridibundus, Stercorarius parasiticus, Sterna hirundo, Sterna paradisaea

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

Carnivora - Alopex lagopus, Canis lupus, Felis catus [exper.], Vulpes vulpes

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Amur, Japan).

Paracoenogonimus viviparae

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in domestic duck. Natural host probably Nyroca fuligula, based on food habits - Sudarikov, 1961.

DESCRIPTION: Sudarikov, 1962; Odening, 1962d.

SYNONYMY: Sudarikov, 1962.

Monostomum viviparae Linstow, 1877

Monostomulum viviparae (Linstow, 1877) Brandes, 1892

Linstowiella viviparae (Linstow, 1877) Szidat, 1933
Prohemistomum viviparae (Linstow, 1877) Mehra, 1947
Paracoenogonimus viviparae (Linstow, 1877) Sudarikov, 1956

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae (prohemistomulum) in edge of mantle of same species of snail, or in fish (Iziumova, 1959); mature in 3 days after ingestion by final host. (Szidat, 1933b)

FIRST INTERMEDIATE HOSTS: Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Viviparus viviparus, Abramis ballerus, Blicca bjoerkna, Pelecus cultratus, Perca fluviatilis, Rutilus rutilus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Falconiformes - Circus aeruginosus

Charadriiformes - Larus argentatus

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany, USSR).

Mesostephanus sp.

STATUS AS WATERFOWL PARASITE: Rare, probably accidental; reported once in wild duck.

DESCRIPTION: Richard, 1965.

SYNONYMY:

Mesostephanus sp. Richard, 1965

LIFE HISTORY: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "wild duck"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Africa (Madagascar).

Diplostomum gasterostei

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic

duck as result of experimental infection.

DESCRIPTION: Williams, 1966a.

SYNONYMY:

Diplostomum (Diplostomum) gasterostei Williams, 1966

LIFE CYCLE: Cercariae develop in fresh-water snail, penetrate and encyst as diplostomulum larva in retina of fresh-water fish; mature in 3 days after ingestion by final host. (Williams, 1966a, 1966b)

FIRST INTERMEDIATE HOSTS: Lymnaea peregra

SECOND INTERMEDIATE HOSTS: Gasterosteus aculeatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Columbiformes - Columba livia (dom.)

HABITAT: Intestine.

DISTRIBUTION: Europe (Scotland).

Diplostomum gavium

STATUS AS WATERFOWL PARASITE: Rare, normally in loons; reported once in wild duck.

STATUS AS SPECIES: Confused with D. immer and other species - Dubois, 1964.

DESCRIPTION: Guberlet, 1922. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Sudarikov, 1960a.

Hemistomum gavium Guberlet, 1922

Alaria gavia (Guberlet, 1922) Guberlet, 1923

Proalaria gavia (Guberlet, 1922) La Rue, 1926

Diplostomum gavium (Guberlet, 1922) Hughes, 1929

Tylodelphys gavia (Guberlet, 1922) Sudarikov, 1960

LIFE CYCLE: Unknown; probably similar to that of D. spathaceum.

FINAL HOSTS: Aves

Anseriformes (Anatidae)

Mergini - Mergus merganser

Gaviiformes - Gavia immer

Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis

Charadriiformes - Larus ichthyaetus

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Europe (USSR), Asia (Kirgizia, W. Siberia), N. America (USA).

Diplostomum indistinctum

STATUS AS WATERFOWL PARASITE: Rare, normally in lariform birds; reported once in wild duck.

STATUS AS SPECIES: Synonym of D. spathaceum - Dubois & Rausch, 1948; Dubois, 1953; adult similar to D. spathaceum, larvae distinct - Shigin, 1959; Dubois, 1966.

DESCRIPTION: Guberlet, 1922; Linton, 1928. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY:

Hemistomum confusum Guberlet, 1922, not Krause, 1914

Alaria indistincta Guberlet, 1923

Proalaria indistincta (Guberlet, 1923) La Rue, 1926

Diplostomum indistinctum (Guberlet, 1923) Hughes, 1929

Diplostomum (Diplostomum) indistinctum (Guberlet, 1923) of Dubois, 1966

LIFE CYCLE: Unknown; probably similar to that of D. spathaceum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas strepera

Charadriiformes - Larus argentatus, Larus atricilla, Larus delawarensis, Larus minutus

HABITAT: Intestine.

DISTRIBUTION: Europe (Georgia SSR), Asia (Kazakhstan), N. America (USA).

Diplostomum mergi

STATUS AS WATERFOWL PARASITE: Frequent; reported 17 times in wild ducks and once in captive duck.

DESCRIPTION: Yamaguti, 1933; Dubois, 1932, 1948; Odening, 1963c. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Dubois, 1938b.

Holostomum exiguum Mehlis in Creplin, 1846, nomen nudum
Holostomum erraticum (Rudolphi) of Linstow, 1877, e.p.
Holostomum pileatum Brandes, 1888, e.p.
Hemistomum excavatum (Rudolphi) of Dubois, 1928
Diplostomum mergi Dubois, 1932
Diplostomum (Diplostomum) mergi Dubois, 1932 of Dubois, 1961
Proalaria mergi Yamaguti, 1933
Diplostomum orientale Yamaguti, 1934 - [Dubois, 1953b]
Neodiplostomum orientale (Yamaguti, 1934) Gower, 1938

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae in lens of eye of fresh-water fish. (Shigin, 1965; Yamaguti, 1942)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Abramis ballerus, Abramus brama, Alburnus alburnus, Aspius aspius, Carassius carassius, Cyprinus carpio, Gobius kessleri, Gobius melanostomus, Lucioperca lucioperca, Parasilurus asotus, Pelecus cultratus, Rutilus rutilus, Scardinius erythrophthalmus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Somateriini - Somateria mollissima

Mergini - Mergus albellus, Mergus merganser, Mergus serrator

Charadriiformes - Actitis hypoleucos, Tringa ochropus

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kirgizia, Tuva, Primorsk, Kamchatka, Japan).

Diplostomum micradenum

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection; natural host unknown.

STATUS AS SPECIES: Synonym of Hysteromorpha triloba - Sudarikov, 1960; distinct form - Williams, 1964.

DESCRIPTION: Olivier, 1940; Dubois & Rausch, 1950.

SYNONYMY:

Cercaria micradena Cort & Brackett, 1939

Diplostomum micradenum (Cort & Brackett, 1939) Olivier, 1940

Diplostomum (Diplostomum) micradenum (Cort & Brackett, 1939) of Dubois, 1961

LIFE CYCLE: Cercariae develop in fresh-water snail, emerge and pene-

trate tadpoles of amphibia, become established in central nervous system or rarely in retina; metacercariae infective in 22-51 days; mature in final host 10 days after ingestion. (Olivier, 1938, 1940; Williams, 1964)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea reflexa

SECOND INTERMEDIATE HOSTS: Bufo americanus, Pseudacris brachyphona,
Rana clamitans, Rana pipiens, Rana sylvatica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe (Russia), N. America (USA).

Diplostomum parviventosum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Dubois, 1932. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY:

Diplostomum parviventosum Dubois, 1932

Tylodelphys parviventosum (Dubois, 1932) Szidat, 1940

Diplostomum (Diplostomum) parviventosum Dubois, 1932 of Dubois, 1961

LIFE CYCLE: Unknown; probably similar to that of D. spathaceum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus albellus, Mergus merganser

Charadriiformes - Larus ridibundus

HABITAT: Intestine.

DISTRIBUTION: Europe (England, Switzerland, Russia), Asia (Kirgizia).

Diplostomum pelmatoides

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once as experimental infection in domestic ducks.

STATUS AS SPECIES: Reported as adult of Diplostomulum phoxini by Rees,

1955; this form would become synonym of Diplostomum phoxini. Maintained as distinct species by Sudarikov, 1960a.

DESCRIPTION: Dubois, 1932. Copy: Dubois, 1938b, Sudarikov, 1960a.

SYNONYMY:

Diplostomum pelmatoides Dubois, 1932

LIFE CYCLE: Metacercariae (diplostomulum) developed in 28 days in brain of fresh-water fish; mature in 4 days after ingestion by final host. (Rees, 1955, 1957)

FIRST INTERMEDIATE HOSTS: Lymnaea pereger

SECOND INTERMEDIATE HOSTS: Phoxinus phoxinus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Mergus merganser

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe.

Diplostomum phoxini

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks, 4 times experimentally in domestic ducks. Best development in experimental infections occurred in gulls.

DESCRIPTION: Dubois, 1932; Arvy & Buttner, 1954. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY:

Tetracotyle phoxini Faust, 1918

Diplostomulum phoxini (Faust, 1918) Hughes, 1929

Diplostomum phoxini (Faust, 1918) Arvy & Buttner, 1954

Diplostomum (Diplostomum) phoxini (Faust, 1918) of Dubois, 1961

Diplostomum pelmatoides Dubois, 1932 - [Rees, 1955]; distinct, Hoffman, 1960; Sudarikov, 1960a

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae (diplostomulum) encysted in brain of cyprinid fish, fully developed in 24 days; mature in final host 3 days after ingestion. (Arvy, 1955; Arvy & Buttner, 1954; Bell & Hopkins, 1956; Berrie, 1960a; Dollfus, 1961; Rees, 1955, 1957)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea peregra

SECOND INTERMEDIATE HOSTS: Phoxinus phoxinus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Cairinini - Cairina moschata (dom.) [exper.]

Mergini - Mergus merganser

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus argentatus [exper.]

Columbiformes - Columba livia (dom.) [exper.]

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe.

Diplostomum pusillum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild ducks.

DESCRIPTION: Dubois, 1928, 1960; Bykhovskaja-Pavlovskaja, 1954a.
Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Dubois, 1938b.

Hemistomum pusillum Dubois, 1927

Diplostomum pusillum (Dubois, 1927) Dubois, 1932

Diplostomum (Diplostomum) pusillum (Dubois, 1927) of Dubois, 1961

LIFE CYCLE: Unknown; probably similar to that of D. spathaceum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula, Mergus albellus, Mergus merganser,

Mergus serrator

Charadriiformes - Larus ridibundus

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Intestine.

DISTRIBUTION: Europe (Switzerland, Rumania, Russia), Asia (W. Siberia, Kirgizia, Tadzhikistan, Tuva, Yakutia, Kamchatka), N. America (USA).

Diplostomum scudleri

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Hoffman & Hundley, 1957; Dubois, 1966. Copy: Sudar-
ikov, 1960a.

SYNONYMY:

Cercaria scudderi Olivier, 1941

Diplostomum (Diplostomum) scudderi (Olivier, 1941) Dubois, 1966

Diplostomum baeri subsp. eucaliae Hoffman & Hundley, 1958

Diplostomum eucaliae (Hoffman & Hundley, 1958) Shigin, 1961

LIFE CYCLE: Eggs passed in feces, hatch in 12 days in fresh water; cercariae develop in fresh-water snail in 30 days after infection, penetrate fish; metacercariae (diplostomulum) develop in brain, remain unencysted, infective in 13-23 days; mature in 3-6 days after ingestion by final host. (Hoffman & Hundley, 1958)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris

SECOND INTERMEDIATE HOSTS: Eucalia inconstans

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Zenaidura macroura [exper.]

Strigiformes - Otus asio [exper.]

HABITAT: Small intestine - anterior one third.

DISTRIBUTION: N. America (USA).

Diplostomum spathaceum spathaceum

STATUS AS WATERFOWL PARASITE: Infrequent, typically in gulls; reported 5 times in wild ducks and once in domestic duck from experimental infection.

DESCRIPTION: Krause, 1914; Bykhovskaja-Pavlovskaja, 1954a; Odening, 1963. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Dawes, 1956; Dubois, 1938b.

Distoma spathaceum Rudolphi, 1819

Holostomum spathaceum (Rudolphi, 1819) Nordmann, 1840

Hemistomum spathaceum (Rudolphi, 1819) Diesing, 1850

Diplostomum spathaceum (Rudolphi, 1819) Olsson, 1876

Conchosomum spathaceum (Rudolphi, 1819) Stossich, 1898

Proalaria spathaceum (Rudolphi, 1819) La Rue, 1926

Diplostomulum spathaceum (Rudolphi, 1819) Hughes, 1929

Diplostomum (Diplostomum) spathaceum spathaceum (Rudolphi, 1819) of
Dubois, 1966

Amphistoma lari-glauci Rudolphi, 1819 - [Sprehn, 1932; Sudarikov, 1960a]
Diplostomum volvens Nordmann, 1832
Distoma volvens Nordmann, 1833, lapsus?
Tetracotyle volvens (Nordmann, 1932) Mataré, 1909
Diplostomulum volvens (Nordmann, 1932) Faust, 1918
Hemistomum pileatum Brandes, 1888, e.p.
Hemistomum pileatum (Rudolphi) of Nicoll, 1914
Diplostomum pileatum (Brandes, 1888) Baylis, 1934
Diplostomum indistinctum Guberlet, 1923 - [Bykhovshafa-Pavlovskafa,
 1953, 1954a; Dubois, 1953b]
Diplostomulum huronense (La Rue, 1927) Hughes & Hall, 1929 - [Bykhov-
 skafa-Pavlovskafa, 1953, 1954a; Sudarikov, 1960a]
Diplostomum flexicaudum (Cort & Brooks, 1928) Van Haitsma, 1930 -
 [Dubois & Rausch, 1948; Dubois, 1953b]

LIFE CYCLE: Eggs passed in feces, hatch in water in 19-33 days; cer-
 cariae develop in fresh-or brackish water snail in 45 days, emerge
 and penetrate surface of body of fresh-water to marine fish; encyst
 as metacercariae (diplostomulum) in lens and vitreous humor of eye
 of fish, probably infective in 5-6 weeks; may overwinter in either
 first or second host; mature in less than 7 days after ingestion by
 final host. (Berrie, 1960b; Cichowlas, 1961; Ciurea, 1933; Dubois,
 1929; Kiseliené, 1966; Komiya, 1938; Mindel, 1963; Reimer, 1964a,
 1965; Shigin, 1964; Sudarikov, 1960a; Szidat, 1924a, 1924b; Williams,
 1966b; Zajíček, 1963c; Ždárská, 1963)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata, Lymnaea abrusa,
Lymnaea ampla, Lymnaea auricularia, Lymnaea exilis, Lymnaea humilis,
Lymnaea megasoma, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra,
Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: At least 90 species of fish reported, in
 the following genera: CYCLOSTOMATA - Lampetra, Petromyzon; OSTEICHTH-
 THYES - Abramis, Acerina, Acipenser, Alburnus, Alosa, Anguilla, Aspius,
Aspro, Barbus, Blicca, Capoetobrama, Carassius, Caspialosa, Chalcal-
burnus, Chondrostoma, Cichlasoma, Clupea, Cobitis, Coregonus, Cottus,
Cyprinus, Diplophysa, Diptychus, Esox, Gadus, Gasterosteus, Gobio,
Gobius, Idus, Lavinia, Leucaspis, Leuciscus, Lota, Lucioperca, Nerophis,
Nemachilus, Orthodon, Osmerus, Parasilurus, Pelecus, Perca, Phoxinus,
Pleuronectes, Pungitius, Pygosteus, Rutilus, Rhodeus, Salmo, Salvelinus,
Scardinius, Schizothorax, Silurus, Siphonostoma, Stenodus, Thymallus,
Tinca, Vimba

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.]

Anas crecca, Anas penelope

Somateriini - Somateria mollissima

Mergini - Mergus merganser

Podicipediformes - Podiceps cristatus

Pelecaniformes - Haliastur africanus, Morus bassanus, Pelecanus crispus,

Phalacrocorax carbo

Ciconiiformes - Ardea cinerea, Botaurus stellaris, Ixobrychus minutus

Falconiformes - Circus aeruginosus, Milvus migrans

Charadriiformes - Alca torda, Chlidonias leucoptera, Gelochelidon nilotica, Larus argentatus, Larus atricilla, Larus canus, Larus fuscus, Larus genei, Larus hyperboreus, Larus ichthyaetus, Larus marinus, Larus minutus, Larus ridibundus, Rissa tridactyla, Stercorarius parasiticus, Sterna albifrons, Sterna hirundo, Tringa nebularia

Coraciiformes - Alcedo atthis

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kirgizia, Kazakhstan, Primorsk), Africa (Egypt).

Diplostomum spathaceum flexicaudum

STATUS AS WATERFOWL PARASITE: Accidental; larval stage normally in fish, developed in eye of domestic duck from experimental exposure to infection. Adult in gulls.

STATUS AS SPECIES: Synonym of D. spathaceum - Dubois & Rausch, 1948; Dubois, 1953b. Adult same as D. spathaceum, larvae with small differences - Dubois, 1966; Shigin, 1959.

DESCRIPTION: Van Haitsma, 1931b. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Van Haitsma, 1931b.

Cercaria flexicauda Cort & Brooks, 1928

Diplostomum flexicaudum (Cort & Brooks, 1928) Van Haitsma, 1930

Diplostomulum flexicaudum (Cort & Brooks, 1928) Hunter, 1942

Diplostomum spathaceum subsp. flexicaudum (Cort & Brooks, 1928) Dubois, 1966

Diplostomulum gigas Hughes & Berkhout, 1929

LIFE CYCLE: Eggs passed in feces, hatch in water in 19-33 days; miracidia infect fresh-water snails; cercariae develop in 45 days, emerge and penetrate fish, and encyst in lens of eye as metacercariae (diplostomulum), perhaps fully develop only in Castostomus in North America, infective probably in 5-6 weeks; mature in less than 7 days after ingestion by final host. Diplostomulum present in snails in winter, infected eyes of fish after ingestion of snails. Diplostomulum developed in eyes of amphibia, reptiles, birds, and mammals exposed to cercariae. (Becker & Brunson, 1966; Cort & Brooks, 1928; Ferguson, 1942, 1943; Haderlie, 1953; Van Haitsma, 1931b)

FIRST INTERMEDIATE HOSTS: Lymnaea abrusa, Lymnaea exilis, Lymnaea

emarginata, Lymnaea humilis, Lymnaea megasoma, Lymnaea palustris,
Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: OSTEICHTHYES - Acerina cernua, Amia calva [exper.], Catostomus catostomus, Catostomus commersoni, Catostomus fecundus, Catostomus humboldtianus, Catostomus occidentalis, Catostomus rimiculus, Catostomus tahoensis, Cottus gobio, Cyprinus carpio, Esox lucius [exper.], Hypentelium nigricans [exper.], Ictalurus nebulosus [exper.], Lavinia exilicauda, Lepomis gibbosus, Lepomis macrochirus [exper.], Lota lota, Micropterus dolomieu, Micropterus salmoides, Nerophis ophidion, Orthodon microlepidotus, Perca flavescens [exper.], Perca fluviatilis, Pimephales promelas [exper.], Pomalobus pseudoharengus, Salmo gairdneri, Siphateles obesus. MOLLUSCA - Lymnaea palustris, Physa propinqua. AMPHIBIA - Bufo americanus [exper.], Rana clamitans [exper.], Rana pipiens [exper.]. REPTILIA - Chrysemys picta [exper.]. AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]. Galliformes - Gallus gallus (dom.) [exper.]. MAMMALIA - Rodentia - Cavia porcellus [exper.], Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]. Lagomorpha - Oryctolagus cuniculus [exper.]

FINAL HOSTS: AVES

Charadriiformes - Larus argentatus, Larus canus, Larus delawarensis,
Larus pipixcan, Larus ridibundus, Sterna hirundo

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland, USSR), Asia (W. Siberia), N. America (USA).

Neodiplostomum attenuatum

STATUS AS WATERFOWL PARASITE: Accidental; larval cysts present in domestic duck as result of experimental infection. Adult in hawks.

STATUS AS SPECIES: Neodiplostomum included in genus Diplostomum - Baer & Joyeux, 1961.

DESCRIPTION: Dubois & Rausch, 1950 (as N. buteonis); Skarda, 1964.
Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Sudarikov, 1960a.

Hemistomum attenuatum Linstow, 1906

Neodiplostomum attenuatum (Linstow, 1906) La Rue, 1926

Neodiplostomum (Neodiplostomum) attenuatum (Linstow, 1906) of Dubois,
1953

Hemistomum cochleare Krause of Dubois, 1928

Neodiplostomum (Neodiplostomum) inaequipartitum Dubois, 1937

Neodiplostomum krausei Dubois, 1937 - [Dubois, 1938, 1953]; distinct,
Sudarikov, 1960a

Neodiplostomum buteonis Dubois & Rausch, 1948 - [Dubois, 1953]
Neodiplostomum pseudattenuatum (Dubois, 1928) Dubois, 1932 - [Odening,
1962, 1965]
Neodiplostomum paraspathula Noble, 1936 - [Dubois, 1964]

LIFE CYCLE: Eggs passed in feces of host, embryonate in fresh water in 7-11 days at 23 C.; cercariae develop in 5 weeks after exposure of fresh-water snails to infection; metacercariae develop in frog tadpoles; mature in final host in 7 days after ingestion. Larval cysts survive in muscles after ingestion by vertebrates other than final hosts. (Odening, 1965c)

FIRST INTERMEDIATE HOSTS: Anisus vortex, Gyraulus albus

SECOND INTERMEDIATE HOSTS: Rana arvalis, Rana temporaria

AUXILIARY HOSTS: REPTILIA - Matrixatrix
AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]
MAMMALIA - Insectivora

FINAL HOSTS: AVES

Falconiformes - Buteo burmanicus, Buteo buteo, Buteo jamaicensis, Buteo lagopus, Buteo platypterus, Buteo regalis, Buteo swainsoni, Circus aeruginosus, Milvus milvus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Japan), N. America (USA).

Neodiplostomum spathula

STATUS AS WATERFOWL PARASITE: Rare, normally in hawks; reported twice in wild ducks.

STATUS AS SPECIES: Neodiplostomum included in genus Diplostomum - Baer & Joyeux, 1961.

DESCRIPTION: Ciurea, 1928. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Dubois, 1938b.

Holostomum spathula Creplin, 1829, e.p.

Hemistomum spathula (Creplin, 1829) Diesing, 1850

Neodiplostomum spathula (Creplin, 1829) La Rue, 1926

Neodiplostomum (Conodiplostomum) spathula (Creplin, 1829) of Dubois,
1938

Amphistoma falconis peregrini Rudolphi, 1819

Neodiplostomum pseudospathula Ciurea, 1928, e.p.

Neodiplostomum sp. Bykhovskaja-Pavlovskaja, 1954

LIFE CYCLE: Metacercariae reported in small mammals, regarded as

auxiliary (reservoir) hosts by Sudarikov (1960).

INTERMEDIATE HOSTS: Unknown.

AUXILIARY HOSTS: MAMMALIA - Insectivora; Rodentia - Apodemus agrarius, Arvivola terrestris, Microtus arvalis; Carnivora - Canis familiaris, Felis catus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Falconiformes - Accipiter nisus, Accipiter striatus, Aquila chrysaetos, Aquila clanga, Buteo buteo, Buteo lagopus, Circus aeruginosus, Circus cyaneus, Circus melanoleucus, Circus pygargus, Falco peregrinus, Falco subbuteo, Falco tinnunculus, Falco vespertinus, Haliaeetus leucocephalus, Haliastur sphenurus, Milvus migrans

Charadriiformes - Capella gallinago, Tringa glareola

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Tadzhikistan, Primorsk), Africa, Australia.

Tylodelphys clavatum

STATUS AS WATERFOWL PARASITE: Probably accidental, normally in hawks; reported once in wild duck.

STATUS AS SPECIES: Identification confused; metacercariae commonly reported under this name probably misidentified - Sudarikov, 1960a. Tylodelphys included in genus Diplostomum - Baer & Joyeux, 1961.

DESCRIPTION: Ciurea, 1928; Dubois, 1964. Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY:

Diplostomum clavatum Nordmann, 1832

Tylodelphys clavatum (Nordmann, 1832) Diesing, 1850

Proalaria clavata (Nordmann, 1832) Ciurea, 1928

Prodiplostomum clavatum (Nordmann, 1832) Ciurea, 1933

Diplostomum (Tylodelphys) clavatum (Nordmann, 1832) of Dubois, 1961

Tylodelphys excavata (Rudolphi) of Bezubik, 1956, and Furmaga, 1957 - [Dubois, 1964]

Tylodelphys circibuteonis Odening, 1962 - [Dubois, 1964]

LIFE CYCLE: Metacercariae in eyes of fresh-water fish (Nordmann, 1832; Dubois, 1964)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Acerina cernua, Lucioperca lucioperca,
Perca fluviatilis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Ciconiiformes - Ardea cinerea, Casmerodius alba, Ciconia ciconia
[exper.], Egretta garzetta

Falconiformes - Buteo buteo, Buteo rufofuscus, Circus aeruginosus

HABITAT: Small intestine - anterior and middle thirds.

DISTRIBUTION: Europe (Germany, Rumania, S. Russia), Africa (Congo region).

Ornithodiplostomum ptychocheilus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks, once in domestic duck from experimental infection.

DESCRIPTION: Van Haitsma, 1930; Lyster, 1940a (as Paracoenogonimus katuradi). Copy: Dubois, 1938b; Sudarikov, 1960a.

SYNONYMY: Dubois, 1938b.

Cercaria ptychocheilus Faust, 1917

Neascus ptychocheilus (Faust, 1917) Hughes & Piszczek, 1928

Tetracotyle ptychocheilus (Faust, 1917)

Paradiplostomum ptychocheilus (Faust, 1917) Van Haitsma, 1930

Ornithodiplostomum ptychocheilus (Faust, 1917) Dubois, 1936

Paracoenogonimus katuradi Lyster, 1940

LIFE CYCLE: Eggs passed in feces, hatch in water in 9 days; cercariae develop in fresh-water snail; metacercariae (neascus) encysted in cranial cavity and mesenteries of fresh-water fish, cysts fully developed in 24 days; mature in 2 days after ingestion by final host. (Hoffman, 1954, 1958; Van Haitsma, 1930)

FIRST INTERMEDIATE HOSTS: Physa anatina [exper.]

SECOND INTERMEDIATE HOSTS: Boleosoma nigrum, Eucalia inconstans, Notropis bifrenatus, Notropis cornutus, Notropis dorsalis, Notropis deliciosus, Pimephales promelas, Ptychocheilus oregonensis, Semotilus atromaculatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Clangula hyemalis, Mergus albellus, Mergus cucullatus,
Mergus merganser, Mergus serrator

Ciconiiformes - Botaurus lentiginosus
Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), N. America (USA, Canada).

Ornithodiplostomum ptychocheilus palaearticum

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Odening, 1963c.

SYNONYMY:

Ornithodiplostomum ptychocheilus subsp. palaearticum Odening, 1963

LIFE CYCLE: Unknown; probably similar to that of O. ptychocheilus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Probably intestine.

DISTRIBUTION: Europe (Germany).

Pharyngostomum cordatum

STATUS AS WATERFOWL PARASITE: Accidental; larval stage reported once in domestic duck as result of experimental infection. Adult in mammals.

DESCRIPTION: Ciurea, 1922; Brandes, 1890. Copy: Dubois, 1938b; Sudarikov, 1960.

SYNONYMY: Dawes, 1956.

Hemistomum cordatum Diesing, 1850

Alaria cordata (Diesing, 1850) Railliet, 1919

Pharyngostomum cordatum (Diesing, 1850) Ciurea, 1922

Pharyngostomum cordatum subsp. sinense Dubois, 1966

Diplostomum putorii Linstow, 1877

Pharyngostomum fausti Skrjabin & Popov, 1930 - [Dubois, 1953b]

Diplostomulum mutadomum Wallace, 1937

Pharyngostomum congolense van den Berghe, 1939 - [Dubois, 1953b]

LIFE CYCLE: Eggs passed in feces, develop in water in 20 days, hatching not observed; cercariae develop in fresh-water snails in 46 days after exposure to developed eggs; cercariae penetrate amphibian tadpoles, en-

cyst as metacercariae (diplostomulum); mature in 30 days after ingestion by final host. Metacercarial cysts survive, encapsulate when ingested by vertebrates (reptiles, birds, small mammals) other than final host. (Wallace, 1937, 1939b; Walton, 1950)

FIRST INTERMEDIATE HOSTS: Segmentina calathus

SECOND INTERMEDIATE HOSTS: Bufo melanostictus, Bufo regularis, Microhyla ornata, Microhyla pulchra, Polypedates leucomystax [exper.], Rana guentheri, Rana limnocharis, Rana tigrina

AUXILIARY HOSTS: OSTEICHTHYES - Eleotris potamophila, Rhodeus sinensis
REPTILIA - Elaphe radiata, Eumeces chinensis, Kinixys belliana, Natrix piscator, Natrix stolata

AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]; Galliformes - Gallus gallus (dom.) [exper.]; Strigiformes - Asio flammeus

MAMMALIA - Insectivora - Suncus coeruleus; Rodentia - Rattus norvegicus (lab.) [exper.]; Carnivora - Felis catus

FINAL HOSTS: MAMMALIA

Carnivora - Acinonyx jubatus, Canis familiaris, Felis catus, Felis leo, Felis sylvestris, Felis tigris, Genetta tigrina

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (China, Taiwan), Africa.

Alaria canis

STATUS AS WATERFOWL PARASITE: Accidental; larval stage encapsulated in muscles of domestic duck after experimental feeding. Adult in carnivorous mammals.

DESCRIPTION: La Rue & Fallis, 1936. Copy: Sudarikov, 1960.

SYNONYMY:

Alaria canis La Rue & Fallis, 1934

Alaria (Alaria) canis La Rue & Fallis, 1934 of Dubois, 1953

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snails in 28-34 days, penetrate amphibian tadpoles and develop into mesocercariae in 2-3 weeks; when ingested by final host diplostomulum larvae develop in lungs, then pass to intestine and mature in 34 days after ingestion. If mesocercariae are ingested by a vertebrate other than final host, they encapsulate in muscles of host without development. (Pearson, 1954, 1956)

FIRST INTERMEDIATE HOSTS: Helisoma campanulatum, Helisoma druryi, Helisoma trivolvis

SECOND INTERMEDIATE HOSTS: Ambystoma jeffersonianum, Ambystoma maculatum;

Bufo americanus, Notophthalmus viridescens, Pseudacris nigrita, Rana clamitans, Rana pipiens, Rana sylvatica

AUXILIARY HOSTS: AMPHIBIA - Rana clamitans [exper.]

REPTILIA - Thamnophis sirtalis [exper.]

AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]; Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Carnivora - Lutra canadensis, Mustela furo [exper.]; Rodentia - Mus musculus (lab.) [exper.], Feromyscus maniculatus [exper.]

FINAL HOSTS: MAMMALIA

Carnivora - Canis familiaris, Canis latrans, Canis lupus, Lynx canadensis, Lynx rufus, Martes pennanti, Urocyon cinereoargenteus, Vulpes fulva

HABITAT: Intestine.

DISTRIBUTION: N. America (USA - Alaska, Canada).

Apatemon anseris

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild geese.

DESCRIPTION: Ryzhikov, Leonov, & Tsimbal'uk, 1964 (as Australapatemon intermedius); Dubois, 1967.

SYNONYMY:

Australapatemon intermedius (Johnston) of Ryzhikov, Leonov, & Tsimbal'uk, 1964

Apatemon (Australapatemon) anseris Dubois, 1967

LIFE CYCLE: Unknown; probably similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser fabalis

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Europe (Netherlands), Asia (Kamchatka).

Apatemon cobitidis cobitidis

STATUS AS WATERFOWL PARASITE: Accidental; reported once as result of experimental infection in waterfowl. Natural host unknown.

DESCRIPTION: Vojtek, 1964a.

SYNONYMY: Vojtek, 1964.

Diplostomum cobitidis Linstow, 1890

Tetracotyle cobitidis (Linstow, 1890) Vojtek, 1959

Apatemon cobitidis cobitidis (Linstow, 1890) Vojtek, 1964

LIFE CYCLE: Eggs hatch in water in 14-15 days at 22 C., in 11 days at 29-30 C.; cercariae develop in fresh-water pulmonate snail in 57 days; metacercariae (as tetracotyle forms) develop in body cavity, musculature, and other organs of fresh-water fish, fully developed in 37 days; mature in 3 days after ingestion by final host. (Vojtek, 1964a)

FIRST INTERMEDIATE HOSTS: Lymnaea peregra

SECOND INTERMEDIATE HOSTS: Cottus gobio [exper.], Nemachilus barbatulus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis [exper.]

Anatini - Anas platyrhynchos [exper.], Anas platyrhynchos (dom.) [exper.], Anas querquedula [exper.], Anas strepera [exper.]

Aythiini - Netta rufina [exper.]

Columbiformes - Columba livia [exper.]

HABITAT: Small intestine - anterior half.

DISTRIBUTION: Europe.

Apatemon cobitidis pellucidus

STATUS AS WATERFOWL PARASITE: Accidental; reported twice in domestic ducks from experimental infections.

STATUS AS SPECIES: Synonym of A. gracilis - Bykhovskaja-Pavlovskaja, 1954a, 1962. A. cobitidis separated from A. gracilis on basis of cercarial structure and fish as second intermediate host, subspecies based on species of fish hosts. Form (A. gracilis pellucidus of Hoffman) from Eucalia inconstans with which Hoffman (1959) infected chicks, called A. cobitidis eucaliae by Vojtek.

DESCRIPTION: Yamaguti, 1933. Copy: Dubois, 1938b; Sudarikov, 1959; Shevtsov & Zaskind, 1960.

SYNONYMY:

Apatemon pellucidus Yamaguti, 1933

Tetracotyle pellucida Yamaguti, 1933

Apatemon (Apatemon) gracilis subsp. pellucidus (Yamaguti, 1933) Dubois, 1953

Apatemon cobitidis pellucidus (Yamaguti, 1933) Vojtek, 1964

LIFE CYCLE: Metacercariae (tetracotyle) encysted in muscles or body

cavity of fresh-water fish; mature in final host 3 days after ingestion, survive 94 days in final host. (Erasmus, 1962a; Olivier, 1940; Yamaguti, 1933)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Cottus gobio, Morgurnda obscura

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Ciconiiformes - Botaurus lentiginosus

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan).

Apatemon cobitidis proterorhini

STATUS AS WATERFOWL PARASITE: Accidental; reported once as result of experimental infection in waterfowl. Natural host unknown.

DESCRIPTION: Vojtek, 1964a.

SYNONYMY:

Apatemon cobitidis proterorhini Vojtek, 1964

LIFE CYCLE: Same as that of A. c. cobitidis. (Vojtek, 1964a)

FIRST INTERMEDIATE HOSTS: Lymnaea peregra

SECOND INTERMEDIATE HOSTS: Proterorhinus marmoratus

FINAL HOSTS: AVES

Anseriformes (Anatidae) - hosts not reported separately from Apatemon c. cobitis; presumably same experimental hosts.

HABITAT: Small intestine.

DISTRIBUTION: Europe (Czechoslovakia).

Apatemon fuhrmanni

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild swans.

DESCRIPTION: Dubois, 1937a, 1948, 1962, 1966. Copy: Dubois, 1938b;

Sudarikov, 1959.

SYNONYMY:

Apatemon gracilis (Rudolphi) of Fuhrmann, 1934

Apatemon fuhrmanni Dubois, 1937

Apatemon (Apatemon) gracilis fuhrmanni (Dubois, 1937) Dubois, 1953

Apatemon (Australapatemon) fuhrmanni Dubois, 1937 of Dubois, 1966

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, Cygnus olor

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden, Switzerland).

Apatemon globiceps

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Szidat, 1928. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b.

Holostomum sphaerocephalum (Westrumb) of Brandes, 1888, e.p., not
Diesing, 1850

Strigea sphaerocephala (Westrumb) of Lutz, 1928, not Westrumb, 1823

Apatemon sphaerocephalus (Brandes, 1888, not Westrumb, 1823) Szidat,
1928

Apatemon globiceps Dubois, 1937

Apatemon (Apatemon) globiceps Dubois, 1937 of Dubois, 1953

LIFE CYCLE: Unknown; probably similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Amazonetta brasiliensis, Cairina moschata

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Apatemon graciliformis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Synonym of A. gracilis - Bykhovskaiā-Pavlovskaiā, 1954a.

DESCRIPTION: Szidat, 1928b. Copy: Dubois, 1938b; Sudarikov, 1950.

SYNONYMY:

Apatemon graciliformis Szidat, 1928

Apatemon (Apatemon) graciliformis Szidat, 1928 of Dubois, 1953

Apatemon gracilis graciliformis (Szidat, 1928) Sudarikov, 1959

LIFE CYCLE: Unknown; probably similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata, Amazonetta brasiliensis

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Apatemon gracilis s. lat.

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 54 times in wild and 28 times in domestic waterfowl (excluding all reports identified by subspecies). Pathological effects described by Zajíček, 1963b; reported associated with mortality in domestic geese by Trofimov (1962).

STATUS AS SPECIES: Subspecies not accepted by Beverley-Burton, 1961; validity questioned by Sudarikov, 1959, and Vojtek, 1964. Odening (1965) feels the wide taxonomic distribution of the first intermediate hosts may indicate the presence of a number of races or species.

DESCRIPTION: Szidat, 1929; Yamaguti, 1933; Iwata, 1934; Dubois & Rausch, 1950a; Bykhovskaiā-Pavlovskaiā, 1954a; Zaskind, 1958; Beverley-Burton, 1961. Copy: Dubois, 1938b; Kurashvili, 1957; Sudarikov, 1959; Shevtsov & Zaskind, 1960.

SYNONYMY: Dubois, 1938b, 1953b.

Amphistoma gracile Rudolphi, 1819

Holostomum gracile (Rudolphi, 1819) Dujardin, 1845

Strigea gracilis (Rudolphi, 1819) Lühe, 1909

Apatemon gracilis (Rudolphi, 1819) Szidat, 1928

Tetracotyle gracilis (Rudolphi, 1819) Szidat, 1929

Apatemon (Apatemon) gracilis (Rudolphi, 1819) of Dubois, 1953

Holostomum variabile Leuckart, 1886

Holostomum variegatum (Creplin) of Muehling, 1808, e.p.

Apatemon graciliformis Szidat, 1928 - [Bykhovskaiā-Pavlovskaiā, 1962]

Cercaria helvetica XXXI Dubois, 1929

Apatemon parvitestis Ishii, 1932 - [Bykhovskaiâ-Pavlovskaiâ, 1962]
Apatemon japonicus Ishii, 1932 - [Bykhovskaiâ-Pavlovskaiâ, 1954a; 1962]
Apatemon pellucidus Yamaguti, 1933 - [Bykhovskaiâ-Pavlovskaiâ, 1962];
subspecies of A. cobitidis, Vojtek, 1964
Cercaria longiremis Wesenberg-Lund, 1934
Cercaria icnusae Giovannola, 1937
Cercaria pseudoburti Rankin, 1939
Cercaria okobojensis Brooks, 1943
Cercaria wansoni Fain, 1953

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails, after emergence penetrate leeches and encyst as tetracotyle larvae, also reported encysted in Odonata larvae, mollusks, oligochaetes, and fish; mature in final host after ingestion. Two groups of subspecies according to Dubois, 1953b; one group (burti group) has metacercariae encysting in leeches or perhaps in mollusks, the other (gracilis group) encysts in fish. Although assigned to one or the other of these groups, the life cycle of most of the so-called subspecies of A. gracilis are actually unknown. (Alekseev, 1963c; Chibichenko, 1964; Dobrowolski, 1958; Ginetsinskaiâ, 1959a; Kiseliene, 1966; Olivier, 1940; Szidat, 1929b, 1931a; Vojtek, 1964; Williams, 1966b; Zajíček, 1963c; Zaskind, 1958; Zdárská, 1963)

FIRST INTERMEDIATE HOSTS: Acroloxus lacustris, Anisus contortus, Anisus leucostomus, Anisus spirorbis, Anisus vortex, Bithynia tentaculata, Helisoma anceps, Lymnaea columella, Lymnaea lagotus, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Physa fontinalis, Planorbis corneus, Planorbis planorbis, Segmentina nitida, Viviparus ussuriensis

SECOND INTERMEDIATE HOSTS: Boreobdella verrucata, Glossiphonia complanata, Glossiphonia heteroclita, Haemopsis sanguisuga, Helobdella stagnalis, Hemiclepsis marginata, Herpobdella atomaria, Herpobdella octoculata, Herpobdella punctata, Herpobdella testacea, Piscicola geometra, Theromyzon tessulatum, Aeschna sp., oligochaeta, Acheilognathus chankaensis, Cultur alburnus, Gobio gobio, Hemicultur leucisculus, Lymnaea auricularia

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser fabalis, Branta canadensis, Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas angustirostris, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas discors, [Anas erythrorhyncha - Lapage, 1961, error], Anas falcata, Anas formosa, Anas penelope, Anas querquedula, Anas rubripes, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus, Mergus cucullatus, Mergus merganser,
Mergus serrator, Mergus squamatus
Charadriiformes - Vanellus vanellus
Columbiformes - Columba livia

HABITAT: Small intestine - duodenum and anterior portion.

DISTRIBUTION: Europe, Asia, Africa (Madagascar), N. America, S. America (Venezuela).

Apatemon gracilis gracilis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Dubois, 1948. Sudarikov, 1959 - Same as species description.

SYNONYMY:

Apatemon gracilis var. gracilis (Rudolphi, 1819) of Dubois, 1948
Apatemon (Apatemon) gracilis gracilis (Rudolphi, 1819) of Dubois, 1953

LIFE CYCLE: Described under A. gracilis s. l.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser, Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: Europe (Switzerland), Asia, N. America.

Apatemon gracilis burti

STATUS AS WATERFOWL PARASITE: Rare; reported once experimentally in domestic duck.

DESCRIPTION: Stunkard, Willey, & Rabinowitz, 1941.

SYNONYMY:

Cercaria burti Miller, 1933
Apatemon gracilis (Rudolphi) of Willey & Rabinowitz, 1938, and Stunkard, Willey, & Rabinowitz, 1941
Apatemon gracilis var. burti (Miller, 1933) Dubois & Rausch, 1960

LIFE CYCLE: Cercariae develop in fresh-water snails, penetrate leech

and encyst as metacercariae (tetracotyle) in 30-42 days; mature in final host in 4-5 days after ingestion; survive 13 days in final host. (Stunkard, Willey, & Rabinowitz, 1941; Willey & Rabinowitz, 1938)

FIRST INTERMEDIATE HOSTS: Helisoma anceps, Helisoma trivolvis, Lymnaea humilis

SECOND INTERMEDIATE HOSTS: Herpobdella punctata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Apatemon gracilis canadensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl.

DESCRIPTION: Dubois & Rausch, 1948, 1950b. Copy: Sudarikov, 1959.

SYNONYMY:

Apatemon gracilis var. canadensis Dubois & Rausch, 1950

Apatemon (Apatemon) gracilis canadensis Dubois & Rausch, 1950 of Dubois, 1953

LIFE CYCLE: Unknown; like that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

Somateriini - Polysticta stelleri

HABITAT: Intestine.

DISTRIBUTION: N. America (USA, USA-Alaska).

Apatemon gracilis congolense

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Dubois & Fain, 1956. Copy: Sudarikov, 1959.

SYNONYMY:

Apatemon gracilis var. congolense Dubois & Fain, 1956

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Thalassornis leuconotus

HABITAT: Intestine.

DISTRIBUTION: Africa (Congo).

Apatemon gracilis exilis

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild ducks.

DESCRIPTION: Dubois, 1948. Copy: Sudarikov, 1959.

SYNONYMY:

Apatemon gracilis var. exilis Dubois, 1948

Apatemon (Apatemon) gracilis exilis Dubois, 1948 of Dubois, 1953

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Bucephala clangula

HABITAT: Intestine.

DISTRIBUTION: Europe (Switzerland).

Apatemon gracilis fuligulae

STATUS AS WATERFOWL PARASITE: Frequent; reported 10 times in wild ducks, once experimentally in domestic duck, and once in captive duck.

DESCRIPTION: Yamaguti, 1933; Dubois, 1948; Odening, 1963. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Tetracotyle fuligulae Yamaguti, 1933

Apatemon fuligulae (Yamaguti, 1933) Yamaguti, 1933

Apatemon (Apatemon) gracilis fuligulae (Yamaguti, 1933) Dubois, 1953

LIFE CYCLE: Metacercariae (tetracotyle) encysted in skin and muscles

of fresh-water fish; mature in 8 days after ingestion by final host.
(Yamaguti, 1933)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Parasilurus asotus, Pseudobagrus aurantiacus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],
Anas acuta, Anas falcata, Anas formosa, Anas penelope, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Bucephala clangula, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Mergus albellus, Mergus merganser,
Mergus serrator

Strigiformes - Strix uralensis

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany, Switzerland, Russia), Asia (Tuva, Yakutia, Uzbekistan, Amur, Primorsk, Kamchatka, Japan).

Apatemon gracilis indicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Vidyarthi, 1937. Copy: Sudarikov, 1959.

SYNONYMY:

Apatemon indicus Vidyarthi, 1937

Apatemon (Apatemon) gracilis indicus (Vidyarthi, 1937) Dubois, 1953

Apatemon casarcus Vidyarthi, 1937 - [Dubois, 1953b]

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Apatemon gracilis japonicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and once in

domestic duck.

STATUS AS SPECIES: Synonym of A. gracilis - Bykhovskaja-Pavlovskaja, 1954a, 1962.

DESCRIPTION: Ishii, 1933a, 1933b. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Apatemon japonicus Ishii, 1932

Apatemon (Apatemon) gracilis japonicus (Ishii, 1932) Dubois, 1953

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

HABITAT: Intestine, ceca.

DISTRIBUTION: Asia (Japan).

Apatemon gracilis minor

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild ducks, once in domestic duck.

DESCRIPTION: Yamaguti, 1933, 1939; Dubois & Rausch, 1948. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Apatemon minor Yamaguti, 1933

Apatemon (Apatemon) gracilis minor (Yamaguti, 1933) Dubois & Rausch, 1950

Cercaria hamburgensis Komiya, 1938 - [Iles, 1960]; distinct, Nasir, 1966

LIFE CYCLE: Cercariae develop in fresh-water snails, emerge and penetrate leeches, encyst as metacercariae (tetracotyle) in body tissues; metacercariae infective for 104-234 days; mature in final host 4-20 days after ingestion. Method of feeding by adults described by Öhman, 1966a. (Erasmus, 1962a; Iles, 1960; Komiya, 1938; Öhman, 1966a; Oravilova & Vojtek, 1965)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea peregra, Planorbis planorbis

SECOND INTERMEDIATE HOSTS: Herpobdella octoculata [exper.], Herpobdella testacea [exper.], Glossiphonia complanata [exper.], Theromyzon tessulata [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas americana, Anas crecca, Anas crecca carolinensis, Anas discors, [Anas erythrorhyncha - Lapage, 1961, error], Anas formosa, Anas penelope, Anas querquedula, Anas rubripes

Aythiini - Aythya affinis

Cairinini - Aix galericulata

Mergini - Clangula hyemalis

Oxyurini - Osyura leucocephala

Podicipediformes - Podiceps ruficollis

Charadriiformes - Cepphus grylle

HABITAT: Small intestine - Anterior region.

DISTRIBUTION: Europe (Great Britain, Czechoslovakia, Russia), Asia (Kirgizia, Primorsk, Japan), N. America (USA, Greenland).

Apatemon gracilis somateriae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Dubois, 1948, 1960. Copy: Sudarikov, 1959.

SYNONYMY:

Apatemon gracilis var. somateriae Dubois, 1948

Apatemon (Apatemon) gracilis somateriae Dubois, 1948 of Dubois, 1953

LIFE CYCLE: Unknown; similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Intestine.

DISTRIBUTION: Europe (Switzerland), N. America (USA).

Apatemon intermedius

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild swans.

DESCRIPTION: Johnston, 1904. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b.

Hemistomum intermedium Johnston, 1904

Proalaria intermedia (Johnston, 1904) La Rue, 1926
Diplostomum intermedium (Johnston, 1904) Hughes, 1929
Apatemon intermedius (Johnston, 1904) Dubois, 1937
Tetracotyle intermedius (Johnston, 1904) Johnston & Beckworth, 1947
Apatemon (Apatemon) intermedius (Johnston, 1904) of Dubois, 1953
Australapatemon intermedius (Johnston, 1904) Sudarikov, 1959
Apatemon (Australapatemon) intermedius (Johnston, 1904) of Dubois,
1966
Cercaria lessoni Johnston & Beckworth, 1947

LIFE CYCLE: Cercariae develop in fresh-water snails, penetrate and encyst as metacercariae (tetracotyle) in leeches in 23 days after infection. (Johnston & Angel, 1951)

FIRST INTERMEDIATE HOSTS: Lymnaea lessoni, Planorbis isingi [exper.], Simlimnaea subaquatilis

SECOND INTERMEDIATE HOSTS: Glossiphonia sp.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anserini - Cygnus atratus

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Australia.

Apatemon parvitestis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of A. gracilis - Bykhovskaja-Pavlovskaja, 1954a, 1962.

DESCRIPTION: Ishii, 1935b. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Apatemon parvitestis Ishii, 1935
Apatemon (Apatemon) parvitestis Ishii, 1935 of Dubois, 1953

LIFE CYCLE: Unknown; probably similar to that of A. gracilis.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos

HABITAT: Intestine, ceca.

DISTRIBUTION: Asia (Japan).

Apatemon skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Ryzhikov, Leonov, & Tsimbaliuk, 1964.

SYNONYMY:

Australapatemon skrjabini Ryzhikov, Leonov, & Tsimbaliuk, 1964

Apatemon (Australapatemon) skrjabini (Ryzhikov, Leonov, & Tsimbaliuk, 1964) Dubois, 1966

LIFE CYCLE: Unknown; probably similar to that of A. gracilis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas penelope

Aythiini - Aythya marila

Mergini - Melanitta fusca deglandi, Melanitta nigra, Mergus albellus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka).

Cotylurus brevis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks, once experimentally in domestic duck and once experimentally in captive duck.

DESCRIPTION: Dubois, 1948, 1964; Dubois & Rausch, 1950a; Nasir, 1960, 1962. Copy: Sudarikov, 1959.

SYNONYMY: Dubois, 1953.

Strigea tarda (Steenstrup) of Mathias, 1925

Cotylurus cornutus (Rudolphi) of Timon-David, 1943

Cotylurus brevis Dubois & Rausch of Dubois, 1948

Cercaria helvetica XXXIV Dubois, 1934

LIFE CYCLE: Eggs passed in feces; miracidia develop in eggs in water in about 3 weeks; cercariae develop in fresh-water snail; metacercariae (tetracotyle) encyst in snails of same species, infective in at least 44 days; eggs appear in feces of final host in 5-6 days after ingestion of metacercariae, survive 7-16 days in final host. (Mathias, 1925; Nasir, 1960; Odening, 1965; Timon-David, 1943)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas cly-

peata, Anas querquedula
Somateriini - Somateria mollissima
Aythyini - Aythya affinis, Aythya fuligula, Aythya marila
Cairinini - Aix galericulata [exper.]
Galliformes - Coturnix coturnix
Charadriiformes - Capella gallinago, Numenius arquata, Pluvialis apricaria, Scolopax rusticola
Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe, N. America (USA)

Cotylurus cornutus

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl (also commonly in charadriiform birds); reported 49 times in wild and 33 times in domestic waterfowl. Pathology described by Feng, 1931, and Zajíček, 1963b.

DESCRIPTION: Szidat, 1929b; Dubois & Rausch, 1950a; Bezubik, 1957a; Dubois, 1960, 1962. Copy: Dubois, 1938b; Kasimov, 1956; Kurashvili, 1957; Sudarikov, 1959; Shevtsov & Zaskind, 1960.

SYNONYMY: Dubois, 1938b.

Amphistoma cornutum Rudolphi, 1808

Holostomum cornutum (Rudolphi, 1808) Dujardin, 1845

Strigea cornuta (Rudolphi, 1808) Lühe, 1909

Cotylurus cornutus (Rudolphi, 1808) Szidat, 1928

Tetracotyle cornuta (Rudolphi, 1808) Hughes, 1929

Amphistoma macrocephalum Rudolphi, 1803, e.p.

Amphistoma erraticum (Rudolphi) of Gurlt, 1845, e.p.

Holostomum erraticum (Rudolphi) of Ercolani, 1881, not Dujardin, 1845

Strigea erratica (Ercolani, not Dujardin) of Faust, 1918

Tetracotyle typica Diesing, 1858, e.p.

Holostomum multilobum Cobbold, 1860

Holostomum variegatum (Creplin) of Mühling, 1898, e.p.

Strigea tarda (Steenstrup, 1842) Lühe, 1909

Tetracotyle hirudinum (Schomburg, 1844) Mataré, 1910

Cercaria sanjuanensis Miller, 1927

Apatemon gracilis (Rudolphi) of Sprehn, 1930, e.p.

Cotylurus japonicus Ishii, 1932 - [Bykhovskaja-Pavlovskaja, 1953, 1962]

LIFE CYCLE: Eggs passed in feces; hatch in water in 8 days at 27-28 C., 21 days at 18-20 C., miracidia invade fresh- and brackish water snails; cercariae develop in 45-60 days, emerge and penetrate another or same snail, encyst as metacercariae (tetracotyle) in 25-30 days; encysted tetracotyle larvae also present in leeches and oligochaetes; mature in final host 2 days after ingestion. (Alekseev, 1963c; Dob-

rowolski, 1958; Harper, 1931; Kiselienė, 1966; Komiya, 1938; Kotelnikov, 1962b; Mathias, 1922; Reimer, 1964a, 1965; Szidat, 1924a, 1929a, 1929b; Williams, 1966b; Zajíček, 1963c, 1964a; Ždárská, 1963, 1964b; Zdun, 1959)

FIRST INTERMEDIATE HOSTS: Anisus vortex, Lymnaea ampla, Lymnaea auricularia, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Physa fontinalis, Planorbarius corneus, Planorbis planorbis

SECOND INTERMEDIATE HOSTS: Lymnaea lagotus, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Planorbarius corneus, Planorbis planorbis, Viviparus ussuriensis, Viviparus viviparus, Boreobdella verrucata, Glossiphonia complanata, Glossiphonia heteroclita, Haemopsis sanguisuga, Helobdella stagnalis, Hemiclepsis marginata, Herpobdella atomaria, Herpobdella octoculata, Herpobdella testacea, Piscicola geometra, oligochaeta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus, Cygnus cygnus, Cygnus cygnus (dom.), Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas formosa, Anas penelope, Anas querquedula, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix galericulata [exper.]

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra, Mergus albellus, Mergus merganser

Oxyurini - Oxyura leucocephala

Falconiformes - Circus aeruginosus, Falco subbuteo

Galliformes - Coturnix coturnix [exper.], Gallus gallus (dom.)

Charadriiformes - Alca torda, Burhinus oedicnemus, Calidris tenuirostris, Capella gallinago, Charadrius dubius, Frobia minuta, Limnodromus griseus, Limosa limosa, Micropalama himantopus, Numenius arquata, Numenius tenuirostris, Phalaropus lobatus, Philomachus pugnax, Pluvialis apricaria, Scolopax rusticola, Sterna hirundo, Sterna paradisaea, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa totanus, Vanellus vanellus

Columbiformes - Columba livia, Columba livia (dom.), Streptopelia orientalis

Passeriformes - Pica pica, Turdus migratorius

HABITAT: Small intestine - jejunem.

DISTRIBUTION: Europe, Iceland, Asia (W. Siberia, Azerbaidzhan, Tadzhikistan, Kirgizia, Kazakhstan, Tuva, Transbaikal, Indochina, China, Yakutia,

Amur, Primorsk, Kamchatka, Japan), Africa (Egypt), N. America (USA), S. America.

Cotylurus erraticus

STATUS AS WATERFOWL PARASITE: Probably accidental, perhaps erroneous; no recent records. Primarily in loons, occasionally in lariform birds.

DESCRIPTION: Guberlet, 1922 (as S. aquavis); Dubois & Rausch, 1950b; Dubois, 1962; Škarda, 1964. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b, 1953b.

Amphistoma erraticum Rudolphi, 1809

Holostomum erraticum (Rudolphi, 1809) Dujardin, 1845

Strigea erratica (Rudolphi, 1809, not Brandes, 1898) Lühe, 1909

Cotylurus erraticus (Rudolphi, 1809) Szidat, 1928

Amphistoma gracile Rudolphi of Bellingham, 1844

Holostoma variegatum (Creplin, 1825) Stiles & Hassall, 1894

Strigea aquavis Guberlet, 1922

Cotylurus aquavis (Guberlet, 1922) Szidat, 1928

LIFE CYCLE: Cercariae develop in fresh-water snail. (Zajíček, 1963, 1964)

FIRST INTERMEDIATE HOSTS: Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas crecca

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya marila

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Mergus albellus, Mergus merganser

Sphenisciformes - Spheniscus sp.

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Podicipediformes - Podiceps grisegena

Pelecaniformes - Phalacrocorax carbo

Gruiformes - Gallinula chloropus

Charadriiformes - Capella gallinago, Chlidonias nigra, Larus canus,
Larus delawarensis, Larus fuscus, Larus ridibundus, Scolopax rusti-
cola, Sterna hirundo, Sterna paradisaea, Uria aalge, Vanellus van-
ellus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia), N. America (Canada).

Cotylurus flabelliformis

STATUS AS WATERFOWL PARASITE: Frequent; reported 10 times in wild ducks, twice (once experimentally) in domestic waterfowl. Pathology of infection described by Gower, 1938b; Van Haitsma, 1931a.

DESCRIPTION: Van Haitsma, 1931a. Copy: Dubois, 1938b; Sudarikov, 1959; Shervtsov & Zaskind, 1960.

SYNONYMY: Dubois, 1938b.

Cercaria flabelliformis Faust, 1917

Tetracotyle flabelliformis (Faust, 1917) Hughes, 1929

Cotylurus flabelliformis (Faust, 1917) Van Haitsma, 1931

Cercaria douglasi Cort, 1917, e.p. - distinct, Achonolu, 1965

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails, emerge and penetrate other snails or may remain in same snail; encyst as metacercariae (tetracotyle) in 20-30 days; mature in final host 3 days after ingestion, survive about 7 days in final host. (Achonolu, 1964a, 1965; Cort, Brackett, & Olivier, 1944; Larson, 1961; Ulmer, 1957; Van Haitsma, 1931a)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea emarginata, Lymnaea reflexa, Lymnaea stagnalis, Physa parkeri, Physa sayii

SECOND INTERMEDIATE HOSTS: Bulinnaea megosoma [exper.], Helisoma campanulatus, Helisoma trivolvis, Lymnaea abrusa [exper.], Lymnaea emarginata, Lymnaea exilis [exper.], Lymnaea humilis, Lymnaea palustris [exper.], Lymnaea reflexa, Lymnaea stagnalis, Physa gyrina

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas platyrhynchos fulvigula, Anas acuta, Anas americana, Anas clypeata, Anas crecca carolinensis, Anas discors, [Anas erythrorhyncha - Lapage, 1961, error], Anas rubripes, Anas strepera

Aythiini - Aythya affinis, Aythya americana, Aythya collaris, Aythya fuligula, Aythya marila, Aythya vallisneria

Mergini - Bucephala clangula

Oxyurini - Oxyura jamaicensis

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Intestine, ceca.

DISTRIBUTION: Europe (Esthonia, USSR - Volga delta), Asia (Amur), N. America (USA).

Cotylurus hebraicus

STATUS AS WATERFOWL PARASITE: Accidental, perhaps erroneous, normally in Rallidae; reported twice in wild waterfowl and once in domestic duck.

DESCRIPTION: Dubois, 1934, 1964; Bykhovskaja-Pavlovskaja, 1954a; Odening, 1962d; Zajiček & Pav, 1961. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Cotylurus hebraicus Dubois, 1934

Cotylurus gallinulae hebraicus (Dubois, 1934) Dubois, 1964

Cotylurus ban Yamaguti, 1939 - [Bykhovskaja-Pavlovskaja, 1954a, 1962; Sudarikov, 1959]

Choanodiplostomum lintoni Perez Vigueras, 1944 - [Dubois, 1964]

Cotylurus lintoni (Perez Vigueras, 1944) Dubois & Perez Vigueras, 1949

Choanodiplostomum vitellosus Lumsden & Zischke, 1963 - [Dubois, 1964]

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anserini - Branta canadensis - probably misidentified]

Anatini - [Anas platyrhynchos - probably misidentified, Dubois, 1957]

Anas platyrhynchos (dom.), Anas acuta

[Aythyini - Aythya ferina - probably misidentified, Dubois, 1957]

Gruiformes - Fulica atra, Gallinula chloropus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Syria, Tadzhikistan, Kamchatka, Japan), N. America (Cuba, USA).

Cotylurus japonicus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks, 3 times in domestic ducks.

STATUS AS SPECIES: Synonym of C. cornutus - Bykhovskaja-Pavlovskaja, 1953, 1962.

DESCRIPTION: Ishii, 1933a, 1933b; Khuan Shen-i, 1962e; Dubois, 1964. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Cotylurus japonicus Ishii, 1932

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas crecca

Aythiini - Aythya marila

Mergini - Melanitta fusca deglandi

Galliformes - Gallus gallus (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (India, Japan, Amur, Kamchatka).

Cotylurus orientalis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks and once in domestic duck.

STATUS AS SPECIES: Doubtful. Synonym of C. syrius - Dubois, 1964.

DESCRIPTION: Vidyarthi, 1937. Copy: Sudarikov, 1959.

SYNONYMY:

Cotylurus orientalis Vidyarthi, 1937

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas crecca

HABITAT: Small intestine.

DISTRIBUTION: Asia (India, Indochina).

Cotylurus platycephalus

STATUS AS WATERFOWL PARASITE: Infrequent, normally in lariform birds; reported 3 times in wild waterfowl.

DESCRIPTION: Szidat, 1929. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b; Sudarikov, 1959.

Amphistoma platycephalum Creplin, 1825

Holostomum platycephalum (Creplin, 1825) Siebold, 1836

Cotylurus platycephalus (Creplin, 1825) Szidat, 1928

Holostomum variegatum Dujardin of Brandes, 1888, e.p.

Strigea variegata (Creplin, 1825) Lühe, 1909, e.p.

Holostomum cucullus Thoss, 1897
Cotylurus strictus Endrigokeit, 1940

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

Anatini - Anas platyrhynchos, Anas strepera

Gaviiformes - Gavia stellata

Podicipediformes - Podiceps cristatus

Pelecaniformes - Pelecanus oncorhynchus, Phalacrocorax carbo

Falconiformes - Haliaeetus albicilla

Charadriiformes - Alca torda, Cephus grylle, Chlidonias nigra, Larus argentatus, Larus canus, Larus fuscus, Larus hyperboreus, Larus ichthyaetus, Larus marinus, Larus minutus, Larus ridibundus, Rissa tridactyla, Stercorarius longicaudus, Stercorarius parasiticus, Stercorarius pomarinus, Sterna albifrons, Sterna hirundo, Thalasseus bengalensis

HABITAT: Bursa of Fabricius, cloaca, large intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan).

Cotylurus raabei

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild and twice in domestic ducks.

DESCRIPTION: Bezubik, 1958; Ryzhikov & Koshkina, 1962; Dubois, 1964.

SYNONYMY:

Strigea raabei Bezubik, 1958

Cotylurostrigea raabei (Bezubik, 1958) Sudarikov, 1962

Cotylurus raabei (Bezubik, 1958) Dubois, 1964

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas querouedula

Aythini - Aythya nyroca

HABITAT: Cloaca.

DISTRIBUTION: Europe (Poland, Russia), Asia (Kazakhstan, Tuva).

Cotylurus strigeoides

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Dubois, 1958.

SYNONYMY:

Cotylurus strigeoides Dubois, 1958

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Cotylurus syrius

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once in captive swan.

DESCRIPTION: Dubois, 1935, 1964. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Cotylurus syrius Dubois, 1934

Cotylurus orientalis Vidyarthi, 1937 - [Dubois, 1964]

LIFE CYCLE: Unknown; probably similar to that of C. cornutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus (olor?)

Anatini - Anas penelope

HABITAT: Small intestine - posterior quarter, large intestine.

DISTRIBUTION: Europe (Netherlands), Asia (Syria).

Cotylurostrigea brandivittellata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Cotylurostrigea a synonym of genus Cotylurus -

Dubois, 1964; Baer & Joyeux, 1961.

DESCRIPTION: Belogurov, Maksimova, & Tolkacheva, 1966.

SYNONYMY:

Cotylurostrigea brandivittellata Belogurov, Maksimova, & Tolkacheva, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas querquedula

Aythiini - Aythya marila

Mergini - Clangula hyemalis

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (Kamchatka, Tamyр).

Parastrigea robusta

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks and 6 times in domestic ducks. Reported as cause of lesions in intestine of host (Odening, 1965).

DESCRIPTION: Szidat, 1928b; Bykhovskaiâ-Pavlovskaiâ & Zhukov, 1954 (as F. anati); Dubois, 1966. Copy: Dubois, 1938b; Sudarikov, 1959; Shevtsov & Zaskind, 1960.

SYNONYMY:

Parastrigea robusta Szidat, 1928

Parastrigea anati Bykhovskaiâ-Pavlovskaiâ & Zhukov, 1954 - [Dubois, 1961a]

Apharyngostrigea parastrigiformis Bykhovskaiâ-Pavlovskaiâ & Zhukov, 1954 - [Dubois, 1966]

LIFE CYCLE: Eggs passed in feces, develop in fresh water in 9-12 days at 18-21 C.; cercariae develop in 6 weeks in fresh-water snails, emerge and penetrate tadpoles of amphibians; metacercariae (tetra-cotyle) infective in 18 days; mature in final host 5-7 days after ingestion, survive 15-17 days in final host. (Odening, 1965a, 1965b)

FIRST INTERMEDIATE HOSTS: Anisus vortex, Gyraulus albus, Planorbis planorbis, Segmentina nitida

SECOND INTERMEDIATE HOSTS: Rana arvalis, Rana temporaria, Bufo bufo

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Aythyini - Aythya ferina
Falconiformes - Falco subbuteo
Columbiformes - Columba livia (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan).

Pseudapatemon mamilliformis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.
Originally described from charadriiform bird.

DESCRIPTION: Tubangui, 1932. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY:

Cotylurus mamilliformis Tubangui, 1932
Pseudapatemon mamilliformis (Tubangui, 1932) Dubois, 1936

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)
Charadriiformes - Capella gallinago

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan, W. Siberia, Indochina, Phillipine Is.).

Pseudostrigea anatis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Ku, 1964.

SYNONYMY:

Pseudostrigea anatis Ku, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (China).

Strigea elegans

STATUS AS WATERFOWL PARASITE: Accidental; larval stage in muscles of domestic duck as result of experimental infection. Adult in owls.

DESCRIPTION: Chandler & Rausch, 1947. Copy: Sudarikov, 1959.

SYNONYMY:

Strigea elegans Chandler & Rausch, 1947

LIFE CYCLE: Eggs passed in feces, hatch in water in 11 days; miracidia infect fresh-water snail; cercariae develop in 26 days, penetrate amphibian tadpoles, develop to mesocercariae in about 2 weeks; after ingestion by reptiles or birds mesocercariae develop to tetracotyle larvae in fasciae of muscles in 21 days; mature in final host after ingestion. (Fearson, 1957, 1959)

FIRST INTERMEDIATE HOSTS: Gyraulus parvus

SECOND INTERMEDIATE HOSTS: Bufo americanus [exper.], Rana sylvatica [exper]

THIRD INTERMEDIATE HOSTS: REPTILIA - Thamnophis sp. [exper.]

AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]

Strigiformes - Bubo virginianus [exper.]

FINAL HOSTS: AVES

Strigiformes - Bubo virginianus, Nyctea scandiaca

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA, Canada).

Strigea falconis

STATUS AS WATERFOWL PARASITE: Frequent; larval stage reported 11 times in muscles of wild ducks. Adult in hawks and owls.

DESCRIPTION: Szidat, 1929. Copy: Dubois, 1939b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b; Sudarikov, 1959.

Strigea falconis palumbi Viborg, 1795, nomen nudum

Amphistoma falconis palumbi (Viborg, 1795) Rudolphi, 1809

Strigea falconis Szidat, 1928

Tetracotyle falconis (Szidat, 1928) Sudarikov, 1959

Festucaria strigis Froelich, 1802
Fasciola strigis (Schrank, 1788) Gmelin, 1790
Strigea strigis (Schrank, 1788) Lühe, 1909, e.p.
Strigea strigis (Goeze) of Nazmi Gohar, 1934
Amphistoma macrocephalum Rudolphi, 1803
Holostomum macrocephalum (Rudolphi, 1803) Blainville, 1828, e.p.
Amphistoma striatum Rudolphi, 1809, e.p.
Holostomum variabile Nitzsch, 1819, e.p.
Distomum capsulare Diesing, 1858
Agamodistomum capsulare (Diesing, 1858) Stossich, 1892
Holostomum cornu (Nitzsch) of Hausmann, 1899
Tetracotyle ardeae (Mataré, 1910) Hughes, 1929
Strigea falconis brasiliana Szidat, 1928 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]; distinct, Dubois, 1953
Tetracotyle ornithocystis Lutz, 1929
Strigea falconis meleagris Harwood, 1931 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]; distinct, Dubois, 1953
Strigea falconis eaglesa Verma, 1936 - [Bykhovskaja-Pavlovskaja, 1962]
Strigea falconis japonensis Yamaguti, 1939 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]
Strigea elongata Yamaguti, 1939 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]
Tetracotyle bonasae Chandler, 1954
Neostrigea africana Bisseru, 1956 - [Dubois, 1959]

LIFE CYCLE: Metacercariae (tetracotyle) encysted under fasciae of muscles of birds as intermediate or auxiliary hosts; mature in final host in 7 days after ingestion. (Sudarikov, 1959, 1960a, 1960b)

INTERMEDIATE HOSTS: Unknown.

AUXILIARY HOSTS (OR THIRD INTERMEDIATE HOSTS?): AVES - Anseriformes - Anserini - Anser anser, Anser erythropus, Cygnus cygnus; Tadornini - Tadorna ferruginea, Tadorna tadorna; Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas querquedula, Anas strepera; Aythyini - Aythya ferina, Aythya nyroca, Netta rufina; Mergini - Bucephala clangula, Mergus albellus, Mergus merganser; Oxyurini - Oxyura leucocephala; Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis; Pelecaniformes - Haliastur pygmaeus, Pelecanus crispus, Pelecanus oncorhynchus, Phalacrocorax carbo; Ciconiiformes - Ardea cinerea, Ardea purpurea, Ardeola ralloides, Botaurus stellaris, Bubulcus ibis, Casmerodius albus, Egretta garzetta, Ixobrychus minutus, Nycticorax nycticorax, Platalea leucorodia, Plegadis falcinellus; Falconiformes - Circus aeruginosus, Haliaeetus albicilla, Milvus migrans, Pandion haliaetus; Galliformes - Bonasa umbellus, Meleagris gallopavo (dom.), Phasianus colchicus; Gruiformes - Crex crex, Fulica atra, Gallinula chloropus, Porzana porzana, Rallus aquaticus; Charadriiformes - Actitis hypoleucos, Capella gallinago, Charadrius dubius, Charadrius hiaticula, Chlidonias leucoptera, Chlidonias nigra, Erolia alpina, Erolia testacea, Gelochelidon nilotica, Himantopus himantopus, Larus argentatus, Larus ichthy-

aetus, Larus minutus, Larus ridibundus, Limosa limosa, Numenius arquata, Phalaropus lobatus, Philomachus pugnax, Recurvirostra avosetta, Sterna albifrons, Sterna hirundo, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa stagnatilis, Tringa totanus, Vanellus vanellus, Xenus cinereus; Columbiformes - Columba palumbus, Streptopelia chinensis; Strigiformes - Asio flammeus, Asio otus; Coraciiformes - Alcedo atthis, Upupa epops; Piciformes - Dendrocopos major; Passeriformes - Acrocephalus arundinaceus, Acrocephalus palustris, Acrocephalus scirpaceus, Cettia cettia, Corvus corone, Corvus corone cornix, Corvus frugilegus, Corvus monedula, Motacilla alba, Motacilla flava, Oriolus melanocephalus, Panurus biarmicus, Passer domesticus, Passer montanus, Pica pica, Remiz pendulinus, Riparia riparia, Sturnus vulgaris

FINAL HOSTS: AVES

Falconiformes - Accipiter cooperii, Accipiter gentilis, Accipiter nisus, Accipiter striatus, Accipiter virgatus, Aegypus monachus, Aquila chrysaetos, Aquila clanga, Aquila heliaca, Aquila pomarina, Buteo albicaudatus, Buteo burmanicus, Buteo buteo, Buteo jamaicensis, Buteo lagopus, Buteo magnirostris, Buteo swainsoni, Circus caetus gallicus, Circus aeruginosus, Circus cyaneus, Circus macrourus, Circus melanoleucus, Circus pygargus, Falco biarmicus, Falco columbarius, Falco peregrinus, Falco rusticolus, Falco subbuteo, Falco tinnunculus, Falco vespertinus, Haliaeetus albicilla, Haliaeetus leucoryphus, Herpetotheres cachinnans, Hieraaetus pennatus, Ieracidea berigora, Lorhaetus occipitalis, Milvus migrans, Milvus milvus, Neophron percnopterus, Pandion haliaetus, Fernis apivorus, Spizaetus ornatus, Terathopius ecaudatus
Strigiformes - Asio flammeus, Asio otus, Athene noctua [exper.]
Strix aluco

HABITAT: Intestine.

DISTRIBUTION: Cosmopolitan. Europe, Asia, Africa, N. America, S. America, Australia.

Strigea vaginata

STATUS AS WATERFOWL PARASITE: Accidental; larval stage in domestic duck as result of experimental infection. Adult primarily parasitic in Cathartidae.

DESCRIPTION: Szidat, 1929. Copy: Dubois, 1938b; Sudarikov, 1959.

SYNONYMY: Dubois, 1938b.

Holostomum vaginatum Brandes, 1888

Strigea vaginata (Brandes, 1888) Szidat, 1928

Gongylura vaginata (Brandes, 1888) Lutz, 1933

Tetracotyle ichthyocystis Lutz, 1928

Tetracotyle ophiocystis Lutz, 1928

Strigea ophiocystis Lutz, 1928

Tetracotyle theriocystis Lutz, 1928

Dicranocercaria gyrinipeta Lutz, 1934

Apatemon gracilis (Rudolphi) of Caballero & Vogelsang, 1949 - [Dubois, 1952]

LIFE CYCLE: No connection shown experimentally between following stages: Cercariae develop in fresh-water snail, penetrate amphibia and form mesocercariae; mesocercariae develop to metacercariae (tetracotyle) after ingestion by fish, birds, and mammals (experimental infections), tetracotyle present naturally in fish, reptiles, birds, and mammals; mature in final host after ingestion. (Lutz, 1928, 1929, 1933, 1934; Olivier, 1940; Pearson, 1959)

FIRST INTERMEDIATE HOSTS: Planorbis anatinus

SECOND INTERMEDIATE HOSTS: Hyla crepitans, Hyla rubra, Leptodactylus pentadactylus

THIRD INTERMEDIATE HOSTS: OSTEICHTHYES - Callichthys callichthys
REPTILIA -

AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]; Galliformes - Gallus gallus (dom.) [exper.]; Columbiformes - Columba livia (dom.) [exper.]

MAMMALIA - Carnivora - Canis thous, Grison vittata; Rodentia - Mus musculus (lab.) [exper.]

FINAL HOSTS: AVES

Falconiformes - Cariama cristata, Cathartes urubitinga, Coragyps atrata, Sarcorhamphus papa, Spizaetus ornatus

Strigiformes -

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Austroilharzia canadensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Doubtful. Very similar to A. variglandis.

DESCRIPTION: McLeod, 1936.

SYNONYMY:

Microilharzia canadensis McLeod, 1936

Austroilharzia canadensis (McLeod, 1936) [Penner, 1953]

LIFE CYCLE: Unknown; probably similar to that of A. variglandis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya vallisneria

HABITAT: Hepatic portal vein.

DISTRIBUTION: N. America (Canada).

Austroilharzia chapini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of A. variglandis - Stunkard & Hinchliffe, 1952; regarded as distinct species by Chu & Cutress, 1954.

DESCRIPTION: Price, 1929a. Copy: Skrjabin, 1952a.

SYNONYMY:

Microilharzia chapini Price, 1929

Austroilharzia chapini (Price, 1929) [Penner, 1953]

LIFE CYCLE: Unknown; probably similar to that of A. variglandis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya affinis

Mergini - Mergus serrator

HABITAT: Mesenteric veins.

DISTRIBUTION: N. America (USA).

Austroilharzia manitobensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Doubtful. Very similar to A. chapini.

DESCRIPTION: McLeod, 1936.

SYNONYMY:

Microilharzia manitobensis McLeod, 1936

Austroilharzia manitobensis (McLeod, 1936) [Penner, 1953]

LIFE CYCLE: Unknown; probably similar to that of A. variglandis.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya vallisneria

HABITAT: Hepatic portal vein.

DISTRIBUTION: N. America (Canada).

Austroilharzia variglandis

STATUS AS WATERFOWL PARASITE: Accidental, probably normally in Charadriiformes; reported twice in domestic ducks from experimental infections.

DESCRIPTION: Stunkard & Hinchliffe, 1952; Chu & Cutress, 1954.

SYNONYMY:

Cercaria variglandis Miller & Northup, 1926

Microilharzia variglandis (Miller & Northup, 1926) Stunkard & Hinchliffe, 1951

Austroilharzia variglandis (Miller & Northup, 1926) Penner, 1953

Microilharzia chapini Price, 1929 - [Stunkard & Hinchliffe, 1952];
distinct, Chu & Cutress, 1954

Ornithilharzia sp. Chapin, 1924 - [Stunkard & Hinchliffe, 1952]

LIFE CYCLE: Eggs passed in feces, hatch very quickly in water; cercariae develop in marine snails in about 6-8 weeks (up to 16 weeks), after emergence penetrate skin of final host; larvae pass through capillaries to lungs in 3 days, migrate in 9-13 days after infection to mesenteric veins, shed eggs 5-6 days later; eggs break through walls of intestinal villi into lumen. (Chu, 1965; Chu & Cutress, 1954; Stunkard & Hinchliffe, 1951, 1952)

INTERMEDIATE HOSTS: Littorina pintado, Littorina scabra [exper.],
Nassarius obsoletus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

[Aythyini - Aythya affinis - Stunkard & Hinchliffe, 1952, based
on type of A. chapini]

[Mergini - Mergus serrator - Penner, 1953, based on A. chapini]

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Anous stolidus [exper.], Arenaria interpres, Larus argentatus [exper.], Sterna fuscata [exper.]

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Serinus canarius [exper.]

HABITAT: Mesenteric veins, rarely in hepatic veins.

DISTRIBUTION: N. America (USA), Oceania (USA - Hawaii).

Ornithobilharzia pricei

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Wetzel, 1930. Copy: Skrjabin, 1952a.

SYNONYMY:

Ornithobilharzia pricei Wetzel, 1930

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

HABITAT: Branches of portal and mesenteric veins.

DISTRIBUTION: N. America (USA).

Bilharziella indica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.
Produced lesions in liver, kidney, lungs (Lal, 1937).

DESCRIPTION: Lal, 1937. Copy: Lal, 1939b; Skrjabin, 1952a.

SYNONYMY:

Chinhuta indica Lal, 1937

Bilharziella indica (Lal, 1937) Mehra, 1940

LIFE CYCLE: Unknown; probably similar to that of B. polonica.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini. - Anas crecca

HABITAT: Blood vessels, liver, lungs, kidney.

DISTRIBUTION: Asia (India).

Bilharziella lali

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baugh, 1963.

SYNONYMY:

Bilharziella lali Baugh, 1963

LIFE CYCLE: Unknown; probably similar to that of B. polonica.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Renal veins.

DISTRIBUTION: Asia (India).

Bilharziella polonica

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 45 times in wild, 20 times in domestic, and twice in captive waterfowl. Pathology of infection described by Litvishko & Pustovar, 1960; distribution in internal organs tabulated by Litvishko, 1959a.

DESCRIPTION: Price, 1929a; Bykhovskaja-Pavlovskaja, 1954a (fig. only); Bezubik, 1957a; Macko, 1960a; Odening, 1964c. Copy: Skryabin, 1952a; Shevtsov & Zaskind, 1960.

SYNONYMY: Price, 1929a.

Bilharzia polonica Kowalewski, 1895

Schistosoma polonicum (Kowalewski, 1895) Railliet, 1898

Bilharziella polonica (Kowalewski, 1895) Looss, 1899

Ornithobilharzia polonica (Kowalewski, 1895) Tanabe, 1925

LIFE CYCLE: Eggs passed in feces, hatch immediately in fresh water; miracidia infect fresh-water snails; cercariae emerge in 50 days, penetrate skin of final host, mature in abdominal veins. Eggs appear in 82-84 days after infection, break through capillary walls of intestinal villi into lumen of intestine. (Brumpt, 1931; Ginetsinskaja, 1959a; Golikova, 1960b; Litvishko, 1963; Odening, 1962c; Porter, 1938; Szidat, 1929c, 1929d, 1930b, 1930c; Ždárská, 1963; Zdun, 1959)

INTERMEDIATE HOSTS: Bulinus africanus, Planorbarius corneus, Planorbis pfeifferi, Planorbis planorbis, Spiralina vortex, [Lymnaea limosa, Lymnaea stagnalis - erroneous report, Odening, 1965]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Branta ruficollis,

Cygnus columbianus bewickii, Cygnus cygnus, Cygnus olor
Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas querquedula, Anas strepera
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina
Mergini - Bucephala clangula, Clangula hyemalis, Mergus albellus, Mergus merganser
Oxyurini - Oxyura leucocephala
Podicipediformes - Podiceps cristatus, Podiceps grisegena
Ciconiiformes - Ardea cinerea, Ardea purpurea, Ardeola ralloides, Botaurus stellaris, Casmerodius alba, Ciconia ciconia, Ciconia nigra, Egretta garzetta, Nycticorax nycticorax, Flegadis falcinellus, Scopus umbretta
Gruiformes - Fulica atra, Fulica cristata
Charadriiformes - Larus minutus, Philomachus pugnax, Tringa ochropus

HABITAT: Abdominal veins, especially portal veins; blood vessels of liver, intestine, lungs, kidneys.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Tadzhikistan, Kazakhstan, Tuva, Yakutia, India, Primorsk), Africa (S. Africa), N. America (USA - National Zoological Park).

Dendritobilharzia asiaticus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once in domestic duck.

DESCRIPTION: Mehra, 1940. Copy: Skrjabin, 1952a.

SYNONYMY:

Dendritobilharzia asiaticus Mehra, 1940

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas crecca

HABITAT: Branch of anterior mesenteric vein.

DISTRIBUTION: Asia (India).

Dendritobilharzia pulverulenta

STATUS AS WATERFOWL PARASITE: Common; reported 22 times in wild,

once in domestic, and once in captive ducks. Pathology (as D. anatinarum) described by Bump, 1943; Cheatum, 1941; mortality reported by Cheatum, 1941. Mortality due to Dendritobilharzia sp. described by Levine, Clark, & Hanson, 1956a, 1956b.

DESCRIPTION: Braun, 1901d; Cheatum, 1941 (as D. anatinarum); Macko, 1959, 1961b; Belokobylenko, 1963; Oshmarin 1963a. Copy: Price, 1929a; Skrjabin, 1952a.

SYNONYMY:

Bilharziella pulverulenta Braun, 1901

Dendritobilharzia pulverulenta (Braun, 1901) Skrjabin, 1924

Dendritobilharzia odhneri Skrjabin & Zakharow, 1920 - [Price, 1929a]

Dendritobilharzia anatinarum Cheatum, 1941 - [Macko, 1959, 1961b]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas querquedula, Anas rubripes, Anas strepera

Aythiini - [Aythya affinis - Lapage, 1961, erroneous citation],

Aythya ferina, Aythya fuligula, Aythya vallisneria

Cairinini - Aix galericulata

Gruiformes - Fulica atra

HABITAT: Dorsal aorta (D. anatinarum); D. pulverulenta reported (erroneously?) in mesenteric veins, blood vessels of heart, kidney, lungs.

DISTRIBUTION: Europe (England, Poland, Czechoslovakia, Russia), Asia (W. Siberia, Uzbekistan, Tadzhikistan, Kazakhstan, Tuva, Yakutia, Primorsk), Africa (Sudan), N. America (USA).

Gigantobilharzia acotylea

STATUS AS WATERFOWL PARASITE: Rare; normally in lariform birds; reported once in wild duck.

DESCRIPTION: Odhner, 1910; Bykhovskaja-Pavlovskaja, 1954a (fig. only). Copy: Price, 1929a; Skrjabin, 1952a.

SYNONYMY:

Gigantobilharzia acotylea Odhner, 1910

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca

Charadriiformes - Larus argentatus, Larus canus, Larus fuscus, Larus marinus, Larus melanocephalus, Larus minutus, Larus ridibundus,
Sterna hirundo

HABITAT: Intestinal veins.

DISTRIBUTION: Europe (England, Sweden, USSR), Asia (W. Siberia).

Gigantobilharzia adami

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1960.

SYNONYMY:

Gigantobilharzia adami Fain, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus auritus

HABITAT: Mesenteric veins.

DISTRIBUTION: Africa (Ruanda-Urundi).

Gigantobilharzia monocotylea

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Szidat, 1930a; Sulgostowska, 1960b. Copy: Skrzabin, 1952a.

SYNONYMY:

Gigantobilharzia monocotylea Szidat, 1930

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Podicipediformes - Podiceps cristatus

Charadriiformes - Larus fuscus, Larus ridibundus

HABITAT: Intestinal veins.

DISTRIBUTION: Europe (Germany, Sweden, Poland).

Gigantobilharzia nettapi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1960.

SYNONYMY:

Gigantobilharzia nettapi Fain, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus auritus

HABITAT: Mesenteric veins.

DISTRIBUTION: Africa (Ruanda-Urundi).

Gigantobilharzia plectropteri

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1960.

SYNONYMY:

Gigantobilharzia plectropteri Fain, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Plectropterus gambensis

HABITAT: Portal veins.

DISTRIBUTION: Africa (Ruanda-Urundi).

Gigantobilharzia suebica

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic

duck as result of experimental infection. Natural host unknown.

DESCRIPTION: Dönges, 1964.

SYNONYMY:

Gigantobilharzia suebica Dönges, 1964

LIFE CYCLE: Cercariae develop in fresh-water snail, emerge and penetrate skin of final host; mature in 20 days. (Dönges, 1964)

INTERMEDIATE HOSTS: Anisus leucostomus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Portal vein.

DISTRIBUTION: Europe (Germany).

Trichobilharzia adamsi

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in domestic duck. Natural host unknown.

DESCRIPTION: Edwards & Jansch, 1955.

SYNONYMY:

Trichobilharzia adamsi Edwards & Jansch, 1955

LIFE CYCLE: Cercariae develop in fresh-water snails, penetrate skin of final host; mature in final host in more than 42 days; larval worm passes through liver in development. (Edwards & Jansch, 1955)

INTERMEDIATE HOSTS: Physa c.f. conformis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.] [duckling - Anser domesticus, Edwards & Jansch]

HABITAT: Liver (immature form).

DISTRIBUTION: N. America (Canada).

Trichobilharzia alaskensis

STATUS AS WATERFOWL PARASITE: Accidental; reported twice experiment-

ally in domestic duck. Natural host unknown.

DESCRIPTION: Harkema, 1960.

SYNONYMY:

Trichobilharzia alaskensis Harkema, McKeever, & Becker, 1957, nomen nudum

Trichobilharzia alaskensis Harkema, 1960

LIFE CYCLE: Cercariae develop in fresh-water snails, penetrate skin of final host; young worms in lungs, mature in intestinal veins in 10-17 days after infection. (Harkema, 1955, 1960; Harkema, McKeever, & Becker, 1957)

INTERMEDIATE HOSTS: Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Intestinal veins.

DISTRIBUTION: N. America (USA - Alaska).

Trichobilharzia anatina

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1955b, 1956b (figure).

SYNONYMY:

Trichobilharzia anatina Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas undulata

HABITAT: Portal system.

DISTRIBUTION: Africa (Congo).

Trichobilharzia berghei

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1955b, 1956b (figure), 1959.

SYNONYMY:

Trichobilharzia berghei Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas undulata

HABITAT: Portal system.

DISTRIBUTION: Africa (Congo).

Trichobilharzia brantae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Farr & Blankemeyer, 1956.

SYNONYMY:

Trichobilharzia brantae Farr & Blankemeyer, 1956

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

HABITAT: Mesenteric veins, renal veins.

DISTRIBUTION: N. America (USA).

Trichobilharzia brevis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Basch, 1966.

SYNONYMY:

Trichobilharzia brevis Basch, 1966

LIFE CYCLE: Cercariae develop in fresh-water snail in 17 days; penetrate skin of final host, mature in 11 days. (Basch, 1966)

INTERMEDIATE HOSTS: Lymnaea rubiginosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Hepatic portal vein, liver, venules of cloacal mesentery.

DISTRIBUTION: Asia (Malaysia).

Trichobilharziella burnetti

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Brackett, 1942. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella burnetti Brackett, 1942

Trichobilharzia burnetti (Brackett, 1942) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya collaris

HABITAT: Cloacal vein.

DISTRIBUTION: N. America (USA).

Trichobilharzia cameroni

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in domestic duck. Natural host unknown.

DESCRIPTION: Wu, 1953a.

SYNONYMY:

Trichobilharzia cameroni Wu, 1953

LIFE CYCLE: Eggs passed in feces, hatch very quickly in fresh water; miracidia penetrate fresh-water snail, develop to cercariae in 28-35 days; cercariae penetrate skin of final host; mature in about 12-14 days after infection, pass through lungs and liver during development, mature in intestinal veins; eggs pass through capillary walls of intestinal villi into lumen; adults survive at least 4 months in final host. (Wu, 1953a)

INTERMEDIATE HOSTS: Physa gyrina

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Serinus canarius [exper.]

HABITAT: Veins in wall of small intestine.

DISTRIBUTION: N. America (Canada).

Trichobilharzia duboisi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1959.

SYNONYMY:

Trichobilharzia duboisi Fain, 1959

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus auritus

HABITAT: Veins of nasal fossae.

DISTRIBUTION: Africa (Ruanda-Urundi).

Trichobilharzia elvae

STATUS AS WATERFOWL PARASITE: Rare or accidental; reported 3 times from domestic ducks as result of experimental infections. Pathology and mortality from experimental infections described by McMullen & Beaver, 1945; Macy, Moore & Price, 1955.

STATUS AS SPECIES: Synonym of T. ocellata - McMullen & Beaver, 1945; maintained as distinct species by Harkema, 1960, and synonymy questioned by others.

DESCRIPTION: McMullen & Beaver, 1945. Copy: Macy, Moore, & Price, 1955.

SYNONYMY:

Cercaria elvae Miller, 1923

Trichobilharzia elvae (Miller, 1923) Ameer, Van der Woude, & Cort,
1953

LIFE CYCLE: Eggs released in mesenteric veins, pass through intestinal

walls to lumen, pass out with feces, hatch immediately on exposure to fresh water; miracidia enter fresh-water snails, develop into cercariae; cercariae penetrate skin of final host; young worms reach lungs within 24 hours, remain at least 5 days; mature in veins of intestine 13 days after infection. (Hunter, et al, 1949; McMullen & Beaver, 1945; Macy & Moore, 1953; Macy, Moore, & Price, 1955; Schell, 1959)

INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Passeriformes - Serinus canarius [exper.]

HABITAT: Small venules of intestinal wall.

DISTRIBUTION: N. America (USA).

Trichobilharzia filliformis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild swans.

DESCRIPTION: Szidat, 1938. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella filiformis Szidat, 1938

Trichobilharzia filiformis (Szidat, 1938) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus bewickii, Cygnus olor

HABITAT: Intestinal veins of large intestine.

DISTRIBUTION: Europe (Netherlands, USSR - Kaliningrad), Asia (Yakutia).

Trichobilharzia horiconensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Brackett, 1942. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella horiconensis Brackett, 1942

Trichobilharzia horiconensis (Brackett, 1942) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya americana

HABITAT: Cloacal vein.

DISTRIBUTION: N. America (USA).

Trichobilharzia indica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baugh, 1963.

SYNONYMY:

Trichobilharzia indica Baugh, 1963

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Renal and hepatic veins.

DISTRIBUTION: Asia (India).

Trichobilharzia kegonsensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Brackett, 1942. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella kegonsensis Brackett, 1942

Trichobilharzia kegonsensis (Brackett, 1942) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya vallisneria

HABITAT: Cloacal vein.

DISTRIBUTION: N. America (USA).

Trichobilharzia kowalewskii

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild waterfowl.

DESCRIPTION: Ejsmont, 1929a, 1929b; Bykhovskaja-Pavlovskaja & Ryzhikov, 1958. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella kowalewskii Ejsmont, 1929

Trichobilharzia kowalewskii (Ejsmont, 1929) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus bewickii

Anatini - Anas platyrhynchos, Anas clypeata, Anas crecca, Anas falcata, Anas formosa, Anas penelope, Anas querquedula

Aythyini - Aythya fuligula

Mergini - Bucephala clangula

HABITAT: Intestinal veins.

DISTRIBUTION: Europe (Poland, USSR - Kaliningrad), Asia (Tadzhikistan, Yakutia, Kamchatka).

Trichobilharzia nasicola

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fain, 1955b, 1956b.

SYNONYMY:

Trichobilharzia nasicola Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas undulata

HABITAT: Veins of nasal mucosa and submucosa.

DISTRIBUTION: Africa (Congo).

Trichobilharzia ocellata

STATUS AS WATERFOWL PARASITE: Frequent; reported 9 times in wild ducks, 6 times (4 experimentally) in domestic ducks.

STATUS AS SPECIES: Cercaria ocellata LaValette probably a collective species - Emmel, 1947; Cort, 1950. Adult yet unknown - Odening, 1965.

DESCRIPTION: Ryzhikov, 1956a; Bykhovskaja-Favlovskaja & Ryzhikov, 1958. Copy: Price, 1929a (as T. kossarewi); Skrjabin, 1952a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Cercaria ocellata La Valette, 1855

Trichobilharzia ocellata (La Valette, 1855) Brumpt, 1931

Trichobilharzia kossarewi Skrjabin & Zacharow, 1920 - [Brumpt, 1931]

Trichobilharzia elvae (Miller, 1923) Ameel, Van der Woude, & Cort, 1953 - [McMullen & Beaver, 1945]; distinct, Macy & Moore, 1950; Harkema, 1960

LIFE CYCLE: Eggs passed in feces, hatch very quickly in fresh water; miracidia enter fresh-water snails; cercariae develop, after emergence penetrate skin of final host into capillaries, mature 8-21 days after infection of final host, young worms in lungs about 2-9 days, adults in veins of liver and intestine; eggs in intestinal wall in 9-56 days, pass through walls of capillaries of intestinal villi into lumen, in feces after 13-40 days, continue at low level to 146 days. (Bourns, Rau, & Ellis, 1967; Brumpt, 1931; Chikami, 1961; Ginetsinskaja, 1959a; Kisielienė, 1966; Mathias, 1930b; Ždárská, 1963)

INTERMEDIATE HOSTS: Lymnaea japonica, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Planorbis corneus, Planorbis planorbis, Planorbis rotundatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, [Anas erythrorhyncha - Lapage, 1961, error], Anas falcata, Anas formosa, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes [exper.], Anas strepera

Aythiini - Aythya fuligula, Netta rufina

Charadriiformes - Sterna hirundo

HABITAT: Small intestinal veins.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kirgizia, Tuva, Yakutia, Amur, Japan), N. America (Canada).

Trichobilharzia oregonensis

STATUS AS WATERFOWL PARASITE: Accidental; reported twice experimentally in domestic waterfowl. Natural host unknown.

DESCRIPTION: Macy, Moore, & Price, 1955.

SYNONYMY:

Cercaria oregonensis Macfarlane & Macy, 1946

Trichobilharzia oregonensis (Macfarlane & Macy, 1946) Macy & Moore, 1953

LIFE CYCLE: Eggs passed in feces; miracidia penetrate fresh-water snail, cercariae develop in 23 days; cercariae penetrate skin of final host; mature in 13 days after infection of final host, with passage through lungs and liver during development. (Macy & Moore, 1953; Macy, Moore, & Price, 1955)

INTERMEDIATE HOSTS: Physa ampullacea

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Portal veins, veins of intestinal and cecal walls.

DISTRIBUTION: N. America (USA).

Trichobilharzia physellae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks, 4 times (3 times experimentally) in domestic duck.

DESCRIPTION: McLeod, 1937 (as P. querquedulae); McLeod & Little, 1942; McMullen & Beaver, 1942. Copy: Skrjabin, 1952a.

SYNONYMY: McMullen & Beaver, 1945.

Cercaria physellae Talbot, 1936

Trichobilharzia physellae (Talbot, 1936) McMullen & Beaver, 1945

Pseudobilharziella querquedulae McLeod, 1937

LIFE CYCLE: Eggs passed in feces, hatch immediately on exposure to fresh water; miracidia penetrate fresh-water snails, cercariae emerge in 34 days, continue to emerge for 3 months, penetrate skin of final host. (Hunter, et al., 1949; McLeod & Little, 1942; McMullen & Beaver, 1942, 1945; Macy, Moore, & Price, 1955; Schell, 1959; Tanaka, 1960b, 1960c)

INTERMEDIATE HOSTS: Lymnaea japonica, Physa gyrina, Physa parkeri, Physella magnalacustris, Physella propinqua

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas discors, [Anas erythrorhyncha - Lepage, 1961, error], Anas poecilorhyncha

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Serinus canarius [exper.]

HABITAT: Portal and intestinal veins; males in mesenteric veins, females in minute veins under serosa and in submucosa of intestine - McLeod & Little, 1942.

DISTRIBUTION: Asia (Japan), N. America (USA, Canada).

Trichobilharzia rodhaini

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck. Originally described from heron.

DESCRIPTION: Fain, 1955, 1956b (figure), 1959.

SYNONYMY:

Trichobilharzia rodhaini Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Ciconiiformes - Hagedash hagedash

HABITAT: Small veins of nasal cavities.

DISTRIBUTION: Asia (India), Africa (Congo).

Trichobilharzia schoutedeni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Fain, 1955b, 1956b (figure).

SYNONYMY:

Trichobilharzia schoutedeni Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Thalassornis leuconotus

HABITAT: Liver, mesenteric veins.

DISTRIBUTION: Africa (Congo).

Trichobilharzia spinulata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Fain, 1955b, 1956b (figure).

SYNONYMY:

Trichobilharzia spinulata Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Alopochen aegyptiacus

Cairinini - Plectropterus gambensis

HABITAT: Small veins in nasal cavities.

DISTRIBUTION: Africa (Congo).

Trichobilharzia stagnicolae

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in domestic duck. Natural hosts unknown.

DESCRIPTION: McMullen & Beaver, 1945. Copy: Skrjabin, 1952a.

SYNONYMY:

Cercaria stagnicolae Talbot, 1936

Trichobilharzia stagnicolae (Talbot, 1936) McMullen & Beaver, 1945

LIFE CYCLE: Cercariae develop in fresh-water snails, penetrate final

host through skin; mature in less than 6 weeks after infection of final host, pass through lungs and liver during development. (McMullen & Beaver, 1942, 1945)

INTERMEDIATE HOSTS: Lymnaea emarginata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper., did not mature.]

Charadriiformes - Larus argentatus [exper., did not mature.]

Passeriformes - Serinus canarius [exper.]

HABITAT: Small veins of intestine.

DISTRIBUTION: N. America (USA).

Trichobilharzia szidati

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Neuhaus, 1952.

SYNONYMY:

Cercaria parocellata Szidat, 1942, not Johnston & Simpson, 1939

Trichobilharzia szidati Neuhaus, 1952

LIFE CYCLE: Eggs passed in feces, hatch in 5-10 minutes in fresh water; miracidia penetrate fresh-water snails; cercariae develop in 80 days, penetrate final host through skin; mature in final host in 10-12 days after infection, survive less than 3 months in final host. (van den Broek, 1965; Neuhaus, 1952; Odening, 1965)

INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Aythini - Aythya ferina

HABITAT: Probably intestinal veins.

DISTRIBUTION: Europe (Germany, Netherlands).

Trichobilharzia waubensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Brackett, 1942. Copy: Skrjabin, 1952a.

SYNONYMY:

Pseudobilharziella waubesensis Brackett, 1942

Trichobilharzia waubesensis (Brackett, 1942) McMullen & Beaver, 1945

LIFE CYCLE: Unknown; probably similar to that of T. ocellata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas americana

Aythini - Aythya collaris

HABITAT: Intestinal and cloacal veins.

DISTRIBUTION: N. America (USA).

Trichobilharzia yokogawai

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild ducks, twice in domestic ducks.

DESCRIPTION: Oiso, 1927. Copy: Price, 1929a; Skrjabin, 1952a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Bilharziella yokogawai Oiso, 1927

Pseudobilharziella yokogawai (Oiso, 1927) Gower, 1938

Trichobilharzia yokogawai (Oiso, 1927) McMullen & Beaver, 1945

LIFE CYCLE: Cercariae develop in fresh-water snails. (Oiso, 1927; Morishita, 1929)

INTERMEDIATE HOSTS: Lymnaea pervia, Lymnaea radix

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca

HABITAT: Portal and intestinal veins.

DISTRIBUTION: Asia (Iraq, China, Taiwan).

Cercaria longicauda

STATUS AS WATERFOWL PARASITE: Accidental; reported once as experi-

mental infection in duck. Natural host unknown.

DESCRIPTION:

SYNONYMY:

Cercaria longicauda Macfarlane, 1949

LIFE CYCLE: Cercariae develop in fresh-water snails; infected duck experimentally, eggs in feces in 7 weeks. Adult not found. (Macfarlane, 1949)

INTERMEDIATE HOSTS: Lymnaea alfredi, Myxas ampulla, Myxas arguta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya novae-seelandiae

HABITAT: Probably in intestinal or hepatic portal veins.

DISTRIBUTION: Australia.

Cercaria mieensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION:

SYNONYMY:

Cercaria mieensis Ishida, 1960

LIFE CYCLE: Miracidia infect fresh-water snails; cercariae develop in 72-84 days, penetrate skin of final host; mature probably in intestinal veins, eggs pass through capillaries of intestinal villi into lumen of intestine. (Ishida, 1960a, 1960b)

INTERMEDIATE HOSTS: Lymnaea japonica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Probably in intestinal veins.

DISTRIBUTION: Asia (Japan).

Cyclocoelum brasilianum

STATUS AS WATERFOWL PARASITE: Rare; normally in charadriiform birds;

reported twice in wild ducks.

STATUS AS SPECIES: Synonym of Haematotrephus lanceolatum - Macko & Feige, 1960.

DESCRIPTION: Harrah, 1922 (as C. halli). Copy: Bashkirova, 1950 (as C. halli); Kurashvili, 1957; Dubois, 1959.

SYNONYMY: Bykhovskaja-Favlovskaja, 1962.

Cyclocoelum brasilianum Stossich, 1902

Corpopyrum brasilianum (Stossich, 1902) Witenberg, 1923

Harrahium brasilianum (Stossich, 1902) Dollfus, 1948

Haematotrephus brasilianum (Stossich, 1902) Bashkirova, 1950

Cyclocoelum (Haematotrephus) brasilianum Stossich, 1902 of Dubois, 1959

Cyclocoelum halli Harrah, 1922

Harrahium halli (Harrah, 1922) Witenberg, 1926

Cyclocoelum (Cyclocoelum) halli Harrah, 1922 of Bashkirova, 1950

Haematotrephus phaneropsolus Stossich, 1902 - [Bashkirova, 1950]; distinct, Dubois, 1959

Cyclocoelum kossacki Witenberg, 1923 - distinct, Joyeux & Baer, 1927; Dubois, 1959

Cyclocoelum longisacculatum Yamaguti, 1933

Cyclocoelum nebularium Khan, 1935

Cyclocoelum nittanyense Zelif, 1946 - [Dubois, 1959]

LIFE CYCLE: Unknown; probably similar to that of C. mutabile.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula, Anas strepera

Charadriiformes - Arenaria interpres, Capella gallinago, Erolia alpina, Erolia ferruginea, Erolia melanotos, Erolia minuta, Erolia ruficollis, Erolia subminuta, Erolia temminckii, Philomachus pugnax, Tringa erythropus, Tringa flavipes, Tringa melanoleucas, Tringa nebularia, Tringa solitaria, Tringa totanus

HABITAT: Air sacs, infraorbital sinus.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia, Uzbekistan, India, Primorsk, Japan, Sakhalin), N. America (USA), S. America (Venezuela, Brazil).

Cyclocoelum mutabile

STATUS AS WATERFOWL PARASITE: Infrequent; typically in gruiform birds; reported 5 times in wild waterfowl.

STATUS AS SPECIES: Synonymy disputed; C. obscurum, with many syn-

onyms, sometimes included in C. mutabile.

DESCRIPTION: Yamaguti, 1939; Bykhovskaja-Pavlovskaja, 1954a (as C. microstomum); Herber, 1961; Macko, 1965. Copy: Bashkirova, 1950; Kasimov, 1956.

SYNONYMY: Dubois, 1959; Macko, 1965.

Monostoma mutabile Zeder, 1800

Cyclocoelum mutabile (Zeder, 1800) Stossich, 1902

Cyclocoelum (Antepharyngeum) mutabile (Zeder, 1800) of Witenberg, 1923

Cyclocoelum (Cyclocoelum) mutabile (Zeder, 1800) of Witenberg, 1928

Monostoma microstomum Creplin, 1829

Cyclocoelum microstomum (Creplin, 1829) Kossack, 1911

Cyclocoelum (Antepharyngeum) microstomum (Creplin, 1829) of Witenberg, 1923

Cyclocoelum (Cyclocoelum) microstomum (Creplin, 1829) of Bashkirova, 1950

Cyclocoelum pseudomicrostomum Harrah, 1922

Cyclocoelum (Antepharyngeum) pseudomicrostomum Harrah, 1922 of Witenberg, 1923

Cyclocoelum (Cyclocoelum) pseudomicrostomum Harrah, 1922 of Bashkirova, 1950

Cyclocoelum (Antepharyngeum) goliath Witenberg, 1923

Cyclocoelum paradoxum del Pont, 1926

Cyclocoelum (Cyclocoelum) paradoxum del Pont, 1926 of Bashkirova, 1950

Cyclocoelum japonicum Kurisu, 1932

Cyclocoelum (Antepharyngeum) microcotyleum Noble, 1933

Cyclocoelum lahillei Dollfus, 1948

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snails; metacercariae encyst in same individual; mature in final host after ingestion. (Ginetsinskaja, 1949c, 1954; Zdar'ska, 1963)

INTERMEDIATE HOSTS: Lymnaea ovata, Lymnaea peregra, Lymnaea stagnalis, Planorbarius corneus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Anatini - Anas platyrhynchos, Anas crecca, Anas strepera

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra

Galliformes - Gallus gallus (dom.)

Gruiformes - Crex crex, Fulica americana, Fulica atra, Gallinula chloropus, Grus grus, Porphyryula martinica, Porzana carolina,
Porzana porzana, Rallus aquaticus

Charadriiformes - Capella gallinago, Capella media, Tringa nebularia,
Vanellus vanellus

HABITAT: Air sacs, nasal cavity.

DISTRIBUTION: Europe, Asia (Azerbaidzhan, Armenia, Uzbekistan, Kir-

gizia, Tadzhikistan, W. Siberia, Kazakhstan, China, Japan) N. America (USA, Mexico, El Salvador).

Cyclocoelum obscurum

STATUS AS WATERFOWL PARASITE: Probably accidental or erroneous, typically in charadriiform birds; reported once in captive goose.

STATUS AS SPECIES: Synonym of C. mutabile - Bykovskaja-Pavlovskaja, 1949, but C. mutabile of Bykhovskaja-Pavlovskaja is C. obscurum, according to Macko, 1965.

DESCRIPTION: Harrah, 1922; Macko, 1965. Copy: Bashkirova, 1950.

SYNONYMY: Joyeux & Baer, 1927; Macko, 1965.

Monostoma obscurum Leidy, 1887

Cyclocoelum obscurum (Leidy, 1887) Harrah, 1922

Cyclocoelum (Postpharyngeum) obscurum (Leidy, 1887) of Witenberg, 1928

Cyclocoelum (Cyclocoelum) obscurum (Leidy, 1887) of Bashkirova, 1950

Cyclocoelum ovopunctatum Stossich, 1902

Cyclocoelum exile Stossich, 1902

Cyclocoelum fasciatum (Stossich, 1902) Kossack, 1911

Cyclocoelum problematicum Stossich, 1902

Cyclocoelum vicarium (Arnsdorff, 1908) Kossack, 1911

Cyclocoelum orientale Skrjabin, 1913

Cyclocoelum halcyonis MacCallum, 1921 - [Witenberg, 1928; Tubangui, 1933]

Cyclocoelum elongatum Harrah, 1921 - [Bykhovskaja-Pavlovskaja, 1949]; distinct, Dubois, 1959

Cyclocoelum obliquum Harrah, 1921

Cyclocoelum cuneatum Harrah, 1922

Cyclocoelum leidy Harrah, 1922

Cyclocoelum macrorchis Harrah, 1922

Cyclocoelum toratsugamushi Morishita, 1924

Cyclocoelum phasidi Stunkard, 1929 - [Bykhovskaja-Pavlovskaja, 1949]

Cyclocoelum orientale var. eurhinus Tubangui, 1932 - [Tubangui, 1933]

Cyclocoelum makii Yamaguti, 1933

Cyclocoelum allahabadi Khan, 1935

Cyclocoelum capellum Khan, 1935

Cyclocoelum erythropis Khan, 1935

Cyclocoelum indicum Khan, 1935

Cyclocoelum lobatum Khan, 1935

Cyclocoelum mehrii Khan, 1935

Cyclocoelum straightum Khan, 1935

Cyclocoelum sharadi Bhalerao, 1935 - [Bykhovskaja-Pavlovskaja, 1949]; synonym of C. elongatum, Dubois, 1959

Cyclocoelum turusigi Yamaguti, 1939

Cyclocoelum dumetellae Zelif, 1943 - [Bykhovskaja-Pavlovskaja, 1949]; synonym of C. elongatum, Dubois, 1959

Cyclocoelum bivesiculatum Prudhoe, 1944

Cyclocoelum mutabile (Zeder) of Bykhovskaiâ-Pavlovskaiâ, 1949

LIFE CYCLE: Unknown; probably similar to that of C. mutabile.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Gruiformes - Fulica atra

Charadriiformes - Capella gallinago, Catantrophorus semipalmata,
Erolia alpina, Erolia maritima, Limosa limosa, Numenius arquata,
Tringa erythropus, Tringa glareola, Tringa nebularia, Tringa och-
ropus, Tringa stagnatilis, Tringa totanus, Vanellus vanellus

Coraciiformes - Halcyon coromanda

Passeriformes - Turdus merula, Turdus philomelos, Zoothera dauma

HABITAT: Air sacs, infraorbital sinus, trachea.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kazakhstan, India, Ceylon, Thailand, Vietnam, Philippine Is., Japan), Africa (Guinea), N. America (USA).

Cyclocoelum odeningi

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild and twice in captive ducks.

DESCRIPTION: Jaiswal, 1957 (as C. capellum); Odening, 1962a (as C. capellum); 1962b (as Cyclocoelum sp.). Copy: Dubois, 1965.

SYNONYMY:

Cyclocoelum capellum Khan of Jaiswal, 1957 and Odening, 1962

Cyclocoelum sp. Odening, 1964

Cyclocoelum (Cyclocoelum) odeningi Dubois, 1965

LIFE CYCLE: Unknown; probably similar to that of C. mutabile.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus coromandelianus

HABITAT: Air sacs?

DISTRIBUTION: Asia (India).

Cyclocoelum vanelli

STATUS AS WATERFOWL PARASITE: Rare; normally in Charadriiformes;

reported once in wild duck.

DESCRIPTION: Yamaguti, 1933 (as Uvitellina tageri); Dollfus, 1948; Bykhovskaja-Pavlovskaja, 1954a (as Uvitellina adelpha); Macko, 1959; Dubois, 1965.

SYNONYMY: Dubois, 1965; Doss, 1964-1966.

Monostoma vanelli Rudolphi, 1918

Haematotrephus (Uvitellina) vanelli (Rudolphi, 1819) Dollfus, 1948

Uvitellina vanelli (Rudolphi, 1819) Macko, 1959

Cyclocoelum (Haematotrephus) vanelli (Rudolphi, 1819) Dubois, 1965

Monostoma lanceolatum Wedl, 1858

Cyclocoelum lanceolatum (Wedl, 1858) Joyeux & Baer, 1927

Cyclocoelum (Haematotrephus) lanceolatum (Wedl, 1858) of Dubois, 1959

Haematotrephus similis Stossich, 1902

Cyclocoelum similis (Stossich, 1902) Joyeux & Baer, 1927

?Haematotrephus consimilis Nicoll, 1914

Haematotrephus adelphus Johnston, 1916

Uvitellina adelphus (Johnston, 1916) Bykhovskaja-Pavlovskaja, 1954

Uvitellina pseudocotylea Witenberg, 1923

Cyclocoelum pseudocotyleum (Witenberg, 1923) Joyeux & Baer, 1927

Haematotrephus (Uvitellina) pseudocotylea (Witenberg, 1923) Dollfus,

Uvitellina magnimbria Witenberg, 1923 1948

Haematotrephus magnimbria (Witenberg, 1923) Dollfus, 1948

Cyclocoelum (Uvitellina) dollfusi Shen Tseng, 1930

Uvitellina kerii Yamaguti, 1933

Haematotrephus (Uvitellina) kerii (Yamaguti, 1933) Dollfus, 1948

Uvitellina tageri Yamaguti, 1933

Haematotrephus (Uvitellina) tageri (Yamaguti, 1933) Dollfus, 1948

Uvitellina macroisophaga Hannum & Wilson, 1934

Haematotrephus (Uvitellina) macroisophaga (Hannum & Wilson, 1934)
Dollfus, 1948

Cyclocoelum obscurum (Leidy) of Houdemer, 1938

Cyclocoelum titiri Chatterji, 1958

Haematotrephus (Haematotrephus) lobivanelli Gupta, 1958

Haematotrephus (Uvitellina) kaniharensis Gupta, 1958

Uvitellina indica Siddiqi & Jairajpuri, 1962

LIFE CYCLE: Unknown; probably similar to that of C. mutabile.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

Charadriiformes - Charadrius dubius, Charadrius hiaticula, Charadrius placidus, Charadrius vociferus, Himantopus himantopus, Himantopus leucocephalus, Hoplopterus ventralis, Lobivanellus indicus, Lobivanellus lobatus, Microsarcops cinereus, Philomachus pugnax, Tringa nebularia, Vanellus vanellus

HABITAT: Air sacs.

DISTRIBUTION: Europe, Asia (Kazakhstan, India, China, Japan), Africa

(Egypt), N. America (USA), Australia.

Hyptiasmus arcuatus

STATUS AS WATERFOWL PARASITE: Common; reported 21 times in wild and 9 times in domestic waterfowl.

DESCRIPTION: Kossack, 1911b; Yamaguti, 1934; Buša, 1960; Herber, 1961.
Copy: Bashkirova, 1950.

SYNONYMY: Dawes, 1956.

Monostoma arcuatum Brandes, 1892

Cyclocoelum arcuatum (Brandes, 1892) Stossich, 1902

Hyptiasmus arcuatus (Brandes, 1892) Kossack, 1911

Hyptiasmus (Hyptiasmus) arcuatus (Brandes, 1892) of Dollfus, 1948

Cyclocoelum (Hyptiasmus) arcuatum (Brandes, 1892) of Dubois, 1959

Hyptiasmus laevigatus Kossack, 1911 - distinct, Bashkirova, 1950

Hyptiasmus tumidus Kossack, 1911

Hyptiasmus oculus Kossack, 1911 - distinct, Dubois, 1959

Transcoelum oculum (Kossack, 1911) Witenberg, 1926

Hyptiasmus magnus Johnston, 1917 - distinct, Dubois, 1959; synonym of
Prohyptiasmus robustus, Bashkirova, 1950

Stossichium magnum (Johnston, 1917) Witenberg, 1928

Prohyptiasmus magnus (Johnston, 1917) Dubinina, 1948

Hyptiasmus coelonodus Witenberg, 1923

Transcoelum sigillum Witenberg, 1926 - synonym of H. oculus, Dubois,
1959

Hyptiasmus sigillum (Witenberg, 1926) Sprehn, 1932

Hyptiasmus magniproles Witenberg, 1928 - [Bykhovskaja-Pavlovskaja,
1962]; distinct, Dubois, 1959

Hyptiasmus theodori Witenberg, 1928 - [Bykhovskaja-Pavlovskaja, 1962;
Dubois, 1959]

Ophthalmophagus theodori (Witenberg, 1928) Gower, 1939

LIFE CYCLE: Unknown; probably similar to that of H. oculus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Cygnus atratus

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas clypeata,

Anas crecca, Anas penelope

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Melanitta fusca deglandi, Melanitta nigra, Mergus albellus

Gruiformes - Fulica atra, Porzana pusilla

Charadriiformes - Himantopus himantopus

HABITAT: Infraorbital sinus, suborbital sinus, nasal cavity, trachea.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kazakhstan, Israel, Tuva, India, Primorsk, Kamchatka, Japan), N. America (El Salvador).

Hyptiasmus oculeus

STATUS AS WATERFOWL PARASITE: Rare; typically in Rallidae; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of H. arcuatus - Joyeux & Baer, 1927; Dawes, 1956.

DESCRIPTION: Kossack, 1911; Bykhovskaja-Pavlovskaja, 1954a. Copy: Bashkirova, 1950.

SYNONYMY: Bykhovskaja-Pavlovskaja, 1962.

Hyptiasmus oculeus Kossack, 1911

Transcoelum oculeum (Kossack, 1911) Witenberg, 1923

Transcoelum sigillum Witenberg, 1923

LIFE CYCLE: Eggs probably enter water from nostrils, hatch within 5 minutes after contact with water; miracidia contain redia, penetrate fresh-water pulmonate snail; cercariae present in about 25 days, encyst in snail without emerging; mature in final host after ingestion. (Ginetsinskaja & Saakova, 1952; Palm, 1963)

INTERMEDIATE HOSTS: Lymnaea ovata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula, Mergus serrator

Gruiformes - Fulica atra, Porzana pusilla

Charadriiformes - Limosa limosa, Vanellus vanellus

HABITAT: Nasal cavity.

DISTRIBUTION: Europe, Asia (W. Siberia, Israel, Tadzhikistan, Primorsk).

Hyptiasmus vigisi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Savinov, 1960.

SYNONYMY:

Hyptiasmus vigisi Savinov, 1960

LIFE CYCLE: Unknown; probably similar to that of H. oculus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Nasal cavity.

DISTRIBUTION: Europe (USSR).

Hyptiasmus witenbergi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Tret'iakova, 1940 (thesis). Copy: Bashkirova, 1950.

SYNONYMY:

Hyptiasmus witenbergi Tret'iakova in Bashkirova, 1950

LIFE CYCLE: Unknown; probably similar to that of H. oculus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas strepera

Mergini - Mergus albellus

HABITAT: Nasal cavity.

DISTRIBUTION: Europe (USSR).

Prohyptiasmus robustus

STATUS AS WATERFOWL PARASITE: Frequent; reported 12 times in wild waterfowl, once in domestic duck.

STATUS AS PARASITE: Prohyptiasmus included in genus Cyclocoelum - Baer & Joyeux, 1961.

DESCRIPTION: Bykhovskaiâ-Pavlovskaiâ, 1954a (fig. only). Copy: Bashkirova, 1950.

SYNONYMY:

Cyclocoelum robustum Stossich, 1902

Monostomum robustum (Stossich, 1902) Lühe, 1909

Hyptiasmus robustus (Stossich, 1902) Kossack, 1911

Prohyptiasmus robustus (Stossich, 1902) Witenberg, 1923
Harrarium robustum (Stossich, 1902) Witenberg, 1928
Ophthalmophagus robustus (Stossich, 1902) Gower, 1938
Cyclocoelum (Hyptiasmus) robustum Stossich, 1902 of Dubois, 1959
Hyptiasmus magnus Johnston, 1917 - [Bashkirova, 1950]; synonym of H. arcuatus, Joyeux & Baer, 1927, & Dawes, 1956; distinct, Dollfus, 1948, & Dubois, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser fabalis, Cygnus atratus

Anatini - Anas platyrhynchos (dom.), Anas strepera

Aythiini - Aythya fuligula

HABITAT: Nasal cavity, air sacs, pharynx.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Primorsk), Australia.

Ophthalmophagus magalhaesi

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild and once in domestic ducks.

DESCRIPTION: Travassos, 1921a, 1925; Dubois, 1930 (as O. plectropteri). Copy: Bashkirova, 1950.

SYNONYMY:

Ophthalmophagus magalhaesi Travassos, 1921

Spaniometra magalhaesi (Travassos, 1921) Joyeux & Baer, 1927

Ophthalmophagus (Ophthalmophagus) maga'haesi Travassos, 1921 of Dollfus, 1948

Ophthalmophagus (Geowitenbergia) magalhaesi Travassos, 1921

Ophthalmophagus plectropteri Dubois, 1930 - synonym or species inquirenda, Dubois, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata (dom.), Plectropterus gambensis

HABITAT: Nasal sinus.

DISTRIBUTION: Africa (S. Africa), S. America (Brazil).

Ophthalmophagus nasicola

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of O. singularis - Dubois, 1959.

DESCRIPTION: Witenberg, 1923; Yamaguti, 1939. Copy: Bashkirova, 1950.

SYNONYMY: Bykhovskaiâ-Pavlovskaiâ, 1962.

Ophthalmophagus nasicola Witenberg, 1923

Spaniometra nasicola (Witenberg, 1923) Joyeux & Baer, 1927

Hyptiasmus nasicola (Witenberg, 1923) Sprehn, 1932

Ophthalmophagus (Geowitenbergia) nasicola Witenberg, 1926 of Dollfus, 1948

Ophthalmophagus massinoi Witenberg, 1926 - synonym of O. singularis, Joyeux & Baer, 1927

Contracoelum skrjabineanum Witenberg, 1926

Spaniometra skrjabineanum (Witenberg, 1926) Joyeux & Baer, 1927

Ophthalmophagus skrjabineanum (Witenberg, 1926) Stunkard, 1934

Ophthalmophagus charadrii Yamaguti, 1934

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Ciconiiformes - Plegadis falcinellus

Gruiformes - Rallus aquaticus

Charadriiformes - Charadrius dubius

HABITAT: Nasal cavity, infraorbital cavity.

DISTRIBUTION: Europe (USSR), Asia (Uzbekistan, Tadzhikistan, Japan).

Ophthalmophagus singularis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Copy: Bashkirova, 1950.

SYNONYMY:

Ophthalmophagus singularis Stossich, 1902

Spaniometra singularis (Stossich, 1902) Joyeux & Baer, 1927

Hyptiasmus singularis (Stossich, 1902) Sprehn, 1932

Ophthalmophagus (Ophthalmophagus) singularis Stossich, 1902; Dollfus, 1948

Ophthalmophagus nasicola Witenberg, 1923 - [Dubois, 1959]

Ophthalmophagus massinoi Witenberg, 1926 - [Dubois, 1930; Joyeux & Baer, 1927]

Hyptiasmus massinoi (Witenberg, 1926) Sprehn, 1932
Ophthalmophagus charadrii Yamaguti, 1934 - [Dubois, 1959]; Synonym of
O. nasicola, Bykhovskaia-Pavlovskaja, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "wild duck"

Anatini - Anas platyrhynchos

Gruiformes - Porzana porzana, Porzana pusilla, Rallus aquaticus, Rallus limicola

Charadriiformes - Charadrius dubius

HABITAT: Body cavity, nasal sinus, orbits.

DISTRIBUTION: Europe (USSR), Asia (Kazakhstan, Japan), N. America (USA).

Neivaia cymbium

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Travassos, 1921a, 1925 (as Typhlocoelum neivai). Copy: Bashkirova, 1950; Dubois, 1959.

SYNONYMY: Dubois, 1959.

Monostomum cymbium Diesing, 1850

Neivaia cymbium (Diesing, 1850) Dubois, 1959

Typhlocoelum neivai Travassos, 1921

Cyclocoelum neivai (Travassos, 1921) Joyeux & Baer, 1927

Neivaia neivai (Travassos, 1921) Travassos, 1929

Cyclocoelum (Cyclocoelum) neivai (Travassos, 1921) of Dollfus, 1948

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "marreco selvageni (Anatides)"

Charadriiformes - Himantopus

HABITAT: Trachea.

DISTRIBUTION: S. America (Brazil).

Typhlocoelum cucumerinum

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 58 times in wild, 12 times in domestic, and

once in captive waterfowl. Commonly in Anatidae other than genus Anas, especially Aythya (Dubois, 1965). Mortality from infection reported by Magalhaes, 1899; Gower, 1938b.

DESCRIPTION: Manter & Williams, 1928 (as T. americanum); Bezubik, 1957a; Macko & Buša, 1960a, 1960b. Copy: Bashkirova, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma cucumerinum Rudolphi, 1809

Monostoma cucumerinum (Rudolphi, 1809) Braun, 1899

Typhlocoelum cucumerinum (Rudolphi, 1809) Stossich, 1902

Typhlocoelum (Typhlocoelum) cucumerinum (Rudolphi, 1809) of Dollfus, 1948

Typhlocoelum cucumerinum cucumerinum (Rudolphi, 1809) of Macko & Buša, 1960

Monostoma flavum Mehlis, 1831

Typhlocoelum flavum (Mehlis, 1831) Stossich, 1892

Monostomum sarcidiornicola Megnin, 1890

Typhlocoelum sarcidiornicola (Megnin, 1890) Stossich, 1902

Typhlultimum sarcidiornicola (Megnin, 1890) Witenberg, 1923

Tracheophilus sarcidiornicola (Megnin, 1890) Skrjabin, 1913

Monostoma cymbium of Monticelli, 1892

Typhlocoelum obovale Neumann, 1909

Typhlocoelum cucumerinum var. obovale (Neumann, 1909) Dollfus, 1948

Typhlocoelum reticulare Johnston, 1913 - distinct, Bashkirova, 1950, and Fotedar, 1965

Typhlocoelum cucumerinum var. reticulare (Johnston, 1913) Dollfus, 1948

Typhlocoelum americanum Manter & Williams, 1928 - [Willey, 1935]

Typhlocoelum cucumerinum americanum (Manter & Williams, 1928) Macko & Buša, 1960

Typhlocoelum gambense Dubois, 1930 - [Bashkirova, 1950]

Typhlophilus shovellus Lal, 1936 - [Dubois, 1959; Bykhovskaja-Pavlovskaja, 1962]

Typhlocoelum shovellus (Lal, 1936) Bashkirova, 1950

LIFE CYCLE: Unknown; probably similar to that of T. sisowi.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Dendrocygnini - Dendrocygna fulva

Anserini - Anser caerulescens, Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas querquedula, Anas rubripes, Anas strepera.

Somateriini - Somateria mollissima

Aythiini - Aythya affinis, Aythya americana, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - [Amazonetta brasiliensis - Lapage, 1961, error], Cair-

ina moschata (dom.), Flectropterus gambensis, Sarkidiornis melanotos

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra, Mergus albellus, Mergus serrator

Podicipediformes - Podiceps cristatus

Gruiformes - Fulica atra, Grus grus

HABITAT: Trachea, bronchi, lungs, nasal cavity, esophagus.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Tadzhikistan, Kirgizia, Kazakhstan, India, Taiwan, Kamchatka), Africa (N. Rhodesia, S. Africa), N. America (USA), Australia.

Typhlocoelum indicum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fotedar, 1965.

SYNONYMY:

Typhlocoelum indicum Fotedar, 1965

LIFE CYCLE: Unknown; probably similar to that of T. sisowi.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Air sacs.

DISTRIBUTION: Asia (India).

Typhlocoelum sisowi

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 59 times in wild, 46 times in domestic, and twice in captive waterfowl. Most commonly in genus Anas (Dubois, 1965). Mortality from infection reported by Potemkina, 1953.

STATUS AS SPECIES: Commonly reported as Typhlocoelum cymbium (Diesing); not Monostomum cymbium Diesing, 1850.

DESCRIPTION: Bezubik, 1957a; Beverley-Burton, 1961. Copy: Bashkirova, 1950; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Haematotrephus cymbius (Diesing) Stossich, 1902

Typhlocoelum cymbium (Diesing) Kossack, 1911, et al.
Tracheophilus cymbium (Diesing) Skrjabin, 1913
Typhlocoelum (Tracheophilus) cymbium (Diesing) of Dollfus, 1948
Typhlocoelum cucumerinum cymbium (Diesing) Macko & Buša, 1960
Tracheophilus sisowi Skrjabin, 1913
Typhlocoelum sisowi (Skrjabin, 1913) Dubois, 1959
Tracheophilus hepaticus (Sugimoto, 1919) - [Bykhovskaja-Pavlovskaja, 1962]; sp. inquir., Dubois, 1959
Typhlocoelum cymbium var. hepaticum (Sugimoto, 1919) Dollfus, 1948
Typhlocoelum hepaticum Sugimoto, 1919
Typhlocoelum cucumerinum var. americanum (Manter & Williams) of Macko & Buša, 1960 - [Dubois, 1965]

LIFE CYCLE: Eggs probably passed in feces, hatch immediately after entering water; miracidia with fully developed redia which penetrate fresh-water pulmonate snails; cercariae develop in snail, encyst in snail without emerging; mature in final host about 6 weeks after ingestion, young worms burrow through intestinal wall and make way to lungs. (Odening, 1965; Stunkard, 1934; Szidat, 1932a, 1932b, 1933a)

INTERMEDIATE HOSTS: Helisoma trivolvis, Lymnaea minuta, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Planorbarius corneus, Planorbis planorbis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser caerulescens, Cygnus olor

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, Anas falcata, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Aythya vallisneria, Netta rufina

Cairinini - Cairina moschata (dom.), Plectropterus gambensis, Sarkidiornis melanotos

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca, Mergus albellus

Podicipediformes - Podilymbus podiceps

Charadriiformes - Capella gallinago, Himantopus himantopus

HABITAT: Trachea, bronchi, oronasal passage, air sacs.

DISTRIBUTION: Cosmopolitan. Europe, Asia, Africa, N. America S. America, Australia.

Typhlocoelum sisowi acirratum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Jain, 1966.

SYNONYMY:

Tracheophilus sisowi var. acirratum Jain, 1966

Typhlocoelum sisowi var. acirratum (Jain, 1966) comb. nov.

LIFE CYCLE: Unknown; probably similar to that of Typhlocoelum sisowi.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

HABITAT: Trachea.

DISTRIBUTION: Asia (India).

Orchipedum tracheicola

STATUS AS WATERFOWL PARASITE: Frequent; reported 16 times in wild waterfowl.

DESCRIPTION: Cheatum, 1938; Bezubik, 1957a; Maksimova, 1962 (fig.); Ryzhikov & Koshkina, 1962; Skarda, 1964. Copy: Skrjabin, 1947a.

SYNONYMY:

Orchipedum tracheicola Braun, 1901

LIFE CYCLE: Unknown.

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas penelope, Anas querquedula

Mergini - Melanitta fusca, Melanitta fusca deglandi

Charadriiformes - Larus ridibundus

HABITAT: Trachea.

DISTRIBUTION: Europe, Asia (Kirgizia, Kazakhstan, Tuva, Yakutia, Kamchatka), N. America (USA, Canada).

Brachylaemus fuscatus

STATUS AS WATERFOWL PARASITE: Rare; normally in passerine birds, occasionally in pigeons and gallinaceous birds; reported twice in wild ducks.

DESCRIPTION: Braun, 1902; Gvozdev, 1958. Copy: Skrjabin, 1948; Kasimov, 1956; Kurashvili, 1957.

SYNONYMY: Dawes, 1956.

Distoma fuscatus Rudolphi, 1819

Harmostomum fuscatus (Rudolphi, 1819) Braun, 1902

Harmostomum (Harmostomum) fuscatus (Rudolphi, 1819) of Witenberg, 1925

Brachylaemus fuscatus (Rudolphi, 1819) Joyeux, Baer, & Timon-David 1932

Brachylaima fuscata (Rudolphi, 1819) of Babero, 1953

Distomum heteroclitum Molin, 1858

Distomum mesostomum of Stossich, 1898 - [Bykhovskaja-Pavlovskaja, 1962]

Harmostomum (Harmostomum) nicolli Witenberg, 1925

Brachylaemus (Brachylaemus) nicolli (Witenberg, 1925) Joyeux, Baer, & Timon-David, 1932

Brachylaima nicolli (Witenberg, 1925) of Adam & Leloup, 1934

Harmostomum inflatocoelum Witenberg, 1925 - [Sinitsin, 1931]

Harmostomum pellucidum Werby, 1928

LIFE CYCLE: Cercariaeum develops in kidney of terrestrial snail; metacercariae in same species; mature in final host 7-10 days after ingestion. (Adam & Leloup, 1934; Joyeux, Baer, & Timon-David, 1932, 1934; Sumenkova, 1962)

FIRST INTERMEDIATE HOSTS: Deroceras reticulatum, Eulota duplocincta, Helicella scitula, Helicopsis arenosa, Helix aspersa, Helix pisana, Oxychilus cellarius

SECOND INTERMEDIATE HOSTS: Eulota duplocincta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca, Mergus albellus

Galliformes - Alectoris graeca, Bonasa umbellus, Canachites canadensis, Coturnix coturnix, Gallus gallus (dom.), Lagopus lagopus, Lagopus leucurus, Lagopus mutus, Pedioecetes phasianellus, Phasianus colchicus, Tetraogallus himalayensis, Tetrastes bonasia

Gruiformes - Crex crex

Charadriiformes - Burhinus oedienemus, Charadrius alexandrinus, Larus argentatus

Columbiformes - Columba livia, Columba livia (dom.), Columba palumbus, Streptopelia orientalis, Streptopelia turtur

Cuculiformes - Cuculus canorus

Passeriformes - Coccothraustes coccothraustes, Corvus cornix, Corvus corone, Corvus frugilegus, Corvus macrorhynchus, Corvus monedula, Cyanopica cyana, Eophona personata, Garrulus glandarius, Passer domesticus, Pica pica, Sturnus vulgaris, Turdus iliacus, Turdus merula, Turdus pallidus, Turdus philomelos, Turdus viscivorus

HABITAT: Small intestine, ceca, esophagus.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kirgizia, Kazakhstan, Yakutia, Primorsk, Sakhalin), Africa (Morocco), N. America (USA, USA - Alaska).

Leucochloridiomorpha constantiae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks, once experimentally in domestic duck.

DESCRIPTION: Gower, 1938b; Allison, 1943; Smogorzhevskaja, 1956.
Copy: Skrjabin, 1948.

SYNONYMY: Allison, 1943.

Cercariaeum constantiae Mueller, 1935

Leucochloridiomorpha constantiae (Mueller, 1935) Allison, 1943

Leucochloridiomorpha macrocotyle Gower, 1938

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water snail; cercariae develop, emerge, and reenter same species of snail; metacercariae develop in uterus of snail in 5 months. Mature in final host in 3 days after ingestion, survive at least 30 days in final host. (Allison, 1940, 1943; Ginetsinskaja, 1959a; Ždárská, 1963, 1964a)

FIRST INTERMEDIATE HOSTS: Campeloma decisum, Viviparus acerosus, Viviparus contectus, Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Campeloma decisum, Viviparus acerosus, Viviparus contectus, Viviparus viviparus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.], Anas querquedula,
Anas rubripes

Charadriiformes - Chlidonias nigra

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Carnivora - Procyon lotor [exper.]

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe (Czechoslovakia, Russia, Ukraine), N. America (USA).

Leucochloridiomorpha lutea

STATUS AS WATERFOWL PARASITE: Accidental; reported once in duck as result of experimental infection. Natural hosts unknown.

DESCRIPTION: Voelker, 1963.

SYNONYMY: Voelker, 1963.

Distoma luteum Baer, 1827

Leucochloridiomorpha lutea (Baer, 1827) Voelker, 1963

Cercariaeum No. 1 Petersen, 1931

Dicranocercaria brachycerca Szidat, 1932 (?)

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae encysted in same species of snail; mature in final host in 5 days after ingestion, survive in final host about 40 days. (Voelker, 1963)

FIRST INTERMEDIATE HOSTS: Viviparus contectus

SECOND INTERMEDIATE HOSTS: Viviparus contectus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe (Germany).

Leucochloridiomorpha papillata

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection. Natural host unknown.

DESCRIPTION: Shoemaker, 1961.

SYNONYMY:

Leucochloridiomorpha papillata Shoemaker, 1961

LIFE CYCLE: Eggs probably hatch after ingestion by fresh-water snail; metacercariae in uterus of fresh-water prosobranch snail; matured in five days after insertion into cloaca of final host (Shoemaker, 1961).

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Campeloma decisum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Bursa of Fabricius.

DISTRIBUTION: N. America (USA).

Leucochloridiomorpha skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Khaziev, 1963.

SYNONYMY:

Leucochloridiomorpha skrjabini Khaziev, 1963

LIFE CYCLE: Unknown; probably similar to that of L. constantiae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe (USSR - Bashkiria).

Leucochloridium cyanocittae

STATUS AS WATERFOWL PARASITE: Rare; normally in charadriiform birds, rarely in Galliformes and other aquatic birds, frequently in passerines; reported twice in wild ducks.

STATUS AS SPECIES: Specific name L. actitis used by Bykhovskaja-Pavlovskaja, 1962, and Ryzhikov, 1963; L. cyanocittae has page priority. Taxonomy of Leucochloridium disputed.

DESCRIPTION: Bykhovskaja-Pavlovskaja, 1954a. Copy: Kasimov, 1956 (as L. pricei and L. variae).

SYNONYMY: Bykhovskaja-Pavlovskaja, 1951, 1962.

Leucochloridium cyanocittae McIntosh, 1932

Leucochloridium actitis McIntosh, 1932

Leucochloridium pricei McIntosh, 1932

Leucochloridium variae McIntosh, 1932 - distinct, Kagan, 1952b

Leucochloridium melospizae McIntosh, 1932 - distinct, Kagan, 1952b

Leucochloridium sime Yamaguti, 1935 - distinct, Kagan, 1952b

Distoma macrostomum Rudolphi of Zeller, 1874 - synonym of L. paradoxum, Kagan, 1952b

Distomum macrostomum Rudolphi of Heckert, 1889 - synonym of L. heckerti, Kagan, 1952b

Leucochloridium insigne (Looss) of Witenberg, 1925

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water semiaquatic snail; cercariae develop in green and white sporocyst brood-sac in tentacle of snail; mature in final host in 10 days after ingestion of brood-sac. (Bennett, 1942; Kagan, 1951, 1952a; McIntosh & McIntosh, 1939)

INTERMEDIATE HOSTS: Succinea retusa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas querquedula

Ciconiiformes - Plegadis falcinellus

Galliformes - Bonasa umbellus, Canachites canadensis, Gallus gallus (dom.) [exper.]

Gruiformes - Fulica atra, Gallinula chloropus

Charadriiformes - Actitis hypoleucos, Actitis macularia, Capella stenura, Charadrius dubius, Chlidonias leucoptera, Erolia subminuta, Erolia temminckii, Limosa lapponica, Limosa limosa, Numenius arquata, Numenius borealis, Numenius minutus, Phalaropus lobatus, Philomachus pugnax, Pluvialis apricaria, Tringa flavipes, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa stagnatilis, Tringa totanus, Vanellus vanellus

Ficiformes - Picoides tridactylus

Passeriformes - Agelaius phoeniceus, Anthus trivialis, Cistothorus palustris, Coccothraustes coccothraustes, Cyanocitta cristata, Empidonax traillii, Lanius collurio, Melospiza melodia, Miniotilta varia, Oriolus oriolus, Parus ater, Parus atricapillus, Passer domesticus, Passerina cyanea, Serinus canarius [exper.], Sturnus vulgaris, Turdus iliacus, Turdus migratorius

HABITAT: Cloaca, large intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Tadzhikistan, Turkmenistan, Amur, Sakhalin, Japan), N. America (USA, USA - Alaska).

Leucochloridium holostomum

STATUS AS WATERFOWL PARASITE: Rare; typically in Ralliformes, occasionally in charadriiform birds; reported twice in wild ducks.

STATUS AS SPECIES: Classification of Leucochloridium disputed and confused.

DESCRIPTION: Larios, 1943 (as L. insigne). Copy: Skrjabin, 1948; Bykhovskaja-Pavlovskaja, 1951.

SYNONYMY: Bykhovskaja-Pavlovskaja, 1951, 1962.

Distoma holostomum Rudolphi, 1819

Leucochloridium holostomum (Rudolphi, 1819) Lutz, 1928

Neoleucochloridium holostomum (Rudolphi, 1819) Kagan, 1950

Urogonimus cercatus Monticelli, 1893

Urogonimus insignis Looss, 1899

Leucochloridium insigne (Looss, 1899) Looss, 1899 - distinct, Kagan, 1952b

Urogonimus turanicus Solov'ev, 1912

Leucochloridium turanicum (Solov'ev, 1912) Witenberg, 1925

Leucochloridium problematicum Magath, 1920 - [Kagan, 1952b]

Neoleucochloridium problematicum (Magath, 1920) Kagan, 1950

Leucochloridium flavum Travassos, 1922

Neoleucochloridium flavum (Travassos, 1922) Kagan, 1952

Leucochloridium sorae McIntosh, 1927

Leucochloridium hypotaenidiarum Tubangui, 1932

Neoleucochloridium hypotaenidiarum (Tubangui, 1932) Kagan, 1952

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water subaquatic snail; cercariae develop in orange-brown sporocyst brood-sac (flavum) or red-brown brood-sac (problematicum) in tentacles of snail, remain as metacercariae in brood-sacs; brood-sacs appear in 50 days to 3 months after infection; mature in 5-16 days after ingestion by final host. (Kagan, 1950, 1951a, 1952a; Magath, 1920; Travassos, 1928)

INTERMEDIATE HOSTS: Homalonyx unguis, Quickella sp., Succinea retusa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas discors, Anas querquedula

Galliformes - Phasianus colchicus

Gruiformes - Crex crex, Fulica atra, Gallinula chloropus, Porphyryla martinica, Porzana albicollis, Porzana carolina, Porzana porzana, Porzana pusilla, Rallus aquaticus, Rallus striatus

Charadriiformes - Actitis hypoleucos, Erolia minutilla, Jacana spinosa, Sterna hirundo, Tringa erythropus, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa stagnatilis

Columbiformes - Streptopelia orientalis

Coraciiformes - Upupa epops

Ficiformes - Dendrocopos leucotos

Passeriformes - Serinus canarius [exper.], Turdus merula

HABITAT: Cloaca, large intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Tadzhikistan, Kazakhstan, Primorsk, Kamchatka, Philippine Is.), Africa (Egypt), N. America (USA, Mexico), S. America (Venezuela, Brazil).

Gymnophallus bilis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of G. bursicola - Rébecq & Prévot, 1962.

DESCRIPTION: Brinkmann, 1956.

SYNONYMY:

Gymnophallus bilis Brinkmann, 1956

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis

HABITAT: Gall bladder.

DISTRIBUTION: Europe (Iceland).

Gymnophallus bursicola

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks.

DESCRIPTION: Odhner, 1900; Yamaguti, 1934, 1939. Copy: Morozov, 1955.

SYNONYMY:

Levithodendrium somateriae (Levinsen, 1881) Jameson, 1902 e. p.

Gymnophallus bursicola Odhner, 1900

Gymnophallus dapsilis Nicoll, 1907 - [James, 1964]

Gymnophallus bilis Brinkmann, 1956 - [Rébecq & Prévot, 1962]

LIFE CYCLE: Metacercariae in marine pelecypod mollusks. (Giard, 1907; Ogata, 1944)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Glaucoma angulata, Laternula kamakurama, Paphia philippinarum, Saxicava rugosa, Tellina sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Mergini - Melanitta fusca, Melanitta nigra

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Bursa of Fabricius.

Gymnophallus deliciosus

STATUS AS WATERFOWL PARASITE: Infrequent, normally in lariform birds; reported 4 times in wild ducks.

DESCRIPTION: Copy: Morozov, 1955.

SYNONYMY: Dawes, 1956.

Distoma deliciosum Olsson, 1893

Gymnophallus deliciosus (Olsson, 1893) Odhner, 1900

Cercaria strigata Lebour, 1908 - [Rees, 1939]

Gymnophallus micropharyngeus (Lühe, 1898) Odhner, 1900 - [Rébecq & Prévot, 1962]

LIFE CYCLE: Cercariae may develop in marine pelecypod mollusks; metacercariae present in marine pelecypod mollusks. (Rees, 1939; Zelikman, 1962)

FIRST INTERMEDIATE HOSTS: Cardium edule, Macoma balthica

SECOND INTERMEDIATE HOSTS: Tellina tenuis, Macoma balthica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

Mergini - Clangula hyemalis, Histrionicus histrionicus, Melanitta nigra

Charadriiformes - Fratercula arctica, Larus argentatus, Larus canus, Larus fuscus, Larus glaucescens, Larus hyperboreus, Larus marinus, Larus occidentalis, Larus ridibundus

HABITAT: Gall bladder.

DISTRIBUTION: Europe (France, England, Arctic), Asia (Kamchatka, Chukotka), N. America (USA).

Gymnophallus minor

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ryzhikov, 1963d.

SYNONYMY:

Gymnophallus minor Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

DISTRIBUTION: Europe (N. Europe), Asia (Japan), N. America (USA).

Gymnophallus ceratostomus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Tsimbaliuk & Leonov, 1963.

SYNONYMY:

Gymnophallus ceratostomus Tsimbaliuk & Leonov, 1963

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Mergini - Melanitta nigra

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Asia (Kamchatka).

Gymnophallus choledocus

STATUS AS WATERFOWL PARASITE: Frequent; reported 11 times in wild ducks.

DESCRIPTION: Odhner, 1900; Isačnikov, 1924. Copy: Morozov, 1955.

SYNONYMY:

Gymnophallus choledocus Odhner, 1900

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya ferina

Mergini - Clangula hyemalis

HABITAT: Gall bladder.

DISTRIBUTION: Europe (N. Europe, Crimea), Iceland, N. America (Greenland).

Somateriini - Somateria mollissima

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Gymnophallus mollissima

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Morozov, 1960.

SYNONYMY:

Cestotrema mallissima Morozov, 1960

Gymnophallus mollissima (Morozov, 1960) Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT:

DISTRIBUTION: Asia (Kamchatka).

Gymnophallus nereicolor

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck as result of experimental infection. Natural host unknown.

STATUS AS SPECIES: Synonym of Meiogymnophallus minutus - Bowers & James, 1967.

DESCRIPTION: Rébecq & Prévot, 1962.

SYNONYMY:

Gymnophallus nereicolor Rébecq & Prévot, 1962

LIFE CYCLE: Metacercariae in marine polychaetous annelid, matures in final host after ingestion. (Rébecq & Prévot, 1962)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Nereis diversicolor [Auxiliary host?]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Not given.

DISTRIBUTION: Europe (France).

Gymnophallus skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ryzhikov, 1963c.

SYNONYMY:

Gymnophallus skrjabini Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of G. deliciosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria fischeri, Somateria spectabilis

HABITAT: Large intestine.

DISTRIBUTION: Asia (USSR - Chukotka).

Meiogymnophallus jamesoni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Meiogymnophallus not valid genus - Prévot, 1966.

DESCRIPTION: Bowers, 1966.

SYNONYMY:

Meiogymnophallus jamesoni Bowers, 1966

LIFE CYCLE: Unknown; probably similar to that of M. somateriae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe (Great Britain).

Meiogymnophallus macroporus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Meiogymnophallus not valid genus - Prévot, 1966. Forma typica, forma lata, and forma acuticapitata described by Ryzhikov, Timofeeva, & Dudorova (1966).

DESCRIPTION: Jameson & Nicoll, 1913; Jogis, 1959; Ryzhikov, Timofeeva, & Dudorova, 1966. Copy: Morozov, 1955.

SYNONYMY:

Gymnophallus macroporus Jameson & Nicoll, 1913
Gymnophalloides macroporus (Jameson & Nicoll, 1913) James, 1964
Meiogymnophallus macroporus (Jameson & Nicoll, 1913) Ching, 1965
Cercaria strigata Lebour, 1908 - [Rees, 1939]

LIFE CYCLE: Unknown; probably similar to that of M. somateriae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya fuligula

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra

Charadriiformes - Calidris canutus, Haematopus ostralegus, Limosa limosa

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Chukotka).

Meiogymnophallus macrostomus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Meiogymnophallus not valid genus - Prévot, 1966.

DESCRIPTION: Yamaguti, 1939. Copy: Morozov, 1955.

SYNONYMY:

Gymnophallus macrostoma Yamaguti, 1939
Gymnophalloides macrostoma (Yamaguti, 1939) James, 1964
Meiogymnophallus macrostomus (Yamaguti, 1939) Ching, 1965
Gymnophalloides tokiensis Fujita, 1925 - [James, 1964]; distinct,
Ching, 1965

LIFE CYCLE: Unknown; probably similar to that of M. somateriae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythini - Aythya marila

Mergini - Histrionicus histrionicus, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Korea, Kamchatka, Komandorsky Is.).

Meiogymnophallus minutus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

STATUS AS SPECIES: Gymnophallus oidemiae, synonym of this name, also reported as synonym of G. somateriae by Yamaguti, 1958, and Rébecq & Prévot, 1962. Meiogymnophallus not valid genus - Prévot, 1966.

DESCRIPTION: Jameson & Nicoll, 1913; Bowers & James, 1967. Copy: Morozov, 1955.

SYNONYMY: Bowers & James, 1967.

Distomum minutum Cobbold, 1859

Meiogymnophallus minutus (Cobbold, 1859) Bowers & James, 1967

Levcithodendrium somateriae (Levinsen) of Jameson, 1902, e.p.

Cercaria margaritae Lebour, 1907

Gymnophallus oidemiae Jameson & Nicoll, 1913

Gymnophalloides oidemiae (Jameson & Nicoll, 1913) James, 1964

Meiogymnophallus oidemiae (Jameson & Nicoll, 1913) Ching, 1965

Cercaria cambrensis Cole, 1938

Gymnophallus nereicolor Rébecq & Prévot, 1962

LIFE CYCLE: Metacercariae in marine pelecypod mollusk, mature in final host after ingestion. (Bowers & James, 1967)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Cardium edule

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Melanitta nigra

Charadriiformes - Haematopus ostralegus

HABITAT: Small intestine.

DISTRIBUTION: Europe.

Meiogymnophallus multigemmulus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Meiogymnophallus not valid genus - Prévot, 1966.

DESCRIPTION: Ching, 1965a.

SYNONYMY:

Meiogymnophallus multigemmulus Ching, 1965

LIFE CYCLE: Cercariae develop in marine clam; metacercariae develop within sporocyst in same individual; mature in final host in 3-5 days after ingestion. (Ching, 1965a)

INTERMEDIATE HOSTS: Macoma inconspicua

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra, Melanitta perspicillata
MAMMALIA - Rodentia - Feromyscus maniculatus [exper.]

HABITAT: Intestine.

DISTRIBUTION: N. America (Canada - Pacific coast).

Meiogymnophallus somateriae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks.

STATUS AS SPECIES: Meiogymnophallus not valid genus - Prévot, 1966.

DESCRIPTION: Odhner, 1900. Copy: Morozov, 1955.

SYNONYMY: Sprehn, 1932; Gower, 1939.

Distoma somateriae Levinsen, 1881

Lecithodendrium somateriae (Levinsen, 1881) Stossich, 1899

Gymnophallus somateriae (Levinsen, 1881) Odhner, 1900

Brachycoelium somateriae (Levinsen, 1881) Giard, 1904

Gymnophalloides somateriae (Levinsen, 1881) James, 1964

Meiogymnophallus somateriae (Levinsen, 1881) Ching, 1965

Gymnophallus oidemiae Jameson & Nicoll, 1913 - [Yamaguti, 1958; Rébecq & Prévot, 1962]; synonym of M. minutus, Bowers & James, 1967

LIFE CYCLE: Cercariae develop in marine pelecypod mollusks; metacercariae encysted in marine pelecypod mollusks. (Belopol'skaĭa, 1952; Giard, 1907; Jameson, 1902)

FIRST INTERMEDIATE HOSTS: Cardium edule, Tapes decussatus

SECOND INTERMEDIATE HOSTS: Donax vittatus, Mytilus edulis, Saxicava rugosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

Mergini - Melanitta nigra

Charadriiformes - Erolia maritima

HABITAT: Ceca, intestine.

DISTRIBUTION: Europe (France, Sweden, N. Russia), Asia (Chukotka), N. America (Greenland).

Lacunovermis conspicuus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ching, 1965a.

SYNONYMY:

Lacunovermis conspicuus Ching, 1965

LIFE CYCLE: Cercariae develop in marine clam; metacercariae develop in same species of clam in 3 months; mature in final host in 2-5 days after ingestion; eggs produced in 48 hours when metacercariae are cultured in sea water at 37 C. (Ching, 1965a)

FIRST INTERMEDIATE HOSTS: Macoma inconspicua

SECOND INTERMEDIATE HOSTS: Macoma inconspicua

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Mergini - Melanitta nigra

MAMMALIA - Rodentia - Peromyscus maniculatus [exper.]

HABITAT: Intestine.

DISTRIBUTION: N. America (Canada - Pacific coast).

Parvatrema affine

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Jameson & Nicoll, 1913. Copy: Morozov, 1955.

SYNONYMY:

Gymnophallus affinis Jameson & Nicoll, 1913

Parvatrema affine (Jameson & Nicoll, 1913) James, 1964

LIFE CYCLE: Cercariae develop in marine clam; metacercariae in same individual within sporocysts. (Reimer, 1964a; Zelikman, 1953)

INTERMEDIATE HOSTS: Macoma balthica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

Charadriiformes - Haematopus ostralegus, Larus argentatus [exper.],

Sterna paradisaea

MAMMALIA - Carnivora - Felis catus [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe.

Parvatrema borealis

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in duck. Natural host unknown.

DESCRIPTION: Stunkard & Uzmann, 1958.

SYNONYMY:

Parvatrema borealis Stunkard & Uzmann, 1958

LIFE CYCLE: Cercariae develop in marine pelecypod mollusks; metacercariae encysted in marine pelecypod mollusks and polychaetous annelids. (Ching, 1959b; Oglesby, 1965; Stunkard, 1962; Stunkard & Uzmann, 1958)

FIRST INTERMEDIATE HOSTS: Gemma gemma, Transennella tantilla

SECOND INTERMEDIATE HOSTS: Gemma gemma, Transennella tantilla, Nereis succinea

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima [exper.]

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Parvatrema lintoni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Linton, 1928. Copy: James, 1964.

SYNONYMY:

Distomum sp. Linton, 1928
Parvatrema lintoni James, 1964

LIFE CYCLE: Unknown; probably similar to that of P. borealis.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Melanitta persicillata

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Parvatrema ovoplenus

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Jameson & Nicoll, 1913. Copy: Morozov, 1955.

SYNONYMY:

Gymnophallus ovoplenus Jameson & Nicoll, 1913
Parvatrema ovoplenus (Jameson & Nicoll, 1913) Stunkard & Uzmann, 1958
Gymnophallus ovolepens Jameson & Nicoll of Morozov, 1955, and Ryzhikov, 1963, lapsus

LIFE CYCLE: Unknown; probably similar to that of P. borealis.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Kamchatka).

Parvatrema timondavidi

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection. Natural host unknown.

DESCRIPTION: Bartoli, 1963, 1965.

SYNONYMY:

Parvatrema timondavidi Bartoli, 1963

LIFE CYCLE: Metacercariae in marine mussel; mature in 2 days after ingestion by final host; survive in host at least 3.5 days, less than 5 days. (Bartoli, 1965)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Mytilus galloprovincialis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus argentatus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe (France).

Ribeiroia ondatrae

STATUS AS WATERFOWL PARASITE: Infrequent, typically in muskrat; reported twice in wild ducks and twice in domestic waterfowl. Mortality in domestic duck reported by Leibovitz, 1962.

DESCRIPTION: Price, 1931; Beaver, 1939; Dubois & Mahon, 1959; Cable, Connor, & Balling, 1960. Copy: Skrjabin, 1947a.

SYNONYMY:

Psilostomum ondatrae Price, 1931

Ribeiroia ondatrae (Price, 1931) Price, 1942

Pseudopsilotrema ondatrae (Price, 1931) Kuntz, 1951

Pseudopsilostoma ondatrae (Price, 1931) Yamaguti, 1958

Cercaria thomasi McMullen, 1938

Ribeiroia thomasi (McMullen, 1938) Yamaguti, 1959 - [Lumsden & Zischke, 1963]

Ribeiroia insignis Travassos, 1939 - [Dubois & Mahon, 1959; Cable, Connor, & Balling, 1960]

Ribeiroia congolensis Dollfus, 1950 - [Mettrick, 1963]

LIFE CYCLE: Eggs passed in feces, hatch in water in 18 days; cercariae develop in fresh-water snails; encyst as metacercariae in lateral line canal and nostrils of fresh-water fish and amphibian tadpoles; metacercariae infective in 7-10 days; mature in 6-7 days after ingestion by final host. (Beaver, 1938, 1939; Mathies & Cort, 1956; Riggin,

1956)

FIRST INTERMEDIATE HOSTS: Australorbis glabratus, Helisoma anceps,
Helisoma campanulatum, Helisoma trivolvis

SECOND INTERMEDIATE HOSTS: Ambloplites repestriis, Ictalurus sp.,
Lebistes reticulatus [exper.], Lepomis gibbosus, Lepomis pallidus,
Micropterus dolomieu, Perca flavescens, Poecilia vivipara [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

Cairinini - Cairina moschata (dom.)

Mergini - Bucephala clangula, Mergus merganser

Pelecaniformes - Pelecanus erythrorhynchus, Phalacrocorax auritus

Ciconiiformes - Ardea herodias, Butorides virescens, Casmerodius
alba, Florida caerulea

Falconiformes - Accipiter cooperii, Pandion haliaetus

Galliformes - Gallus gallus (dom.)

Charadriiformes - Larus californicus

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Serinus canarius [exper.]

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Proventriculus - in mucosa, liver in mammal.

DISTRIBUTION: N. America (USA, Canada, Puerto Rico).

Echinochasmus beleocephalus

STATUS AS WATERFOWL PARASITE: Frequent, typically in herons; reported
6 times in wild, 6 times in domestic, and once in captive ducks. Cause
of severe mortality in young domestic fowl (Shevtsov, 1965a).

DESCRIPTION: Mendheim, 1940, 1943; Bashkirova, 1941; Belokobylenko,
1963; Odening, 1963b. Copy: Skrjabin, Petrov, & Bashkirova, 1947;
Skrjabin & Bashkirova, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Distomum beleocephalum Linstow, 1873

Echinostoma beleocephalum (Linstow, 1873) Stossich, 1892

Echinochasmus beleocephalus (Linstow, 1873) Dietz, 1909

Echinochasmus (Echinochasmus) beleocephalus (Linstow, 1873) of Bash-
kirova, 1941

Echinochasmus beleocephalus chankensis Oshmarin & Dotsenko, 1951 -
[Skrjabin & Bashkirova, 1956]

Echinochasmus japonicus Tanabe, 1926 - [Alekseev, 1963a]

LIFE CYCLE: Metacercariae in amphibians and fresh-water fish; mature in 5 days after ingestion by final host. (Alekseev, 1963c; Shevtsov, 1965a)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Pelobates fuscus, Rana temporaria, Acheilognathus chankaensis, Cultur alburnus, Gobio gobio, Hemicultur leucisculus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata

Mergini - Bucephala clangula

Ciconiiformes - Ardea cinerea, Ardea purpurea, Ardeola ralloides, Casmerodius alba, Egretta garzetta, Geronticus eremita, Nycticorax nycticorax

Galliformes - Gallus gallus (dom.)

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Tuva, Yakutia, Amur, Primorsk), Africa (Egypt).

Echinochasmus coaxatus

STATUS AS WATERFOWL PARASITE: Infrequent, typically in grebes; reported 5 times in wild ducks.

DESCRIPTION: Dietz, 1909; Bashkirova, 1941; Odening, 1963b. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinochasmus coaxatus Dietz, 1909

Echinochasmus (Echinochasmus) coaxatus Dietz, 1909 of Bashkirova, 1941

Echinochasmus squamatus Mendheim, 1940 - [Odening, 1963]

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae encysted in fresh-water mollusks. (Wisniewski, 1957)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia

SECOND INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas strepera
Gaviiformes - Gavia arctica
Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps
griseogen, Podiceps ruficollis
Ciconiiformes - Ardea cinerea, Botaurus stellaris, Ciconia ciconia

HABITAT: Large intestine, small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Kazakhstan, Kirgizia, Uzbekistan, Primorsk, Japan, Kamchatka).

Echinochasmus dietzevi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks, once in captive duck.

DESCRIPTION: Isačnikov, 1927; Odening, 1963b. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kurashvili, 1957.

SYNONYMY:

Echinochasmus dietzevi Isačnikov, 1927

Echinochasmus (Echinochasmus) dietzevi Isačnikov, 1927 of Bashkirova, 1941

LIFE CYCLE: Unknown; probably similar to that of E. japonicus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, Anas penelope

Aythiini - Aythya nyroca

Mergini - Mergus merganser

Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps
griseogen, Podiceps ruficollis

Charadriiformes - Larus ichthyaetus, Larus ridibundus

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland, USSR), Asia (Kirgizia, Uzbekistan).

Echinochasmus japonicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once experimentally in domestic duck.

STATUS AS SPECIES: Synonym of E. beleocephalus - Alekseev, 1963a.

DESCRIPTION: Tanabe, 1926; Yamaguti, 1939. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY: Yamaguti, 1958.

Echinochasmus perfoliatus (Ratz) of Tanabe, 1922

Echinochasmus japonicus Tanabe, 1926

Echinochasmus (Echinochasmus) japonicus Tanabe, 1926 of Bashkirova, 1941

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae encysted in gills of fresh-water fish and frog tadpoles; mature 2 weeks after ingestion by final host. (Hasegawa, 1934; Izumi, 1935; Muto, 1921; Okabe, 1940; Tanabe, 1926; Ujiie, 1936a; Yamaguti, 1951)

FIRST INTERMEDIATE HOSTS: Bulimus striatulus, Parafossarulus manchouricus

SECOND INTERMEDIATE HOSTS: Abbottina psegma, Acheilognathus intermedius, Brevigobio kowabatae, Carassius auratus, Chaenogobius macrognathus, Coresperca gracilis, Coresperca kawamebari, Fluvidraco nudiceps, Gnathopogon elongatus, Hemibarbus barbus, Ischikauia steenackeri, Leucogobio gracilis, Leucogobio guentheri, Limanda herzensteni, Misgurnus anguillicaudatus, Odontobius obscurus, Opsarichthys uncirostris, Paracheilognathus rhombea, Parasilurus asotus, Plecoglossus altivelis, Pseudorasbora parva, Pseudoperilamphus typus, Rhodeus atremius, Rhodeus lanceolatus, Salanx microdon, Sarcocheilichthys sinensis, Sarcocheilichthys variegatus, Zacco platypus, Zacco temminckii, Rana rugosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Bucephala clangula

Podicipediformes - Podiceps ruficollis

Ciconiiformes - Mesophoyx intermedia, Nycticorax nycticorax, Pseudibis papillosa

Falconiformes - Milvus migrans

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Primates - Homo sapiens

Rodentia - Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

Carnivora - Canis familiaris [exper.], Felis catus [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (China, Japan, Korea).

Echinochasmus mergi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Cannon, 1938. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Stephanoprora mergi Cannon, 1938

Mesorchis mergi (Cannon, 1938) Skrjabin & Bashkirova, 1956

Echinochasmus mergi (Cannon, 1938) Odening, 1963

LIFE CYCLE: Unknown; probably similar to that of E. japonicus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Ceca.

DISTRIBUTION: N. America (Canada).

Echinochasmus mergi palaeartcticus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Odening, 1963b.

SYNONYMY:

Echinochasmus mergi subsp. palaeartcticus Odening, 1963

LIFE CYCLE: Unknown; probably similar to that of E. japonicus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany - Berlin Zoological Park).

Echinochasmus milvi

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck from experimental infection.

DESCRIPTION: Yamaguti, 1939.

SYNONYMY:

Echinochasmus milvi Yamaguti, 1939

Echinochasmus (Echinochasmus) milvi Yamaguti, 1939 of Skrjabin & Bashkirova, 1956

LIFE CYCLE: Cercariae develop in fresh-water snails, encyst as metacercariae in gills of fresh-water fish; mature in 3 days after ingestion by final host. (Koga, 1952; McCauley & Pratt, 1960; Uzmann & Hayduk, 1964)

FIRST INTERMEDIATE HOSTS: Oxytrema silicula

SECOND INTERMEDIATE HOSTS: Acheilognathus lanceolata, Acheilognathus limbata, Acanthorhodeus atremius, Gasterosteus aculeatus [exper.], Lebistes reticulatus [exper.], Plecoglossus altivelis, Pseudorasbora parva, Salmo gairdneri

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Falconiformes - Milvus migrans

MAMMALIA - Rodentia - Mesocricetus auratus [exper.], Rattus norvegicus (lab.) [exper.]

Carnivora - Canis familiaris [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan), N. America (USA).

Echinochasmus mirus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mendheim, 1940. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinochasmus mirus Mendheim, 1940

Echinochasmus (Echinochasmus) mirus Mendheim, 1940 of Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of E. japonicus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany).

Echinochasmus mordax

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Odhner, 1910; Dollfus, 1950. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma mordax Looss, 1899

Heterochinostomum mordax (Looss, 1899) Odhner, 1910

Echinochasmus mordax (Looss, 1899) Price, 1931

Echinochasmus (Echinochasmus) mordax (Looss, 1899) of Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of E. japonicus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

Podicipediformes - Podiceps auratus, Podiceps cristatus

Pelecaniformes - Pelecanus crispus, Pelecanus oncorotalus, Pelecanus rufescens

MAMMALIA - Carnivora - Canis familiaris

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden, Poland, USSR), Asia (Palestine, Kazakhstan), Africa (Egypt, Congo).

Episthmium colymbi

STATUS AS WATERFOWL PARASITE: Rare, typically in grebes; reported twice in wild ducks.

STATUS AS SPECIES: Episthmium included in genus Echinochasmus - Baer & Joyeux, 1961.

DESCRIPTION: Shakhtakhtinskaja, 1958; Sulgostowska, 1960a; Odening, 1963b. Copy: Kurashvili, 1957.

SYNONYMY:

Echinochasmus (Episthmium) colymbi Shigin in Skrjabin & Bashkirova, 1956

Episthmium colymbi (Shigin, 1956) Shigin, 1956

Echinochasmus (Episthmium) mathevossianae Shakhtakhtinskaja in Kurashvili, 1957

Episthmium mathevossianae (Shakhtakhtinskaja, 1957) Sulgostowska, 1960 - [Sulgostowska, 1960a; Odening, 1963]

Echinochasmus schigini Bykhovskaja-Pavlovskaja, 1962 - [Odening, 1963]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya fuligula, Netta rufina

Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps grisegena

HABITAT: Large intestine, bursa of Fabricius.

DISTRIBUTION: Europe (Poland, Georgia SSR), Asia (Azerbaijan).

Moliniella anceps

STATUS AS WATERFOWL PARASITE: Rare, normally in Rallidae; reported twice in wild ducks.

STATUS AS SPECIES: Moliniella included in genus Echinochasmus - Baer & Joyeux, 1961.

DESCRIPTION: Mendheim, 1940. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY: Hübner, 1939.

Distoma anceps Molin, 1859

Echinostoma anceps (Molin, 1859) Dietz, 1910

Moliniella anceps (Molin, 1859) Hübner, 1939

Isoparyphium anceps (Molin, 1859) Mendheim, 1940

Echinoparyphium anceps (Molin, 1859) Yamaguti, 1958

Cercaria limbifera Seifert, 1926 - [Odening, 1964]

Cercaria laticaudata Riech, 1927

Cercaria Echinostomi Dubois, 1929

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails; metacercariae encysted in fresh-water snails; mature in 7-14 days after ingestion by final host. (Ališauskaitė, 1958, 1959; Hübner, 1939; Kiselienė, 1966; Odening, 1964a; Zajíček, 1963c; Ždárská, 1963)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris

SECOND INTERMEDIATE HOSTS: Anisus vortex, Lymnaea auricularia, Lymnaea limosa, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Physa fontinalis, Planorbium corneum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Gruiformes - Fulica atra, Gallinula chloropus, Porzana porzana

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe, Asia (Kazakhstan).

Patagifer bilobus

STATUS AS WATERFOWL PARASITE: Rare, normally in Ciconiiformes; reported once in wild goose.

DESCRIPTION: Mendheim, 1940; Kurashvili, 1957. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Distoma (Echinostoma) bilobum Rudolphi, 1819

Echinostoma bilobum (Rudolphi, 1819) Cobbold, 1860

Patagifer bilobus (Rudolphi, 1819) Dietz, 1909

LIFE CYCLE: Cercariae develop in fresh-water snails, encyst in fresh-water snails after emergence. (Ališauskaitė, 1958, 1959; Ginetsinskaja & Kulik, 1952)

FIRST INTERMEDIATE HOSTS: Planorbis planorbis

SECOND INTERMEDIATE HOSTS: Lymnaea ovata [exper.], Lymnaea palustris, Lymnaea stagnalis [exper.], Lymnaea vivipara [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Podicipediformes - Podiceps ruficollis

Ciconiiformes - Carphibis spinicollis, Hagedashia hagedash, Platalea leucorodia, Platalea regia, Plegadis falcinellus, Plegadis guarana, Threskiornis aethiopica

Gruiiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Armenia, Kazakhstan, Japan), Africa (Egypt, Sudan), S. America (Brazil), Australia.

Stephanoprora denticulata

STATUS AS WATERFOWL PARASITE: Infrequent, typically in gulls; reported 6 times in wild ducks.

DESCRIPTION: Linton, 1928; Bashkirova, 1941; Dollfus, 1963b (as Mesorchis pseudoechinatus); Odening, 1963b (as M. pseudoechinatus). Copy: Skrjabin & Bashkirova, 1956; Kurashvili, 1957.

SYNONYMY: Dawes, 1956.

Fasciola denticulata Rudolphi, 1802

Distoma (Echinostoma) denticulatum (Rudolphi, 1802) Rudolphi, 1809

Echinostoma denticulatum (Rudolphi, 1802) Cobbold, 1860

Mesorchis denticulatus (Rudolphi, 1802) Dietz, 1909

Stephanoprora denticulata (Rudolphi, 1802) Odhner, 1910

Distoma pseudoechinatum Olsson, 1876

Echinostoma pseudoechinatum (Olsson, 1876) Stossich, 1892

Mesorchis pseudoechinatus (Olsson, 1876) Dietz, 1909 - distinct, Skrjabin & Bashkirova, 1956; Gupta, 1963; et al.

Mesorchis polycestus Dietz, 1909 - distinct, Beaver, 1937

Mesorchis denticulatoides Isaïchikov, 1925 - [Prendel', 1937]

Ignavia inops Freitas, 1948

LIFE CYCLE: Metacercariae in fresh-water fish. (Ciurea, 1931, 1933)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Atherina pontica, Leuciscus idus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas penelope

Aythini - Aythya ferina, Aythya nyroca

Cairinini - Aix sponsa

Mergini - Mergus merganser

Gaviiformes - Gavia immer

Podicipediformes - Podiceps auritus, Podiceps cristatus, Podiceps grisegena

Pelecaniformes - Phalacrocorax olivaceus

Ciconiiformes - Botaurus stellaris

Charadriiformes - Alca torda, Gelochelidon nilotica, Larus argentatus, Larus atricilla, Larus canus, Larus delawarensis, Larus fuscus, Larus genei, Larus hyperboreus, Larus ichthyaetus, Larus marinus, Larus minutus, Larus philadelphia, Larus ridibundus, Philomachus pugnax, Rissa tridactyla, Sterna albifrons, Sterna hirundo, Thalasseus sandvicensis

MAMMALIA - Carnivora - Canis familiaris, Felis catus, Vulpes fulva

Pinnipedia - Zalophus californianus

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe, Asia (Armenia, Kazakhstan, Primorsk), Africa, N. America (Panama, USA).

Stephanoprora gracilis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mendheim, 1940. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Stephanoprora gracilis Mendheim, 1940

Mesorchis gracilis (Mendheim, 1940) Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of S. denticulata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Intestine.

DISTRIBUTION: Europe (Germany).

Stephanoprora pseudodenticulata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mendheim, 1940. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Stephanoprora pseudodenticulata Mendheim, 1940

Mesorchis pseudodenticulata (Mendheim, 1940) Skrjabin & Bashkirova,
1956

LIFE CYCLE: Unknown; probably similar to that of S. denticulata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Iceland).

Stephanoprora spinosa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Most authors separate S. spinosa and Monilifer spinulosus.

DESCRIPTION: Dietz, 1910; Mendheim, 1940; Odening, 1962d, 1963b (as M. spinulosus). Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin

& Bashkirova, 1956.

SYNONYMY: Dawes, 1956.

Monilifer spinulosus (Rudolphi) of Dietz, 1909

Echinostoma spinosum Odhner, 1910

Stephanoprora spinosa (Odhner, 1910) Odhner, 1910

Mesorchis spinosa (Odhner, 1910) Szidat, 1943

Distoma spinulosum Rudolphi, 1809

Distoma (Echinostoma) spinulosum Rudolphi, 1809 of Dujardin, 1845

Echinostoma spinulosum (Rudolphi, 1809) Cobbold, 1858

Mesorchis spinulosum (Rudolphi, 1809)

Echinochasmus (Monilifer) spinulosus (Rudolphi, 1809) Bashkirova,
1941

Stephanoprora spinulosus (Rudolphi, 1809) Gupta, 1963

Stephanoprora gilberti Ward, 1917

Monilifer gilberti (Ward, 1917) Yamaguti, 1958

LIFE CYCLE: Unknown; probably similar to that of S. denticulata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

Aythiini - Aythya marila, [Aythya fuligula - Bezubik, 1956, original citation not found, probably erroneous]

Mergini - Bucephala clangula

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps cristatus, Podiceps grisegena

Pelecaniformes - Anhinga rufa, Phalacrocorax aristotelis

Ciconiiformes - Ciconia ciconia

Charadriiformes - Alca torda, Cephus grylle, Larus argentatus, Larus hyperboreus, Larus philadelphia, Larus ridibundus, Numenius arquata, Numenius tenuirostris, Philomachus pugnax

Gruiformes - Fulica atra

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe, Asia (Kirgizia), Africa (Egypt), N. America (USA).

Acanthoparyphium kurogamo

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Yamaguti, 1939. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Acanthoparyphium kurogamo Yamaguti, 1939

Acanthoparyphium tyosenense Yamaguti, 1939 - [Skrjabin & Bashkirova,
1956]

LIFE CYCLE: Unknown; probably similar to that of A. spinulosum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Japan).

Acanthoparyphium marilae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Yamaguti, 1934. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Acanthoparyphium marilae Yamaguti, 1934

LIFE CYCLE: Larval stages in marine snail. (Yamaguti, 1934)

FIRST INTERMEDIATE HOSTS: Batillaria multiformis

SECOND INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

Mergini - Melanitta fusca, Melanitta nigra

Charadriiformes - Calidris canutus, Calidris tenuirostris, Limosa lapponica

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan, Korea).

Acanthoparyphium melanittae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Yamaguti, 1939. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Acanthoparyphium melanittae Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of A. spinulosum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca, [Melanitta nigra - Lapage, 1961, erroneous citation]

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan).

Acanthoparyphium paracharadrii

STATUS AS WATERFOWL PARASITE: Accidental; recorded once as experimental infection in duckling; normal host not known.

DESCRIPTION: Velasquez, 1964.

SYNONYMY:

Acanthoparyphium paracharadrii Velasquez, 1964

LIFE CYCLE: Cercariae produced in marine snail; encysted metacercariae present in mantle and muscles of same individuals; mature in 10 days after ingestion by final host. Experimental infection in guinea pig more successful than in duckling. (Velasquez, 1964)

FIRST INTERMEDIATE HOSTS: Cerithium ornata

SECOND INTERMEDIATE HOSTS: Cerithium ornata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

MAMMALIA - Rodentia - Cavia porcellus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (Philippine Is.).

Acanthoparyphium spinulosum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Johnston, 1917; Yamaguti, 1934; Bearup, 1960; Martin & Adams, 1961. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Acanthoparyphium spinulosum Johnston, 1917

Acanthoparyphium spinulosum suzugamo Yamaguti, 1939 - [Bearup, 1960]

Acanthoparyphium longivitellatum Oshmarin, 1956 - [Skrjabin & Bashkirova, 1956; Bykhovskaja-Pavlovskaja, 1962]

LIFE CYCLE: Eggs passed in feces, hatch in water in 16-27 days; cercariae develop in marine and brackish water snails; metacercariae encysted in same species of snails, clams, and polychaetous annelids; mature in final host 7-12 days after ingestion. (Bearup, 1960; Little, Hopkins, & Schlicht, 1966; Martin & Adams, 1960, 1961)

FIRST INTERMEDIATE HOSTS: Cerithidea hegewischi, Pyrazus australis, Salinator fragilis

SECOND INTERMEDIATE HOSTS: Cerithidea hegewischi, Salinator fragilis, Crassostrea virginica, Phanaerocephala sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Charadrius leschenaultii, Larus novae-hollandiae [exper.], Pluvialis dominicus, Recurvirostra americana, Squatarola squatarola

HABITAT: Small intestine.

DISTRIBUTION: Asia (Primorsk, Japan), N. America (USA), Australia.

Acanthoparyphium tyosenense

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Synonym of A. kurogamo - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Yamaguti, 1939.

SYNONYMY:

Acanthoparyphium tyosenense Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of A. spinulosum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca, Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan, Korea).

Cotylotretus cubanicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Artiukh, 1958.

SYNONYMY:

Cotylotretus cubanicus Artiukh, 1958

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Russia).

Cotylotretus grandis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Copy: Kurashvili, 1957; Skrjabin, 1966.

SYNONYMY:

Distoma grande Rudolphi, 1819

Mesaulus grandis (Rudolphi, 1819) Braun, 1902

Cotylotretus grandis (Rudolphi, 1819) Oehner, 1910

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Ciconiiformes - Platalea ajaja

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany, USSR), N. America (USA, Mexico), S. America (Brazil).

Echinoparyphium aconiatum

STATUS AS WATERFOWL PARASITE: Common; reported 24 times in wild waterfowl, twice in domestic ducks.

DESCRIPTION: Dietz, 1909; Mendheim, 1940; Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Kasimov, 1956; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium aconiatum Dietz, 1909

Cercaria echinata Siebold, 1837 - [Ališauskaitė, 1960b; Odening, 1964]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snail; metacercariae encysted in fresh-water snails, clams, and experimentally in tadpoles; mature in final host 9-12 days after ingestion. (Ališauskaitė, 1959, 1960b; Ališauskaitė-Kiselienė, 1961; Gintsinskaitė, 1959a; Golikova, 1960; Kiselienė, 1966; Kotova, 1939; Kupriianova-Shakhmetova, 1960b, 1961; Odening, 1965; Riech, 1927; Ždárská, 1963, 1964b)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata, Lymnaea limosa, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Sphaerium corneum

SECOND INTERMEDIATE HOSTS: Anisus vortex, Lymnaea auricularia, Lymnaea baltica, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Physa fontinalis, Planorbarius corneus, Viviparus acerosus, Viviparus fasciatus, Viviparus viviparus, Sphaerium cornutum, Sphaerium lacustre, Rana temporaria [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta bernicla

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas formosa, Anas querquedula

Aythiini - Aythya ferina, Aythya fuligula, Netta rufina

Mergini - Clangula hyemalis, Melanitta nigra

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps auratus

Galliformes - Bonasa umbellus, Gallus gallus (dom.) [exper.]

Charadriiformes - Limosa limosa, Philomachus pugnax, Recurvirostra avosetta, Tringa glareola, Tringa ochropus, Vanellus vanellus

Columbiformes - Columba livia (dom.) [exper.]

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Tadzhikistan, Kirgizia, Uzbekistan, Kazakhstan, Tuva, Yakutia, Amur, Kamchatka), N. America (USA).

Echinoparyphium baculus

STATUS AS WATERFOWL PARASITE: Frequent; reported 15 times in wild ducks and twice in domestic ducks.

DESCRIPTION: Dietz, 1910. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY: Gower, 1939.

Distoma mergi Rudolphi, 1819

Distoma baculus Diesing, 1850

Echinostoma baculus (Diesing, 1850) Cobbold, 1860

Echinoparyphium baculus (Diesing, 1850) Lühe, 1909

Echinostoma echinatum of Mühling, 1898 - [Skrjabin & Bashkirova, 1956]

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snail; metacercariae encysted in fresh-water snails; mature in 13 days or less after ingestion by final host. (Ginetsinskaiâ, 1949b; Golikova, 1960)

FIRST INTERMEDIATE HOSTS: Physa fontinalis

SECOND INTERMEDIATE HOSTS: Physa fontinalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila

Mergini - Bucephala clangula, Melanitta fusca, Mergus albellus

Gaviiformes - Gavia arctica, Gavia stellata

Charadriiformes - Sterna hirundo [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Tuva, Buryat ASSR, Amur, Primorsk, Kamchatka), N. America (USA).

Echinoparyphium bagulai

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks and once experimentally in duck.

DESCRIPTION: Jain, 1960, 1961.

SYNONYMY:

Echinoparyphium bagulai Jain, 1961

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snail; metacercariae encysted in same species of snail; mature in final host 21 days after ingestion. (Jain, 1960, 1961)

FIRST INTERMEDIATE HOSTS: Lymnaea luteola

SECOND INTERMEDIATE HOSTS: Lymnaea luteola

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas clypeata, Anas poecilorhyncha [exper.],
Anas strepera

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Echinoparyphium clerici

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild and once in domestic ducks.

DESCRIPTION: Skrjabin, 1915; Bykhovskaja-Pavlovskaja, 1954a (fig. only). Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium clerici Skrjabin, 1915

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas querquedula

Aythiini - Aythya ferina

Oxyurini - Oxyura leucocephala

Charadriiformes - Chlidonias leucoptera, Chlidonias nigra, Larus argentatus, Larus ichthyaetus, Larus minutus, Larus ridibundus, Limosa limosa, Sterna albifrons, Sterna hirundo, Tringa glareola, Tringa nebularia, Tringa ochropus, Vanellus vanellus

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland, USSR), Asia (W. Siberia, Uzbekistan, India).

Echinoparyphium colchicus

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection. Natural host unknown.

DESCRIPTION: Dzavelidze, 1957.

SYNONYMY:

Echinoparyphium colchicus Dzavelidze, 1957

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae in same species; mature in 23-24 hours after ingestion by final host. (Dzavelidze, 1957, 1958)

FIRST INTERMEDIATE HOSTS: Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Viviparus viviparus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Georgia SSR).

Echinoparyphium dumni

STATUS AS WATERFOWL PARASITE: Accidental; reported once as result of experimental infection; natural host unknown.

DESCRIPTION: Lie & Umathevy, 1965b.

SYNONYMY:

Echinoparyphium dumni Lie & Umathevy, 1965

LIFE CYCLE: Eggs passed in feces; hatch in fresh water in 8 days, miracidia infect fresh-water pulmonate snail; cercariae emerge in 22-26 days after infection; metacercariae develop in fresh-water snails; mature in final host 10 days after ingestion, survive in final host about 3 weeks. (Lie & Umathevy, 1965b)

FIRST INTERMEDIATE HOSTS: Lymnaea rubiginosa

SECOND INTERMEDIATE HOSTS: Bellamya ingallsiana, Gyraulus convexiusculus, Indoplanorbis exustus, Lymnaea rubiginosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Lonchura ferruginosa [exper.], Lonchura punctulata [exper.], Padda oryzivora [exper.]

HABITAT: Small intestine - anterior portion.

DISTRIBUTION: Asia (Malaysia).

Echinoparyphium elegans

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of E. recurvatum - Mathias, 1927.

DESCRIPTION: Dietz, 1910; Cannon, 1938; Richard, 1964. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma elegans Looss, 1899

Echinoparyphium elegans (Looss, 1899) Dietz, 1909

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas rubripes

Ciconiiformes - Phoenicopterus antiquorum

Strigiformes - Tyto alba

HABITAT: Small intestine.

DISTRIBUTION: Africa (Egypt, Madagascar), N. America (Canada).

Echinoparyphium ellisi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swan.

STATUS AS SPECIES: May be synonym of E. gizzardae - Johnston & Angel, 1949.

DESCRIPTION: Johnston & Angel, 1949.

SYNONYMY:

Cercariae ellisi Johnston & Simpson, 1944

Echinoparyphium ellisi (Johnston & Simpson, 1944) Johnston & Angel, 1949

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snails in

77-125 days after exposure to infection; metacercariae encysted in fresh-water mollusks and tadpoles. (Johnston & Angel, 1949)

FIRST INTERMEDIATE HOSTS: Lymnaea lessoni, Simlimnaea subaquatilis

SECOND INTERMEDIATE HOSTS: Amerianna sp., Corbiculina angasi, Lymnaea lessoni, Planorbis isingi, Plotiopsis tatei, tadpoles of Crinia signifera [all exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Small intestine - anterior portion.

DISTRIBUTION: Australia.

Echinoparyphium flexum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: McCoy, 1928; Najarian, 1954; Rai & Pande, 1967. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Distomum flexum Linton, 1892

Echinostoma flexum (Linton, 1892) Stossich, 1899

Echinoparyphium flexum (Linton, 1892) McCoy, 1927

LIFE CYCLE: Eggs passed in feces, hatch in water in 10-14 days; cercariae develop in fresh-water pulmonate snails in 40-46 days; metacercariae encysted in kidneys of tadpoles and adult frogs, and in snails, infective in 24 hours; mature in 12-14 days after ingestion by final host. (McCoy, 1928; Najarian, 1952, 1953, 1954; Rai & Pande, 1967)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris, Physa integra

SECOND INTERMEDIATE HOSTS: Hyla crucifer, Pseudacris nigrita, Rana clamitans, Rana pipiens, Rana sylvatica, Gyraululus parvus, Helisoma trivolvis, Lymnaea lacustris, Lymnaea palustris, Physa gyrina, Physa integra, Viviparus bengalensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus sp.

Anatini - Anas acuta, [Anas americana - Lapage, 1961, erroneous citation], Anas clypeata, Anas discors, Anas strepera

Mergini - Bucephala clangula, Melanitta nigra
Galliformes - Gallus gallus (dom.) [exper.]
Gruiformes - Porzana carolina, Rallus limicola
Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (India), N. America (USA).

Echinoparyphium gizzardai

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Doubtful whether this belongs in Echinoparyphium -
Skrjabin & Bashkirova, 1956.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium gizzardai Verma, 1936

Echinostoma gizzardii (Verma, 1936) Mendheim, 1943

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Not given, probably India (Calcutta museum).

Echinoparyphium minor

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Hsü, 1935. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma minor Hsü, 1935

Echinoparyphium minor (Hsü, 1935) Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (China).

Echinoparyphium nordiana

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks, once in domestic duck.

DESCRIPTION: Bashkirova, 1941; Bezubik, 1957a. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium nordiana Bashkirova, 1941

LIFE CYCLE: Metacercariae encysted in fresh-water snails; mature in 13-14 days after ingestion by final host. (Ališauskaitė, 1960a; Kiseliënė, 1966; Kupriřanova-Shakhmetova, 1960b, 1961)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea stagnalis, Planorbarius corneus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas penelope

Mergini - Mergus albellus, Mergus merganser

Charadriiformes - Larus ridibundus

Passeriformes - Garrulus glandarius

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland, Lithuania, Russia), Asia (W. Siberia, Kazakhstan, Amur).

Echinoparyphium paracinctum

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Bykhovskaiř-Pavlovskaiř, 1954a. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium paracinctum Bykhovskaja-Pavlovskaja, 1954

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta

Aythini - Aythya ferina

Charadriiformes - Limosa limosa, Tringa glareola, Vanellus vanellus

HABITAT: Intestine.

DISTRIBUTION: Asia (W. Siberia, Tuva).

Echinoparyphium querquedulae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Ablasov & Chibichenko, 1960.

SYNONYMY:

Echinoparyphium querquedulae Ablasov & Chibichenko, 1960

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kirgizia).

Echinoparyphium recurvatum

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 95 times in wild, 66 times in domestic and twice in captive waterfowl. Pathology of infection described by Betz, 1941; mortality reported by Shleikus & Tatarintsevaite, 1960 (in epizootic); Soulsby, 1955; and Trofimov, 1962 (in epizootic).

STATUS AS SPECIES: Development of cercariae in both Lymnaeidae and Planorbidae indicates possibility of different races or a species complex to Odening (1965).

DESCRIPTION: Yamaguti, 1933, 1934; Bashkirova, 1941; Mendheim, 1943;

Bezubik, 1957a; Gvozdev, 1958; Beverley-Burton, 1961; Odening, 1964c.
Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova,
1956; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma recurvatum Linstow, 1873

Echinostoma recurvatum (Linstow, 1873) Stossich, 1892

Echinoparyphium recurvatum (Linstow, 1873) Lühe, 1909

Echinoparyphium koidzumii Tsuchimochi, 1924 - [Yamaguti, 1933; Ando,
1928]

Echinostoma aegyptiaca Khalil & Abaza, 1924 - [Bykhovskaiâ-Pavlov-
skaiâ, 1962]

Echinoparyphium recurvatum vanelli Yamaguti, 1939 - [Bykhovskaiâ-
Pavlovskaiâ, 1954a, 1962]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh- and brackish water pulmonate snails in about 32 days; encyst in same individual or penetrate and encyst as metacercariae in other fresh-water snails and kidneys of tadpoles; mature in 8-22 days after ingestion by final host, survive in final host about 35 days. Much life cycle work in Europe confused, larvae inadequately identified (Odening, 1962b). (Abdel Azim, 1930; Alekseev, 1963c; Ališauskaitė, 1958, 1959; Bisseru, 1953, 1967; Bittner, 1925; Brumpt & Buttner, 1949; Dinulescu, 1939; Ginetsinskaiâ, 1959a; Gmitter, 1955; Harper, 1929; Ianchev & Bozhkov, 1959a; Kiselienė, 1966; Kotel'nikov, 1961a; Kupriianova-Shakhmetova, 1961; Mathias, 1926, 1927; Mathies & Cort, 1956; Morishita, 1929; Nevostrueva, 1954a; Odening, 1962b, 1965; Petrochenko & Kotel'nikov, 1959b; Pratt & McCauley, 1961; Rašin, 1933; Reimer, 1964a, 1965; Senger, 1954; Simón Vicente, 1963; Sonsino, 1892; Suzuki, 1932; Tsuchimochi, 1924, 1926; Williams, 1966b; Zajíček, 1963c; Ždárská, 1963)

FIRST INTERMEDIATE HOSTS: Anisus leucostomus, Anisus spirobis, Anisus vortex, Bulinnaea megasoma, Bulinus contortus, Bulinus dybowskii, Bulinus innesi, Bulinus truncatus, Gyraulus convexiusculus, Gyraulus leucostomus; Lymnaea abrusa, Lymnaea ampla, Lymnaea auricularia, Lymnaea emarginata, Lymnaea ovata, Lymnaea palustris, Lymnaea parva, Lymnaea peregra, Lymnaea stagnalis, Paludina vivipara, Physa alexandrina, Physa fontinalis, Physa parkeri, Planorbis carinatus, Planorbis imbilicatus, Planorbis planorbis, Spiralina vortex, Valvata piscinalis

SECOND INTERMEDIATE HOSTS: Anisus contortus, Anisus leucostomus, Anisus spirorbis, Anisus vortex, Bathyomphalas contortus, Bulinus africanus, Bulinus contortus, Bulinus dybowskii, Bulinus truncatus, Dreissena polymorpha, Gyraulus albus, Indoplanorbis exustus, Lymnaea auricularia, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea pervia, Lymnaea stagnalis, Lymnaea swinhoi, Physa acuta, Physa fontinalis, Planorbarius corneus, Planorbarius dufouri, Planorbis carinatus, Planorbis planorbis, Planorbis tanganykanus, Valvata piscinalis, Musculinum lacustre, Pisidium obtusale,

Pisidium pusillum, Sphaerium corneum, Bufo vulgaris, Cyclas sp., Hyla viridis, Felobates fuscus, Rana dalmatina, Rana esculenta, Rana temporaria

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Cygnus cygnus, Cygnus olor

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas angustirostris, Anas clypeata, Anas crecca, Anas falcata, Anas formosa, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas specularis, Anas strepera, Anas versicolor

Somateriini - Somateria mollissima

Aythiini - Aythya baeri, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix galericulata, Cairina moschata (dom.)

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus, Mergus merganser

Podicipediformes - Podiceps sp.

Ciconiiformes - Botaurus stellaris

Falconiformes - Circus melanoleucus

Galliformes - Gallus gallus (dom.), Lyrurus tetrrix, Meleagris gallopavo, Meleagris gallopavo (dom.), Perdix perdix [exper.], Phasianus colchicus

Gruiformes - Fulica atra, Rallus aquatica

Charadriiformes - Actitis hypoleucos, Charadrius dubius, Chlidonias nigra, Erolia minuta, Larus canus, Larus ridibundus, Limosa limosa, Numenius arquata, Philomachus pugnax, Pluvialis apricaria, Scolopax rusticola, Sterna albifrons, Tringa nebularia, Tringa ochropus, Vanellus vanellus, Xenus cinereus

Columbiformes - Columba livia (dom.), Streptopelia orientalis

Strigiformes - Strix aluco, Strix uralensis

Passeriformes - Aidemosyne cantans [exper.], Corvus sp., Lonchura atricapillus [exper.]

MAMMALIA - Primates - Homo sapiens

Rodentia - Mus musculus (lab.) [exper.], Ondatra zibethica, Rattus norvegicus, Rattus rattus

Carnivora - Canis familiaris

HABITAT: Small intestine - especially duodenum, ceca.

DISTRIBUTION: Cosmopolitan.

Echinoparyphium recurvatum var. indiana

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Does not belong in Echinoparyphium, description insufficient - Skrjabin & Bashkirova, 1956; subspecies probably not valid - Beverley-Burton, 1961.

DESCRIPTION: Verma, 1936.

SYNONYMY:

Echinoparyphium recurvatum var. indiana Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

Charadriiformes - Capella gallinago

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Echinoparyphium sinorchis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Skrjabin & Bashkirova, 1956; Macko, 1960b, 1960c.

SYNONYMY:

Echinoparyphium sinorchis Oshmarin in Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

Passeriformes - Cyanopica cyana

HABITAT: Small intestine.

DISTRIBUTION: Europe (Czechoslovakia), Asia (Primorsk).

Echinoparyphium spiniferum

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck as result of experimental infection. Natural host unknown.

STATUS AS SPECIES: Cercaria spiniferum of Ahmed synonym of Echinostoma revolutum (Odening, 1962), or in E. revolutum complex (Odening,

1964e), not in Echinoparyphium.

DESCRIPTION: Ahmed, 1959.

SYNONYMY:

Cercaria spinifera La Valette, 1855

Echinoparyphium spiniferum (La Valette, 1855) Ahmed, 1959

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by fresh-water snail, cercariae developed in 8 weeks; cercariae penetrate and encyst as metacercariae in fresh-water snails and frog tadpoles; mature in 14-21 days after ingestion by final host; survive less than 6 weeks in duck as final host. (Ahmed, 1959)

FIRST INTERMEDIATE HOSTS: Planorbarius corneus, Faludina vivipara

SECOND INTERMEDIATE HOSTS: Planorbarius corneus, Rana esculenta [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

HABITAT: Large intestine.

DISTRIBUTION: Europe (Germany).

Echinoparyphium syrdariense

STATUS AS WATERFOWL PARASITE: Rare; reported once (?) in wild duck.

DESCRIPTION: Burdelev, 1937. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium syrdariense Skrjabin & Shul'ts, 1934, nomen nudum

Echinoparyphium syrdariense Burdelev, 1937

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus albellus

Galliformes - Gallus gallus (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Uzbekistan, Yakutia).

Echinoparyphium syrdariense var. aquaticum

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium sydrariense var. aquaticum Bashkirova, 1941

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus albellus

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Yakutia).

Echinoparyphium westsibiricum

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild and 3 times in domestic ducks.

DESCRIPTION: Isaïchikov, 1925; Gvozdev, 1958. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Kasimov, 1956; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinoparyphium westsibiricum Isaïchikov, 1925

LIFE CYCLE: Unknown; probably similar to that of E. recurvatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.), Phasianus colchicus

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Europe (England), Asia (W. Siberia, Azerbaidzhan, Kazakhstan, Uzbekistan, Primorsk).

Neoacanthoparyphium echinatoides

STATUS AS WATERFOWL PARASITE: Rare or accidental; reported once from natural infection and 5 times from experimental infection in

domestic waterfowl. Natural host not known - Odening, 1962b.

STATUS AS SPECIES: Identification much confused in early literature. Echinostoma echiniferum (La Val.) Stoss., 1892, not recognized as synonym by Odening (1962b), reported in Anas boschas and Mergus merganser. Neoacanthoparyphium a synonym of Echinoparyphium - Baer & Joyeux, 1961.

SYNONYMY: Odening, 1962b.

Cercaria echinatoides Filippi, 1854

Neoacanthoparyphium echinatoides (Filippi, 1854) Odening, 1962

Echinoparyphium echinatoides (Filippi, 1854) Kupriánova-Shakhmetova, 1961

Cercaria echinifera La Valette, 1855

Echinoparyphium petrowi Nevostrueva, 1954

Neoacanthoparyphium petrowi (Nevostrueva, 1954) Yamaguti, 1958

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snail; metacercariae encysted in fresh-water snails and clams; mature in 5-8 days after ingestion by final host, survive 10-14 days. Odening (1964) doubts if Galba palustris and Bithynia tentaculata are hosts as reported; even metacercariae almost exclusively in Viviparus. (Ališauskaitė, 1959; Ginetsinskaja, 1957; Kiselienė, 1965, 1966; Kupriánova-Shakhmetova, 1961; Nevostrueva, 1954a, 1958b; Odening, 1962b, 1964e, 1965; Vergun, 1962; Ždárská, 1964a)

FIRST INTERMEDIATE HOSTS: Viviparus acerosus, Viviparus contectus, Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Viviparus acerosus, Viviparus contectus, Viviparus viviparus, Sphaerium rivicola, Sphaerium solidum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus ridibundus [exper.]

Columbiformes - Columba livia (dom.) [exper.]

Passeriformes - Passer domesticus [exper.], Passer montanus [exper.],
Sturnus vulgaris [exper.]

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

Lagomorpha - Oryctolagus cuniculus [exper.]

HABITAT: Probably small intestine.

DISTRIBUTION: Europe.

Echinostoma amurzetica

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Petrochenko & Egorova, 1961, 1963.

SYNONYMY:

Echinostoma amurzetica Petrochenko & Egorova, 1961

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca.

DISTRIBUTION: Asia (Khabarovsk).

Echinostoma anseris

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild goose and twice in domestic ducks.

DESCRIPTION: Yamaguti, 1939. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma anseris Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis

Anatini - Anas platyrhynchos (dom.)

Gruiformes - Rallus aquaticus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Thailand, China, Japan).

Echinostoma asiatica

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Belongs in Echinoparyphium - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Hsü, 1935. Copy: Skrjabin & Bashkirova, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Echinostoma elongata Hsü, 1935, not Nicoll, 1914

Echinostoma asiatica Mendheim, 1943

Echinostoma hsui Yamaguti, 1958

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (China).

Echinostoma audyi

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic ducklings from experimental infection; natural hosts unknown.

DESCRIPTION: Lie & Umathevy, 1965a.

SYNONYMY:

Echinostoma audyi Lie & Umathevy, 1965

LIFE CYCLE: Eggs hatch in fresh water in 8-12 days, miracidia infect fresh-water snail; cercariae emerge 19-23 days after infection; metacercariae develop in fresh-water snails; mature 8 days after ingestion by final host. (Lie & Umathevy, 1965a)

FIRST INTERMEDIATE HOSTS: Lymnaea rubiginosa

SECOND INTERMEDIATE HOSTS: Gyraulus convexiusculus [exper.], Bellamyia ingallsiana, Indoplanorbis exustus [exper.], Lymnaea rubiginosa [exper.], Pila scutulata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.], Macropygia ruficeps [exper.]

Passeriformes - Lonchura ferruginosa [exper.], Lonchura punctulata [exper.], Padda oryzivora [exper.]

HABITAT: Large intestine.

DISTRIBUTION: Asia (Malaysia).

Echinostoma barbosai

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duckling as result of experimental infection. Natural host not known.

DESCRIPTION: Lie & Basch, 1966.

SYNONYMY:

Echinostoma barbosai Lie & Basch, 1966

LIFE CYCLE: Eggs hatch in fresh water in 8 days at 28° C.; miracidia penetrate fresh-water snails; cercariae emerge in 17-26 days and penetrate other snails to encyst as metacercariae in pericardial sac and kidney, or encyst in other structures of body of first host without emerging; mature in final host 10 days after ingestion; survive in final host about 4 weeks. (Lie & Basch, 1966)

FIRST INTERMEDIATE HOSTS: Biomphalaria glabrata, Biomphalaria straminea [exper.], Biomphalaria tenagophila

SECOND INTERMEDIATE HOSTS: Biomphalaria glabrata, Biomphalaria straminea, Biomphalaria tenagophila

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Small intestine - posterior end, large intestine, ceca.

DISTRIBUTION: S. America (Brazil).

Echinostoma bhattacharyai indicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Ablasov & Chibichenko, 1960.

SYNONYMY:

Echinostoma bhattacharyai indicus Ablasov & Chibichenko, 1960

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser indicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kirgizia).

Echinostoma chasma

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Belongs in Echinoparyphium - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Lal, 1939b. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma chasma Lal, 1939

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Echinostoma chinensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Ku, Li, & Chu, 1964.

SYNONYMY:

Echinostoma chinensis Ku, Li, & Chu, 1964.

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Large intestine.

DISTRIBUTION: Asia (China).

Echinostoma chloropodis

STATUS AS WATERFOWL PARASITE: Rare, normally in ralliform birds;

reported once in wild duck.

DESCRIPTION: Mendheim, 1940; Bykhovskaiā-Pavlovskaiā, 1954a (fig. only); Herber, 1961. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Distoma chloropodis Zeder, 1800

Echinostoma chloropodis (Zeder, 1800) Dietz, 1909

Fasciata crenata Froelich, 1802 nec Rudolphi, 1802 - [Sprehn, 1932]

Distoma uncinatum Zeder, 1803

Echinostoma uncinatum (Zeder, 1803) Cobbold, 1860 - [Hübner, 1939]

LIFE CYCLE: Metacercariae in fresh-water snail. (Ališauskaitė, 1959a)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Viviparus contectus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Gruiformes - Fulica americana, Fulica atra, Gallinula chloropus,

Porzana porzana, Porzana pusilla, Rallus aquaticus

Charadriiformes - Capella gallinago, Capella media, Erolia testacea

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kazakhstan, Kirgizia, Tadzhikistan), N. America (USA, El Salvador).

Echinostoma crecci

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of E. govindum Moghe, 1932 - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma crecci Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Echinostoma dietzi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl and twice in domestic goose.

DESCRIPTION: Pukhov, 1939; Bashkirova, 1941; Macko, 1956. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Echinostoma dietzi Skrjabin, 1924, nomen nudum
Echinostoma dietzi Skrjabin in Pukhov, 1939 (?)

LIFE CYCLE: Metacercariae in fresh-water snail; mature in final host 13-14 days after ingestion. (Kupriřanova-Shakhmetova, 1960b, 1961)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Planorbarius corneus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Cygnus columbianus bewickii, Cygnus olor

Aythini - Aythya ferina

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Europe (USSR), Asia (Armenia, Kirgizia, Uzbekistan, Kazakhstan, Yakutia).

Echinostoma echinocephalum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Doubtful; description inadequate. Probably synonym of E. revolutum - Beaver, 1937.

DESCRIPTION: Dietz, 1910. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Distoma echinocephalum Rudolphi, 1819

Distoma (Echinostoma) echinocephalum Rudolphi, 1819 of Dujardin,
1845

Echinostoma echinocephalum (Rudolphi, 1819) Cobbold, 1860

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

Falconiformes - Milvus milvus, Milvus migrans

HABITAT: Probably small intestine.

DISTRIBUTION: Europe, Africa (Egypt).

Echinostoma fulicae

STATUS AS WATERFOWL PARASITE: Accidental, normally in Fulica; reported once in domestic duck from experimental infection.

DESCRIPTION: Porter, 1921.

SYNONYMY:

Echinostoma fulicae Porter, 1921

LIFE CYCLE: Larvae in fresh-water snails. (Porter, 1921, 1938)

INTERMEDIATE HOSTS: Bulinus tropicus, Tomichia ventricosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Gruiformes - Fulica cristata

HABITAT: Probably small intestine.

DISTRIBUTION: Africa (S. Africa).

Echinostoma gotoi

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck from experimental infection.

STATUS AS SPECIES: Perhaps synonym of E. sarcinum - Yamaguti, 1958.

DESCRIPTION: Ando & Ozaki, 1923; Dollfus, 1925. Copy: Skrjabin &

Bashkirova, 1956.

SYNONYMY:

Echinostoma gotoi Ando & Ozaki, 1923

LIFE CYCLE: Cercariae developed in fresh-water snails; metacercariae encysted in fresh-water snails; mature in 10 days after ingestion by final host. (Ando & Tsuyuki, 1926; Ono, 1935)

FIRST INTERMEDIATE HOSTS: Lymnaea japonica, Viviparus japonicus, Viviparus malleatus

SECOND INTERMEDIATE HOSTS: Lymnaea sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Gruiformes - Grus japonensis

Passeriformes - Corvus coronoides

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan).

Echinostoma grandis

STATUS AS WATERFOWL PARASITE: Infrequent, normally in Fulica; reported 3 times in wild ducks and once in domestic waterfowl.

DESCRIPTION: Bashkirova, 1946; Ginetsinskaja, 1952. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma grandis Bashkirova, 1946

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.), Anas crecca, Anas penelope

Gruiformes - Fulica atra

HABITAT: Small intestine, ceca.

DISTRIBUTION: E. Europe (Czechoslovakia, Poland, Azerbaidzhan), Asia (W. Siberia, Uzbekistan, Tadzhikistan).

Echinostoma hortense

STATUS AS WATERFOWL PARASITE: Rare; reported once (?) in domestic duck, perhaps as result of experimental infection; original citation not found. Normally in mammals.

DESCRIPTION: Asada, 1926; Yamaguti, 1933, 1941c. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinochasmus hortense Goto in Asada, 1926
Echinostoma hortense Asada, 1926
Echinostoma campi Ono, 1930 - [Yamaguti, 1958]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snail; metacercariae encysted in gills of amphibian tadpoles and fish, infective in at least 7 days; mature in final host in 22 days after ingestion. (Asada, 1939; Ono, 1930; Yamaguti, 1933, 1941c)

FIRST INTERMEDIATE HOSTS: Lymnaea japonica, Lymnaea pervia

SECOND INTERMEDIATE HOSTS: Misgurnus anguillicaudatus, Bufo bufo, Cynops pyrrhogaster, Hynobius naevius, Hynobius nebulosus, Rana cat-esbiana, Rana nigromaculata, Rana rugosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) - [Reported by Bashkirova, 1947; original citation not found]

MAMMALIA - Carnivora - Canis familiaris, Mustela itatsi
Rodentia - Rattus norvegicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (China, Korea, Japan).

Echinostoma katuradai

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duck from experimental infection. Natural host unknown.

DESCRIPTION: Kurisu, 1930.

SYNONYMY:

Echinostoma katuradai Kurisu, 1930

LIFE CYCLE: Metacercariae encysted in fresh-water snails and frogs. (Yamaguti, 1958)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Viviparus malleatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Passeriformes - Corvus sp. [exper.]

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Japan).

Echinostoma koisarensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Ablasov & Iksanov, 1959.

SYNONYMY:

Echinostoma koisarensis Ablasov & Iksanov, 1959

Echinoparyphium koisarensis Ablasov & Iksanov, 1959 of McDonald, 1965,
lapsus

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

Charadriiformes - Larus ridibundus

HABITAT: Intestine.

DISTRIBUTION: Asia (Kirgizia).

Echinostoma lindoensis

STATUS AS WATERFOWL PARASITE: Rare, normally in man or rats; reported once in domestic duck. Heavy experimental infections cause death of ducklings, goslings, and mice (Lie Kian Joe, 1964a).

DESCRIPTION: Sandground & Bonne, 1940; Kian Joe Lie, 1964b.

SYNONYMY:

Echinostoma lindoensis Sandground & Bonne, 1940

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 9-13 days; miracidia infect fresh-water snail; cercariae develop and emerge in 23 days after infection, penetrate fresh-water clams, snails, and amphibian tadpoles, and form metacercariae; mature in final host 10-14 days after ingestion. (Bonne, Bras, & Lie, 1948, 1953; Bonne, et al., 1941; Kian Joe Lie, 1964b, 1968; Sandground & Bonne, 1940)

FIRST INTERMEDIATE HOSTS: Biomphalaria glabrata, Biomphalaria straminea [exper.], Gyraulus sarasinorum, Gyraulus convexiusculus

SECOND INTERMEDIATE HOSTS: Corbicula javanica, Corbicula lindoensis, Corbicula rivalis, Biomphalaria glabrata, Biomphalaria straminea [exper.], Gyraulus convexiusculus, Indoplanorbis exustus, Lymnaea rugiginosa, Viviparus rudipellis, Rhacophorus leucomystax (tadpoles)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Primates - Homo sapiens

Rodentia - Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.],

Rattus norvegicus (lab.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (Malaysia, Celebes I. - Lake Lindo), S. America (Brazil).

Echinostoma longicirrus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive or domestic swan.

STATUS AS SPECIES: Doubtful species - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma longicirrus Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Echinostoma minimus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Validity doubted - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma minimus Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Echinostoma miyagawai

STATUS AS WATERFOWL PARASITE: Common; reported 12 times in wild waterfowl, 26 times in domestic waterfowl.

STATUS AS SPECIES: Synonym of E. revolutum - Beaver, 1937; Bykhovskaja-Pavlovskaja, 1954a, 1962.

DESCRIPTION: Ishii, 1933a, 1933b; Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY:

Echinostoma miyagawai Ishii, 1932

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 9-11 days; cercariae develop in fresh-water snails; metacercariae in fresh-water snails and frogs; mature in 12-24 days after ingestion by final host. (Chiaberashvili, 1954; Nevostueva, 1953)

FIRST INTERMEDIATE HOSTS: Lymnaea lagotis, Lymnaea palustris, Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea ovata, Lym-

naea palustris, Lymnaea stagnalis, Planorbis planorbis, Rana temporaria

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Cygnus olor

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope

Aythiini - Netta rufina

Oxyurini - Oxyura leucocephala

Galliformes - Gallus gallus (dom.)

Charadriiformes - Larus ridibundus

Columbiformes - Streptopelia turtur

MAMMALIA - Rodentia - Arvicola terrestris

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe (Bulgaria, USSR), Asia (Azerbaijan, Uzbekistan, Kirgizia, Kazakhstan, China, Primorsk, Japan).

Echinostoma novum

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild and twice in domestic waterfowl.

DESCRIPTION: Verma, 1936; Baugh, 1950; Shirinov, 1962b. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Paryphostomum novum Verma, 1936

Echinostoma novum (Verma, 1936) Baugh, 1950

LIFE CYCLE: Metacercariae in fresh-water snail. (Oshmarin, et al., 1963)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Lymnaea lagotus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser indicus

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan, India, Primorsk).

Echinostoma paraulum

STATUS AS WATERFOWL PARASITE: Common; reported 22 times in wild and 25 times in domestic waterfowl.

STATUS AS SPECIES: Synonym of E. revolutum - Beaver, 1937; Yamaguti, 1958; Bykhovskaiâ-Pavlovskaiâ, 1954a, 1962; retained as distinct on basis of larval characteristic by Supperer, 1959.

DESCRIPTION: Dietz, 1910; Mendheim, 1943; Odening, 1965. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Echinostoma paraulum Dietz, 1909

Echinoparyphium paraulum (Dietz, 1909) Sprehn, 1930

Echinostoma columbae Zunker, 1925

Echinostoma parvulum Skrjabin, 1915, lapsus

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails, encyst in another snail and form metacercariae; mature in 11-12 days after ingestion by final host. (Chîaberashvili, 1954; Kupriianova-Shakhmetova, 1960b; Petrochenko & Kotel'nikov, 1959b; Supperer, 1959; Zajiček, 1963c)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea lagotus, Lymnaea ovata, Lymnaea stagnalis, Lymnaea truncatula, Planorbis cornutus

SECOND INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea lagotus, Lymnaea palustris, Planorbis carinatus, Viviparus viviparus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus, Cygnus cygnus, Cygnus olor (dom.)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas penelope, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Netta rufina

Mergini - Mergus merganser

Podicipediformes - Podiceps cristatus, Podiceps ruficollis

Galliformes - Gallus gallus (dom.), Phasianus colchicus

Charadriiformes - Calidris tenuirostris, Erolia ferruginea

Columbiformes - Columba cristata, Columba livia, Columba livia (dom.)

MAMMALIA - Primates - Homo sapiens

HABITAT: Intestine - posterior portion.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Uzbekistan, Kirgizia, Kazakhstan, Tuva, China, Amur, Primorsk, Japan).

Echinostoma pekinensis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in domestic duck.

DESCRIPTION: Ku, 1937a. Copy: Skrjabin & Bashkirova, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Echinostoma pekinensis Ku, 1937

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (China).

Echinostoma revolutum

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl and other aquatic birds and mammals; reported 118 times in wild, 127 times in domestic, and twice in captive waterfowl. Occasionally reported as cause of disease and mortality.

STATUS AS SPECIES: Development of cercariae in both Lymnaeidae and Planorbidae indicates possibility of different strains or races (Odening, 1965). The adults of several species can scarcely be differentiated.

DESCRIPTION: Yamaguti, 1933, 1934; Beaver, 1937; Gorshkov, 1937; Mendheim, 1940; Bykhovskaja-Pavlovskaja, 1954a; Perez Viguera, 1957; Bezubik, 1957a; Gvozdev, 1958; Beverley-Burton, 1961; Odening, 1964c. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Beaver, 1937; Stiles & Hassall, 1908.

Fasciola revoluta Froelich, 1802

Echinostoma revolutum (Froelich, 1802) Looss, 1899

Distoma anatis fuscae Viborg, 1795

Festucaria anatis Schrank, 1788

Fasciola anatis (Schrank, 1788) Gmelin, 1790

Distoma anatis (Schrank, 1788) Zeder, 1800

Distoma echinatum Zeder, 1803

Echinostoma echinatum (Zeder, 1803) Rudolphi, 1809

Distomum dilatatum Fischer, 1840

Echinostoma dilatatum (Fischer, 1840) Cobbold, 1960

- Distoma cygni oloris Diesing, 1858
Distoma fuligulae ferinae Diesing, 1858
Distomum armatum Molin, 1858, not Rudolphi, 1793
Echinostoma oxycephalum (Rudolphi, 1819) Railliet, 1896 - [perhaps a synonym, Beaver, 1937]; synonym of Hypoderaeum conoideum, Rees, 1933
Echinostoma mendax Dietz, 1909 - distinct, Yamaguti, 1958
Echinostoma paraulum Dietz, 1909 - distinct, Supperer, 1959, et al.
Echinostoma echinocephalum (Rudolphi, 1819) Dietz, 1810 - [perhaps, Beaver, 1937]
Echinostoma sudanense Odhner, 1911 - [perhaps, Beaver, 1937]
Echinostoma acuticauda Nicoll, 1914 - [perhaps, Beaver, 1937]
Cercaria trivolvis Cort, 1914 - [Ginetsinskaja, 1959a]
Echinostoma armigerum Barker & Irving, 1915 - distinct, Yamaguti, 1958
Echinostoma coalitum Barker & Beaver, 1915 - distinct, Yamaguti, 1958
Echinostoma callawayensis Barker & Noll, 1915-[perhaps, Beaver, 1937]
Echinostoma limicoli Johnston, 1920
Echinostoma cinetorchis Ando & Ozaki, 1923 - distinct, Yamaguti, 1958
Echinostoma erraticum Lutz, 1924 - [Skrjabin & Bashkirova, 1956]
Echinostoma microrchis Lutz, 1924 - [Skrjabin & Bashkirova, 1956]
Echinostoma neglectum Lutz, 1924 - [Skrjabin & Bashkirova, 1956]
Echinostoma nephrocystis Lutz, 1924 - [perhaps, Beaver, 1937]
Echinostoma columbae Zunker, 1925 - synonym of E. paraulum, Dawes, 1956
Echinostoma miyagawai Ishii, 1932 - distinct, Vasilev, 1958, et al.
Echinostoma revolutum var. japonicum Kurisu, 1932
Echinostoma robustum Yamaguti, 1935 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]; distinct, Skrjabin, Petrov, Bashkirova, 1947; et al.
Echinostoma revolutum var. tenuicollis Bashkirova, 1941 - [Bykhovskaja-Pavlovskaja, 1954a, 1962]
Echinostoma multispinosus Perez Vigueras, 1944 - [Dubois, 1951; Perez Vigueras, 1956]

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 9-14 days; cercariae develop in fresh-water snails in 39 days, penetrate another or the same snail, encyst as metacercariae; metacercariae may form in pelecypod mollusks, planaria, frog tadpoles, or fish (auxiliary hosts?); mature in 11-24 days after ingestion by final host, survive in final host about 35 days. (Alekseev, 1963c; Ališauskaitė, 1958, 1959; Anazawa, 1930; Beaver, 1937; Bisseru, 1953, 1967; Brown, 1926; Brumpt & Buttner, 1949; Caballero & Larios Rodriguez, 1940; Chlāberashvili, 1954; Fallis, 1934; Ginetsinskaja, 1959a; Golikova, 1960b; Gower, 1938b; Ianchev & Bozhkov, 1959a; Johnson, 1920; Johnston & Angel, 1941; Kiseliene, 1966; Kupriianova-Shakhmetova, 1961; Linstow, 1894; Miller, 1936; Nevostueva, 1954a; Odening, 1965; Ono, 1935; Patnaik & Ray, 1966; Peter, 1958; Petrochenko & Kotel'nikov, 1959b; Rees, 1933; Sandosham, 1954; Senger, 1954; Supperer, 1959; Suzuki, 1932; Tsuchimochi, 1924; Tubangui, 1932b; Vevers, 1923; Zajíček, 1963c; Zdárská, 1963; Zischke, 1966)

FIRST INTERMEDIATE HOSTS: Amerianna pectorosa, Amerianna pyramidata, Anisus contortus, Anisus vortex, Biomphalaria contortus, Biomphalaria

dufourii [exper.], Biomphalaria glabrata [exper.], Bulinus tropicus [exper.], Bulinus truncatus [exper.], Gyraulus japonicus, Helisoma trivolvis, Lymnaea auricularia, Lymnaea columella, Lymnaea lagotus, Lymnaea natalensis, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea pervia, Lymnaea radix, Lymnaea stagnalis, Lymnaea swinhoi, Physa gyrina, Physa occidentalis, Physa rivalis, Planorbarius corneus, Planorbis planorbis, Planorbis tanganikanus, Semisulcospira cancellata

SECOND INTERMEDIATE HOSTS: Anisus leucostomus, Anisus vortex, Aplexa hypnorum, Bathyomphalus contortus, Biomphalaria glabrata [exper.], Bithynia tentaculata, Bithynia ventricosa, Bulinus africanus, Bulinus tropicus [exper.], Bulinus truncatus [exper.], Gyraulus japonicus, Helisoma trivolvis, Indoplanorbis exustus [exper.], Lymnaea abrusa, Lymnaea auricularia, Lymnaea columella, Lymnaea modicella, Lymnaea natalensis, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea pervia, Lymnaea stagnalis, Lymnaea traski, Paludina sp., Physa fontinalis, Physa gyrina, Physa hallei, Physa occidentalis, Physa rivalis, Planorbarius corneus, Planorbis carinatus, Planorbis glabrata [exper.], Planorbis tanganikanus, Semisulcospira cancellata, Valvata macrostoma, Viviparus ussuriensis, Viviparus viviparus, Cardium edule, Corbicula producta, Musculium partumeium, Pisidium obovale, Sphaerium sp., planaria, Bufo americana, Rana catesbeiana, Rana esculenta, Rana japonica, Rana nigromaculata, Rana pipiens, Rana rugosa, Rana temporaria

AUXILIARY HOSTS?: Acheilognathus chankaensis, Cultur alburnus, Gobio gobio, Hemicultur leucisculus, Ictalurus melas

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Dendrocygnini - Dendrocygna viduata

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus, Anser fabalis, Branta bernicla, Branta canadensis, Branta ruficollis, Cygnus atratus, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus melanocoryphus, Cygnus olor, Cygnus olor (dom.)

Tadornini - Neochen jubatus, Tadorna ferruginea, Tadorna tadorna, Tadorna tadornoides

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas discors, [Anas erythrorhyncha - Larage, 1961, erroneous citation], Anas falcata, Anas formosa, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rhynchotis, Anas rubripes, Anas strepera, Anas superciliosa

Aythiini - Aythya americana, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix galericulata, Amazonetta brasiliensis, Cairina moschata (dom.), Nettapus pulchellus

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca, Melanitta nigra, Mergus albellus, Mergus merganser, Mergus

serrator

- Oxyurini - Biziura lobata, Oxyura jamaicensis, Oxyura leucocephala
Podicipediformes - Podiceps cristatus
Pelecaniformes - Haliastur pygmaeus
Ciconiiformes - Ciconia ciconia, Nycticorax nycticorax, Phoenicopterus antiquorum
Falconiformes - Buteo lagopus, Fernis apivorus
Galliformes - Gallus gallus (dom.), Lyrurus tetrix, Meleagris gallopavo, Perdix perdix, Phasianus colchicus
Gruiformes - Aramides cajanea [exper.], Fulica americana, Fulica atra, Grus grus, Porzana porzana
Charadriiformes - Actitis hypoleucos, Capella gallinago, Haematopus ostralegus, Himantopus himantopus, Larus argentatus, Larus ridibundus, Numenius arquata, Philomachus pugnax, Rissa tridactyla, Scolopax rusticola, Vanellus vanellus
Columbiformes - Columba livia (dom.), Columba oenas, Streptopelia orientalis, Streptopelia turtur
Strigiformes - Strix uralensis
Coraciiformes - Coracias garrulus
Passeriformes - Cassidix mesamexicanus, Corvus brachyrhynchos, Corvus corone, Corvus corone cornix, Corvus monedula, Corvus scapularis, Hirundo rustica, Motacilla flava
MAMMALIA - Marsupialia - Didelphis marsupialis
Primates - Homo sapiens
Rodentia - Arvicola terrestris, Cavia porcellus [exper.], Mus musculus (lab.) [exper.], Ondatra zibethica, Rattus norvegicus (lab.) [exper.]
Lagomorpha - Oryctolagus cuniculus [exper.]
Carnivora - Canis familiaris [exper.], Felis catus [exper.]
Artiodactyla - Sus scrofa [exper.], Sus vittatus

HABITAT: Ceca, large intestine, small intestine.

DISTRIBUTION: Cosmopolitan.

Echinostoma robustum

STATUS AS WATERFOWL PARASITE: Common; reported 12 times in wild ducks, 24 times in domestic waterfowl.

STATUS AS SPECIES: Synonym of E. revolutum - Bykhovskaia-Pavlovskaiâ, 1954a, 1962; maintained as distinct species by Skrjabin & Bashkirova, 1956, et al.

DESCRIPTION: Yamaguti, 1935a; Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY:

Echinostoma robustum Yamaguti, 1935

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae encysted in fresh-water snail, frog, or fish (auxiliary host?); mature in 9-11 days after ingestion by final host. (Alekseev, 1963c; Ališauskaitė, 1959; Kiselienė, 1965, 1966; Kotel'nikov, 1961a; Kupriánova-Shakhmetova, 1960b)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris

SECOND INTERMEDIATE HOSTS: Cistaria plicata, Lymnaea lagotus, Lymnaea ovata, Lymnaea palustris, Melania amurensis, Planorbium cornueus, Viviparus contectus, Viviparus ussuriensis, Viviparus viviparus, Rana temporaria

AUXILIARY HOSTS ?: Acheilognathus chankaensis, Cultur alburnus, Gobio gobio, Hemicultur leucisculus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas falcata, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.)

Charadriiformes - Erolia testacea

Columbiformes - Columba livia (dom.), Streptopelia chinensis, Streptopelia turtur

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, Uzbekistan, Tadzhikistan, Kirgizia, Tuva, Amur, Primorsk, Kamchatka, Taiwan, Japan).

Echinostoma rufinae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Kurova, 1927. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova. 1956.

SYNONYMY:

Echinostoma rufinae Kurova, 1927

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya ferina, Aythya fuligula, Netta rufina

Gruiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Azerbaijan, Uzbekistan, Kazakhstan).

Echinostoma sarcinum

STATUS AS WATERFOWL PARASITE: Rare, normally in gruiform birds; reported once in wild duck.

DESCRIPTION: Macko, 1956. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma sarcinum Dietz, 1909

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Gruiformes - Fulica atra, Gallinula chloropus, Grus grus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kazakhstan, Japan), Africa (Sudan).

Echinostoma stromi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks, twice in domestic ducks.

DESCRIPTION: Bashkirova, 1946. Copy: Skrjabin, 1947b; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma stromi Bashkirova, 1946

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta sp., Anser erythropus
Anatini - Anas platyrhynchos (dom.)
Aythyini - Aythya ferina, Aythya nyroca, Netta rufina

HABITAT: Small intestine.

DISTRIBUTION: Asia (Azerbaijan, China).

Echinostoma sudanense

STATUS AS WATERFOWL PARASITE: Rare, typically in herons; reported once in wild duck.

STATUS AS SPECIES: Cannot be separated by description from E. revolutum - Beaver, 1937.

DESCRIPTION: Odhner, 1910; Shigin, 1955; Smogorzhevskaja, 1956.
Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma sudanense Odhner, 1910

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

Ciconiiformes - Ardea cinerea, Ardea purpurea, Ephippiorhynchus senegalensis, Nycticorax nycticorax, Scopus umbretta

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe (USSR), Africa (Sudan).

Echinostoma turkestanicum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild ducks.

DESCRIPTION: Kurova, 1927. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma turkestanicum Kurova, 1927

LIFE CYCLE: Unknown; probably similar to that of E. revolutum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythiini - Aythya ferina, Aythya nyroca, Netta rufina

HABITAT: Small intestine.

DISTRIBUTION: Asia (Azerbaijan, Kazakhstan, Primorsk).

Euparyphium longitestis

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Does not belong in Euparyphium, placed provisionally in Echinoparyphium - Skrjabin & Bashkirova, 1956.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Euparyphium longitestis Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of E. murinum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Not given, probably India (specimen in Calcutta Museum).

Euparyphium murinum

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Tubangui, 1931. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Euparyphium murinum Tubangui, 1931

Echinostoma murinum (Tugangui, 1931) Tubangui, 1947

Isthmiophora murina (Tubangui, 1931) Yamaguti, 1959

LIFE CYCLE: Eggs passed in feces, hatch in water in about one week; cercariae develop in fresh-water snail in 22 days after infection; metacercariae encysted in snail (may be same individual) or in frog tadpole, infective in 10 days; mature in 5-10 days after ingestion by final host, survive 2-7 months in final host. (Kian Joe Lie, 1967;

Tubangui, 1932b; Wu, 1951)

FIRST INTERMEDIATE HOSTS: Gyraulus convexiusculus, Lymnaea peregra

SECOND INTERMEDIATE HOSTS: Biomphalaria glabrata [exper.], Biomphalaria tenagophila [exper.], Gyraulus convexiusculus [exper.], Gyraulus chinensis, Hippeutis cantori, Indoplanorbis exustus [exper.], Lymnaea ollula, Lymnaea peregra, Lymnaea rubiginosa [exper.], Parafossarulus manchouricus, Segmentina hemisphaerula, Viviparus sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Rodentia - Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (Malaysia, Philippine Is., China).

Hypoderaeum conoideum

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 72 times in wild, 78 times in domestic, and twice in captive waterfowl. Cause of localized inflammation in intestine (Vevers, 1923).

DESCRIPTION: Yamaguti, 1934; Mendheim, 1943; Yamaguti & Mitunaga, 1943c; Cerecero, 1944; Bezubik, 1957a; Beverley-Burton, 1961. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Cuculanus conoideus Bloch, 1782

Distomum conoideum (Bloch, 1782) Railliet, 1886

Echinostoma conoideum (Bloch, 1782) Kowalewski, 1896

Hypoderaeum conoideum (Bloch, 1782) Dietz, 1908

Fasciola appendiculata Froelich, 1802 - [Kowalewski, 1898]

Distoma oxycephalum Rudolphi, 1819 - [Kowalewski, 1898]

Distoma Froelichii Kowalewski, 1894 - [Kowalewski, 1898]

Echinostoma froelichii (Kowalewski, 1894) Kowalewski, 1894

Opisthorchis pianae Galli-Valerio, 1898 - [Kowalewski, 1898]

Psilochasmus lecithosus Otte, 1926

Hypoderaeum sinensis Hsü, 1935 - [Hsu & Chow, 1938b]

Hypoderaeum magnocirrusa Verma, 1936 - [Skrjabin & Bashkirova, 1956]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails; metacercariae encysted in mollusks, fully formed in 40 days

at 12-24 C., mature in 8-30 days after ingestion by final host. (Alekseev, 1963c; Ališauskaitė, 1959; Brumpt & Buttner, 1949; Ginetsinskaja, 1959a; Golikova, 1960b; Kiselienė, 1966; Kotel'nikov, 1961; Kupriianova-Shakhmetova, 1961; Odening, 1965; Petrochenko & Kotel'nikov, 1959b; Rees, 1933; Vevers, 1923; Vergun, 1962; Williams, 1966b; Zdárská, 1963)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea lagotus, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea pervia, Lymnaea stagnalis, Lymnaea swinhoei, Planorbium corneum

SECOND INTERMEDIATE HOSTS: Anisus vortex, Gyraulus albus, Lymnaea auricularia, Lymnaea lagotus, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Physa fontinalis, Planorbium corneum, Planorbis planorbis, Viviparus ussuriensis, Pisidium sp., Sphaereum corneum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, [Branta canadensis - Lapage, 1961, erroneous citation], Branta ruficollis, Cygnus cygnus, Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, [Anas erythrorhynchos - Lapage, 1961, error], Anas falcata, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Cairina moschata, Plectropterus gambensis

Mergini - Bucephala clangula, Clangula hyemalis, Mergus merganser

Podicipediformes -

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.)

Gruiformes - Fulica atra

Columbiformes - Columba livia (dom.)

HABITAT: Small intestine - posterior portion, cloaca.

DISTRIBUTION: Europe, Asia, Africa, N. America (USA).

Hypoderaeum dingeri

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic waterfowl from experimental infection. Severe infections produced mortality in ducklings and goslings (Kian Joe Lie, 1964a).

DESCRIPTION: Kian Joe Lie, 1964a.

SYNONYMY:

Hypoderaeum dingeri Lie, 1964

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 6-9 days; cercariae develop in fresh-water snail, emerge in 23 days; continue emerging for 3.5 months, penetrate snails; metacercariae develop in fresh-water snails and amphibian tadpoles; mature in final host 14 days after ingestion, survive 4-8 weeks. (Kian Joe Lie, 1964a)

FIRST INTERMEDIATE HOSTS: Lymnaea rubiginosa

SECOND INTERMEDIATE HOSTS: Gyraulus convexiusculus, Indoplanorbis exustus, Lymnaea rubiginosa, tadpoles of Rhacophorus leucomystax

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Small intestine - posterior two thirds.

DISTRIBUTION: Asia (Malaysia).

Hypoderaeum essexensis

STATUS AS WATERFOWL PARASITE: Accidental; reported once as experimental infection in domestic duck. Natural host unknown.

DESCRIPTION: Khan, 1962b.

SYNONYMY:

Cercaria essexensis Khan, 1960

Hypoderaeum essexensis (Khan, 1960) Khan, 1962

LIFE CYCLE: Eggs passed in feces, hatch in water in 11 days; miracidia penetrate fresh-water snail; cercariae develop in snail, encyst in same or another snail; encysted metacercariae infective in 4 days, remain infective at least 30 days; mature in 13 days after ingestion by final host; survive in final host at least 11 days. (Khan, 1960, 1962b)

FIRST INTERMEDIATE HOSTS: Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Lymnaea peregra, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Small intestine - anterior end.

DISTRIBUTION: Europe (England).

Hypoderaeum gnedini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 11 times in wild ducks, twice in domestic duck.

DESCRIPTION: Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY:

Hypoderaeum gnedini Bashkirova, 1941

LIFE CYCLE: Unknown; probably similar to that of H. conoideum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas poecilorhyncha, Anas querquedula

Aythiini - Aythya ferina, Netta rufina

Podicipediformes - Podiceps cristatus

Gruiformes - Fulica atra

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe (USSR), Asia (Azerbaijan, Uzbekistan, Kazakhstan, Amur, Kamchatka).

Hypoderaeum mainpuria

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Verma, 1936. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Hypoderaeum mainpuria Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of H. conoideum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Hypoderaeum microspina

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Singh, 1954. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Echinostoma microspina Singh, 1954

Hypoderaeum microspina (Singh, 1954) Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of H. conoideum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas strepera

HABITAT: Intestine.

DISTRIBUTION: Asia (Kirgizia, India).

Hypoderaeum skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Hypoderaeum skrjabini Oshmarin in Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of H. conoideum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya ferina

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland, USSR), Asia (Buryat ASSR).

Hypoderaeum vigi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild ducks and twice in domestic ducks.

DESCRIPTION: Bashkirova, 1941; Gvozdev, 1962. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Hypoderaeum vigi Bashkirova, 1941

LIFE CYCLE: Unknown; probably similar to that of H. conoideum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas acuta

Aythiini - Aythya ferina, Aythya marila, Netta rufina

Charadriiformes - Erolia testacea

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ukraine, Georgia SSR), Asia (Azerbaijan, Kirgizia, Kazakhstan).

Metechinostoma amurensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Petrochenko & Khrustaleva, 1963.

SYNONYMY:

Metechinostoma amurensis Petrochenko & Khrustaleva, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Asia (Amur).

Farechinostomum cinctum

STATUS AS WATERFOWL PARASITE: Frequent; reported 11 times in wild

and 3 times (once experimentally) in domestic waterfowl.

DESCRIPTION: Gorshkov, 1937. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kasimov, 1956.

SYNONYMY: Dawes, 1956.

Fasciola cincta Rudolphi, 1803

Distoma (Echinostoma) cinctum (Rudolphi, 1803) Rudolphi, 1809

Echinostoma cinctum (Rudolphi, 1803) Cobbold, 1860

Parechinostomum cinctum (Rudolphi, 1803) Dietz, 1909

Echinoparyphium cinctum (Rudolphi, 1803) Bashkirova, 1941

Distoma uncinatum Zeder, 1803

Echinostoma uncinatum (Zeder, 1803) Cobbold, 1860

Distoma tringae helveticae Rudolphi, 1819

Echinoparyphium skrjabini Ivanitzkii, 1927 - [Skrjabin & Baskhirova, 1956; et al.]

LIFE CYCLE: Metacercariae encysted in fresh-water snails; mature 12-13 days after ingestion by final host. (Kiselienė, 1965, 1966; Kupriřanova-Shakhmetova, 1960b, 1961)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Lymnaea ovata, Lymnaea palustris, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],
Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas poecilorhyncha, Anas querquedula

Aythiini - Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Mergus albellus

Galliformes - Gallus gallus (dom.), Meleagris gallinavo (dom.), Phasianus colchicus

Gruiformes - Gallinula chloropus

Charadriiformes - Limosa limosa, Philomachus pugnax, Squatarola squatarola, Vanellus vanellus

Coraciiformes - Coracias garrulus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Uzbekistan, Kirgizia, Tuva, Thailand, Amur, Kamchatka).

Paryphostomum horai

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baugh, 1950.

SYNONYMY:

Paryphostomum horai Baugh, 1950

LIFE CYCLE: Unknown; probably similar to that of P. radiatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas poecilorhyncha

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Paryphostomum pentalobum

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic goose.

DESCRIPTION: Verma, 1936; Shirinov, 1962b. Copy; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Paryphostomum pentalobum Verma, 1936

LIFE CYCLE: Unknown; probably similar to that of P. radiatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Charadriiformes - Capella gallinago

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan, India).

Paryphostomum radiatum

STATUS AS WATERFOWL PARASITE: Rare, normally in cormorants; reported once in domestic goose.

DESCRIPTION: Edwards, 1927; Yamashita, 1938, 1939; Yamaguti, 1939; Bykhovskaja-Pavlovskaja, 1955; Bisseru, 1957b; Ryšavý, 1958. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Distoma (Echinostoma) radiatum Dujardin, 1845

Paryphostomum radiatum (Dujardin, 1845) Dietz, 1909
Distoma echinatum Zeder of Wedl, 1858 - [Sprehn, 1932]
Echinostoma exechinatum Solov'ev, 1912 - [Skrjabin & Bashkirova, 1956]
Echinochasmus tenuicollis S. J. Johnston, 1917 - [Johnston, 1943]
Paryphostomum tenuicollis (Johnston, 1917) Johnston & Angel, 1943
Paryphostomum phalacrocoracis Goss, 1941 - [Johnston, 1943]

LIFE CYCLE: Cercariae develop in fresh-water snails, encyst as metacercariae in fresh-water fish or tadpoles; mature after ingestion by final host. (Johnston & Angel, 1943)

FIRST INTERMEDIATE HOSTS: Lymnaea lessoni, Amerianna sp.

SECOND INTERMEDIATE HOSTS:

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Podicipediformes - Podiceps cristatus

Pelecaniformes - Anhinga rufa, Haliastur africanus, Haliastur melanoleucos, Haliastur pygmaeus, Phalacrocorax aristotelis, Phalacrocorax capillatus, Phalacrocorax carbo, Phalacrocorax fuscicollis

Gruiformes - Rallus aquaticus

Charadriiformes - Erolia fuscicollis

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Armenia, Uzbekistan, Kazakhstan, Kirgizia, Ceylon, Japan), Africa (S. Africa), Australia.

Paryphostomum testitri- folium

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Gogate, 1934; Bashkirova, 1941. Copy: Lal, 1939; Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Paryphostomum testitri-
folium Gogate, 1934

LIFE CYCLE: Unknown; probably similar to that of P. radiatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

Pelecaniformes - Haliastur pygmaeus, Phalacrocorax carbo

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), Asia (Kazakhstan, Kirgizia, Tadzhikistan, India, Burma).

Petasiger coronatus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mendheim, 1940; Sudarikov & Karmanova, 1960. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Petasiger coronatus Mendheim, 1940

Petasiger (Petasiger) coronatus Mendheim, 1940 of Skrjabin & Bashkirova, 1956

LIFE CYCLE: Metacercariae in oligochaete annelid. (Karmanova, 1960; Sudarikov & Karmanova, 1960)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Criodrilus lacuum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Gaviiformes - Gavia stellata

HABITAT: Intestine.

DISTRIBUTION: Europe (Germany, Ukraine).

Petasiger jubilarum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: El'perin, 1937. Copy: Skrjabin, Petrov, & Bashkirova, 1947; Skrjabin & Bashkirova, 1956; Kurashvili, 1957.

SYNONYMY:

Echinoparyphium jubilarum El'perin, 1937

Petasiger (Neopetasiger) jubilarum (El'perin, 1937) Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of P. megacantha.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos
Falconiformes - Falco tinnunculus

HABITAT: Intestine.

DISTRIBUTION: Europe (Georgia SSR), Asia (Armenia).

Petasiger longicirratus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Ku, 1938. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Petasiger longicirratus Ku, 1938

Petasiger (Neopetasiger) longicirratus Ku, 1938 of Skrjabin & Bashkirova, 1956

LIFE CYCLE: Unknown; probably similar to that of P. megacantha.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Intestine - duodenum.

DISTRIBUTION: Asia (China).

Petasiger megacantha

STATUS AS WATERFOWL PARASITE: Rare, typically in grebes; reported twice in wild ducks.

DESCRIPTION: Kotlan, 1922; Linton, 1928 (as P. nitidus); Beaver, 1939 (as P. nitidus). Copy: Skrjabin & Bashkirova, 1956; Kurashvili, 1957.

SYNONYMY:

Echinostomum pungens (Linstow) of Odhner, 1910

Echinostoma megacanthum Kotlan, 1922

Petasiger megacanthum (Kotlan, 1922) Pande, 1939

Petasiger (Petasiger) megacantha (Kotlan, 1922) of Bashkirova, 1941

Petasiger neocomense Fuhrmann, 1928 - [Prudhoe, 1945]

Petasiger nitidus Linton, 1928 - [Prudhoe, 1945]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snails; metacercariae encyst in esophageal and pharyngeal walls of fresh-water fish, infective in 9 days; mature in 10 days after inges-

tion by final host. (Beaver, 1938, 1939)

FIRST INTERMEDIATE HOSTS: Helisoma anceps, Helisoma campanulatum

SECOND INTERMEDIATE HOSTS: All experimental. Amblonites rupestris, Ictalurus nebulosus, Lebistes reticulatus, Lepomis pallidus, Notropis hudsonius, Perca flavescens, Umbra limi

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

Podicipediformes - Podiceps auratus, Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis

Passeriformes - Serinus canarius [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe (Hungary, USSR), Asia (Kirgizia, Kazakhstan), N. America (USA).

Petasiger minutissimus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Gogate, 1934; Bashkirova, 1941. Copy: Lal, 1939b; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Petasiger minutissimus Gogate, 1934

Petasiger (Neopetasiger) minutissimus Gogate, 1934 of Bashkirova, 1947

Navicularia minutissimus (Gogate, 1934) Mendheim, 1943

LIFE CYCLE: Unknown; probably similar to that of P. megacantha.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

HABITAT: Intestine.

DISTRIBUTION: Asia (Burma).

Petasiger skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Bashkirova, 1941. Copy: Skrjabin, Petrov, & Bashkirova,

1947; Skrjabin & Bashkirova, 1956.

SYNONYMY:

Petasiger (Neopetasiger) skrjabini Bashkirova, 1941

LIFE CYCLE: Unknown; probably similar to that of P. megacantha.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Podicipediformes - Podiceps cristatus, Podiceps grisegena

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ukraine), Asia (Azerbaijan).

Protechinostoma mucronisertulatum

STATUS AS WATERFOWL PARASITE: Accidental, normally in rail (Gruiformes); reported once in domestic duck as result of experimental infection.

DESCRIPTION: Feldman, 1941; Beaver, 1943.

SYNONYMY:

Fsilostomum reflexae Feldman, 1941

Protechinostoma mucronisertulatum Beaver, 1943

LIFE CYCLE: Cercariae develop in fresh-water snails; encyst as metacercariae in fresh-water snails, infective in 5-7 days; mature in final host 5 days after ingestion. (Feldman, 1940, 1941; Beaver, 1943; Redington & Ulmer, 1964)

FIRST INTERMEDIATE HOSTS: Lymnaea palustris, Lymnaea reflexa

SECOND INTERMEDIATE HOSTS: Helisoma trivolvis, Lymnaea palustris, Lymnaea stagnalis, Physa gyrina

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Gruiformes - Porzana carolina

Passeriformes - Sturnus vulgaris [exper.], Turdus migratorius [exper.]

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

HABITAT: Small intestine - lower part.

DISTRIBUTION: N. America (USA).

Curtuteria grummti

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Odening, 1963b.

SYNONYMY:

Curtuteria grummti Odening, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany - Berlin Zoological Park).

Himasthla elongata

STATUS AS WATERFOWL PARASITE: Rare, typically in Charadriiformes; reported twice in wild ducks.

DESCRIPTION: Dietz, 1910; Linton, 1928; Mendheim, 1940. Copy: Skryabin & Bashkirova, 1956.

SYNONYMY: Dawes, 1956.

Distoma elongatum Mehlis, 1831

Echinostomum elongatum (Mehlis, 1831) Stossich, 1892

Himasthla elongata (Mehlis, 1831) Dietz, 1909

Himasthla tensa Linton, 1940 - [Stunkard, 1960b]

Himasthla leptosoma (Creplin, 1829) Dietz, 1909 - [Mendheim, 1940]

LIFE CYCLE: Metacercariae encysted in marine clam. (Stunkard, 1960b)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Mya arenaria

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Ciconiiformes - Nycticorax nycticorax

Charadriiformes - Larus argentatus, Larus canus, Larus delawarensis,
Larus marinus, Larus philadelphia, Larus ridibundus, Tringa totanus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Kurile Is.), N. America (USA).

Himasthla incisa

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Linton, 1928. Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY:

Himasthla incisa Linton, 1928

LIFE CYCLE: Unknown; probably similar to that of H. militaris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca deglandi, [Melanitta nigra - Yamaguti, 1958, erroneous]

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Himasthla militaris

STATUS AS WATERFOWL PARASITE: Infrequent, perhaps accidental, typically in Charadriiformes; reported 4 times in wild ducks; does not always mature in eiders (Bykhovskaiâ-Pavlovskaiâ, 1962).

DESCRIPTION: Dietz, 1910; Kulikov, Tsimbalûk, & Baranova, 1965.
Copy: Skrjabin & Bashkirova, 1956.

SYNONYMY: Dawes, 1956; Skrjabin & Bashkirova, 1956.

Fasciola militaris Rudolphi, 1803

Distoma militaris Rudolphi, 1809

Echinostoma militare (Rudolphi, 1803) Cobbold, 1861

Himasthla militaris (Rudolphi, 1803) Dietz, 1909

Distoma leptosomum Creplin, 1829

Distoma (Echinostoma) leptosomum Creplin, 1829 of Dujardin, 1845

Echinostoma leptosomum (Creplin, 1829) Cobbold, 1860

Himasthla leptosoma (Creplin, 1829) Dietz, 1909 - distinct, Skrjabin & Bashkirova, 1956

Echinostoma secundum Nicoll, 1906

Himasthla secunda (Nicoll, 1906) Dietz, 1909 - may be young H. elongata, Stunkard, 1960

LIFE CYCLE: Cercariae develop in marine snails (also reported in fresh-water snails); metacercariae encysted in marine mollusks, re-

ported in polychaetous annelids and echinoderms (auxiliary hosts?); mature in final host after ingestion. (Chubrik, 1957; Cuenot, 1892, 1927; Kulikov, Tsimbaliuk, & Baranova, 1965; Linstow, 1873; Rébecq, 1961; Timon-David & Rébecq, 1958; Villot, 1875, 1878)

FIRST INTERMEDIATE HOSTS: Cyclas cornea, Hydrobia ventrosa, Littorina litorea, Littorina obtusata, Littorina saxatilis, Lymnaea auricularia, Lymnaea ovata, Lymnaea stagnalis, Paludina vivipara

SECOND INTERMEDIATE HOSTS: Cardium edule, Mya arenaria, Mytilus edulis, Scorbicularia tenuis, Tapes pullastra, Acmaea cassis, Buccinum beri, Littorina sitchana, Arenicola marina, Nereis diversicolor, Leptosynapta galliennei, Leptosynapta inhoerens

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagica

Somateriini - Somateria mollissima

Gruiformes - Porzana porzana

Charadriiformes - Arenaria interpres, Calidris canutus, Capella gallinago, Crocethia alba, Erolia alpina, Erolia maritima, Haematopus ostralegus, Larus argentatus, Larus fuscus, Larus glaucescens [ex- per.], Larus marinus, Larus ridibundus, Limosa lapponica, Lymnocyptes minimus, Numenius arquata, Tringa nebularia, Tringa totanus

Passeriformes - Motacilla alba

HABITAT: Intestine.

DISTRIBUTION: Europe (England, France, USSR), Asia (Bering Sea).

Cloacitrema marilae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Tsimbaliuk & Leonov, 1963.

SYNONYMY:

Cloacitrema marilae Tsimbaliuk & Leonov, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Large intestine, cloaca.

DISTRIBUTION: Asia (Kamchatka).

Cloacitrema ovatum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Yamaguti, 1935a. Copy: Skrjabin, 1947a.

SYNONYMY:

Cloacitrema ovatum Yamaguti, 1935

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

HABITAT: Cloaca.

DISTRIBUTION: Asia (Japan).

Parorchis acanthus

STATUS AS WATERFOWL PARASITE: Accidental, normally in Charadriiformes; reported once experimentally in domestic ducks (only in birds on inadequate diet).

STATUS AS SPECIES: Synonym of P. pittacium - Russell, 1958; Dubois & Mahon, 1959; pittacium not in Parorchis - Baugh, 1962.

DESCRIPTION: Linton, 1928 (as P. avitus); Rees, 1939; Perez Viguera, 1956. Copy: Skrjabin, 1947a; Dawes, 1956.

SYNONYMY: Dawes, 1956.

Zeugorchis acanthus Nicoll, 1906

Parorchis acanthus (Nicoll, 1906) Nicoll, 1907

Cercaria purpurae Lebour, 1907

Parorchis avitus Linton, 1914

Cercaria sensifera Stunkard & Shaw, 1931 - [Stunkard & Cable, 1932]

LIFE CYCLE: Eggs passed in feces, may hatch before laying, after ingestion by snail, or in water; snails infected in 21 days after exposure to eggs; cercariae develop in marine snails; metacercariae encysted on marine clams or on detritus. Mature in 30 days after ingestion by final host. (Cooley, 1959, 1962; Lebour, 1914; Lebour & Elmhirst, 1922; Rees, 1940; Stunkard & Cable, 1932)

INTERMEDIATE HOSTS: Cerithidea scalariformis, Thais floridana, Thais haemastoma, Thais lapillus, Urosalpinx cinerea

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Procellariiformes - Puffinus pacificus [exper.]

Ciconiiformes - Nyctanassa violacea, Nycticorax nycticorax, Phoenicopterus ruber

Charadriiformes - Actitis hypoleucos, Anous stolidus [exper.], Arenaria interpres, Calidris arenaria, Catoptrophorus semipalmatus, Charadrius hiaticula, Erolia alpina, Erolia maritima, Erolia minuta, Erolia minutilla, Gelochelidon nilotica, Heteroscelus incanus, Larus argentatus, Larus atricilla, Larus canus, Larus delawarensis, Larus fuscus, Larus marinus, Larus occidentalis, Larus ridibundus, Limosa fedoa, Recurvirostra americana, Sterna dougallii [exper.], Sterna fuscata [exper.], Sterna hirundo, Tringa melanoleucus, Tringa melanoleucus, Tringa nebularia, Tringa totanus

HABITAT: Cloaca, bursa of Fabricius.

DISTRIBUTION: Europe (England, USSR), Asia (Siberia, Kazakhstan, India), N. America (USA), S. America (Cuba, Brazil), Oceania (USA - Hawaii).

Philophthalmus anatinus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in domestic duck.

STATUS AS SPECIES: Doubtful. Perhaps synonym of P. gralli - Yamaguti, 1958; synonym of P. gralli - Ching, 1961.

DESCRIPTION: Sugimoto, 1928a, 1928b, 1928c. Copy: Shevtsov & Zaskind, 1960.

SYNONYMY:

Philophthalmus anatinus Sugimoto, 1928

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Asia (Taiwan, Philippine Is.).

Philophthalmus cupensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic goose.

Pathology described by Richter, Vrazic, & Aleraj, 1953.

DESCRIPTION: Richter, Vrazic, & Aleraj, 1953.

SYNONYMY:

Philophthalmus cupensis Richter, Vrazic, & Aleraj, 1953

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

HABITAT: Eye - under nictitating membrane.

DISTRIBUTION: Europe (Yugoslavia).

Philophthalmus gralli

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild geese and 4 times in domestic waterfowl.

DESCRIPTION: Mathis & Leger, 1910; Yamaguti & Mitunaga, 1943c; Ching, 1961a. Copy: Skrjabin, 1947a; Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Philophthalmus gralli Mathis & Leger, 1910

Philophthalmus anatinus Sugimoto, 1928 - [Ching, 1961]

Philophthalmus nyrocae Yamaguti, 1934 - [Ching, 1961]

LIFE CYCLE: Eggs escape from eye and mouth or nostrils of final host, hatch immediately after contact with water; cercariae develop in fresh-water prosobranch snail in 95 days after infection, encyst on surfaces shortly after emergence; metacercariae ingested by final host, make way to conjunctival sac, mature in 24-29 days after ingestion. (Alicata, 1962; Alicata & Noda, 1960, Ching, 1961a)

INTERMEDIATE HOSTS: Melanoides newcombi, Thiara granifera

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.), Pavo cristatus, Pavo muticus

Gruiformes - Fulica americana

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

Lagomorpha - Oryctolagus cuniculus [exper.]

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Europe (USSR - Dneiper River), Asia (Indo-China, Taiwan), Oceania (USA - Hawaii).

Philophthalmus hegeneri

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform and ciconiiform birds; reported once as experimental infection in domestic swan. Caused congestion with much exudate in eyes of swan and Ortalis (Penner & Fried, 1963).

DESCRIPTION: Penner & Fried, 1963.

SYNONYMY:

Philophthalmus hegeneri Penner & Fried, 1963

LIFE CYCLE: Eggs pass into water from eyes or nostrils of host, hatch very quickly in sea water; cercariae develop in marine snail, upon emergence encyst on objects (not snail shells nor arthropods). Mature in 13 days after ingestion by final host; larval worms reach eye by nasolachrymal canal from mouth and nasal cavity in 7 days; survive in final host at least 65 days. (Fried, 1962; Penner & Fried, 1963)

INTERMEDIATE HOSTS: Batillaria minima

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor (dom.) [exper.]

Ciconiiformes - Nyctanassa violacea

Galliformes - Gallus gallus (dom.) [exper.], Ortalis ruficauda [exper.]

Charadriiformes - Catoptrophorus semipalmatus, Larus atricilla, Larus occidentalis [exper.], Thalasseus maximus

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Orbit - under nictitating membrane.

DISTRIBUTION: N. America (USA).

Philophthalmus hovorkai

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild, 3 times in domestic waterfowl. Pathology described by Buša, 1956, 1957a, 1962a, 1963b, 1965b.

DESCRIPTION: Buša, 1956, 1957a, 1961b. Copy: Shevtsov & Zaskind,

1960.

SYNONYMY:

Philophthalmus (Tubolecithalmus) hovorkai Buša, 1956

LIFE CYCLE: Cercariae develop in fresh-water snail, encyst on shells or other solid objects; larvae reach conjunctival sac of final host in 24 hours after ingestion, mature in 25-30 days. (Buša, 1965a, 1965b)

INTERMEDIATE HOSTS: Fagotia acicularis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Europe (Czechoslovakia).

Philophthalmus muraschkinzewi

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Tret'îakova, 1948. Copy: Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Philophthalmus muraschkinzewi Tret'îakova in Skrjabin, 1947

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Charadriiformes - Pluvialis dominca

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia).

Philophthalmus nocturnus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Looss, 1907; Bykhovskaiâ-Pavlovskaiâ, 1954b.

SYNONYMY:

Philophthalmus nocturnus Looss, 1907

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix galericulata

Falconiformes - Circus aeruginosus

Strigiformes - Athene noctua

Charadriiformes - Larus ridibundus

Passeriformes -

HABITAT: Conjunctival sac.

DISTRIBUTION: Europe (Czechoslovakia), Asia (W. Siberia, China, Primorsk), Africa (Egypt).

Philophthalmus nyrocae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild waterfowl.

STATUS AS SPECIES: Doubtful. Synonym of P. gralli - Ching, 1961; West, 1961.

DESCRIPTION: Yamaguti, 1934. Copy: Skrjabin, 1947a.

SYNONYMY:

Philophthalmus nyrocae Yamaguti, 1934

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis

Anatini - Anas acuta, Anas angustirostris

Aythini - Aythya ferina

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Asia (Armenia, Primorsk, Japan, Kamchatka).

Philophthalmus posaviniensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic goose.

Pathology of infection described by Richter, Vrazic, & Aleraj, 1953.

DESCRIPTION: Richter, Vrazic, & Aleraj, 1953.

SYNONYMY:

Philophthalmus posaviniensis Richter, Vrazic, & Aleraj, 1953

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

HABITAT: Eye - under nictitating membrane.

DISTRIBUTION: Europe (Yugoslavia).

Philophthalmus proboscoides

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Oshmarin, 1963a.

SYNONYMY:

Philophthalmus proboscoides Oshmarin, 1963

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya fuligula

Falconiformes - Aquila clanga

HABITAT: Under eyelid.

DISTRIBUTION: Asia (Primorsk).

Philophthalmus rizalensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Tubangui, 1932a. Copy: Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Philophthalmus rizalensis Tubangui, 1932

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.)

HABITAT: Eye - conjunctival sac.

DISTRIBUTION: Asia (Philippine Is.).

Philophthalmus sinensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Perhaps synonym of P. problematicus - Yamaguti, 1958.

DESCRIPTION: Hsü & Chow, 1938b.

SYNONYMY:

Philophthalmus sinensis Hsü & Chow, 1938

LIFE CYCLE: Unknown; probably similar to that of P. gralli.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Eye - under nictitating membrane.

DISTRIBUTION: Asia (China).

Psilochasmus alii

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Jaiswal, 1957.

SYNONYMY:

Psilochasmus alii Jaiswal, 1957

LIFE CYCLE: Unknown; probably similar to that of P. oxyurus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Sarkidiornis melanotos

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Psilochasmus indicus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Gupta, 1958.

SYNONYMY:

Psilochasmus indicus Gupta, 1958

LIFE CYCLE: Unknown; probably similar to that of P. oxyurus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Psilochasmus longicirratus

STATUS AS WATERFOWL PARASITE: Common; reported 16 times in wild, 7 times in domestic waterfowl.

STATUS AS SPECIES: Doubtful. Synonym of P. oxyurus - Szidat, 1957; Yamaguti, 1958; et al.; retained as distinct species by Dawes, 1956, and Skrjabin, 1947a.

DESCRIPTION: Skrjabin, 1913c; Yamaguti, 1930; Inamdar & Bhalerao, 1944b; Ablasov, 1957. Copy: Skrjabin, 1947a; Dawes, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY:

Psilochasmus longicirratus Skrjabin, 1913

Psilochasmus japonicus Ishii, 1935 - [Yamaguti, 1939]; synonym of P. oxyurus, Szidat, 1957

LIFE CYCLE: Unknown; probably similar to that of P. oxyurus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Branta canadensis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas a-

cuta, Anas clypeata, Anas poecilorhyncha, Anas rubripes
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya
nyroca
Mergini - Bucephala clangula
Ciconiiformes - Ardea purpurea, Botaurus stellaris, Phoenicopterus
antiquorum
Columbiformes - Columba livia (dom.)
Strigiformes - Strix sp.

HABITAT: Small intestine - anterior region, ceca.

DISTRIBUTION: Europe, Asia (Azerbaijan, Tadzhikistan, Kazakhstan, Kirgizia, India, Philippine Is., China, Primorsk, Taiwan, Japan), N. America (USA, Canada).

Psilochasmus oxyurus

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 46 times in wild, 9 times in domestic, and once in captive waterfowl. Pathological effects in host described by Dubey & Pande, 1965.

DESCRIPTION: Bykhovskaja-Pavlovskaja, 1954a (fig. only); Kurashvili, 1957; Wisniewski, 1958b; Beverley-Burton, 1961. Copy: Skrjabin, 1947a; Dawes, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma oxyurum Creplin, 1825

Psilostomum oxyurum (Creplin, 1825) Braun, 1902

Psilochasmus oxyurus (Creplin, 1825) Lühe, 1909

Psilochasmus longicirratus Skrjabin, 1913 - [Singh, 1954; Yamaguti, 1958; et al.]

Psilochasmus agilis Travassos, 1921 - [Gupta, 1957]

Psilochasmus japonicus Ishii, 1935 - [Bykhovskaja-Pavlovskaja, 1954a; Szidat, 1957; Beverley-Burton, 1961]; synonym of P. longicirratus, Yamaguti, 1939

LIFE CYCLE: Cercariae develop in fresh- and brackish water snails; metacercariae encysted on internal side of shell or on mantle of mollusks; mature after ingestion by final host. (Reimer, 1964a, 1964b, 1965; Szidat, 1957; Wisniewski, 1958b)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata, Hydrobia stagnalis, Hydrobia ulvae [exper.], Littoridina australis

SECOND INTERMEDIATE HOSTS: Bithynia tentaculata, Hydrobia ulvae, Littorina saxatilis, Lymnaea ampla, Lymnaea auricularia, Lymnaea ovata, Spiralina vortex, Theodoxus fluviatilis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Cygnus sp.

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas bahamensis, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra

Galliformes - Gallus gallus (dom.)

Charadriiformes - Haematopus ostralegus, Vanellus vanellus

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Europe, Asia (Azerbaijan, Tadzhikistan, Kirgizia, Kazakhstan, W. Siberia, India), Africa (Egypt), N. America (USA), S. America (Argentina, Brazil).

Psilochasmus skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild and 3 times in domestic ducks.

STATUS AS SPECIES: Perhaps synonym of P. longicirratus - Yamaguti, 1958.

DESCRIPTION: Gnedina, 1946. Copy: Skrjabin, 1947a.

SYNONYMY:

Psilochasmus skrjabini Gnedina, 1946

LIFE CYCLE: Unknown; probably similar to that of P. oxyurus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata

Aythiini - Aythya ferina, Aythya nyroca, Netta rufina

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ukraine, Russia), Asia (Azerbaijan).

Psilorchis ajgainis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Lal, 1938. Copy: Lal, 1939b; Skrjabin, 1947a.

SYNONYMY:

Psilorchis ajgainis Lal, 1938

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Psilostomum anserinum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Oshmarin, 1963a.

SYNONYMY:

Psilostomum anserinum Oshmarin, 1963

LIFE CYCLE: Unknown; probably similar to that of P. brevicolle.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis

Anatini - Anas falcata

HABITAT: Intestine.

DISTRIBUTION: Asia (Primorsk).

Psilostomum borealis

STATUS AS WATERFOWL PARASITE: Rare; reported once in waterfowl.

DESCRIPTION: Ryzhikov, 1963d.

SYNONYMY:

Psilostomum borealis Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of P. brevicolle.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons, Anser erythropus

HABITAT: Small intestine.

DISTRIBUTION: Asia (USSR - Chukotka).

Psilostomum brevicolle

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild ducks, once in captive duck.

DESCRIPTION: Nicoll, 1907; Beverley-Burton, 1961; Reimer, 1962b; Odening, 1963b. Copy: Skrjabin, 1947a.

SYNONYMY: Dawes, 1956.

Distoma brevicolle Creplin, 1829

Distoma (Dicrocoelium) brevicolle Creplin, 1829 of Stossich, 1892

Psilostomum brevicolle (Creplin, 1829) Braun, 1902

Distoma platyurum Mühling, 1896

Psilostomum platyurum (Mühling, 1896) Looss, 1899 - distinct, Yamaguti, 1958

Distoma piriforme Odhner, 1913 - [Bykhovskaja-Pavlovskaja, 1962]

LIFE CYCLE: Cercariae develop in brackish (or fresh?) water snails; metacercariae in brackish water clams; mature in final host 12 days after ingestion. (Reimer, 1964a, 1964b)

FIRST INTERMEDIATE HOSTS: Hydrobia stagnalis

SECOND INTERMEDIATE HOSTS: Cardium edule, Mytilus edulis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Aythiini - Aythya marila

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Melanitta nigra

Charadriiformes - Haematopus ostralegus, Larus ridibundus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Yakutia).

Psilostomum cygnei

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild

swans.

DESCRIPTION: Southwell & Kirshner, 1937. Copy: Skrjabin, 1947a.

SYNONYMY:

Psilostomum cygnei Southwell & Kirshner, 1937

Psilotrema cygnei (Southwell & Kirshner, 1937) Oshmarin, 1964

LIFE CYCLE: Unknown; probably similar to that of P. brevicolle.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Small intestine.

DISTRIBUTION: Europe (England).

Psilostomum marilae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Price, 1942. Copy: Skrjabin, 1947a.

SYNONYMY:

Psilostomum marilae Price, 1942

Grysoma marilae (Price, 1942) Byrd, Bogitsh, & Maples, 1961

LIFE CYCLE: Unknown; probably similar to that of P. brevicolle.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya affinis

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Psilotrema acutirostris

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Oshmarin, 1963a; Bykhovskaiâ-Pavlovskaiâ, Ryzhikov, & Khotepovskii, 1966.

SYNONYMY:

Psilotrema acutirostris Oshmarin, 1963

LIFE CYCLE: Unknown; probably similar to that of P. oligoon.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis

Anatini - Anas platyrhynchos, Anas acuta, Anas falcata, Anas querquedula

HABITAT: Intestine.

DISTRIBUTION: Asia (Yakutia, Primorsk, Amur).

Psilotrema brevis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl.

DESCRIPTION: Oshmarin, 1963a; Bykhovskaiâ-Pavlovskaiâ, Ryzhikov, & Khotepovskii, 1966.

SYNONYMY:

Psilotrema brevis Oshmarin, 1963

LIFE CYCLE: Unknown; probably similar to that of P. oligoon.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser fabalis

Anatini - Anas platyrhynchos, Anas acuta, Anas falcata, Anas penelope

Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kazakhstan, Yakutia, Primorsk).

Psilotrema mediopora

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Oshmarin, 1963a; Bykhovskaiâ-Pavlovskaiâ, Ryzhikov, & Khotepovskii, 1966.

SYNONYMY:

Psilotrema mediopora Oshmarin, 1963

LIFE CYCLE: Unknown; probably similar to that of P. oligoon.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas clypeata, Anas querquedula

Aythini - Aythya fuligula

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia, Amur, Primorsk, Kamchatka).

Psilotrema oligoon

STATUS AS WATERFOWL PARASITE: Common; reported 12 times in wild, 8 times in domestic, and twice in captive waterfowl. Heavy mortality reported by Wertejuk (1958) from epizootic in domestic geese, and by Honer (1964) in captive swans.

DESCRIPTION: Bykhovskaiâ-Pavlovskaiâ, 1954a (as P. spiculigerum); Kazlauskas, 1960; Odening, 1965; Bykhovskaiâ-Pavloskaiâ, Ryzhikov, & Khotepovskii, 1966. Copy: Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY: Wertejuk, 1958.

Distomum oligoon Linstow, 1887

Distomum (Brachylaimus) oligoon Linstow, 1887 of Stossich, 1892

Psilostomum oligoon (Linstow, 1887) Lühe, 1909

Psilotrema oligoon (Linstow, 1887) Odhner, 1913

Distomum spiculigerum Mühling, 1898

Psilostomum spiculigerum (Mühling, 1898) Looss, 1899

Psilotrema spiculigerum (Mühling, 1898) Odhner, 1913

Cercaria tuberculata de Filippi, 1857 - [Wisniewski, 1958]

Psilotrema tuberculata (de Filippi, 1857) Kuprifanova-Shakhmetova, 1959

Cercaria tentacula de Filippi, - [Yamaguti, 1958]

LIFE CYCLE: Eggs passed in feces, hatch in water in 22-23 days at 23-24 C.; cercariae develop in fresh-water prosobranch snail, encyst on shell of same snail or on vegetation; mature in about 4 days after ingestion by final host. (Kiseliene, 1966; Kuprifanova-Shakhmetova, 1961; Mathias, 1924b, 1925; Pike, 1968; Wisniewski, 1958)

INTERMEDIATE HOSTS: Bithynia tentaculata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser

erythropus, Anser fabalis, Cygnus melanocoryphus, Cygnus olor
Anatini - Anas platyrhynchos (dom.), Anas crecca, Anas falcata,
Anas penelope, Anas querquedula, Anas strepera
Aythyini - Aythya fuligula, Aythya nyroca
Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra,
Mergus albellus
Galliformes - Gallus gallus (dom.) [exper.]
Gruiformes - Fulica atra, Gallinula chloropus
Columbiformes - Columba livia (dom.) [exper.]
MAMMALIA - Rodentia - Arvicola terrestris, Mus musculus (lab.) [exper.]

HABITAT: Small intestine - posterior portion.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Tuva, Yakutia, Amur, Kamchatka).

Psilotrema simillimum

STATUS AS WATERFOWL PARASITE: Common; reported 17 times in wild, 3 times in domestic, and once in captive waterfowl.

DESCRIPTION: Bykhovskaïa-Pavlovskaïa, 1954a; Zaskind, 1958; Belokobylenko, 1963; Bykhovskaïa-Pavlovskaïa, Ryzhikov, & Khotepovskii, 1966. Copy: Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma simillimum Mühling, 1898

Psilostomum simillimum (Mühling, 1898) Looss, 1899

Psilotrema simillimum (Mühling, 1898) Odhner, 1913

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snail; after emergence, cercariae encyst in same snail between mantle and shell. (Szidat, 1937)

INTERMEDIATE HOSTS: Bithynia tentaculata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser fabalis, Cygnus melanocoryphus, Cygnus olor

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas falcata, Anas penelope, Anas querquedula, Anas strepera

Aythyini - Aythya baeri, Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Mergus albellus

Oxyurini - Oxyura leucocephala

Gruiformes - Fulica atra

MAMMALIA - Rodentia - Arvicola terrestris

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Tuva, Yakutia, Amur, Primorsk, Kamchatka).

Psilotrema simillimum swerinesis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic waterfowl.

DESCRIPTION: Gräfner, 1965.

SYNONYMY:

Psilotrema simillimum swerinensis Gräfner, 1965

LIFE CYCLE: Unknown; probably similar to that of F. simillimum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany).

Sharmaia gatesi

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck (probably domestic).

DESCRIPTION: Sharma, 1943.

SYNONYMY:

Mehlisia gatesi Sharma, 1943

Sharmaia gatesi (Sharma, 1943) Yamaguti, 1958

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.?)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Sphaeridiotrema globulus

STATUS AS WATERFOWL PARASITE: Frequent; reported 12 times in wild and 4 times in domestic waterfowl. Cause of severe ulcerative enteritis; heavy mortality reported during epizootics by Price, 1929b, 1934b; Cornwell & Cowan, 1963; Testi, 1962; epizootics in coots described by Trainer & Fischer, 1963.

DESCRIPTION: Price, 1934b; Szidat, 1937; Bykhovskaja-Pavlovskaja, 1954a; Belokobylenko, 1963. Copy: Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma globulus Rudolphi, 1814

Sphaeridiotrema globulus (Rudolphi, 1814) Odhner, 1913

Cercaria helvetica XVII Dubois, 1929

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water snail, encyst as metacercariae in same host between shell and mantle; mature in 2-7 days after ingestion by final host. (Macy, Berntzen, & Benz, 1968; Macy & Ford, 1964; Szidat, 1937; Wisniewski, 1958) Cercaria described by Macy & Ford (1964) quite different from that described by Szidat (1937).

INTERMEDIATE HOSTS: Bithynia tentaculata, Flumenicola virens

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons [exper.], Cygnus cygnus, Cygnus olor

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas crecca,

Anas penelope, Anas querquedula

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya vallisneria

Mergini - Bucephala clangula, Clangula hyemalis, Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

Gruiformes - Fulica americana

Charadriiformes - Alca torda, Vanellus vanellus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan), N. America (USA).

Sphaeridiotrema spinoacetabulum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and once in domestic duck. Mortality observed in experimentally infected ducks, pathology described (Burns, 1961).

STATUS AS SPECIES: Believed to be synonym of S. globulus - Macy, Berntzen, & Benz, 1968.

DESCRIPTION: Burns, 1961.

SYNONYMY:

Sphaeridiotrema spinoacetabulum Burns, 1961

LIFE CYCLE: Cercariae develop in fresh-water snail, encyst in another snail; metacercariae infective within 16 days; mature in final host within 9 days after ingestion. (Burns, 1961)

FIRST INTERMEDIATE HOSTS: Fluminicola virens

SECOND INTERMEDIATE HOSTS: Fluminicola virens, Oxytrema silicula

FINAL HOSTS: AVES

Anseriformes (Anatidae) "duck"

Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Zygocotyle lunata

STATUS AS WATERFOWL PARASITE: Common, characteristic parasite of waterfowl; reported 23 times in wild waterfowl, 7 times in domestic waterfowl. Mortality from infection in domestic ducks reported by Mettrick, 1959b.

DESCRIPTION: Stunkard, 1916, 1917; Price, 1928; Willey, 1933; Mettrick, 1959b; Khuan Shen-i, 1962b; Lenov, et al., 1963. Copy: Skrajabin, 1949; Kasimov, 1956.

SYNONYMY: Dawes, 1956.

Amphistoma lunatum Diesing, 1836

Zygocotyle lunata (Diesing, 1836) Stunkard, 1916

Chiorchis lunatus (Diesing, 1836) Dadai, 1907

Zygocotyle ceratosa Stunkard, 1916

Cercaria poconensis Willey, 1930

Solenorchis travassosi Hilmy, 1949 - [Mettrick, 1959b]

Zygocotyle travassosi (Hilmy, 1949) Mettrick, 1959

LIFE CYCLE: Cercariae develop in fresh-water snails; encyst on aquatic vegetation and debris; mature in final host in over 14 days after ingestion; may survive in final host at least 71 days. (Gower, 1938b; Larson, 1961; Willey, 1937, 1938, 1941)

INTERMEDIATE HOSTS: Helisoma ancers, Helisoma campanulatum, Helisoma trivolvis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Branta canadensis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas bahamensis, Anas clypeata, Anas crecca carolinensis, Anas discors, [Anas erythrorhyncha - Lapage, 1961, error], Anas falcata, Anas rubrives, Anas strepera

Aythiini - Aythya affinis, Aythya americana, Aythya marila, Aythya vallisneria

Cairinini - Amazonetta brasiliensis, Cairina moschata, Cairina moschata (dom.), Sarkidiornis melanotos

Galliformes - Gallus gallus (dom.), Meleagris galloravo

Charadriiformes - Capella gallinago, Numenius arquata

MAMMALIA - Artiodactyla - Blastocerus dichotomus, Bos taurus, Ovis aries [exper.]

Sirenia - Halicore halicore

Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Ceca, intestine.

DISTRIBUTION: Asia (Amur, Kamchatka), Africa (S. Rhodesia), N. America (USA, Canada, Mexico), S. America (Brazil).

Notocotylus aegyptiacus

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in captive goose and twice in domestic ducks.

STATUS AS SPECIES: Name should be N. imbricatus if Cercaria imbricata Looss, 1896, was the larval stage of N. aegyptiacus as stated by Dubois; Cercaria imbricata Looss, 1893 has no validity (Stunkard, 1966).

DESCRIPTION: Copy: .Skrjabin, 1953; Shevtsov & Zaskind, 1960; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Monostomum verrucosum of Looss, 1896, not Froelich, 1789

Cercaria imbricata of Looss, 1896

Notocotyle aegyptiaca Odhner, 1905

Notocotylus aegyptiacus Odhner, 1905 of Kossack, 1911

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snail. (Looss, 1896)

INTERMEDIATE HOSTS: Thiara tuberculata

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Tadornini - Alorochen aegyptiacus
Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca, intestine.

DISTRIBUTION: Europe (Bulgaria), Africa (Egypt, Ethiopia).

Notocotylus atlanticus

STATUS AS WATERFOWL PARASITE: Accidental; reported once in captive duck from experimental infection. True host unknown.

DESCRIPTION: Stunkard, 1966.

SYNONYMY:
Notocotylus atlanticus Stunkard, 1966

LIFE CYCLE: Cercariae develop in brackish-water snail, encyst on operculum of snail or other hard surface immediately upon emergence; mature in final host after ingestion. (Stunkard, 1966)

INTERMEDIATE HOSTS: Hydrobia salsa

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Somateriini - Somateria mollissima [exper.]

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Notocotylus attenuatus

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 85 times in wild, 83 times in domestic, and twice in captive waterfowl. Pathology of infection described by Wehrmann, 1909; mortality in domestic geese reported by Serafin (1957).

STATUS AS SPECIES: Called N. triserialis by Dubois, 1951. Better to retain N. attenuatus as name after long use, synonymy with N. triserialis Diesing cannot be proven or disproven - Beverley-Burton, 1959.

DESCRIPTION: Yamaguti, 1933, 1934; Dubois, 1951; Bykhovskaja-Pavlovskaja, 1954a; Bezubik, 1957a; Kupriianova-Shakhmetova, 1959; Beverley-Burton, 1961. Copy: Skrjabin, 1953; Kasimov, 1956; Kurashvili, 1957;

Gvozdev, 1958; Shevtsov & Zaskind, 1960; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Monostoma attenuatum Rudolphi, 1809, nomen nudum

Notocotylus attenuatus (Rudolphi, 1809) Kossack, 1911 - species inquirenda, Joyeux & Baer, 1951

Notocotylus triserialis Diesing, 1839 - species inquirenda, Kossack, 1911

Notocotylus triserialis triserialis Diesing, 1839 of Dubois, 1951

Monostoma marilae Rudolphi, 1819 - [Diesing, 1850]

Cercaria urbanensis Cort, 1914

Notocotylus urbanensis (Cort, 1914) Harrah, 1922, e.p. - distinct, Herber, 1955; Achonolu & Olsen, 1967

Notocotylus intestinalis Tubangui, 1932

Notocotylus thienemanni L. & U. Szidat, 1933 - [Kupriřanova-Shakhmetova, 1959]

Cercaria vaga L. & U. Szidat, 1933

Notocotylus stagnicolae Herber, 1942 - distinct, Achonolu & Olsen, 1967

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water snails: cercariae develop in about 7 weeks, encyst very quickly after emergence, upon aquatic vegetation, snails, debris, fresh-water decapod shrimps; metacercariae infective immediately; mature in 6-27 days after ingestion by final host. Pieces of digestive gland from infected snails or rediae alone also infective to ducklings (Williams, 1966b). (Alekseev, 1962, 1963c; Brumpt & Buttner, 1949; Ginetsinskaiř, 1959a; Golikova, 1960b; Joyeux, 1922b; Kiseliene, 1966; Kotel'nikov, 1962b; Kupriřanova-Shakhmetova, 1959; Mathias, 1930a; Odening, 1965; Petrochenko & Kotel'nikov, 1959b; Szidat, 1930d; Szidat & Szidat, 1933; Yamaguti, 1938; Zajıcek, 1963c; Źdřarskř, 1963)

INTERMEDIATE HOSTS: Anisus rotundatus, Bulimus striatulus, Lymnaea auricularia, Lymnaea lagotus, Lymnaea limosa, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Melania amurensis, Physa gyrina, Planorbis rotundatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser caerulescens, Anser erythropus, Anser fabalis, Anser indicus, Branta bernicla, Branta canadensis, Branta leucopsis, Branta ruficollis, Cygnus atratus, Cygnus columbianus bewickii, Cygnus columbianus jankowskii, Cygnus cygnus, Cygnus olor

Tadornini - Lophonetta specularioides, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas castanea, Anas clypeata, Anas crecca, Anas cyanoptera, Anas discors, Anas falcata, Anas formosa, Anas georgica,

Anas penelope, Anas roscilorrhyncha, Anas punctata, Anas querquedula, Anas specularis, Anas strepera, Anas superciliosa,
Anas versicolor

Somateriini - Somateria mollissima, Somateria spectabilis

Aythya - Aythya baeri, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairini - Aix galericulata, Aix sponsa, Cairina moschata (dom.),
Nettapus pulchellus

Mergini - Eucerypha clangula, Eucerypha islandica, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus, Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra, Gallinula chloropus, Rallus aquaticus

Charadriiformes - Actitis hypoleucos, Burhinus grallarius, Carella gallinago, Charadrius dubius, Charadrius semipalmatus, Chlidonias leucoptera, Haematorus ostralegus, Larus canus, Lobivanellus lobatus, Phalaropus lobatus, Philomachus pugnax, Fluvialis arcticaria, Squatarola squatarola, Sterna hirundo, Tringa ochropus, Vanellus vanellus

MANMALIA - Rodentia - Microtus pennsylvanicus [exper.], Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

HABITAT: Ceca, large intestine.

DISTRIBUTION: Europe, Asia, N. America, Australia.

Notocotylus babai

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks, once in domestic duck. Pathological changes in host described by Dubey & Fande, 1965.

DESCRIPTION: Bhalerao, 1935. Copy: Lal, 1939b; Skrjabin, 1953; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Notocotylus babai Bhalerao, 1935

Hindia babai (Bhalerao, 1935) Lal, 1935

Hindolana babai (Bhalerao, 1935) Strand, 1942

Notocotylus indicus Lal, 1935

Notocotylus solitaria Singh, 1954 - [Dubois, 1955b]

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas falcata,

Anas penelope
Falconiformes - Milvus migrans

HABITAT: Ceca.

DISTRIBUTION: Asia (India, Burma, Amur).

Notocotylus dafilae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Harwood, 1939; Khuan Shen-i, 1962b. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Notocotylus dafilae Harwood, 1939

Notocotylus triserialis dafilae (Harwood, 1939) Dubois, 1951

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca

HABITAT: Ceca.

DISTRIBUTION: Asia (Amur, Kamchatka, Komandorsky Is.), N. America (USA).

Notocotylus duboisianus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Odening, 1964b.

SYNONYMY:

Notocotylus duboisianus Odening, 1964

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettarus coromandelianus

HABITAT: Ceca, rectum.

DISTRIBUTION: Asia (India - source of bird examined at Berlin Zoo).

Notocotylus ephemera

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks, twice in domestic waterfowl (once experimentally).

DESCRIPTION: Szidat & Szidat, 1933; Ždárská, 1964c. Copy: Odening, 1964b.

SYNONYMY: Dubois, 1951.

Cercaria ephemera Nitzsch, 1807

Notocotylus ephemera (Nitzsch, 1807) Harwood, 1939

Notocotylus thienemanni L. & U. Szidat, 1933 - synonym of N. attenuatus, Kupriánova-Shakhmetova, 1959

LIFE CYCLE: Cercariae develop in fresh-water snails, encyst on objects in water; metacercariae ingested by final host, mature in 7-8 days. (Dönges, 1962a; Odening, 1966a; Szidat & Szidat, 1933; Ždárská, 1964c)

INTERMEDIATE HOSTS: Planorbarius corneus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],

Anas crecca

Galliformes - Gallus gallus (dom.)

HABITAT: Probably ceca.

DISTRIBUTION: Europe.

Notocotylus gibbus

STATUS AS WATERFOWL PARASITE: Rare, normally in Rallidae; reported twice in wild ducks.

DESCRIPTION: Herber, 1961; Bykhovskaiâ-Pavlovskaiâ, 1954a. Copy: Odening, 1964b.

SYNONYMY:

Monostoma gibbum Mehlis in Creplin, 1846, nomen nudum

Notocotylus gibbus (Mehlis, 1846) Kossack, 1911

Hindia gibbus (Mehlis, 1846) Lal, 1935

Kossackia gibba (Mehlis, 1846) Szidat, 1936

Hindolana gibbus (Mehlis, 1846) Strand, 1942
Notocotylus (Hindia) gibbus (Mehlis, 1846) of Dubois, 1951.

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anatini - Anas platyrhynchos - Ruiz, 1946, Anas platyrhynchos (dom.) - Gower, 1938, 1939, both based on Stunkard & Dunihue, 1931, specimen is N. minutus; Anas discors - McDonald, 1965, record for N. pacifera; Anas erythrorhyncha - Lapage, 1961, error]

Mergini - Bucephala clangula, Melanitta nigra

Gruiformes - Fulica americana, Fulica atra, Gallinula chloropus,

Porzana porzana, Porzana pusilla, Rallus aquaticus

Charadriiformes - Capella media

HABITAT: Ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Tadzhikistan, Primorsk, Kamchatka), N. America (El Salvador).

Notocotylus imbricatus imbricatus

STATUS AS WATERFOWL PARASITE: Frequent; reported 6 times in wild, 5 times in domestic, and once in captive waterfowl.

STATUS AS SPECIES: Cercaria imbricata Looss, 1893 used only in footnote without description, and has no validity (Stunkard, 1966); N. duboisi proposed in its place.

DESCRIPTION: Beverley-Burton, 1961; Kazlauskas, 1960. Copy: Skrjabin, 1953; Shevtsov & Zaskind, 1960; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Cercaria imbricata Looss, 1893

Notocotylus imbricatus (Looss, 1893) U. Szidat, 1935

Notocotylus imbricatus imbricatus (Looss, 1893) of Dubois, 1951

Notocotylus duboisi Stunkard, 1966

Cercaria helvetica I Dubois, 1928

Notocotylus intestinalis Tubangui, 1932 - [Harwood, 1939]; synonym of N. triserialis, Dubois, 1951

Notocotylus gibbus (Mehlis) of Stunkard & Dunihue, 1931 - [Harwood, 1939]; N. minutus Stunkard, 1960

Hindia lucknowensis Lal, 1935

Hindolana lucknowensis (Lal, 1935) Strand, 1942

Notocotylus lucknowensis (Lal, 1935) Ruiz, 1946

Notocotylus anatis Ku, 1937

Notocotylus orientalis Ku, 1937 - [Harwood, 1939]; synonym of N. parviovatus, Dubois, 1951

Notocotylus attenuatus (Rudolphi) of Yamaguti, 1938 - [Odening, 1964]

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails, encyst as metacercariae on vegetation and debris very soon after emergence; mature after ingestion by final host. (Dönges, 1962a; Kise-
liené, 1966; Szidat, 1933b, 1935)

INTERMEDIATE HOSTS: Bithynia tentaculata, Paludina vivipara

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, [Branta bernicla - Lapage, 1961, erroneous citation], Cygnus cygnus

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope

Aythiini - Aythya affinis, Aythya fuligula, Aythya vallisneria

Cairinini - Aix sponsa

Mergini - Bucephala clangula, Histrionicus histrionicus

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Ceca.

DISTRIBUTION: Europe, Asia (India, China, Komandorsky Is.), N. America (USA).

Notocotylus imbricatus magniovatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild waterfowl, once experimentally in domestic duck.

DESCRIPTION: Yamaguti, 1934. Cory: Odening, 1964b.

SYNONYMY:

Notocotylus magniovatus Yamaguti, 1934

Notocotylus imbricatus magniovatus (Yamaguti, 1934) Dubois, 1951

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails, encyst as metacercariae on vegetation and debris very quickly after emergence; mature in at least 34 days after ingestion by final host. (Yamaguti, 1938)

INTERMEDIATE HOSTS: Semisulcospira japonica, Semisulcospira libertina

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons, Anser caerulescens, Anser fabalis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],
Anas discors

Cairinini - Aix galericulata

Mergini - Bucephala islandica

HABITAT: Ceca.

DISTRIBUTION: Asia (Japan), N. America (USA).

Notocotylus linearis

STATUS AS WATERFOWL PARASITE: Rare, normally in charadriiform birds; reported twice in wild ducks.

DESCRIPTION: U. Szidat, 1936. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY:

Monostoma lineare Rudolphi, 1819 - Synonym of Catatronis verrucosa,
Shevtsov & Zaskind, 1960

Notocotylus linearis (Rudolphi, 1819) U. Szidat, 1936

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythiini - Aythya ferina

Ciconiiformes - Phoenicopterus ruber

Charadriiformes - Philomachus pugnax, Recurvirostra avosetta, Tringa glareola, Tringa ochropus, Vanellus vanellus, Xenus cinereus

HABITAT: Ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Buryat ASSR, India, Yakutia).

Notocotylus mamii

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once experimentally in domestic duck.

DESCRIPTION: Hsü, 1954; Petrov & Chertkova, 1962. Copy: Odening, 1964b.

SYNONYMY:

Notocotylus mamii Hsü, 1954

LIFE CYCLE: Cercariae develop in 47-64 days in fresh-water snail, encyst as metacercariae on objects in water; mature about 23 days after ingestion by final host. (Hsü, 1957)

INTERMEDIATE HOSTS: Thiara tuberculata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Bucephala clangula

MAMMALIA - Lagomorpha - Oryctolagus cuniculus [exper.]

HABITAT: Ceca.

DISTRIBUTION: Asia (Azerbaijan, China).

Notocotylus minutus

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks and once in probably a domestic duck.

STATUS AS SPECIES: Synonym of N. imbricatus - Harwood, 1939; synonym of N. triserialis triserialis - Dubois, 1951.

DESCRIPTION: Stunkard & Dunihue, 1931; Stunkard, 1960a. Copy: Odening, 1964b.

SYNONYMY:

Notocotylus gibbus (Mehlis) of Stunkard & Dunihue, 1931

Notocotylus minutus Stunkard, 1960

LIFE CYCLE: Cercariae develop in marine or brackish water snail; encyst as metacercariae on nearby objects such as mollusk shells; mature in final host after ingestion. (Stunkard, 1960, 1966)

INTERMEDIATE HOSTS: Hydrobia minuta, Hydrobia salsa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos X, Anas platyrhynchos (dom.?)

Somateriini - Somateria mollissima

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Notocotylus naviformis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Tubangui, 1932a. Copy: Skrjabin, 1953; Shevtosv &

Zaskind, 1960; Odening, 1964b.

SYNONYMY:

Notocotylus naviformis Tubangui, 1932

Naviformia naviformis (Tubangui, 1932) Lal, 1935

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Philippine Is.).

Notocotylus pacifera

STATUS AS WATERFOWL PARASITE: Rare, normally in Rallidae; reported once in wild duck.

STATUS AS SPECIES: Synonym of N. gibbus - Dubois, 1951; distinct - Lumsden & Zischke, 1963; Odening, 1964b, 1966.

DESCRIPTION: Noble, 1933; Beverley-Burton, 1959 (as N. gibbus); Lumsden & Zischke, 1963. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY:

Catatropis pacifera Noble, 1933

Kossackia pacifera (Noble, 1933) Szidat, 1936

Notocotylus pacifera (Noble, 1933) Harwood, 1939

Paramonostomum obtortum Caballero, 1942 - [Larios Rodriguez, 1943]

LIFE CYCLE: Cercariae develop in fresh-water snail, encyst on solid object immediately after emergence; mature in 7 days after ingestion by final host. (Odening, 1964, 1966)

INTERMEDIATE HOSTS: Physa fontinalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas discors

Gruiformes - Fulica americana, Fulica atra, Gallinula chloropus

HABITAT: Ceca.

DISTRIBUTION: Europe (England, Germany, Russia), Asia (Japan), N. America (USA, Mexico), S. America (Argentina).

Notocotylus parviovatus

STATUS AS WATERFOWL PARASITE: Common; reported 19 times in wild and 8 times in domestic waterfowl.

DESCRIPTION: Yamaguti, 1934, 1939, 1941a; Gorshkov, 1937 (as N. chionis). Copy: Odening, 1964b.

SYNONYMY:

Notocotylus parviovatus Yamaguti, 1934

Notocotylus orientalis Ku, 1937 - [Dubois, 1951]

Notocotylus chionis Baylis of Gorshkov, 1937, and Soviet authors -
[Odening, 1964]

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails, emerge 25 days after infection, encyst on objects in water. (Erkina, 1952, 1954 (as N. chionis))

INTERMEDIATE HOSTS: Bithynia leachei, Bithynia tentaculata

FINAL HOSTS: AVES
Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser fabalis, Cygnus columbianus bewickii, Cygnus columbianus jankowskii

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas crecca

Cairinini - Aix galericulata

HABITAT: Ceca.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia, Uzbekistan, Kazakhstan, Tuva, Yakutia, India, China, Primorsk, Kamchatka, Japan).

Notocotylus ralli

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic duckling from experimental infection.

DESCRIPTION: Baylis, 1936; Dönges, 1962c. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY:

Notocotylus ralli Baylis, 1936

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snail. (Dönges, 1962; Odening, 1964, 1966)

INTERMEDIATE HOSTS: Lymnaea palustris, Planorbis carinatus

FINAL HOSTS: AVES
Anseriformes (Anatidae)
 Anatini - Anas platyrhynchos (dom.) [exper.]
Galliformes - Gallus gallus (dom.) [exper.]
Gruiformes - Gallinula chloropus, Rallus aquaticus

HABITAT: Ceca.

DISTRIBUTION: Europe (England, Russia).

Notocotylus seineti

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks, twice in domestic waterfowl.

STATUS AS SPECIES: Synonym of N. imbricatus - Harwood, 1939.

DESCRIPTION: Fuhrmann, 1919; Dubois, 1951. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY: Dubois, 1951.

Cercaria monostomi Linstow, 1896
Notocotylus seineti Fuhrmann, 1919

LIFE CYCLE: Cercariae develop in fresh-water pulmonate snails, encyst on surface of dead or living snail shells and rarely on ostracod crustacea, shortly after emergence. (Dönges, 1962a; Harper, 1929)

FIRST INTERMEDIATE HOSTS: Lymnaea ovata, Lymnaea neregra, Lymnaea stagnalis, [Physa fontinalis - report questioned by Odening, 1965]

SECOND INTERMEDIATE HOSTS -INCIDENTAL: Gyraulus albus, Lymnaea truncatula, Physa fontinalis, Valvata piscinalis, Cypris rubera

FINAL HOSTS: AVES
Anseriformes (Anatidae)
 Anserini - Anser anser (dom.)
 Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca carolinensis, Anas querquedula
 Aythyini - Aythya americana, Aythya marila
 Mergini - Bucephala clangula, Clangula hyemalis

HABITAT: Ceca, intestine.

DISTRIBUTION: Europe, Iceland, N. America (USA).

Notocotylus skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Ablasov, 1954. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY:

Notocotylus skrjabini Ablasov in Skrjabin, 1953

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Asia (Kirgizia).

Notocotylus stagnicolae

STATUS AS WATERFOWL PARASITE: Accidental; reported twice in waterfowl from experimental infections. Reported once from plover.

STATUS AS SPECIES: Synonym of N. triserialis (N. attenuatus) - Dubois, 1951

DESCRIPTION: Herber, 1942; Wu, 1953b; Achonolu & Olsen, 1967. Copy: Skrjabin, 1953.

SYNONYMY:

Notocotylus stagnicolae Herber, 1942

LIFE CYCLE: Cercariae develop in fresh-water snail in at least 75 days after infection, encyst on solid object shortly (20 minutes) after emergence; mature in final host 10-14 days after ingestion. (Achonolu, 1964b; Achonolu & Olsen, 1967; Herber, 1942; Wu, 1953b)

INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea emarginata, Lymnaea palustris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.) [exper.], Anas discors [exper.]

Mergini - Mergus merganser [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Charadrius semipalmata

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Notocotylus tachyeretis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Duthoit, 1931; Szidat & Szidat, 1962. Copy: Skrjabin, 1953; Odening, 1964b.

SYNONYMY:

Notocotylus tachyeretis Duthoit, 1931

Hindia tachyeretis (Duthoit, 1931) Lal, 1935

Hindolana tachyeretis (Duthoit, 1931) Strand, 1942

LIFE CYCLE: Unknown; probably similar to that of N. attenuatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tachyeres patachonicus

HABITAT: Ceca, posterior intestine.

DISTRIBUTION: S. America (Argentina).

Notocotylus urbanensis

STATUS AS WATERFOWL PARASITE: Rare, normally in muskrats; reported twice in wild ducks, once in domestic duck from experimental infection.

STATUS AS SPECIES: Synonym of N. attenuatus - Dubois, 1951; not valid name - Harwood, 1939.

DESCRIPTION: Gower, 1938b; Herber, 1955; Achonolu & Olsen, 1967. Copy: Skrjabin, 1953.

SYNONYMY:

Cercaria urbanensis Cort, 1914

Notocotylus urbanensis (Cort, 1914) Harrah, 1922

Paramonostomum echinum Harrah, 1922 - [Herber, 1939]

Catatropis fimbriata Barker, 1915 - [Herber, 1939]

Catatropis filamentis Barker, 1915 - [Herber, 1939]

LIFE CYCLE: Cercariae develop in fresh-water snail, encyst on solid object almost immediately after emergence; mature in final host about 24 days after ingestion. (Achonolu, 1964b; Achonolu & Olsen, 1967; Herber, 1939; Luttermoser, 1935)

INTERMEDIATE HOSTS: Goniobasis livescens, Lymnaea emarginata, Physa gyrina, Physa parkeri, Physella magnalacustris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],

[Anas acuta - Harrah, 1922, misidentified]

[Cairinini - Aix sponsa - Harrah, 1922, misidentified]

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Rodentia - Microtus pennsylvanicus, Ondatra zibethica,

Rattus norvegicus (lab.) [exper.]

HABITAT: Large intestine, ceca.

DISTRIBUTION: N. America (USA).

Uniserialis breviserialis

STATUS AS WATERFOWL PARASITE: Accidental; reported once as result of experimental infection in domestic duck.

STATUS AS SPECIES: Uniserialis a synonym of genus Notocotylus - Baer & Joyeux, 1961.

DESCRIPTION: Stunkard, 1967b.

SYNONYMY:

Uniserialis breviserialis Stunkard, 1967

LIFE CYCLE: Cercariae develop in brackish-water snail; encyst on solid surface (snail shell, algae, hard object) 1-4 hours after emergence; metacercariae infective immediately, mature in final host about 2 weeks after ingestion. (Stunkard, 1967b)

INTERMEDIATE HOSTS: Hydrobia salsa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Bursa of Fabricius.

DISTRIBUTION: N. America (USA).

Uniserialis gippyensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Uniserialis a synonym of genus Notocotylus -
Baer & Joyeux, 1961.

DESCRIPTION: Beverley-Burton, 1958.

SYNONYMY:

Uniserialis gippyensis Beverley-Burton, 1958

LIFE CYCLE: Unknown; probably similar to that of U. breviserialis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Ceca, bursa of Fabricius.

DISTRIBUTION: Europe (England).

Catatropis appendiculata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Lutz, 1928.

SYNONYMY:

Catatropis appendiculata Lutz, 1928

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Amazonetta brasiliensis

HABITAT: Ceca.

DISTRIBUTION: S. America (Venezuela).

Catatropis cygni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Yamaguti, 1939.

SYNONYMY:

Catatropis cygni Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus jankowskii

Tadornini - Tadorna tadorna

HABITAT: Ceca.

DISTRIBUTION: Asia (Japan).

Catatropis harwoodi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Bullock, 1952. Copy: Skrjabin, 1953.

SYNONYMY:

Catatropis harwoodi Bullock, 1952

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Catatropis hisikui

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild waterfowl.

DESCRIPTION: Yamaguti, 1939.

SYNONYMY:

Catatropis hisikui Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES

Anseriformes (Anatidae)
Anserini - Anser fabalis
Aythyini - Aythya fuligula

HABITAT: Ceca.

DISTRIBUTION: Europe (Czechoslovakia), Asia (Japan).

Catatropis indicus

STATUS AS WATERFOWL PARASITE: Rare, normally in chickens; reported twice in domestic waterfowl.

DESCRIPTION: Srivastava, 1935; Rohde & Lee Fah On, 1967. Copy: Lal, 1939b; Skrjabin, 1953.

SYNONYMY:
Catatropis indicus Srivastava, 1935

LIFE CYCLE: Eggs passed in feces, apparently ingested by fresh-water snails; cercariae develop in 51-139 days after exposure of snails to infection, emerge and swim actively 3-20 minutes, then encyst on snail shells, vegetation, or hard substrate; infective in at least one day; mature in final host 10-12 days after ingestion. (Rhode & Lee Fah On, 1967)

INTERMEDIATE HOSTS: Bithynia siamensis or B. pulchellum

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anserini - "geese" (domestic?)
Anatini - Anas platyrhynchos (dom.)
Galliformes - Gallus gallus bankiva, Gallus gallus (dom.)

HABITAT: Ceca.

DISTRIBUTION: Asia (India).

Catatropis orientalis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Species inquirenda - Lal, 1939.

DESCRIPTION: Harshe, 1932. Copy: Skrjabin, 1953.

SYNONYMY:

Catatropis orientalis Harshe, 1932

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
 Anatini - Anas acuta
Gruiformes - Fulica atra

HABITAT: Ceca.

DISTRIBUTION: Asia (India, Uzbekistan).

Catatropis pricei

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Harwood, 1939. Copy: Skrjabin, 1953.

SYNONYMY:
Catatropis pricei Harwood, 1939

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
 Anserini - Branta canadensis

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Catatropis rauschi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Singh, 1956.

SYNONYMY:
Catatropis rauschi Singh, 1956

LIFE CYCLE: Unknown; probably similar to that of C. verrucosa.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
 Anatini - Anas acuta

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Catatropis verrucosa

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 53 times in wild, 36 times in domestic, and twice in captive waterfowl.

DESCRIPTION: Beverley-Burton, 1961; Macko, 1961b. Copy: Skrjabin, 1953; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Fasciola verrucosa Froelich, 1789

Monostomum verrucosum (Froelich, 1789) Zeder, 1800

Notocotyle verrucosum (Froelich, 1789) Monticelli, 1802

Catatropis verrucosa (Froelich, 1789) Odhner, 1905

Festucaria pedata Schrank, 1786, e.p.

Fasciola anseris Gmelin, 1790

Monostomum lineare Rudolphi, 1819 - [Shevtsov & Zaskind, 1960]

Notocotyle triserialis Diesing, 1839, e.p.

Monostomum ovatum Molin, 1859 - [Shevtsov & Zaskind, 1960]

LIFE CYCLE: Cercariae develop in fresh-water snails, encyst as metacercariae very quickly after emergence, on solid objects (do not leave snail host but encyst within host, sometimes encyst in phoretic oligochaete - Odening, 1966a); mature in final host 7 days after ingestion. (Alekseev, 1963c; Erkina, 1952; Ginetsinskaja, 1959a; Golikova, 1960b; Odening, 1965d, 1966a; Szidat, 1930d)

FIRST INTERMEDIATE HOSTS: Anisus leucostomus, Gyraulus albus, Planorbis sp., Segmentina nitida, [Bithynia leachei, Bithynia tentaculata - reports declared erroneous by Odening, 1966a]

SECOND INTERMEDIATE HOSTS -INCIDENTAL: Chaetogaster limnaei

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser brachyrhynchus, Anser cygnoides, Anser erythropus, Anser fabalis, Branta bernicla, Branta leucopsis, Cygnus cygnus, Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas penelope, Anas querquedula, Anas strepera

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila

Cairinini - Cairina moschata (dom.) [exper.]
Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta fusca deglandi, Melanitta nigra, Mergus merganser,
Mergus serrator
Galliformes - Gallus gallus (dom.)
Gruiformes - Crex crex, Fulica atra, Gallinula chloropus, Porzana porzana
Charadriiformes - [Erolia minutilla - doubtful], Haematopus ostralegus, Philomachus pugnax, Recurvirostra avosetta, Squatarola squatarola

HABITAT: Ceca, intestine, bursa of Fabricius.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Uzbekistan, Kirgizia, Kazakhstan, India, Burma, Indochina, Primorsk, Amur, Kamchatka, Japan), Africa (Egypt), N. America (USA, Greenland).

Paramonostomum alveatum

STATUS AS WATERFOWL PARASITE: Common; reported 19 times in wild, 4 times in domestic, and twice in captive waterfowl. Mortality from epizootic in ducklings reported by Kulachkova, 1954, 1961; eider ducklings less than two weeks old feed in area with infected snails, older ducklings feed in deeper waters outside this area.

DESCRIPTION: Muehling, 1898; Lühe, 1909, Kossack, 1911; Bullock, 1952; Stunkard, 1967a. Copy: Skrjabin, 1953; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Monostoma alveatum Mehlis in Creplin, 1846
Notocotyle alveatum (Mehlis, 1846) Monticelli, 1892
Paramonostomum alveatum (Mehlis, 1846) Lühe, 1909
Monostoma verrucosum (Froelich) of Wedl, 1857
Monostoma alveiforme Cohn, 1904
Paramonostomum brantae Bullock, 1952 - [Stunkard, 1967a]

LIFE CYCLE: Cercariae develop in marine snails, encyst 1-4 hours after emergence as metacercariae on the surface of marine mollusks and arthropods; mature in 6-8 days after ingestion by final host. (Kulachkova, 1954; Stunkard, 1967a)

FIRST INTERMEDIATE HOSTS: Hydrobia salsa, Hydrobia ulvae

SECOND INTERMEDIATE HOSTS - INCIDENTAL: Hydrobia salsa, Hydrobia ulvae, Littorina littorea, Littorina obtusata, Littorina palliata, Littorina rudis, Mytilus edulis, Gammarus locusta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Branta bernicla, Branta canadensis, Cygnus cygnus, Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca, Anas penelope

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Ceca, intestine, cloaca.

DISTRIBUTION: Europe, Asia (Uzbekistan, Turkmenistan, Yakutia), N. America (USA).

Paramonostomum bucephalae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild waterfowl, once in domestic duck.

DESCRIPTION: Yamaguti, 1935a, 1939. Copy: Skrjabin, 1953.

SYNONYMY:

Paramonostomum bucephalae Yamaguti, 1935

Neoparamonostomum bucephalae (Yamaguti, 1935) Lal, 1936

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas strepera

Aythiini - Aythya ferina, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Mergus merganser

Podicipediformes - Podiceps grisgena

HABITAT: Ceca.

DISTRIBUTION: Europe (Belgium, Ukraine), Asia (Uzbekistan, Kazakhstan, Amur, Kamchatka, Japan).

Paramonostomum casarcum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: May be identical with P. querquedula and P. ovatum (Stunkard, 1967a); reported differences often dependent upon state of contraction of specimen.

DESCRIPTION: Lal, 1936c. Copy: Lal, 1939b; Skrjabin, 1953.

SYNONYMY:

Paramonostomum casarcum Lal, 1936

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Ceca.

DISTRIBUTION: Asia (India).

Paramonostomum chabaudi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: van Strydonck, 1965a.

SYNONYMY:

Paramonostomum chabaudi van Strydonck, 1965

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Charadriiformes - Haematopus ostralegus

HABITAT: Probably ceca.

DISTRIBUTION: Europe (Belgium).

Paramonostomum elongatum

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild swan.

DESCRIPTION: Yamaguti, 1934; Škarda, 1964.

SYNONYMY:

Paramonostomum elongatum Yamaguti, 1934

Neoparamonostomum elongatum (Yamaguti, 1941) Lal, 1936

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus jankowskii, Cygnus cygnus

HABITAT: Ceca.

DISTRIBUTION: Europe (Czechoslovakia), Asia (Korea).

Paramonostomum harwoodi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Nath & Pande, 1962.

SYNONYMY:

Paramonostomum harwoodi Nath & Pande, 1962

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Probably ceca.

DISTRIBUTION: Asia (India).

Paramonostomum histrionici

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably a Notocotylus or Catatropis - Prudhoe, 1963, Zool. Record, 98, Sec. 6.

DESCRIPTION: Ching, 1961b.

SYNONYMY:

Paramonostomum histrionici Ching, 1961

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Histrionicus histrionicus

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Paramonostomum malerischi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: Dunagan, 1957.

SYNONYMY:

Paramonostomum malerischi Dunagan, 1957

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagicus

HABITAT: Ceca.

DISTRIBUTION: N. America (USA - Alaska).

Paramonostomum nettioni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baugh, 1958.

SYNONYMY:

Paramonostomum nettioni Baugh, 1958

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Large intestine.

DISTRIBUTION: Asia (India).

Paramonostomum ovatum

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck and once in wild duck.

DESCRIPTION: Hsü, 1935.

SYNONYMY:

Paramonostomum ovatum Hsü, 1935

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "duck, wild duck"

Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca.

DISTRIBUTION: Asia (China).

Paramonostomum parvum

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild waterfowl, once in probably a domestic duck.

DESCRIPTION: Stunkard & Dunihue, 1931; Stunkard, 1967a. Copy: Skrjabin, 1953; Shevtsov & Zaskind, 1960.

SYNONYMY:

Paramonostomum parvum Stunkard & Dunihue, 1931

Neoparamonostomum parvum (Stunkard & Dunihue, 1931) Lal, 1936

?Paramonostomum pseudalveatum Price of Swales, 1933 - [Harwood, 1939]

LIFE CYCLE: Cercariae develop in marine or brackish water snail, encyst on solid surface in 1-4 hours or immediately when disturbed; mature in final host after ingestion. (Stunkard, 1967a)

INTERMEDIATE HOSTS: Hydrobia salsa

FINAL HOSTS: AVES

Anseriformes (Anatidae) "duck"

Anserini - Anser caerulescens

Anatini - Anas platyrhynchos (dom.)

Somateriini - Somateria mollissima [exper.]

Aythiini - Aythya ferina

Mergini - Bucephala clangula

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan), N. America (USA, Canada).

Paramonostomum pseudalveatum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild waterfowl.

STATUS AS SPECIES: May be synonym of P. parvum - Stunkard, 1967a.

DESCRIPTION: Price, 1933; Jogis, 1959; Škarda, 1964. Copy: Skrajabin, 1953.

SYNONYMY:

Paramonostomum pseudalveatum Price, 1931

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis, Cygnus cygnus

Anatini - Anas penelope

Aythiini - Aythya fuligula

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Large intestine.

DISTRIBUTION: Europe (Scotland, Czechoslovakia, Estonia), N. America (USA).

Paramonostomum querquedula

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: May be identical with P. ovatum and P. casarcum - Stunkard, 1967a.

DESCRIPTION: Lal, 1936c. Copy: Lal, 1939b.

SYNONYMY:

Paramonostomum querquedula Lal, 1936

LIFE CYCLE: Unknown; probably similar to that of P. alveatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

HABITAT: Ceca.

DISTRIBUTION: Asia (India).

Tristriata anatis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Skrjabin, 1953; Belopol'skaia, 1954.

SYNONYMY:

Tristriata anatis Belopol'skaia in Skrjabin, 1953

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Bucephala clangula, Histrionicus histrionicus, Mergus serrator

HABITAT: Ceca.

DISTRIBUTION: Asia (Amur, Primorsk, Kamchatka, Komandorsky Is.).

Parapronocephalum symmetricum

STATUS AS WATERFOWL PARASITE: Rare, normally in charadriiform birds; reported once in wild duck.

DESCRIPTION: Belopol'skaia, 1952b. Copy: Skrjabin, 1955.

SYNONYMY:

Parapronocephalum symmetricum Belopol'skaia, 1952

LIFE CYCLE: Cercariae develop in marine snail; metacercariae encysted in gonads or mantle cavity of same individual snail. (Belopol'skaia, 1952b; Chubrik, 1954)

INTERMEDIATE HOSTS: Littorina rudis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Charadriiformes - Arenaria interpres, Erolia maritima, Haematopus

ostralegus, Philomachus cugnax

HABITAT: Ceca.

DISTRIBUTION: Europe (USSR - Barents Sea, White Sea).

Renicola brantae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild goose.

DESCRIPTION: McIntosh & Farr, 1952; Wright, 1957.

SYNONYMY:

Renicola brantae McIntosh & Farr, 1952

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

HABITAT: Kidney.

DISTRIBUTION: N. America (USA).

Renicola mediovitellata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild ducks.

DESCRIPTION: Bykhovskaja-Pavlovskaja, 1950.

SYNONYMY:

Renicola mediovitellata Bykhovskaja-Pavlovskaja, 1950

Renicola (Anatirenicola) mediovitellata Bykhovskaja-Pavlovskaja, 1950
of Odening, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas clypeata, Anas formosa, Anas penelope,
Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Netta rufina

Mergini - Clangula hyemalis

HABITAT: Kidney.

DISTRIBUTION: Asia (W. Siberia, Kazakhstan, Yakutia, Amur, Kamchatka, Chukotka).

Renicola mollissima

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks. Highest incidence in two-week-old birds.

DESCRIPTION: Kulachkova, 1957.

SYNONYMY:

Renicola mollissima Kulachkova, 1957

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Kidney - urinary tubules.

DISTRIBUTION: Europe (USSR - White Sea, Chukotka).

Renicola somateriae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks. Mass loss from epizootic reported by Kapitonov, 1959.

DESCRIPTION: Belopol'skaia, 1952b.

SYNONYMY:

Renicola somateriae Belopol'skaia, 1952

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

Mergini - Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus

HABITAT: Kidney.

DISTRIBUTION: Europe (N. USSR), Asia (Yakutia, Primorsk, Kamchatka).

Brachylecithum sp.

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.
Most species of genus reported in insectivorous birds or in Passeri-
formes.

STATUS AS SPECIES: Brachylecithum a synonym of genus Lyperosomum -
Baer & Joyeux, 1961.

DESCRIPTION: Gvozdev, 1962.

SYNONYMY:

Brachylecithum sp. Gvozdev, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya ferina

HABITAT: Probably liver or gall bladder.

DISTRIBUTION: Asia (Kazakhstan).

Lyperosomum anatis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Belogurov & Leonov, 1963.

SYNONYMY:

Lyperosomum anatis Belogurov & Leonov, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas acuta

HABITAT: Pancreas.

DISTRIBUTION: Asia (Kamchatka).

Lyperosomum sp.

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swan.

DESCRIPTION: None.

SYNONYMY:

Lyperosomum sp. Lewis, 1926

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus cygnus

HABITAT: Small intestine.

DISTRIBUTION: Europe (Great Britain).

Pancreatrema sp.

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: None.

SYNONYMY:

Pancreatrema sp. Lalitha & Alwar, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (com.)

HABITAT: Pancreas.

DISTRIBUTION: Asia (India).

Wetzelitrema melanittae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Rayski & Fahmy, 1962.

SYNONYMY:

Wetzelitrema melanittae Rayski & Fahmy, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

HABITAT: Gall bladder.

DISTRIBUTION: Europe (Scotland).

Eucotyle clangulae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Doubtful. Synonym of E. cohni - Reimer, 1964c.

DESCRIPTION: Walden, 1960.

SYNONYMY:

Eucotyle clangulae Walden, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis

HABITAT: Kidney.

DISTRIBUTION: Europe (Sweden).

Eucotyle cohni

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Skrjabin, 1924; Reimer, 1964c. Copy: Dollfus, 1946; Skrjabin, 1947a.

SYNONYMY:

Eucotyle cohni Skrjabin, 1924

Eucotyle clangulae Walden, 1960 - [Reimer, 1964]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Melanitta fusca deglandi, Melanitta nigra, Mergus albellus,

Mergus serrator

Gaviiformes - Gavia arctica

Podicipediformes - Podiceps caspicus, Podiceps grisegena

HABITAT: Kidney.

DISTRIBUTION: Europe (Poland, USSR), Asia (Kirgizia, Aral Sea, Primorsk, Kamchatka).

Eucotyle nephritica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Copy: Dollfus, 1946; Skrjabin, 1947a.

SYNONYMY:

Monostoma nephriticum Mehlis in Creplin, 1846

Eucotyle nephritica (Mehlis, 1846) Cohn, 1904

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Netta rufina

Gaviiformes - Gavia arctica

HABITAT: Kidney - urinary tubules.

DISTRIBUTION: Europe (Germany, USSR), Asia (Tadzhikistan).

Eucotyle popowi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks, once in domestic duck.

DESCRIPTION: Skrjabin & Evranova, 1942. Copy: Skrjabin, 1947a; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY:

Eucotyle popowi Skrjabin & Evranova, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Somateriini - Somateria spectabilis

Mergini - Bucephala clangula, Melanitta fusca, Melanitta fusca deglandi

Podicipediformes - Podiceps cristatus

HABITAT: Kidney - urinary tubules.

DISTRIBUTION: Europe (Georgia SSR), Asia (Tuva, Yakutia, Amur).

Eucotyle warreni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Schell, 1967.

SYNONYMY:

Eucotyle renalis Warren, 1956 [nomen nudum]

Eucotyle warreni Schell, 1967

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Kidney and ureters.

DISTRIBUTION: N. America (USA).

Eucotyle wehri

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

STATUS AS SPECIES: Likely a synonym of E. zakharowi - Odening, 1964.

DESCRIPTION: Price, 1930; Sulgostowska, 1960. Copy: Dollfus, 1946; Skrjabin, 1947a.

SYNONYMY:

Eucotyle wehri Price, 1930

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas discors, [Anas erythrorhyncha - Lapage, 1961, error]

Aythiini - Aythya affinis, Aythya fuligula, Aythya marila, Aythya vallisneria

Mergini - Bucephala clangula

HABITAT: Kidney.

DISTRIBUTION: Europe (Poland), N. America (USA).

Eucotyle zakharowi

STATUS AS WATERFOWL PARASITE: Common; reported 24 times in wild ducks, 4 times in domestic ducks.

DESCRIPTION: Skrjabin, 1920b; Bykhovskaiâ-Pavlovskaiâ, 1954a (fig. only); Reimer, 1964c; Odening, 1964c. Copy: Dollfus, 1946; Skrjabin, 1947a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Eucotyle zakharowi Skrjabin, 1920

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas falcata, Anas poecilorhyncha, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca

Mergini - Melanitta fusca, Mergus albellus

Charadriiformes - Chettusia leucura

HABITAT: Kidney - urinary tubules, ureter.

DISTRIBUTION: Europe (Germany, Poland, USSR), Asia (W. Siberia, Azerbaidzhan, Tadzhikistan, Kirgizia, Kazakhstan, Tuva, Yakutia, Primorsk, Amur, Chukotka).

Tanaisia fedtschenkoi fedtschenkoi

STATUS AS WATERFOWL PARASITE: Rare, typically in Charadriiformes; reported once in wild duck.

DESCRIPTION: Cheatum, 1938 (as T. pelidnae); Dollfus, 1946; Byrd & Denton, 1950; Bykhovskaiâ-Pavlovskaiâ, 1954a (fig. only); Sulgostowska, 1958b; Odening, 1965. Copy: Skrjabin, 1947a; Kasimov, 1956.

SYNONYMY: Byrd & Denton, 1950.

Tanaisia fedtschenkoi Skrjabin, 1924

Tanaisia fedtschenkoi fedtschenkoi Skrjabin, 1924 of Odening, 1964

Tanaisia elliptica Nezlubinski, 1926

Ohridia panuri Nezlubinski, 1926

Proshytera rossittensis Korkhaus, 1930

Tanaisia rossittensis (Korkhaus, 1930) Korkhaus, 1935

Tanaisia pelidnae Cheatum, 1938

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya ferina

Podicipediformes - Podiceps ruficollis

Ciconiiformes - Nycticorax nycticorax, Plegadis falcinellus

Galliformes - Tetrastes bonasia

Gruiformes - Crex crex, Fulica atra, Gallinula chloropus, Rallus aquaticus

Charadriiformes - Arenaria interpres, Capella gallinago, Capella media, Capella stenura, Charadrius alexandrinus, Charadrius dubius, Charadrius hiaticula, Charadrius vociferus, Chettusia leucura, Chlidonias leucoptera, Chlidonias nigra, Erolia alpina, Erolia minuta, Gelochelidon nilotica, Haematopus ostralegus, Heteroscelus incanus, Himantopus himantopus, Larus argentatus, Larus canus, Larus fuscus, Larus minutus, Larus ridibundus, Limosa limosa, Numenius arquata, Phalaropus lobatus, Philomachus pugnax, Sterna albifrons, Sterna hirundo, Tringa erythropus, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa stagnatilis, Tringa totanus, Vanellus vanellus

Passeriformes - Cassidix mesamexicanus, Corvus corone, Corvus corone cornix, Corvus ossifragus, Euphagus carolinus, Motacilla flava, Panurus biarmicus

HABITAT: Kidney - urinary tubules.

DISTRIBUTION: Europe, Asia (Siberia, Kazakhstan, Kirgizia, Uzbekistan, USSR - Far East), N. America (USA).

Tanaisia fedtschenkoi meridionalis

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Odening, 1964b.

SYNONYMY:

Tanaisia fedtschenkoi subsp. meridionalis Odening, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Carinini - Nettapus coromandelianus

HABITAT: Ureters of kidney.

DISTRIBUTION: Asia (India - source of bird examined at Berlin Zoo).

Prosthogonimus anatinus

STATUS AS WATERFOWL PARASITE: Frequent; reported 6 times in wild and 9 times in domestic waterfowl.

STATUS AS SPECIES: Probably invalid. Original form immature - Witenberg & Eckman, 1939; form of P. pellucidus in ducks and geese - Krasnolobova, 1959b; synonym (with nearly all other forms) of P. ovatus - Boddeke, 1960c.

DESCRIPTION: Markov, 1903; Panin, 1957b. Copy: Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY: Bykhovskaja-Pavlovskaja, 1962 from Panin, 1957b.

Prosthogonimus anatinus Markov, 1902

Prosthogonimus (Mediogenotrema) anatinus Markov, 1902 of Skrjabin, 1941

Prosthogonimus (Primagenotrema) anatinus Markov, 1902 of Skrjabin, 1962

Prosthogonimus rudolphii Skrjabin, 1919

Prosthogonimus skrjabini Zakharov, 1920 - [Chauhan, 1940]

Prosthogonimus horiuchii Morishita & Tsuchimochi, 1925

Prosthogonimus karausiaki Layman, 1926 - [Chauhan, 1940]

Prosthogonimus orientalis Yamaguti, 1933

Prosthogonimus querquedulae Yamaguti, 1933

LIFE CYCLE: Metacercariae in dragonflies (Odonata). (Panin, 1957b)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Anax parthenope

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas rubripes, Anas strepera

Aythiini - Aythya ferina, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Mergus albellus

Galliformes - Gallus gallus (dom.), Phasianus colchicus

Gruiformes - Fulica atra

Charadriiformes - Larus ridibundus, Numenius arquata

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kirgizia, Kazakhstan, China, Primorsk, Indo-China, Japan), N. America (USA, Mexico).

Frosthogonimus cuneatus

STATUS AS WATERFOWL PARASITE: Common; reported 18 times in wild and 21 times in domestic waterfowl. Cause of disease in geese (Szidat, 1933a).

STATUS AS SPECIES: Synonym (with almost all other forms) of P. ovatus - Boddeke, 1960c.

DESCRIPTION: Gorshkov, 1937; Panin, 1957a; Ryzhikov, 1959a; Beverley-Burton, 1961. Copy: Lal, 1939b; Kasimov, 1956; Gvozdev, 1958; Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY: Dawes, 1956; Bykhovskaiâ-Pavlovskaiâ, 1962 from Panin, 1957b.

Distoma cuneatum Rudolphi, 1809

Prymnoprion cuneatus (Rudolphi, 1809) Looss, 1899

Prosthogonimus cuneatus (Rudolphi, 1809) Braun, 1901

Prosthogonimus (Macrogenotrema) cuneatus (Rudolphi, 1809) of Skrjabin, 1941

Prymnoprion anceps Looss, 1899

Prymnoprion ovatus (Rudolphi, 1803) Looss, 1899

Prosthogonimus pellucidus (Linstow, 1873) Braun, 1901

Prosthogonimus japonicus Braun, 1901

Prosthogonimus putschkowskii Skrjabin, 1912

Prosthogonimus brauni Skrjabin, 1919

Prosthogonimus furcifer Railliet, 1924

Prosthogonimus fuelleborni Skrjabin & Massino, 1925

Prosthogonimus leei Hsü, 1935

Prosthogonimus folliculus Reid & Freeman, 1936

Prosthogonimus indicus Srivastava, 1938

Prosthogonimus macroacetabulum Chauhan, 1940

Prosthogonimus sinensis Ku, 1941

Prosthogonimus penni Ku, 1941

Prosthogonimus pseudopellucidus Tubangui & Masiluñgan, 1941

Prosthogonimus ketupi Jaiswal, 1957 - [Nath, 1962]

Prosthogonimus hyderabadensis Jaiswal, 1957 - [Nath, 1962]

LIFE CYCLE: Eggs passed in feces; miracidia develop in 8-10 days at 28-34 C.; cercariae develop in fresh-water snail in 45 days at 25-27 C., both prosobranch and pulmonate snails reported, probably only prosobranch snails involved (Odening, 1965); metacercariae in dragonflies (Odonata); mature in final host in 7 days in oviduct, 14 days in bursa, after ingestion. (Dollfus, 1948a; Heidegger, 1937; Kiseliene, 1966; Krasnolobova, 1956, 1960, 1961; Kupriianova-Shakhmetova, 1961; Macy, 1965; Panin, 1957a; Szidat, 1931b, 1933c)

FIRST INTERMEDIATE HOSTS: Anisus spirorbis, Bithynia leachei [exper.], Bithynia tentaculata, Gyraulus albus [exper.], Gyraulus gredleri [exper.], Planorbis corneus, Vivirarus contectus

SECOND INTERMEDIATE HOSTS: Anax parthenope, Cordulia anea, Epitheca bimaculata, Leucorrhinia dubius, Libellula brunnea, Libellula quadrimaculata, Platycnemis pennipes, Sympetrum depressiusculum [ex-
per.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Branta bernicla,
Branta ruficollis, Cygnus columbianus bewickii, Cygnus cygnus,
Cygnus olor (dom.)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Melanitta fusca, Mergus albellus,
[Mergus merganser - Lapage, 1961, error]

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps ruficollis

Pelecaniformes - Haliastur africanus, Haliastur pygmaeus, Phalacrocorax carbo, Phalacrocorax olivaceus

Ciconiiformes - Ardea cinerea, Casmerodius albus, Platalea leucorodia, Plegadis falcinellus

Falconiformes - Accipiter nisus, Circus aeruginosus, Circus macrourus

Galliformes - Coturnix coturnix, Francolinus pularis, Gallus gallus (dom.), Lagopus lagopus, Lyrurus tetrix, Meleagris gallinavo (dom.), Numida meleagris (dom.), Favo cristatus (dom.), Phasianus colchicus, Tetrao parvirostris, Tetrao urogallus, Tetrastes bonasia

Gruiformes - Fulica atra, Grus grus, Otis tarda

Charadriiformes - Capella gallinago, Chlidonias nigra, Haematopus ostralegus, Larus argentatus, Larus canus, Larus ridibundus, Numenius arquata, Philomachus pugnax, Fluvialis arcticaria, Rynchops nigra, Tringa nebularia, Tringa ochropus

Coraciiformes - Merops asiaticus

Ficiformes - Dendrocopos major, Dendrocopos minor

Passeriformes - Acridotheres tristis, Agelaius phoeniceus, Anthus trivialis, Corvus corax, Corvus corone, Corvus corone cornix, Corvus frugilegus, Corvus monedula, Fringilla coelebs, Garrulus glandarius, Hirundo rustica, Lanius collurio, Lanius cristatus, Lanius minor, Luscinia svecica, Motacilla flava, Passer domesticus, Passer montanus, Fica pica, Quiscalus quiscula, Sturnus vulgaris, Turdus pilaris

HABITAT: Bursa of Fabricius, cloaca, oviduct, rectum.

DISTRIBUTION: Cosmopolitan. Europe, Asia, Africa, N. America, S. America.

Prosthogonimus limani

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Presumably would be synonym of P. ovatus on basis of Boddeke's study (1960c).

DESCRIPTION: Gnedina, 1941. Copy: Skrjabin, 1962.

SYNONYMY:

Prosthogonimus limani Gnedina, 1941

Prosthogonimus (Prosthogenotrema) limani Gnedina, 1941 of Skrjabin & Gnedina, 1941

LIFE CYCLE: Unknown; probably similar to that of P. ovatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe (Ukraine), Asia (Azerbaijan).

Prosthogonimus macrorchis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild, once in domestic, and once in captive waterfowl. Cause severe damage to chickens, but little or none in ducks.

STATUS AS SPECIES: Synonym of P. putschkowskii and P. rudolphii - Witenberg & Eckman, 1939.

DESCRIPTION: Macy, 1934a, 1934b; Khuan Shen-i, 1962b. Copy: Kasimov, 1956; Panin, 1957b; Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY:

Distoma ovatum of Linton, 1887

Prosthogonimus macrorchis Macy, 1934

Prosthogonimus (Macrogenotrema) macrorchis Macy, 1934 of Skrjabin & Baskakov, 1941

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water prosobranch snail; cercariae enter nymphs of dragonflies (Odonata), encyst in abdomen, infective in about 2 months, overwinter in nymph; mature in a few weeks after ingestion of adult dragonfly by final host, survive 4-5 months in final host. (Gower, 1938; Krasnolobova, 1960; Macy, 1934a, 1934b)

FIRST INTERMEDIATE HOSTS: Amnicola limosa

SECOND INTERMEDIATE HOSTS: Epicordulia princeps, Erythemis simplicicollis, Gomphus spicatus, Leucorrhinia intacta, Libellula sp., Tetragoneuria cynosura, Tetragoneuria spinigera

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas falcata, Anas penelope, Anas querquedula, Anas rubripes

Mergini - Mergus merganser

Galliformes - Bonasa umbellus, Gallus gallus (dom.), Meleagris gallopavo (dom.) [exper.], Phasianus colchicus [exper.]

Passeriformes - Corvus brachyrhynchos [exper.], Passer domesticus [exper.]

HABITAT: Oviduct, bursa of Fabricius.

DISTRIBUTION: Europe (Italy), Asia (Amur), N. America (USA).

Prosthogonimus ovatus

STATUS AS WATERFOWL PARASITE: Very common; reported 24 times in wild, 40 times in domestic waterfowl. Cause of severe damage to chickens.

STATUS AS SPECIES: Classification of Prosthogonimus confused. Over 40 species named, in 5 subgenera. Witenberg & Eckman (1939), Chen (1951), and Panin (1957b), each reduced 23-30 species to 7, but not the same 7 species; Nath (1962) reduced 10 Indian species to 2. Generally recognized (of species reported in waterfowl): P. cuneatus and ovatus; recognized by some: P. pellucidus, putschkowskii, rudolphi, anatinus, and macrorchis. Boddeke (1960c) combined all European and Asiatic species (27 species listed) in P. ovatus, with possible exceptions of P. macrorchis and P. vitellatus. Not all species were listed in this paper, and several new ones have been named since.

DESCRIPTION: Baskakov, 1927; Boddeke, 1960a; Beverley-Burton, 1961. Copy: Kasimov, 1956; Kurashvili, 1957; Gvozdev, 1958; Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY: Stiles & Hassall, 1908; Dawes, 1956; Boddeke, 1960c.

Hirudo fasciolaris Mueller, 1788

Fasciola anatis Bruguiere, 1791

Fasciola ovata Rudolphi, 1803

Distomum ovatum (Rudolphi, 1803) Rudolphi, 1809

Distomum (Dicrocoelium) ovatum (Rudolphi, 1803) of Dujardin, 1845

Cephalogonimus ovatus (Rudolphi, 1803) Stossich, 1892
Frymnoprion ovatus (Rudolphi, 1803) Looss, 1899
Prosthogonimus ovatus (Rudolphi, 1803) Lühe, 1899
Prosthogonimus (Ultragenotrema) ovatus (Rudolphi, 1803) of Skrjabin,
1928
Prosthogonimus (Prosthogonimus) ovatus (Rudolphi, 1803) of Skrjabin &
Baskakov, 1941
Distomum anatis-domesticae Rudolphi, 1809 - [Diesing, 1850]
Distomum bursicola Creplin, 1846
Prosthogonimus cuneatus (Rudolphi, 1809) Braun, 1901
Prosthogonimus pellucidus (Linstow, 1873) Braun, 1901
Prosthogonimus japonicus Braun, 1901
Prosthogonimus anatinus Markov, 1902
Prosthogonimus putschkowskii Skrjabin, 1913
Prosthogonimus dogieli Skrjabin, 1915
Prosthogonimus brauni Skrjabin, 1919
Prosthogonimus rudolphii Skrjabin, 1919
Prosthogonimus skrjabini Zakharov, 1920
Prosthogonimus longusmorbificans Seifreid, 1923
Prosthogonimus furcifer Railliet, 1924
Prosthogonimus fuelleborni Railliet, 1924
Prosthogonimus horiuchii Morishita & Tsuchimochi, 1925
Prosthogonimus karasiaki Layman, 1926
Prosthogonimus orientalis Yamaguti, 1933
Prosthogonimus querquedulae Yamaguti, 1933
Prosthogonimus leei Hsu, 1935
Prosthogonimus indicus Srivastava, 1938
Prosthogonimus macroacetabulus Chauhan, 1940
Prosthogonimus penni Ku, 1940
Prosthogonimus sinensis Ku, 1940
Prosthogonimus pseudopellucidus Tubangui & Masiluñgan, 1941
Prosthogonimus dollfusi Jaiswal, 1957
Prosthogonimus hyderabadensis Jaiswal, 1957
Prosthogonimus ketupi Jaiswal, 1957
Prosthogonimus mesolecithus Jaiswal, 1957
Prosthogonimus singhi Jaiswal, 1957

LIFE CYCLE: Eggs passed in feces; miracidia develop in 13-14 days at 22-35 C., eggs ingested by fresh-water prosobranch snail; cercariae emerge, are pulled into respiratory chambers of dragonfly nymphs (Odonata), encyst in tissues; mature in final host in 7-16 days after ingestion of adult dragonfly. Most common in young birds with bursa; in adults only in female during breeding season, enter oviduct only when it is functional. (Boddeke, 1960b; Krasnolobova, 1960; Panin, 1957a)

FIRST INTERMEDIATE HOSTS: Bithynia leachei, Bithynia tentaculata, [Gyraulus albus, Gyraulus gredleri, probably erroneous, not proven experimentally - Odening, 1965]

SECOND INTERMEDIATE HOSTS: Aeschna cyanea, Anax parthenope, Cord-

ulia aenea, Leucorrhinia caudalis, Leucorrhinia pectoralis, Libellula quadrimaculata, Orthetrum cancellatum, Sympetrum depressiusculum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.],
Anas acuta, Anas clypeata, Anas crecca, Anas cyanoptera, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya marila, Aythya nyroca

Mergini - Bucephala clangula, Clangula hyemalis, Mergus albellus

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps caspicus, Podiceps grisegena, Podiceps ruficollis

Pelecaniformes - Pelecanus oncorhynchus

Ciconiiformes - Ardea cinerea, Mesembrinibis cayennensis, Nycticorax nycticorax, Plegadis falcinellus

Falconiformes - Accipiter nisus, Buteo buteo, Circus aeruginosus,
Circus macrourus, Falco subbuteo, Falco tinnunculus, Falco vespertinus

Galliformes - Coturnix coturnix, Gallus gallus (dom.), Lagopus lagopus,
Lyrurus tetrax, Meleagris gallopavo (dom.), Numida meleagris,
Pavo cristatus, Perdix perdix, Phasianus colchicus, Tetrao urogallus,
Tetrastes bonasia

Gruiformes - Crex crex, Fulica atra, Gallinula chloropus, Grus grus,
Otis tarda, Porzana porzana, Rallus aquaticus

Charadriiformes - Actitis hypoleucos, Alca torda, Capella gallinago,
Capella media, Charadrius placidus, Chlidonias nigra, Larus argentatus,
Larus canus, Larus fuscus, Larus hyperboreus, Larus minutus,
Larus ridibundus, Limosa limosa, Numenius arquata, Numenius madagascariensis,
Philomachus pugnax, Scolorax rusticola, Stercorarius longicaudus,
Stercorarius parasiticus, Sterna hirundo, Tringa glareola,
Tringa nebularia, Tringa ochropus, Uria grylle, Vanellus vanellus

Cuculiformes - Cuculus canorus, Piaya cayana

Strigiformes - Asio flammeus, Athene noctua, Tyto alba

Apodiformes - Apus apus

Coraciiformes - Alcedo atthis, Ceryle rudis

Piciformes - Dendrocopos medius

Passeriformes - Aegithalos caudatus, Ammospiza maritima, Anthus trivialis,
Corvus brachyrhynchos, Corvus corone, Corvus corone cornix,
Corvus frugilegus, Corvus monedula, Cyanocorax cyanomelas, Delichon urbica,
Emberiza schoeniclus, Fringilla coelebs, Garrulus glandarius,
Hirundo rusticus, Junco hyemalis, Lanius cristatus, Lanius collurio,
Lanius excubitor, Lanius minor, Motacilla alba, Motacilla flava,
Muscicapa striata, Panurus biarmicus, Parus major, Passer domesticus,
Passer montanus, Pica pica, Saxicola torquata, Sitta europaea,
Sturnus vulgaris, Sylvia nisoria, Turdus merula, Turdus pilaris,
Turdus viscivorus, Xiphorhynchus guttatus

HABITAT: Bursa of Fabricius, oviduct, cloaca, large intestine.

DISTRIBUTION: Cosmopolitan.

Prosthogonimus pellucidus

STATUS AS WATERFOWL PARASITE: Frequent; reported 6 times in wild and 9 times in domestic waterfowl. Mortality in waterfowl from infection reported by Szidat (1933c).

STATUS AS SPECIES: Synonym of P. cuneatus - Bykhovskaja-Pavlovskaja, 1962; synonym (with P. cuneatus and other forms) of P. ovatus - Boddeke, 1960c.

DESCRIPTION: Braun, 1902. Copy: Kasimov, 1956; Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY: Dawes, 1956.

Distoma pellucidum Linstow, 1873

Cephalogonimus pellucidus (Linstow, 1873) Railliet, 1890

Distomum (Dicrocoelium) pellucidum Linstow, 1873 of Stossich, 1892

Mesogonimus pellucidus (Linstow, 1873) Neumann, 1892

Frymnoprion pellucidus (Linstow, 1873) Looss, 1890

Prosthogonimus pellucidus (Linstow, 1873) Braun, 1901

Prosthogonimus (Macrogenotrema) pellucidus (Linstow, 1873) of Shevtsov & Zaskind, 1960

Prosthogonimus (Politogenotrema) pellucidus (Linstow, 1873) of Skrjabin, 1962

Prosthogonimus japonicus Braun, 1901 - [Witenberg & Eckman, 1939]

Prosthogonimus anatinus Markov, 1902 - [Krasnolobova, 1959b]

Prosthogonimus intercalandus Hieronymi & Szidat, 1921

Prosthogonimus longus-morbificans Seifreid, 1923 - [Witenberg & Eckman, 1939]

Prosthogonimus leei Hsü, 1935 - [Witenberg & Eckman, 1939]

LIFE CYCLE: Eggs passed in feces, ingested by fresh-water prosobranch snail; metacercariae encysted in dragonfly nymphs (Odonata), infective in 65-70 days; mature in 8-42 days after ingestion of adult dragonflies by final host, period of maturation depending upon host and habitat within host. (Heidegger, 1937; Krasnolobova, 1959a, 1960, 1963; Szidat, 1926, 1931c)

FIRST INTERMEDIATE HOSTS: Bithynia leachei, Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Cordulia aenea, Gomphus sp., Leucorrhinia rubicunda, Libellula brunnea, Libellula quadrimaculata, Platycnemis pennipes, Somatochlora metallica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta,
Anas clypeata, Anas crecca, Anas formosa, Anas querquedula
Mergini - Clangula hyemalis, Histrionicus histrionicus, Melanitta
fusca, Melanitta fusca deglandi, Melanitta nigra
Falconiformes - Falco subbuteo
Galliformes - Gallus gallus (dom.), Lyrurus tetrrix, Meleagris gallo-
pavo (dom.), Tetrao urogallus, Tetrastes bonasia
Charadriiformes - Numenius arquata
Passeriformes - Corvus frugilegus

HABITAT: Bursa of Fabricius, oviduct.

DISTRIBUTION: Europe, Asia (China, Primorsk, Amur, Kamchatka), N.
America (USA), S. America (Argentina).

Prosthogonimus putschkowskii

STATUS AS WATERFOWL PARASITE: Rare; reported twice in domestic water-
fowl.

STATUS AS SPECIES: Doubtful. Synonym of P. cuneatus - Panin, 1957c,
and Bykhovskaja-Pavlovskaja, 1962; synonym (with P. cuneatus and other
forms) of P. ovatus - Boddeke, 1960c.

DESCRIPTION: Skrjabin, 1913c. Copy: Shevtsov & Zaskind, 1960; Skr-
jabin, 1962.

SYNONYMY:

Prosthogonimus putschkowskii Skrjabin, 1913

Prosthogonimus (Macrogenotrema) putschkowskii Skrjabin, 1913 of Shev-
tsov & Zaskind, 1960

Prosthogonimus brauni Skrjabin, 1919 - [Witenberg & Eckman, 1939]

Prosthogonimus fuelleborni Skrjabin & Massino, 1925 - [Witenberg &
Eckman, 1939]

Prosthogonimus horiuchii Morishita & Tsuchimochi, 1925 - [Witenberg
& Eckman, 1939]

Prosthogonimus querquedulae Yamaguti, 1933 - [Witenberg & Eckman, 1939]

Prosthogonimus folliculus Reid & Freeman, 1936 - [Witenberg & Eckman,
1939]

Prosthogonimus indicus Srivastava, 1938 - [Bhalerao & Gideon, 1941;
Nath, 1962]

Prosthogonimus macroacetabulus Chauhan, 1940 - [Nath, 1962]

Prosthogonimus dollfusi Jaiswal, 1957 - [Nath, 1962]

Prosthogonimus singhi Jaiswal, 1957 - [Nath, 1962]

LIFE CYCLE: Metacercariae encysted in body of dragonfly (Odonata);
mature in 3 weeks after ingestion by final host. (Ono, 1928)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Anax parthenope

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Ciconiiformes - Ardeola grayii, Ibis megalocephala, Platalea leucorodia, Plegadis falcinellus

Galliformes - Gallus gallus (dom.)

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe (USSR), Asia (Kazakhstan, India, China).

Prosthogonimus rudolphii

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks, 5 times in domestic ducks.

STATUS AS SPECIES: Doubtful. Synonym of P. anatinus - Panin, 1957b and Bykhovskaiâ-Pavlovskaiâ, 1962; synonym (with P. anatinus and other forms) of P. ovatus - Boddeke, 1960c.

DESCRIPTION: Larios, 1942. Copy: Shevtsov & Zaskind, 1960; Skrjabin, 1962.

SYNONYMY:

Prosthogonimus rudolphii Skrjabin, 1919

Prosthogonimus (Macrogenotrema) rudolphii Skrjabin, 1919 of Shevtsov & Zaskind, 1960

Prosthogonimus (Primagenotrema) rudolphii Skrjabin, 1919 of Skrjabin, 1962

Prosthogonimus orientalis Yamaguti, 1933 - [Witenberg & Eckman, 1939]

Prosthogonimus macrorchis Macy, 1934 - [Witenberg & Eckman, 1939]

Prosthogonimus skrjabini Zakharov, 1920 - [Witenberg & Eckman, 1939]

LIFE CYCLE: Unknown; probably similar to that of P. ovatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas cyanoptera, Anas rubripes, Anas discors - [report by Larios, 1942, not clear]

Aythini - Aythya affinis, Aythya collaris

Mergini - Bucephala clangula, Mergus serrator

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe, N. America (USA, Mexico).

Frosthogonimus ryjikowi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably would be included with other forms in P. ovatus by Boddeke, 1960c, but not mentioned.

DESCRIPTION: Ablasov, 1955b. Cory: Skrjabin, 1962.

SYNONYMY:

Frosthogonimus (Frosthogonimus) ryjikowi Ablasov, 1955

Frosthogonimus (Frosthogenotrema) ryjikowi Ablasov, 1955 of Skrjabin,
1962

LIFE CYCLE: Unknown; probably similar to that of P. ovatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas strepera

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Asia (Kirgizia).

Frosthogonimus spinatus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Probably would be included with other forms in P. ovatus by Boddeke, 1960c.

DESCRIPTION: Shevtsov, 1965b.

SYNONYMY:

Frosthogonimus (Politogenotrema) spinatus Shevtsov, 1965

LIFE CYCLE: Unknown; probably similar to that of P. cuneatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Probably bursa of Fabricius or oviduct.

DISTRIBUTION: Europe (Ukraine).

Prosthogonimus sudarikovi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably would be included in P. ovatus by Boddeke, 1960c.

DESCRIPTION: Copy: Skrjabin, 1962.

SYNONYMY:

Prosthogonimus sudarikovi Oshmarin, 1948, nomen nudum

Prosthogonimus (Politogenotrema) sudarikovi Oshmarin in Skrjabin, 1962

LIFE CYCLE: Unknown; probably similar to that of P. ovatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya ferina

HABITAT: Body cavity - probably accidental; true habitat probably bursa of Fabricius and oviduct.

DISTRIBUTION: Asia (Buryat-Mongolia).

Schistogonimus rarus

STATUS AS WATERFOWL PARASITE: Common; reported 27 times in wild waterfowl, 9 times in domestic waterfowl.

DESCRIPTION: Braun, 1901a; Gvozdev, 1958; Beverley-Burton, 1961.
Copy: Shevtsov & Zaskind, 1960; Skrjabin, 1961.

SYNONYMY:

Prosthogonimus rarus Braun, 1901

Schistogonimus rarus (Braun, 1901) Lühe, 1909

Schistogonimus intermedius Semenov, 1927 - Probably synonym of S. rarus

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas querquedula, Anas strepera

Aythini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca

Mergini - Bucephala clangula, Melanitta fusca, Mergus albellus

Galliformes - Lagopus lagopus

Gruiformes - Fulica atra

Charadriiformes - Charadrius dubius, Larus canus, Numenius arquata

HABITAT: Bursa of Fabricius.

DISTRIBUTION: Europe, Asia (W. Siberia, Tadzhikistan, Kazakhstan, China, Amur).

Fleuropsolus somateria

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Fleuropsolus a synonym of genus Parabascus - Baer & Joyeux, 1961.

DESCRIPTION: Morozov, 1960.

SYNONYMY:

Fleuropsolus somateria Morozov, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kamchatka).

Ascorhytis charadriiformis

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform birds; reported once from experimental infection in duckling.

DESCRIPTION: Young, 1949; Ching, 1963, 1965. Copy: Belopol'skaja, 1952a.

SYNONYMY:

Levinseniella charadriiformis Young, 1949

Ascorhytis charadriiformis (Young, 1949) Ching, 1965

LIFE CYCLE: Eggs passed in feces; cercariae develop in marine snail, penetrate gills of marine crab, encyst as metacercariae on tissues lining ventral blood sinuses; mature in 4 hours after ingestion by final host, survive up to 11 days in final host. Mature experiment-

ally in bird, mammal, amphibian, and fish hosts. (Ching, 1963, 1965)

FIRST INTERMEDIATE HOSTS: Littorina scutulata

SECOND INTERMEDIATE HOSTS: Hemigrapsus oregonensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Catoptrophorus semipalmatus, Larus canus, Larus glaucenscens, Larus philadelphia, Limosa fedoa

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

AMPHIBIA - Rana pipiens [exper.]

OSTEICHTHYES - Carassius auratus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: N. America (Pacific Coast - USA & Canada).

Atriochallophorus minutus

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild and once in domestic duck.

DESCRIPTION: Price, 1934a; Stunkard, 1958; Deblock & Rosé, 1964b; Ching, 1965. Copy: Rankin, 1939; Belopol'skaia, 1952a, 1963a.

SYNONYMY:

Levinseniella minuta Price, 1934

Atriochallophorus minutus (Price, 1934) Deblock & Rosé, 1964

Atriochallophorus samarae Deblock & Rosé, 1964 - [Deblock & Rosé, 1964b; Ching, 1965]

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by fresh- and brackish water snails; cercariae develop but do not emerge, encysting as metacercariae in same individual; mature in 2-3 days after ingestion by final host. (Ching, 1965; Stunkard, 1958)

INTERMEDIATE HOSTS: Amnicola limosa, Hydrobia minuta, Oxytrema silicula

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Aythini - Aythya fuligula

MAMMALIA - Rodentia - Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe (France), N. America (USA, W. Indies).

Levinseniella amnicolae

STATUS AS WATERFOWL PARASITE: Rare; reported once experimentally in duck, once in domestic duck.

DESCRIPTION: Etges, 1953. Copy: Belopol'skaia, 1963a.

SYNONYMY:

Levinseniella amnicolae Etges, 1953

LIFE CYCLE: Eggs passed in feces into fresh water, take over 20 days to develop; cercariae develop in fresh-water prosobranch snail, emerge and penetrate fresh-water isopod crustacea, encyst as metacercariae around dorsal blood vessel, infective in 34-40 days; mature in 2 days when ingested by final host; adults survive at least 38 days. (Etges, 1953)

FIRST INTERMEDIATE HOSTS: Amnicola pilsbryi

SECOND INTERMEDIATE HOSTS: Asellus communis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos [exper.], Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

HABITAT: Ceca.

DISTRIBUTION: N. America (USA).

Levinseniella belopolskoi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of L. pellucida - Deblock & Ky, 1966.

DESCRIPTION: Khuan Shen-i, 1962b. Copy: Belopol'skaia, 1963a.

SYNONYMY:

Levinseniella belopolskoi Khuan Shen-i, 1962

LIFE CYCLE: Unknown; probably similar to that of L. amnicolae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas crecca, Anas penelope

Mergini - Histrionicus histrionicus

HABITAT: Ceca.

DISTRIBUTION: Asia (Amur, Kamchatka).

Levinseniella brachysoma

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks, once in captive duck.

DESCRIPTION: Jägerskiöld, 1907; Odening, 1964d; Deblock & Ky, 1966.
Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY: Dawes, 1956.

Distoma brachysomum Creplin, 1837

Distomum (Brachycoelium) brachysomum (Creplin, 1837) Stossich, 1892

Levinsenia brachysomum (Creplin, 1837) Stossich, 1899

Levinseniella brachysoma (Creplin, 1837) Stiles & Hassall in Ward,
1902

Levinseniella tridigitata Deblock & Biguet, 1958 - [Deblock & Ky,
1966]

LIFE CYCLE: Metacercariae encysted in marine isopod and amphipod crustacea. Metacercariae reported in intestine of marine fish, interpreted as auxiliary host. (Jägerskiöld, 1907; Reimer, 1963; Vilot, 1875, 1878)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Anthura gracilis, Corophium volutator,
Gammarus locusta, Sphaeroma hookeri

AUXILIARY HOSTS?: Pholis gunellus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos

Somateriini - Polysticta stelleri

Aythiini - Aythya marila, Aythya fuligula

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra

Gaviiformes - Gavia arctica

Ciconiiformes - Ardea cinerea

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Calidris

canutus, Capella gallinago, Charadrius hiaticula, Erolia alpina,
Erolia ruficollis, Erolia temminckii, Haematopus ostralegus, Larus
ridibundus, Numenius phaeopus, Squatarola squatarola, Tringa ery-
thropus, Tringa totanus, Vanellus vanellus

Strigiformes - Asio flammeus

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe, Asia (Primorsk), N. America.

Levinseniella bucephalae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Yamaguti, 1935a, 1939; Ryzhikov & Timofeeva, 1962.
Copy: Belopol'skaia, 1952a.

SYNONYMY:

Spelophallus bucephalae Yamaguti, 1935

Levinseniella bucephalae (Yamaguti, 1935) Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of L. amnicolae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas clypeata

Mergini - Bucephala clangula, Histrionicus histrionicus

Charadriiformes - Capella gallinago, Heteroscelus incanus

HABITAT: Ceca.

DISTRIBUTION: Asia (Primorsk, Amur, Kamchatka, Jaran).

Levinseniella camtshatica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Morozov, 1960. Copy: Belopol'skaia, 1963a.

SYNONYMY:

Levinseniella camtshatica Morozov, 1960

LIFE CYCLE: Unknown; probably similar to that of L. amnicolae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)
Mergini - Bucephala sp.

HABITAT: Intestine.

DISTRIBUTION: Asia (Kamchatka).

Levinseniella cruzi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Incertae sedis, pertenance to Levinseniella very doubtful - Deblock, Capron, & Biguet, 1959.

DESCRIPTION: Travassos, 1921b. Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY:

Levinseniella cruzi Travassos, 1921

Cornucopula cruzi (Travassos, 1921) Rankin, 1939

LIFE CYCLE: Unknown; probably similar to that of L. amnicolae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas bahamensis

HABITAT: Probably small intestine.

DISTRIBUTION: S. America (Brazil)..

Levinseniella pellucida

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks; once in domestic duck.

DESCRIPTION: Jägerskiöld, 1907; Deblock & Ky, 1966. Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY:

Levinseniella pellucida Jägerskiöld, 1907

Levinseniella belopolskoi Khuan Shen-i, 1962 - [Deblock & Ky, 1966]

LIFE CYCLE: Metacercariae encysted in fresh-water decapod crustacea; mature in 24 hours after ingestion by final host. (Balozet & Callot, 1938; Buttner, 1951)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Palaemonetes mesogenitor

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Aythiini - Aythya fuligula, Aythya nyroca

Charadriiformes - Xenus cinereus

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

HABITAT: Intestine, ceca.

DISTRIBUTION: Europe (Sweden, Lithuania, USSR), Asia (Kurile Is.), Africa (Tunisia).

Levinseniella propinqua

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Jägerskiöld, 1907; Ching, 1965; Deblock & Ky, 1966.
Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY:

Levinseniella propinqua Jägerskiöld, 1907

Levinseniella carcinidis Rankin, 1939 - [Deblock & Ky, 1966]

Levinseniella leptophallus Coil, 1956 - [Deblock & Ky, 1966]

Levinseniella gymnopocha Coil, 1956 - [Deblock & Ky, 1966]

LIFE CYCLE: Metacercariae in marine amphipod crustacea. (Kulachkova, 1953; Uspenskaja, 1960)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Gammarus locusta, Gammarus marinus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Somateriini - Somateria mollissima

Aythiini - Aythya fuligula

Mergini - Bucephala clangula

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Arenaria melanocephala, Charadrius hiaticula, Erolia alpina, Erolia maritima, Erolia minuta, Erolia testacea, Haematopus ostralegus, Haematopus ostralegus bachmani, Heteroscelus incanus, Pluvialis dominica, Squatarola squatarola, Tringa totanus, Xenus cinereus

HABITAT: Intestine, ceca.

DISTRIBUTION: Europe (England, Sweden, Esthonia, USSR), Asia (W. Siberia, Kurile Is.), N. America (USA).

Microphallus claviformis

STATUS AS WATERFOWL PARASITE: Infrequent, normally in charadriiform birds; reported 4 times in wild ducks and once in domestic duck.

DESCRIPTION: Nicoll, 1907, 1909; Cable, Connor, & Balling, 1960; Deblock, Capron, & Biguet, 1960 (fig.). Copy: Belopol'skaia, 1952a.

SYNONYMY: Dawes, 1956; Biguet, Deblock, & Capron, 1958.

Distomum claviforme Brandes, 1888

Distomum (Brachycoelium) claviforme Brandes, 1888 of Stossich, 1892

Lecithodendrium claviforme (Brandes, 1888) Stossich, 1899

Levinsenia claviforme (Brandes, 1888) Looss, 1899

Spelotrema claviforme (Brandes, 1888) Nicoll, 1907

Levinseniella claviformis (Brandes, 1888) Travassos, 1921

Microphallus claviformis (Brandes, 1888) Baer, 1944

Cercaria corophii Lebour, 1908 - [Reimer, 1963]

Microphallus longicollis (Yamaguti, 1939) Baer, 1944

Microphallus limuli Stunkard, 1951

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-, brackish-, and salt-water (marine) snails; cercariae encyst in snail without emerging, or metacercariae encysted in marine cirriped, isopod, and amphipod crustacea; mature in 2-4 days after ingestion by final host, survive at least 3 months. Matured in mammals after experimental infection, but failed to survive. (Deblock, Capron, & Biguet, 1960; Deblock & Rosé, 1966; Rébecq, 1964; Reimer, 1963, 1964a)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata, Hydrobia stagnalis, Hydrobia ulvae

SECOND INTERMEDIATE HOSTS: Balanus improvisus, Idotea baltica, Idotea viridis, Jaera albifrons, Sphaeroma hookeri, Sphaeroma serrata, Orchestia gammarella, Hydrobia stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Clangula hyemalis

Charadriiformes - Actitis hypoleucos, Charadrius hiaticula, Charadrius semipalmatus, Charadrius wilsonia, Crocethia alba, Erolia alpina, Erolia ruficollis, Erolia temminckii, Erolia tenuirostris, Haemato-

pus ostralegus, Larus argentatus [exper.], Larus ridibundus, Limosa lapponica, Limosa limosa, Numenius arquata, Philomachus pugnax, Squatarola squatarola, Tringa erythropus, Tringa nebularia, Tringa totanus

Passeriformes - Anthus pratensis, Anthus spinoletta, Motacilla flava
MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Primorsk), N. America (Puerto Rico).

Microphallus excellens

STATUS AS WATERFOWL PARASITE: Rare, normally in charadriiform birds; reported once in wild duck.

STATUS AS SPECIES: Synonym of M. similis - Deblock & Ky, 1966.

DESCRIPTION: Nicoll, 1907. Copy: Belopol'skaia, 1952a.

SYNONYMY:

Spelotrema excellens Nicoll, 1907

Levinseniella excellens (Nicoll, 1907) Travassos, 1921

Microphallus excellens (Nicoll, 1907) Baer, 1944

Spelotrema feriatum Nicoll, 1907 - [Dawes, 1956]

Cercaria ubiquita Lebour, 1907

Microphallus pirum (Afanesev, 1941) Rausch, 1953 - [Biguet, Deblock, & Capron, 1958]

LIFE CYCLE: Eggs passed in feces; cercariae develop in marine snails; metacercariae in marine decapod crustacea. (Chubrik, 1957; Lebour, 1911; Nicoll, 1909; Nicoll & Small, 1909; Uspenskaja, 1955)

FIRST INTERMEDIATE HOSTS: Littorina palliata, Littorina rudis, Paludestrina stagnalis

SECOND INTERMEDIATE HOSTS: Cancer pagurus, Carcinus moenas

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

Charadriiformes - Calidris canutus, Charadrius hiaticula, Erolia alpina, Haematopus ostralegus, Himantopus himantopus, Larus argentatus, Larus marinus, Larus schistisagus, Numenius arquata, Tringa totanus, Vanellus vanellus

HABITAT: Small intestine.

DISTRIBUTION: Europe (Great Britain, Sweden, USSR).

Microphallus fusiformis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Reimer, 1963.

SYNONYMY:

Microphallus fusiformis Reimer, 1963.

LIFE CYCLE: Cercariae develop in marine snail, encyst as metacercariae in same individual without emerging as free forms (Reimer, 1963).

INTERMEDIATE HOSTS: Hydrobia ulvae

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis, Melanitta fusca

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany).

Microphallus longicaecus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Chen, 1956. Copy: Belopol'skaia, 1963a (as M. longicollis).

SYNONYMY:

Microphallus longicaecus Chen, 1956

Microphallus longicollis Chen of Belopol'skaia, 1963a, lapsus, not M. longicollis (Yamaguti, 1939)

LIFE CYCLE: Unknown; probably similar to that of M. nicolli or M. pygmaeus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (China).

Microphallus nicolli

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Cable & Hunninen, 1938: Young, 1938. Copy: Rankin, 1940; Belopol'skaia, 1952a.

SYNONYMY:

Spelotrema nicolli Cable & Hunninen, 1938

Microphallus nicolli (Cable & Hunninen, 1938) Baer, 1944

LIFE CYCLE: Cercariae develop in marine snail; metacercariae encysted in gills of marine decapod crustacea; mature in final host 3 days after ingestion. (Cable & Hunninen, 1938, 1939, 1940; Rankin, 1940; Young, 1938, 1949)

FIRST INTERMEDIATE HOSTS: Bittium alternatum, Olivella biplicata

SECOND INTERMEDIATE HOSTS: Callinectes sapidus, Emerita analoga

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Charadriiformes - Burhinus sp., Catantrophorus semipalmatus, Larus argentatus [exper.], Limosa fedoa

Passeriformes - Amospiza maritima

HABITAT: Small intestine - posterior end.

DISTRIBUTION: Europe (USSR - White Sea), N. America (USA).

Microphallus papillorobustus

STATUS AS WATERFOWL PARASITE: Infrequent, normally in Charadriiformes; reported twice in wild ducks, once in domestic, and once in captive duck.

DESCRIPTION: Rankin, 1940; Jogis, 1960; Odening, 1964d. Copy: Belopol'skaia, 1952a, 1963a.

SYNONYMY:

Spelotrema papillorobusta Rankin, 1940

Carneophallus papillorobusta (Rankin, 1940) Caballero y C., 1959

Microphallus papillorobustus (Rankin, 1940) Baer, 1944

Spelotrema pseudogonotyla Chen, 1944 - [Deblock & Ky, 1966]

Microphallus chabaudi Capron, Deblock, & Biguet, 1957 - [Belopol'skaia, 1963a; Deblock & Ky, 1966]

Microphallus tringae Capron, Deblock, & Biguet, 1957 - [Deblock & Ky, 1966]

Spelotrema magnirapillata Leonov, 1959 - [Belopol'skaia, 1963a; Deblock & Ky, 1966]

LIFE CYCLE: Cercariae develop in marine snail; metacercariae in marine amphipod crustacea. (Belopol'skaia, 1957; Rébecq, 1961; Reimer, 1963)

FIRST INTERMEDIATE HOSTS: - Hydrobia ventrosa

SECOND INTERMEDIATE HOSTS: Gammarus locusta, Gammarus salinus, Sphaeroma hookeri

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas clypeata

Aythiini - Aythya fuligula, Aythya marila, Aythya nyroca

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Calidris canutus, Capella gallinago, Charadrius hiaticula, Chlidonias leucopterus, Crocethia alba, Erolia alpina, Erolia minutilla, Erolia ruficollis, Erolia testacea, Haematopus ostralegus, Larus canus, Larus genei, Larus melanocephalus, Larus ridibundus, Limosa limosa, Numenius arquata, Numenius phaeopus, Philomachus pugnax, Pluvialis apricaria, Squatarola squatarola, Sterna hirundo, Sterna paradisaea, Tringa erythropus, Tringa glareola, Tringa nebularia, Tringa ochropus, Tringa totanus, Vanellus vanellus

Fasseriformes - Motacilla alba, Sturnus vulgaris

HABITAT: Ceca, lower intestine.

DISTRIBUTION: Europe (France, Baltic Sea, White Sea, Estonia), N. America (USA).

Microphallus pirum

STATUS AS WATERFOWL PARASITE: Rare, normally in carnivorous mammals; reported once in wild ducks.

STATUS AS SPECIES: Synonym of M. excellens - Biguet, Deblock, & Capron, 1958; synonymy rejected by Belopol'skaia, 1963a and Ching, 1965.

DESCRIPTION: Afanas'ev, 1941; Ching, 1965. Copy: Belopol'skaia, 1952a.

SYNONYMY:

Paraheterophyes pirum Afanes'ev, 1941

Spelotrema pirum (Afanes'ev, 1941) Belopol'skaia, 1952

Microphallus pirum (Afanes'ev, 1941) Rausch, 1953

Microphallus enhydrae Rausch & Locker, 1951 - [Yamaguti, 1958; Belopol'skaia, 1963a]

LIFE CYCLE: Eggs eaten by marine snail; metacercariae in marine decapod crustacean; mature in final host 36 hours after ingestion. (Schiller, 1959)

FIRST INTERMEDIATE HOSTS: Thais emarginata [exper.]

SECOND INTERMEDIATE HOSTS: Pagurus hirsutiusculus, Telmessus sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca deglandi

Charadriiformes - Larus glaucescens [exper.]

MAMMALIA - Carnivora - Enhydra lutris, Alopex lagopus, Vulpes fulva [exper.]

Rodentia - Mesocricetus auratus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (Komandorsky Is.), N. America (USA - Alaska).

Microphallus primas

STATUS AS WATERFOWL PARASITE: Infrequent, probably normally in charadriiform birds; reported 3 times in wild ducks.

DESCRIPTION: Jägerskiöld, 1908: Stunkard, 1951. Copy: Belopol'skaia, 1952a.

SYNONYMY: Biguet, Deblock, & Capron, 1958.

Spelophallus primas Jägerskiöld, 1908

Levinseniella primas (Jägerskiöld, 1908) Travassos, 1921

Microphallus primas (Jägerskiöld, 1908) Stunkard, 1951

Spelotrema primas (Jägerskiöld, 1908) Belopol'skaia, 1952

Cercaria carcini Guyenot, Naville, Ponce, 1925 - [Reimer, 1963]

Microphallus canchei Biguet, Deblock, & Capron, 1958 - [Reimer, 1963; Deblock & Ky, 1966]; distinct, Belopol'skaia, 1963a

LIFE CYCLE: Metacercariae encysted in marine decapod and amphipod crustacea; metacercariae reported encysted in gills and free in intestine of marine fish, interpreted as auxiliary hosts. (Reimer, 1963; Yamaguti, 1934)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Carcinus moenas, Gammarus locusta, Gammarus salinus

AUXILIARY HOSTS?: Macrophthalmus dilatatus, Pholis gunellus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Aythiini - Aythya marila

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra

Charadriiformes - Actitis hyroleucos, Charadrius hiaticula, Crocethia alba, Erolia ruficollis, Haematopus ostralegus, Haematopus ostralegus bachmani, Larus marinus, Larus ridibundus, Numenius arquata, Squatarola squatarola

Passeriformes - Pica pica

HABITAT: Intestine, ceca.

DISTRIBUTION: Europe, Asia (Japan), N. America (USA).

Microphallus pseudogonotylus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Synonym of M. papillorobustus - Deblock & Ky, 1966.

DESCRIPTION: Chen, 1944. Copy: Cable & Kuns, 1951; Belopol'skaia, 1952a; Shevtsov & Zaskind, 1960.

SYNONYMY: Biguet, Deblock, & Capron, 1958.

Spelotrema pseudogonotyla Chen, 1944

Carneophallus pseudogonotyla (Chen, 1944) Cable & Kuns, 1951

Microphallus pseudogonotylus (Chen, 1944) Biguet, Deblock, & Capron, 1958

LIFE CYCLE: Unknown; probably similar to that of M. nicolli or M. pygmaeus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (China).

Microphallus pygmaeus

STATUS AS WATERFOWL PARASITE: Common; reported 21 times in wild ducks, once in domestic duck. Regarded as potential pathogen in eiders by Belopol'skaia (1953c).

DESCRIPTION: Jägerskiöld, 1900; Belopol'skaia, 1954 (as Spelotrema oidemia); Deblock, Capron, & Biguet, 1960 (fig.); Ching, 1961b.
Copy: Rankin, 1940; Belopol'skaia, 1952a.

SYNONYMY: Biguet, Deblock, & Capron, 1958.

Distoma pygmaeum Levinsen, 1881

Distomum (Brachycoelium) pygmaeum Levinsen, 1881 of Stossich, 1892

Levinsenia pygmaeum (Levinsen, 1881) Stossich, 1899

Spelotrema pygmaeum (Levinsen, 1881) Jägerskiöld, 1901

Levinseniella pygmaea (Levinsen, 1881) Stafford, 1903

Microphallus pygmaeus (Levinsen, 1881) Baer, 1944

Spelotrema capellae Yamaguti, 1939

Microphallus capellae (Yamaguti, 1939) Baer, 1944

Microphallus enhydrae Rausch & Locker, 1951 - synonym of Spelotrema pirus, Yamaguti, 1958; Belopol'skaia, 1963a

Spelotrema oidemia Belopol'skaia, 1952

Microphallus oidemia (Belopol'skaia, 1952) Biguet, Deblock, & Capron, 1958 - distinct, Belopol'skaia, 1963a

Cercaria littorinae rudis Lebour, 1906

LIFE CYCLE: Cercariae develop in marine snails; final host infected experimentally from these snails, with no second intermediate host. (Belopol'skaia, 1949a, 1952b; Ching, 1962; Chubrik, 1957)

INTERMEDIATE HOSTS: Littorina littorea, Littorina obtusata, Littorina palliata, Littorina rudis, Littorina scutulata, Margarites groenlandicus, Rissoa aculeus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya fuligula

Mergini - Bucephala clangula, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus merganser

Charadriiformes - Calidris tenuirostris, Capella solitaria, Cerphus grylle, Erolia maritima, Larus argentatus, Larus marinus, Stercorarius parasiticus, Sterna paradisaea, Uria aalge

MAMMALIA - Carnivora - Enhydra lutris, Felis catus [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Kazakhstan, Frimorsk, Kamchatka, Japan, Chukotka), N. America (USA, USA - Alaska, Greenland).

Microphallus similis

STATUS AS WATERFOWL PARASITE: Rare, normally in Charadriiformes; reported once in wild duck.

STATUS AS SPECIES: Often confused with M. primas.

DESCRIPTION: Nicoll, 1906, 1907; Stunkard, 1957c; Deblock, Capron, & Biguet, 1960 (fig.); Deblock & Ky, 1966. Copy: Belopol'skaia, 1952a, 1963a.

SYNONYMY:

Levinsenia pygmaea var. similis Jägerskiöld, 1900
Spelotrema simile (Jägerskiöld, 1900) Jägerskiöld, 1901
Distoma pygmaea similis (Jägerskiöld, 1900) Looss, 1902
Levinsenia similis (Jägerskiöld, 1900) Nicoll, 1906
Levinseniella similis (Jägerskiöld, 1900) Travassos, 1921
Microphallus similis (Jägerskiöld, 1900) Baer, 1944
Spelotrema excellens Nicoll, 1907 - [Deblock & Ky, 1966]
Cercaria carcini Lebour, 1908
Microphallus sp. Ching, 1960

LIFE CYCLE: Cercariae develop in marine snails; metacercariae encysted in marine decapod and amphipod crustacea; mature in final host in 24 hours after ingestion. (Deblock, Capron, & Biguet, 1960; Rees, 1937; Stunkard, 1957)

FIRST INTERMEDIATE HOSTS: Littorina littorea, Littorina obtusata, Littorina rudis, Littorina saxatilis

SECOND INTERMEDIATE HOSTS: Carcinus moenas, Hyas araneus, Gammarus lacustris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Charadriiformes - Haematopus ostralegus, Larus argentatus, Larus fuscus, Larus marinus, Larus ridibundus, Sterna hirundo [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe, N. America (USA).

Microphallus somateriae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Kulachkova, 1958. Copy: Belopol'skaia, 1963a.

SYNONYMY:

Levinseniella somateriae Kulachkova, 1958
Microphallus somateriae (Kulachkova, 1958) Deblock & Rosé, 1964

LIFE CYCLE: Cercariae develop in marine snails. (Chubrik, 1957; Kulachkova, 1953)

FIRST INTERMEDIATE HOSTS: Hydrobia ulvae, Littorina palliata

SECOND INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria mollissima

Aythyini - Aythya fuligula

Charadriiformes - Squatarola squatarola

HABITAT: Intestine.

DISTRIBUTION: Europe (France, Estonia, White Sea).

Anacetabulitrema samarae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Deblock & Rosé, 1964b.

SYNONYMY:

Anacetabulitrema samarae Deblock & Rosé, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya ferina

HABITAT: Small intestine.

DISTRIBUTION: Europe (France).

Gynaecotyla jaegerskioeldi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Incertae sedis - Deblock, Capron, & Biguet, 1961.

Gynaecotyla a synonym of Microphalloides - Baer & Joyeux, 1961.

DESCRIPTION: Travassos, 1921b. Copy: Rankin, 1939; Belopol'skaïa, 1952a.

SYNONYMY: Etges, 1953.

Levinseniella jaegerskioeldi Travassos, 1921

Gynaecotyla jaegerskioeldi (Travassos, 1921) Yamaguti, 1939

Cornucopula jaegerskioeldi (Travassos, 1921) Rankin, 1939

Microphalloides jaegerskioeldi (Travassos, 1921) Etges, 1953

LIFE CYCLE: Metacercariae in marine decapod crustaceans. (Yamaguti, 1958)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Uca rugilator

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus auritus

Gruiformes - Aramides cajanea, Laterallus viridis

MAMMALIA - Marsupialia - Didelphis auritus, Didelphis marsupialis

HABITAT: Intestine.

DISTRIBUTION: [Africa (Tunisia) - Yamaguti, 1958; original citation not seen], S. America (Brazil).

Maritrema acadiae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks. Cause of epizootic with extensive mortality (Swales, 1933c).

DESCRIPTION: Swales, 1933c. Copy: Rankin, 1939; Belopol'skaja, 1952a.

SYNONYMY:

Streptovitella acadiae Swales, 1933

Maritrema acadiae (Swales, 1933) Gower, 1938

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas rubripes

HABITAT: Small intestine.

DISTRIBUTION: N. America (Canada).

Maritrema afanassjewi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, originally described from arctic fox.

DESCRIPTION: Afanas'ev, 1941. Copy: Belopol'skaiâ, 1952a.

SYNONYMY:

Maritrema sp. Afanas'ev, 1941

Maritrema afanassjewi Belopol'skaiâ, 1952

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Histrionicus histrionicus

MAMMALIA - Carnivora - Alopex lagopus, Canis familiaris

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka, Komandorsky Is.), N. America (Canada - St. George Is.).

Maritrema afanassjewi var. minor

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Chen, 1957. Copy: Belopol'skaiâ, 1963a.

SYNONYMY:

Maritrema afanassjewi var. minor Chen, 1957

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (China).

Maritrema gratiosum

STATUS AS WATERFOWL PARASITE: Rare, normally in Charadriiformes; reported once in wild duck.

DESCRIPTION: Nicoll, 1907; Deblock & Ky, 1966. Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY: Deblock, 1960.

Maritrema gratiosum Nicoll, 1907

Cercaria balani Lebour, 1908

Maritrema arenaria Hadley & Castle, 1940

LIFE CYCLE: Metacercariae in cirriped crustacea. (Belopol'skaia, 1953; Deblock, 1960; Uspenskaia, 1954, 1960)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Balanus balanoides

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Charadrius alexandrinus, Charadrius hiaticula, Charadrius mongolus, Erolia alpina, Erolia maritima, Erolia melanotos, Erolia minuta, Haema-
topus ostralegus, Heteroscelus incanus, Larus argentatus [exper.],
Larus marinus [exper.], Larus ridibundus, Limosa lapponica, Plu-
vialis dominica

Passeriformes - Motacilla alba, Turdus iliacus

HABITAT: Intestine.

DISTRIBUTION: Europe (England, USSR - Murman coast, White Sea), Asia (USSR - Far East, Kurile Is.), Africa (Tunisia), N. America (USA).

Maritrema inusitata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Leonov & Tsimbaliuk, 1963.

SYNONYMY:

Maritrema inusitata Leonov & Tsimbaliuk, 1963

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka).

Maritrema japonicum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Yamaguti, 1939. Copy: Belopol'skaja, 1952a.

SYNONYMY:

Pseudospelotrema japonicum Yamaguti, 1939

Maritrema japonicum (Yamaguti, 1939) Etges, 1953

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Histrionicus histrionicus, Melanitta fusca, [Melanitta nigra - Lapage, 1961, erroneous citation], Mergus merganser

Charadriiformes - Heteroscelus incanus

HABITAT: Ceca, intestine.

DISTRIBUTION: Asia (Primorsk, Japan, Kamchatka, Komandorsky Is.), N. America (USA).

Maritrema macracetabulum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Deblock & Rosé, 1964.

SYNONYMY:

Maritrema macracetabulum Deblock & Rosé, 1964

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya ferina

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe (France).

Maritrema nettae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Gower, 1938b. Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY:

Maritrema nettae Gower, 1938

Maritreminoides nettae (Gower, 1938) Rankin, 1939

Pseudospelotrema nettae (Gower, 1938) Hunter & Vernberg, 1953

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya affinis

Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Maritrema nicolli

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Travassos, 1921b. Copy: Belopol'skaia, 1952a.

SYNONYMY:

Maritrema nicolli Travassos, 1921

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas bahamensis

Mergini - Clangula hyemalis

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR); S. America (Brazil).

Maritrema obstipum

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Etges, 1953. Copy: Rankin, 1939; Belopol'skaia, 1952a, 1963a.

SYNONYMY: Etges, 1953.

Microphallus obstipum Van Cleave & Mueller, 1932

Maritrema obstipum (Van Cleave & Mueller, 1932) Mueller, 1934

Maritreminoides obstipum (Van Cleave & Mueller, 1932) Rankin, 1939

Pseudospelotrema obstipum (Van Cleave & Mueller, 1932) Hunter & Vernberg, 1953

Maritreminoides medium Van Cleave & Mueller, 1932 - [Chen, 1957]

LIFE CYCLE: Eggs passed in feces into fresh water, develop 35 days, then apparently eaten by snail; cercariae develop in prosobranch snail, infect fresh-water isopod crustacea; metacercariae encysted in tissue around dorsal blood vessel, infective in 39 days; mature in 2 days after ingestion by final host, survive in final host at least 28 days. Fresh-water fish also infected, probably as auxiliary hosts. (Etges, 1953)

FIRST INTERMEDIATE HOSTS: Amnicola pilsbryi

SECOND INTERMEDIATE HOSTS: Asellus communis

AUXILIARY HOSTS?: Ambloplites rupestris, Micropterus dolomieu

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia [exper.]

Passeriformes - Serinus canarius [exper.]

MAMMALIA - Rodentia - Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Maritrema raminellae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Dery, 1958. Copy: Belopol'skaia, 1963a.

SYNONYMY:

Maritreminoides raminellae Dery, 1958

Maritrema raminellae (Dery, 1958) Deblock, Capron, & Biguet, 1961

Pseudospelotrema raminellae (Dery, 1958) Ching, 1963, and Belopol'skaia, 1963

LIFE CYCLE: Unknown; probably similar to that of M. obstipum.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Maritrema rhodanicum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, once experimentally in domestic duck.

STATUS AS SPECIES: Doubtful. Synonym of M. subdolum - Rébecq, 1960; Deblock & Ky, 1966.

DESCRIPTION: Carrère, 1936. Copy: Rankin, 1939; Belopol'skaia, 1952a; Shevtsov & Zaskind, 1960.

SYNONYMY:
Maritrema rhodanicum Carrère, 1936

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae in fresh-water amphipod crustacea. (Carrère, 1936)

FIRST INTERMEDIATE HOSTS: Paludetrina acuta, Pseudamnicola similis

SECOND INTERMEDIATE HOSTS: Gammarus locusta, Gammarus neglecta, Gammarus pulex

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.]
Cairinini - Cairina moschata (dom.) [exper.]
Charadriiformes - Larus argentatus, Larus ridibundus

HABITAT: Intestine.

DISTRIBUTION: Europe (France), Asia (Azerbaijan).

Maritrema subdolum

STATUS AS WATERFOWL PARASITE: Frequent; reported 9 times in wild, once in domestic, and once in captive ducks.

DESCRIPTION: Jägerskiöld, 1909; Deblock & Capron, 1960: Odening, 1964d. Copy: Rankin, 1939; Belopol'skaia, 1952a.

SYNONYMY:

Maritrema subdolum Jägerskiöld, 1908

Cercaria minor Lebour, 1911

Maritrema rhodanicum Carrère, 1936 - [Rébecq, 1960; Deblock & Ky, 1966]

Maritrema ovatum Rankin, 1939 - [Deblock & Ky, 1966]

LIFE CYCLE: Eggs passed in feces; cercariae develop in marine snail; metacercariae develop in 17 days after infection in marine decapod, isopod, amphipod, and cirriped crustacea, rarely in marine snail; metacercariae reported in intestine of marine fish, interpreted as auxiliary host; mature in final host after ingestion, survive 20-35 days. (Belopol'skaia, 1957; Deblock, 1960; Deblock, Capron, & Biguet, 1960; Deblock, Capron, & Rosé, 1961; Garkavi, 1965b; Rébecq, 1960a; Reimer, 1963)

FIRST INTERMEDIATE HOSTS: Hydrobia ventrosa, Paludestrina stagnalis

SECOND INTERMEDIATE HOSTS: Carcinus moenas, Cyathura carinata, Idotea baltica, Idotea viridis, Sphaeroma hookeri, Sphaeroma rugicauda, Sphaeroma serrata, Corophium volutator, Gammarus lacustris, Gammarus locusta, Gammarus maeoticus, Gammarus salinus, Melita palmata, Orchestria gammarella, Balanus improvisus, Paludestrina stagnalis

AUXILIARY HOSTS?: Pholis gunellus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas crecca

Somateriini - Polysticta stelleri, Somateria mollissima

Aythiini - Aythya fuligula

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca, Melanitta nigra, Mergus serrator

Pelecaniformes - Fhalacrocorax carbo

Gruiformes - Fulica atra

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Calidris canutus, Capella gallinago, Charadrius alexandrinus, Charadrius hiaticula, Erolia alpina, Erolia ruficollis, Erolia temminckii, Erolia testacea, Haematopus ostralegus, Larus canus, Larus genei, Larus marinus, Larus melanocephalus, Larus ridibundus, Limosa lapponica, Limosa limosa, Numenius arquata, Numenius phaeopus, Philomachus pugnax, Fluvialis apricaria, Squatarola squatarola, Tringa erythropus, Tringa glareola, Tringa ochropus, Tringa totanus, Vanellus vanellus

Passeriformes - Sturnus vulgaris

HABITAT: Small intestine.

DISTRIBUTION: Europe (France, N. Europe, Volga delta), Asia (Primorsk, Amur, Kazakhstan).

Maritreminoides mapaensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck (probably domestic) and once in duck from experimental infection.

STATUS AS SPECIES: Genus Maritreminoides included in Maritrema by Deblock, Capron, & Biguet, 1961.

DESCRIPTION: Chen, 1957. Copy: Belopol'skaja, 1963a.

SYNONYMY:

Maritreminoides mapaensis Chen, 1957

LIFE CYCLE: Metacercariae in fresh-water decapod crustacea. (Chen, 1957)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Neocaridina denticulata

FINAL HOSTS: AVES

Anseriformes (Anatidae) "ducks, natural and experimental infections"

Anatini - Anas platyrhynchos (dom.) [exper.]

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.]

HABITAT: Intestine.

DISTRIBUTION: Asia (China).

Pseudolevinseniella cheni

STATUS AS WATERFOWL PARASITE: Accidental; reported once in duckling as result of experimental infection. Natural host unknown.

DESCRIPTION: Tsai, 1955. Copy: Belopol'skaja, 1953a.

SYNONYMY:

Pseudolevinseniella cheni Tsai, 1955

LIFE CYCLE: Metacercariae in muscles of decapod crustacea; mature in final host after ingestion. (Tsai, 1955)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Macrobrachium nipponensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Ciconiiformes - Nycticorax nycticorax [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (China).

Plagiorchis brauni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably invalid; declared synonym of P. cirratus by Fedorova, 1954; Odening, 1959; and synonym of P. elegans by Styczynska-Jurewicz, 1962 (with P. cirratus).

DESCRIPTION: Massino, 1927; Gvozdev, 1958; Dollfus, 1963b. Copy: Kasimov, 1956.

SYNONYMY: Bykhovskaja-Pavlovskaja, 1962, from Fedorova, 1954.

Plagiorchis brauni Massino, 1927

Lepoderma (Multiglandularis) brauni (Massino, 1927) Mehra, 1937

Plagiorchis loossi Massino, 1927

Plagiorchis uhlwormi Massino, 1927

Plagiorchis massino Petrov & Tichonov, 1927

Plagiorchis casarcii (Mehra, 1937) Skrjabin & Antipin, 1959

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya ferina

Ciconiiformes - Plegadis falcinellus

Falconiformes - Circus macrourus, Falco columbarius, Falco subbuteo

Galliformes - Coturnix coturnix, Lyrurus tetrrix, Tetrastes bonasia

Charadriiformes - Actitis hypoleucos, Chlidonias nigra, Erolia minuta,

Larus argentatus, Larus ridibundus, Numenius arquata, Numenius

minutus, Philomachus pugnax, Sterna hirundo, Tringa glareola

Cuculiformes - Cuculus canorus

Coraciiformes - Upupa epops

Piciformes - Dendrocopos major

Passeriformes - Corvus corone, Corvus frugilegus, Corvus monedula,

Hirundo rustica, Oriolus oriolus, Passer domesticus, Pica pica,

Sturnus vulgaris, Sylvia nisoria, Turdus pilaris

MAMMALIA - Carnivora - Alopex lagopus

HABITAT: Small intestine.

DISTRIBUTION: Europe (USSR), Asia (Siberia, Kazakhstan, Iran), N. America (Canada).

Plagiorchis casarcii

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably invalid; declared synonym of P. cirratus by Odening, 1959; synonym of P. brauni by Bykhovskaiâ-Pavlovskaiâ, 1962; and synonym of P. elegans by Styczynska-Jurewicz, 1962 (with P. cirratus and P. brauni).

DESCRIPTION: Mehra, 1937. Copy: Skrjabin & Antipin, 1959.

SYNONYMY:

Lepoderma casarcii Mehra, 1937

Plagiorchis (Multiglandularis) casarcii (Mehra, 1937) Skrjabin & Antipin, 1959

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Plagiorchis cirratus

STATUS AS PARASITE: Rare, or erroneous; reported twice in waterfowl under other names which may not be synonyms; most commonly in passerine birds.

STATUS AS SPECIES: Questionable. Declared synonym of P. elegans by Styczynska-Jurewicz, 1962; retained as distinct by Odening. Ždárská, 1966, stated that cercariae of P. cirratus, P. elegans, & P. laricola are all different, although adults are same except for distribution of vitellaria.

DESCRIPTION: von Mühling, 1897; Odening, 1959; Dollfus, 1960.

SYNONYMY:

Fasciola cirrhata Rudolphi, 1802

Distoma cirratum Rudolphi, 1809

Lepoderma cirratum (Rudolphi, 1802) Looss, 1899

Plagiorchis cirratus (Rudolphi, 1802) Lühe, 1899

Plagiorchis (Multiglandularis) cirratus (Rudolphi, 1802) of Olsen,
1937

Plagiorchis (Multiglandularis) cirratus cirratus (Rudolphi, 1802) of
Odening, 1959

Plagiorchis brauni Massino, 1927 - [Fedorova, 1954; Odening, 1959]

Plagiorchis loossi Massino, 1927 - [Fedorova, 1954; Odening, 1959]

Plagiorchis massino Petrov & Tichinov, 1927 - [Fedorova, 1954; Oden-
ing, 1959]

Lepoderma casarcii Mehra, 1937 - [Odening, 1959]

Plagiorchis casarcii (Mehra, 1937) Skrjabin & Antipin, 1959

LIFE CYCLE: Metacercariae in amphipod crustacea (Dollfus, 1960).

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Gammarus sp.

FINAL HOSTS: AVES (Some hosts perhaps those of suggested synonyms)

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea [as P. casarcii]

Aythiini - Aythya ferina [as P. brauni]

Falconiformes -

Charadriiformes - Larus marinus, Larus ridibundus

Apodiformes - Apus apus

Passeriformes - Corvus corone, Corvus frugilegus, Corvus monedula,

Hirundo rustica, Motacilla alba, Passer montanus, Fica pica, Stur-
nus vulgaris, Turdus merula

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.]

Carnivora - Felis catus, Canis familiaris

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia).

Plagiorchis elegans

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

If reported synonyms are included this species is frequent; reported
11 times in wild ducks.

DESCRIPTION: Bykhovskaja-Pavlovskaja, 1954a; Styczynska-Jurewicz,
1962. Copy: Olsen, 1937 (fig. only).

SYNONYMY: Styczynska-Juresicz, 1962; Stiles & Hassall, 1908.

Fasciola elegans Rudolphi, 1802
Distomum elegans (Rudolphi, 1802) Rudolphi, 1809
Distoma (Brachylaemus) elegans (Rudolphi, 1802) of Dujardin, 1845
Plagiorchis elegans (Rudolphi, 1802) Braun, 1902
Lepoderma (Lepoderma) elegans (Rudolphi, 1802) Mehra, 1937
Plagiorchis (Plagiorchis) elegans (Rudolphi, 1802) of Olsen, 1937
Plagiorchis (Plagiorchis) elegans elegans (Rudolphi, 1802) of Oden-
 ing, 1959
Plagiorchis (Multiglandularis) elegans (Rudolphi, 1802) of Skrjabin
 & Antipin, 1959
Plagiorchis cirratus (Rudolphi, 1802) Braun, 1902 - distinct, Oden-
 ing, 1959
Plagiorchis blumbergi Massino, 1927
Plagiorchis brauni Massino, 1927
Plagiorchis loossi Massino, 1927
Plagiorchis uhlwormi Massino, 1927 - distinct subspecies, Odening,
 1959
Plagiorchis massino Petrov & Tichinov, 1927
Plagiorchis potanini Skrjabin, 1928 - subspecies of F. cirratus,
 Odening, 1959
Plagiorchis casarcii (Mehra, 1937) Skrjabin & Antipin, 1959
Plagiorchis strictus Shtrom, 1940
Plagiorchis blatnensis Chalupsky, 1954
Plagiorchis stejanskii Furmaga, 1956
Plagiorchis raabei Furmaga, 1956

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae in
 larvae of aquatic insects (Odonata, Ephemeroptera, Diptera), isopod
 and amphipod crustacea, fresh-water snails; mature in final host 7-15
 days after ingestion (Styczynska-Jurewicz, 1961, 1962).

FIRST INTERMEDIATE HOSTS: Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Aeschna grandis, Aedes aegypti [exper.],
Anopheles maculipennis [exper.], Corethra sp., Culex pipiens [exper.],
Tendipedidae sp., Cloeon dipterum [exper.], Coenagrion hastulatum
 [exper.], Lestes sponsa [exper.], Asellus aquaticus, Gammarus pulex,
Lymnaea palustris, Lymnaea stagnalis, Sialis sp., Ilybius sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Ciconiiformes - Flegadis falcinellus

Falconiformes - Circus aeruginosus, Circus macrourus, Falco columbar-
 ius, Falco subbuteo, Falco vespertinus

Galliformes - Coturnix coturnix, Gallus gallus (dom.), Lyrurus tetrix,
Tetrastes bonasia

Charadriiformes - Actitis hypoleucos, Capella gallinago, Erolia min-
 uta, Glareola nordmanni, Glareola pratincola, Chlidonias nigra,
Larus argentatus, Larus ridibundus, Limosa limosa, Numenius arquata,
Numenius tenuirostris, Philomachus pugnax, Sterna hirundo, Tringa

glareola

Cuculiformes - Cuculus canorus

Strigiformes - Otus scops

Apodiformes - Apus apus

Coraciiformes - Upupa epops

Piciformes - Dendrocoptes major

Passeriformes - Acanthis flavirostris, Carduelis flavirostris, Corvus corone, Corvus corax, Corvus frugilegus, Corvus monedula, Fringilla coelebs, Delichon urbica, Garrulus glandarius, Hirundo rustica, Motacilla alba, Motacilla flava, Muscicapa striata, Oriolus oriolus, Panurus biarmicus, Parus ater, Parus coeruleus, Parus major, Parus palustris, Passer domesticus, Passer montanus, Pica pica, Prunella modularis, Sitta europaea, Sturnus vulgaris, Sylvia nisoria, Turdus pilaris

MAMMALIA - Rodentia - Mus musculus (lab.) [exper.], Apodemus agrarius, Apodemus sylvaticus, Microtus arvalis

Carnivora - Alopec lagopus, Canis familiaris, Felis catus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Kirgizia, Primorsk).

Plagiorchis ferrugineum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mehra, 1937. Copy: Skrjabin & Antipin, 1959.

SYNONYMY:

Lepoderma ferrugineum Mehra, 1937

Plagiorchis (Multiglandularis) ferrugineum (Mehra, 1937) Skrjabin & Antipin, 1959

Plagiorchis (Multiglandularis) laricola ferrugineum (Mehra, 1937, Odening, 1959)

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Plagiorchis laricola

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild

ducks. Reported as cause of parasitic necrosis in gallinaceous birds.

STATUS AS SPECIES: Original description not available. Rayski (1964) says description from key in Massino, 1927; description in Semenov, 1927; figure in Bykhovskaiâ-Pavlovskaiâ, 1962; and figure in Chertkova, 1953, are all different. Form in Chertkova, 1953, (copied in Kasimov, 1956, as P. laricola) renamed P. bikhovskayae Rayski, 1964.

DESCRIPTION: Skrjabin, 1924; Belopol'skaiâ, 1952b; Chertkova, 1953; Bykhovskaiâ-Pavlovskaiâ, 1954a (fig. only). Copy: Kasimov, 1956; Gvozdev, 1958.

SYNONYMY:

Plagiorchis laricola Skrjabin, 1924

Lepoderma (Multiglandularis) laricola (Skrjabin, 1924) Mehra, 1937

Plagiorchis (Multiglandularis) laricola Skrjabin, 1924 of Olsen, 1937

Plagiorchis (Multiglandularis) laricola laricola (Skrjabin, 1924) of Odening, 1959

Plagiorchis mutationis Panova, 1927 - [Belopol'skaiâ, 1952]; distinct subspecies, Odening, 1959

Plagiorchis megalorchis Rees, 1952 - [Gvozdev, 1958]

LIFE CYCLE: Cercariae develop in fresh-water snails, infect larvae of aquatic diptera and form metacercariae; mature in final host after ingestion. (Sudarikov & Karmanova, 1964; Ždárská, 1966)

FIRST INTERMEDIATE HOSTS: Lymnaea stagnalis

SECOND INTERMEDIATE HOSTS: Aedes aegypti [exper.], Culex pipiens [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas clypeata, Anas crecca, Anas querquedula

Aythiini - Aythya marila

Mergini - Bucephala clangula, Melanitta nigra

Podicipediformes - Podiceps caspicus

Ciconiiformes - Plegadis falcinellus

Falconiformes - Falco tinnunculus

Galliformes - Francolinus francolinus, Gallus gallus (dom.), Meleagris gallopavo (dom.)

Charadriiformes - Charadrius dubius, Chlidonias leucoptera, Chlidonias nigra, Gelochelidon nilotica, Larus argentatus, Larus canus, Larus fuscus, Larus ichthyaetus, Larus minutus, Larus ridibundus, Limosa limosa, Numenius arquata, Phalaropus lobatus, Philomachus pugnax, Pluvialis apricaria, Stercorarius parasiticus, Sterna hirundo, Sterna paradisaea, Tringa glareola, Tringa totanus

Strigiformes - Asio flammeus

Passeriformes - Acrocephalus aedon, Acrocephalus arundinaceus, Corvus corone, Hirundo rustica, Panurus biarmicus, Saxicola torquata

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ireland, Poland, USSR), Asia (W. Siberia, Armenia, Kirgizia, Kazakhstan, Primorsk, Kamchatka).

Plagiorchis maculosus

STATUS AS WATERFOWL PARASITE: Rare, typically parasitic in passerine birds; reported once in wild waterfowl.

DESCRIPTION: Yamaguti, 1939; Fedorov, 1954; Bykhovskaiâ-Pavlovskaiâ, 1954a (fig. only). Copy: Kurashvili, 1957; Skrjabin & Antipin, 1959.

SYNONYMY: Sprehn, 1932; Skrjabin, 1958; Bykhovskaiâ-Pavlovskaiâ, 1962.

Fasciola maculosa Rudolphi, 1802

Distoma maculosum (Rudolphi, 1802) Rudolphi, 1809

Distomum (Dicrocoelium) maculosum (Rudolphi, 1802) of Olsson, 1876

Distomum (Brachylaimus) maculosum (Rudolphi, 1802) of Stossich, 1892

Plagiorchis maculosus (Rudolphi, 1802) Braun, 1901

Lepoderma maculosum (Rudolphi, 1802) Bittner & Sprehn, 1928

Plagiorchis (Plagiorchis) maculosus (Rudolphi, 1802) of Shul'ts & Skvortsov, 1931

Plagiorchis (Plagiorchis) maculosus maculosus (Rudolphi, 1802) of Odening, 1959

Plagiorchis clelandi Johnston, 1916

Plagiorchis maculosus var. anatis Skrjabin, 1928

Plagiorchis transbaicalicus Skrjabin, 1928

Plagiorchis popowi Palimpsestov, 1929

Plagiorchis maculosus var. citelli Shul'ts, 1932

Plagiorchis russii (Mehra, 1937) Skrjabin & Antipin, 1959

Lepoderma bulbuli Mehra, 1937

Plagiorchis spatulatus Johnston, 1961 - [Angel, 1959]; distinct subspecies, Odening, 1959

Plagiorchis notabilis Nicoll, 1909 - [Angel, 1959]; distinct, Odening, 1959

Plagiorchis orientalis Park, 1939 - [Angel, 1959]

Plagiorchis eutamiatus zibethica Vasil'ev, 1939 - [Odening, 1959]

Plagiorchis crassus (Olsson, 1875) - [Yamaguti, 1958]

LIFE CYCLE: Cercariae develop in fresh-water snail, encyst as metacercariae in aquatic insect larvae (Diptera); mature after ingestion by final host. (Angel, 1959; Hall, 1929; Nöller & Ulrich, 1928; Strenzke, 1952)

FIRST INTERMEDIATE HOSTS: Lymnaea auricularia, Lymnaea lessoni, Lymnaea stagnalis, Paludina impura, Valvata piscinalis, Viviparus viviparus

SECOND INTERMEDIATE HOSTS: Chaeborus crystallinus, Chironomus plumosus, Chironomus thummi, Culex pipiens, Drusus trifidus, Psectrotanypus varius

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta bernicla

Tadornini - Tadorna ferruginea

Anatini - Anas clypeata

Aythiini - Aythya ferina

Mergini - Histrionicus histrionicus

Falconiformes - Accipiter nisus

Galliformes - Gallus gallus (dom.) [exper.], Meleagris gallopavo (dom.)

Charadriiformes - Charadrius alexandrinus, Chlidonias leucoptera, Chlidonias nigra, Larus canus, Larus ridibundus, Sterna hirundo

Strigiformes - Otus bakkamoena

Caprimulgiformes - Caprimulgus caprimulgus, Caprimulgus europaeus

Coraciiformes - Upupa epops

Apodiformes - Apus apus, Apus melba, Hirundapus caudacutus

Passeriformes - Aedomosyne cantans, Aegithalos caudatus, Alauda arvensis, Amadina fasciata, Carduelis spinus, Cecropis daurica, Corvus corone, Delichon urbica, Emberiza bruniceps, Emberiza calandra, Emberiza cia, Emberiza citrinella, Emberiza hortulana, Ficedula hypoleuca, Fringilla coelebs, Grallina cyanoleuca, Gymnorhina tibicen, Hippolais caligata, Hirundo rustica, Hirundo tahitica, Hypochera chalybeata, Iduna rama, Lagonosticta senegale, Lanius collurio, Motacilla alba, Motacilla cinerea, Motacilla citreola, Muscicapa striata, Parus ater, Parus atricapillus, Passer domesticus, Passer luteus, Passer montanus, Phylloscopus collybita, Fica pica, Pomatostomum superciliosus, Frunella modularis, Rhipidura flabellifera, Rhipidura leucophrys, Riparia riparia, Saxicola torquata, Sitta europaea, Sturnus philippinensis, Sturnus vulgaris, Sylvia atricapilla, Sylvia borin, Turdus iliacus, Turdus viscivorus

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe, Asia (Armenia, W. Siberia, Kazakhstan, Kirgizia, India, Primorsk, Japan), Australia.

Plagiorchis nanus

STATUS AS WATERFOWL PARASITE: Rare, normally in charadriiform birds; reported once in wild ducks.

STATUS AS SPECIES: Not in Plagiorchis, in Opisthoglyphinae - Odening, 1959.

DESCRIPTION: Bykhovskaja-Pavlovskaja, 1954a (fig. only). Copy: Olsen, 1937 (fig. only).

SYNONYMY: Bykhovskaja-Pavlovskaja, 1962; Stiles & Hassall, 1908.

Fasciola nana Rudolphi, 1802

Distomum nanum (Rudolphi, 1802) Rudolphi, 1809

Plagiorchis nanus (Rudolphi, 1802) Braun, 1901

Lepoderma nanum (Rudolphi, 1802) Bittner & Sprehn, 1928

Plagiorchis (Plagiorchis) nanus (Rudolphi, 1802) of Shul'ts & Skvor-
tsov, 1931

Plagiorchis fastuosus Szidat, 1924

Plagiorchis morosovi Sobolev, 1946

LIFE CYCLE: Metacercariae apparently in larvae of trichopteran insects. (Shtein, 1957)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Stenophylax stellatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca

Charadriiformes - Actitis hypoleucos, Capella gallinago, Capella solitaria, Capella sternura, Charadrius dubius, Charadrius hiaticula, Erolia acuminata, Erolia alpina, Erolia melanotos, Erolia minuta, Erolia subminuta, Erolia testacea, Glareola nordmanni, Larus minutus, Limosa lapponica, Limosa limosa, Numenius arquata, Numenius minutus, Numenius phaeopus, Numenius tenuirostris, Phalaropus fulicarius, Phalaropus lobatus, Philomachus rugnax, Sterna hirundo, Tringa erythropus, Tringa glareola, Tringa ochropus, Tringa stagnatilis, Tringa totanus, Vanellus vanellus, Xenus cinereus, Tringa nebularia

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Primorsk).

Plagiorchis nyrocae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Ryzhikov & Timofeeva, 1962b.

SYNONYMY:

Plagiorchis nyrocae Ryzhikov & Timofeeva, 1962

LIFE CYCLE: Unknown: probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Intestine.

DISTRIBUTION: Asia (Kamchatka).

Plagiorchis obtusus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Shtrom, 1940.

SYNONYMY:

Plagiorchis obtusus Shtrom, 1940

Plagiorchis (Multiglandularis) obtusus Shtrom, 1940 of Skrjabin & Antipin, 1959

Opisthioglyphe (Lecithopyge) obtusus (Shtrom, 1940) Żarnowski, 1960

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas clypeata

Aythiini - Aythya fuligula, Aythya marila

Mergini - Melanitta nigra

Falconiformes - Falco subbuteo

Charadriiformes - Erolia subminuta, Erolia temminckii, Larus canus,

Larus minutus, Limosa lapponica, Phalaropus lobatus, Philomachus pugnax, Sterna hirundo, Tringa ochropus

Passeriformes - Motacilla alba

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Estonia, Barents Sea), Asia (W. Siberia, Kirgizia, Kamchatka).

Plagiorchis potanini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild ducks, once in domestic duck.

STATUS AS SPECIES: Doubtful. Synonym of P. elegans - Styczynska-Jurewicz, 1962.

DESCRIPTION: Skrjabin, 1928; Belokobylenko, 1963. Copy: Skrjabin & Antipin, 1959; Shevtsov & Zaskind, 1960.

SYNONYMY:

Plagiorchis potanini Skrjabin, 1928

Lepoderma potanini (Skrjabin, 1928) Baylis, 1929
Lepoderma (Lepoderma) potanini (Skrjabin, 1928) of Mehra, 1937
Plagiorchis (Multiglandularis) potanini Skrjabin, 1928 of Shul'ts
& Skvortsov, 1931
Plagiorchis (Multiglandularis) cirratus potanini (Skrjabin, 1928)
Odening, 1959
Plagiorchis russii (Mehra, 1937) - [Angel, 1959]

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas formosa

Mergini - Bucephala clangula, Melanitta fusca

Oxyurini - Oxyura leucocephala

Charadriiformes - Larus pinixcan

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Kazakhstan, USSR - Chita, Zaibaka', Tuva, Yakutia, Amur, India), N. America (USA).

Plagiorchis russii

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Doubtful. Synonym of P. potanini - Angel, 1959; synonym of P. maculosus - Bykhovskaja-Pavlovskaja, 1962; Odening, 1950.

DESCRIPTION: Skrjabin, 1928; Mehra, 1937. Copy: Skrjabin & Antipin, 1959.

SYNONYMY: Skrjabin & Antipin, 1959.

Plagiorchis maculosus var. anatis Skrjabin, 1928

Plagiorchis maculosus var. anatinus Skrjabin of Massino, 1929, et al., lapsus

Lepoderma maculosus var. anatis (Skrjabin, 1928) Mehra, 1937, lapsus

Lepoderma (Multiglandularis) russii Mehra, 1937

Plagiorchis (Plagiorchis) russii (Mehra, 1937) Skrjabin & Antipin, 1950

Plagiorchis maculosus var. motacillae Yamaguti, 1930 - [Angel, 1959]

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos

HABITAT: Small intestine.

DISTRIBUTION: Asia (USSR - Transbaikal).

Plagiorchis uhlwormi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably invalid. Synonym of F. brauni - Bykhovskaïa-Pavlovskaiâ, 1962; synonym (with F. brauni) of F. elegans - Styczynska-Jurewicz, 1962.

DESCRIPTION: Massino, 1927, 1929. Copy: Skrjabin & Antipin, 1950.

SYNONYMY:

Plagiorchis uhlwormi Massino, 1927

Lepoderma (Lepoderma) uhlwormi (Massino, 1927) Mehra, 1937

Plagiorchis (Plagiorchis) uhlwormi Massino, 1927 of Shul'ts & Skvortsov, 1931

Plagiorchis (Plagiorchis) elegans uhlwormi (Massino, 1927) Odening, 1959

LIFE CYCLE: Unknown; probably similar to that of P. maculosus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Ciconiiformes - Plegadis falcinellus

Galliformes - Lyrurus tetrix

Charadriiformes - Actitis hypoleucos, Capella gallinago, Chlidonias nigra, Erolia minuta, Numenius arquata, Numenius borealis

Passeriformes - Pica pica

HABITAT: Small intestine.

DISTRIBUTION: Europe (USSR), Asia (USSR - Transbaikal).

Laterotrema arenula

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Bykhovskaïa-Pavlovskaiâ, 1954a; Dollfus, 1956; Bykhovskaïa-Pavlovskaiâ, et al., 1959; Odening, 1964a.

SYNONYMY:

Distoma arenula Creplin, 1825

Phaneropsolus arenula (Creplin, 1825) Bittner & Sprehn, 1928

Laterotrema arenula (Creplin, 1825) Dollfus, 1956

Laterotrema (Lecithodollfusia) arenula (Creplin, 1825) Odening, 1964

Leyogonimus polyoon (Linstow, 1887) of Ginetsinskaja, 1952 - [Odening, 1964]

LIFE CYCLE: Cercariae develop in fresh-water snail; metacercariae develop in snail; mature in 5-7 days after ingestion by final host. (Bykhovskaja-Pavlovskaja, et al., 1959; Odening, 1964a)

FIRST INTERMEDIATE HOSTS: Bithynia leachei

SECOND INTERMEDIATE HOSTS: Bithynia leachei, Bithynia tentaculata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Mergus albellus

Gruiformes - Fulica atra, Gallinula chloropus

HABITAT: Small intestine - anterior portion.

DISTRIBUTION: Europe, Asia (W. Siberia, Yakutia).

Apophallus bacalloti

STATUS AS WATERFOWL PARASITE: Rare or accidental; reported once in domestic duckling as result of experimental infection.

DESCRIPTION: Balozet & Callot, 1939; Timon-David, 1963. Copy: Morozov, 1952.

SYNONYMY:

Apophallus sp. Balozet & Callot, 1939

Apophallus bacalloti Morozov, 1952

LIFE CYCLE: Metacercariae develop in fresh-water fish, mature in final host after ingestion. (Timon-David, 1963)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Gambusia affinis [exper.], Gasterosteus aculeatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Ciconiiformes - Botaurus stellaris

HABITAT: Small intestine.

DISTRIBUTION: Europe (France), Africa (Tunisia).

Apophallus donicus

STATUS AS WATERFOWL PARASITE: Rare, normally in fish-eating birds and mammals; reported twice in wild ducks.

DESCRIPTION: Skrjabin & Lindtrop, 1919; Ransom, 1920 (as A. brevis).
Copy: Morozov, 1952.

SYNONYMY: Dawes, 1956.

Rossicotrema donicum Skrjabin & Lindtrop, 1919

Apophallus donicus (Skrjabin & Lindtrop, 1919) Price, 1931

Cotylophallus venustus Ransom, 1920

Rossicotrema venustum (Ransom, 1920) Ciurea, 1924

Apophallus venustus (Ransom, 1920) Price, 1931

Cotylophallus similis Ransom, 1920

Rossicotrema similis (Ransom, 1920) Ciurea, 1924

Apophallus similis (Ransom, 1920) Price, 1931

Apophallus brevis Ransom, 1920

Rossicotrema breve (Ransom, 1920) Witenberg, 1929 - [Witenberg, 1929]

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae encysted in fins and skin of fresh-water fish. (Ciurea, 1928, 1929, 1933a, 1934; Mödinger, 1934)

FIRST INTERMEDIATE HOSTS: Amnicola limosa, Goniobasis livescens

SECOND INTERMEDIATE HOSTS: Abramus ballerus, Abramis brama, Abramis vimba, Acerina cernua, Acerina schraetser, Alburnoides bipunctatus, Amia calva, Aspro streber, Atherina pontica, Blicca bjoerkna, Catostomus commersoni, Chondrostoma nasus, Cyprinus carpio, Esox lucius, Gobius fluviatilis, Ictalurus nebulosus, Ictalurus punctatus, Lepisosteus osseus, Lepomis gibbosus, Lucioperca longensis, Lucioperca lucioperca, Lucioperca sandra, Lucioperca volgaensis, Luxilus cornutus, Micropterus dolomieu, Moxostoma aureolum, Perca flavescens, Perca fluviatilis, Percarina demidoff, Salmo trutta, Salvelinus fontinalis, Scardinius erythrophthalmus, Stizostedion vitreum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos [exper.]

Mergini - Mergus merganser

Gaviiformes - Gavia immer

Ciconiiformes - Ardea herodias, Ciconia ciconia, Nycticorax nycticorax

Falconiformes - Buteo buteo

Galliformes - Coturnix coturnix

Charadriiformes - Larus delawarensis, Larus ridibundus, Thalasseus sandvicensis
Columbiformes - Columba livia, Streptopelia turtur
Strigiformes - Asio otus
MAMMALIA - Carnivora - Alopex lagopus, Canis familiaris, Felis catus,
Lutra lutra, Martes foina, Procyon lotor, Vulpes vulpes, Vormela peregusna
Pinnipedia - Phoca vitulina
Lagomorpha - Oryctolagus cuniculus [exper.]
Rodentia - Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe, N. America (USA).

Apophallus imperator

STATUS AS WATERFOWL PARASITE: Rare, natural infection in heron; reported once (?) in wild ducks (original citation not found).

STATUS AS SPECIES: Doubtful. Synonym of A. brevis - Miller, 1941. A. brevis was declared a synonym of A. donicus by Witenberg, 1929; this would make imperator also a synonym of A. donicus.

DESCRIPTION: Lyster, 1940b. Copy: Morozov, 1952.

SYNONYMY:

Apophallus imperator Lyster, 1940

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae encysted in skin under scales as spots in fresh-water fish; mature in final host in 7-12 days after ingestion, eggs in feces in 40 days. (Lyster, 1940b; Miller, 1940, 1941, 1946)

FIRST INTERMEDIATE HOSTS: Amnicola limosa, Helisoma, Complecta

SECOND INTERMEDIATE HOSTS: Catostomus sp., Ferca flavescens, Salmo gairdneri, Salvelinus fontinalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus cucullatus, Mergus merganser [both listed by Morozov, 1952; original citation not found]

Ciconiiformes - Ardea herodias

Columbiformes - Columba livia [exper.]

MAMMALIA - Carnivora - Felis catus [exper.]

HABITAT: Small intestine - posterior portion.

DISTRIBUTION: N. America (Canada).

Ascocotyle angrense

STATUS AS WATERFOWL PARASITE: Accidental, typically in ciconiiform birds and in mammals; reported once in wild duck.

DESCRIPTION: Sogandares-Bernal & Lumsden, 1963. Cory: Ransom, 1920; Morozov, 1952.

SYNONYMY: Sogandares-Bernal & Lumsden, 1963.

Ascocotyle angrense Travassos, 1916

Ascocotyle (Phagicola) angrense Travassos, 1916 of Travassos, 1930

Phagicola angrense (Travassos, 1916) Travassos, 1929

Parascocotyle angrense (Travassos, 1916) Morozov, 1952

Ascocotyle nana Ransom, 1920

Parascocotyle nana (Ransom, 1920) Witenberg, 1929

Ascocotyle (Phagicola) nana Ransom, 1920 of Travassos, 1930

Phagicola nana (Ransom, 1920) Price, 1932

Ascocotyle (Parascocotyle) diminuta Stunkard & Haviland, 1924

Ascocotyle (Phagicola) diminuta Stunkard & Haviland, 1924 of Travassos,
1930

Phagicola diminuta (Stunkard & Haviland, 1924) Price, 1932

Phagicola lageniformis Chandler, 1941

Parascocotyle lageniformis (Chandler, 1941) Morozov, 1952

LIFE CYCLE: Metacercariae in gill filaments of poeciliid and cyprinodont brackish or fresh-water fishes; mature in 2-3 days after ingestion by final host. (Sogandares-Bernal & Lumsden, 1963; Stunkard & Uzzmann, 1955)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Belonesox belizanus, Cyprinodon variegatus, Fundulus chrysotus, Fundulus grandis, Fundulus heteroclitus, Fundulus jenkinsi, Fundulus majalis, Fundulus pallidus, Fundulus similis, Lucania parva, Mollienesia latirinna, Mollienesia sphenops

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix sponsa

Pelecaniformes - Morus bassana

Ciconiiformes - Ardetta erythromelas, Butorides striata, Butorides virescens, Casmerodius albus, Florida thula, Hydranassa tricolor, Nyctanassa violacea, Nycticorax nycticorax

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus argentatus [exper.]

MAMMALIA - Carnivora - Alonex lagopus, Canis familiaris [exper.],

Felis catus [exper.], Procyon lotor

Rodentia - Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.],
Ondatra zibethicus, Rattus norvegicus

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Atlantic coast - N. America (USA, Mexico), S. America (Brazil).

Centrocestus formosanus

STATUS AS WATERFOWL PARASITE: Accidental, normally in fish-eating birds and mammals; reported once in domestic duck as result of experimental infection.

STATUS AS SPECIES: Synonym of C. caninus - Yamaguti, 1958.

DESCRIPTION: Nishigori, 1924; Yamaguti, 1939; Chen, 1941. Copy: Morozov, 1952.

SYNONYMY:

Stamnosoma formosanum Nishigori, 1924

Centrocestus formosanus (Nishigori, 1924) Price, 1932

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae encysted in gills of fresh-water fish and in frogs; mature in 2 days after ingestion by final host. (Africa, de Lion, & Garcia, 1940; Martin, 1958; Nishigori, 1924; Tanabe, 1922; Vasquez-Colet & Africa, 1939, 1940)

FIRST INTERMEDIATE HOSTS: Semisulcospira libertina, Stenomelania newcombi

SECOND INTERMEDIATE HOSTS: Anabis testudineus, Carassius auratus, Channa formosana, Clarias fuscus, Ctenopharyngodon idellus, Cyprinus carpio, Gambusia affinis, Glossogobius giurus, Hemirhamphus dussumieri, Kuhlia sandvicensis, Limia caudofasciata, Macropodus opercularis, Misgurnus anguillicaudata, Mugil affinis, Mugil cephalus, Ophicephalus maculatus, Ophicephalus striatus, Ophicephalus tadianus, Opsariichthys uncirostris, Parasilurus asotus, Pseudorasbora parva, Puntius semifasciolatus, Rhodeus ocellatus, Therapon plumbeus, Xiphophorus helleri, Zacco platypus, Bufo melanostictus, Rana limnocharis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Ciconiiformes - Ardea purpurea, Bubulcus ibis, Egretta intermedia,

Nycticorax nycticorax, Flatalea leucorodia

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Carnivora - Canis familiaris, Felis catus, Nyctereutes

procyonoides
Rodentia - Cavia porcellus [exper.], Mus musculus (lab.) [exper.],
Rattus norvegicus, Rattus rattus [exper.]
Lagomorpha - Oryctolagus cuniculus [exper.]
Primates - Homo sapiens [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (China, Taiwan, Japan, Philippine Is.), Oceania (Hawaii).

Jubilarum skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Morozov, 1959.

SYNONYMY:

Jubilarum skrjabini Morozov, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas sp.

HABITAT: Intestine.

DISTRIBUTION: Asia (Kamchatka).

Pygidiopsis genata

STATUS AS WATERFOWL PARASITE: Accidental, normally in fish-eating birds and mammals; reported once in domestic goose, once experimentally in domestic duck.

DESCRIPTION: Witenberg, 1929. Copy: Ransom, 1920; Morozov, 1952.

SYNONYMY: Dawes, 1956.

Pygidiopsis genata Looss, 1907

Ascocotyle plana Linton, 1928

Pygidiopsis plana (Linton, 1928) Price, 1933

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snail; metacercariae encysted in fish of fresh and brackish waters. (Balozet & Callot, 1938, 1939; Ciurea, 1933, 1934; Vasquez-Colet & Africa, 1938; Witenberg, 1929)

FIRST INTERMEDIATE HOSTS: Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Astatotilapia desfontainesi, Atherina pontica, Barbus antinorii, Barbus canis, Gambusia affinis, Hemichromis bimaculatus, Neogobius cephalarges, Neogobius fluviatilis, Neogobius melanostomus, Neogobius syrman, Mugil capito, Mugil dussumieri, Pleuronectes flesus, Pleuronectes platessa, Scardinius erythrophthalmus, Tilapia galilea, Tilapia nilotica, Tilapia simonis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.) [exper.]

Podicipediformes - Podiceps cristatus

Pelecaniformes - Pelecanus crispus, Pelecanus oncorhynchus

Ciconiiformes - Ardea cinerea, Ardea purpurea, Botaurus stellaris, Butorides virescens, Egretta garzetta, Nycticorax nycticorax, Platalea leucorodia, Plegadis falcinellus

Falconiformes - Haliaeetus albicilla, Milvus migrans, Pandion haliaetus

Galliformes - Numida meleagris

Charadriiformes - Larus argentatus, Larus ridibundus

Columbiformes - Columba livia

Strigiformes - Asio otus

MAMMALIA - Carnivora - Canis familiaris [exper.], Canis lupus, Felis catus, Vulpes vulpes

Rodentia - Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.], Rattus rattus

Lagomorpha - Oryctolagus cuniculus [exper.]

Insectivora - Crocidura olivieri, Erinaceus europaeus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Palestine, China), Africa (Tunisia, Egypt), N. America (USA).

Sonkulitrema kazachstanica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck; also reported from heron.

DESCRIPTION: Maksimova, 1962; Zhatkanbaeva, 1964.

SYNONYMY:

Heterophyidae gen. sp. Maksimova, 1962

Sonkulitrema kazachstanica Zhatkanbaeva, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas acuta
Ciconiiformes - Ardea cinerea

HABITAT: Intestine.

DISTRIBUTION: Asia (Kazakhstan).

Cryptocotyle concavum

STATUS AS WATERFOWL PARASITE: Frequent, typically in fish-eating birds; reported 12 times in wild ducks, twice experimentally in domestic waterfowl.

DESCRIPTION: Ransom, 1920; Isačhikov, 1925, Wootton, 1957. Copy: Morozov, 1952.

SYNONYMY: Gower, 1939.

Distoma concavum Creplin, 1825

Distoma (Dicrocoelium) concavum Creplin, 1825 of Stossich, 1892

Cotylogonimus (Cryptocotyle) concavum (Creplin, 1825) Lühe, 1909

Tocotrema concavum (Creplin, 1825) Looss, 1899

Cryptocotyle concavum (Creplin, 1825) Fischeoeder, 1903

Monostomum echinatum Linstow, 1878

Cryptocotyle echinata (Linstow, 1878) Lühe, 1909

LIFE CYCLE: Eggs passed in feces, ingested by snails; cercariae develop in fresh-water to marine prosobranch snails; metacercariae encysted in gills or other portions of fresh-water and marine fish; mature in final host after ingestion. (Ciurea, 1933a; Hoffman, 1957; Isačhikov, 1926; Nicoll & Small, 1909; Reimer, 1965; Wootton, 1957)

FIRST INTERMEDIATE HOSTS: Ammicola longinqua

SECOND INTERMEDIATE HOSTS: Atherina hepsetus, Atherina mochon, Atherina pontica, Benthophilus macrostomus, Benthophilus ponticus, Benthophilus stellatus, Catostomus catostomus, Catostomus commersoni, Gasterosteus aculeatus, Gobius cephalarges, Gobius fluviatilis, Gobius jozo, Gobius kessleri, Gobius melanostomus, Gobius melanio, Gobius minutus, Gobius ratan, Gobius syrman, Mesogobius gymnotrachelus, Mugil capito, Mullus barbatus, Mullus surmuletus, Fleuronectes flesus, Fleuronectes passer, Fleuronectes platessa, Fleuronectes testis, Rhombus maximus, Siphonostoma typhle, Trachurus trachura

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos (dom.) [exper.], Anas crecca, Anas querquedula
 Somateriini - Somateria mollissima
 Aythyini - Aythya fuligula, Aythya marila
 Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra, Mergus albellus, Mergus merganser, Mergus serrator
 Gaviiformes - Gavia stellata
 Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps grisegena
 Pelecaniformes - Haliastur pygmaeus, Pelecanus crispus, Pelecanus onocrotalus,
Phalacrocorax aristotelis, Phalacrocorax carbo
 Ciconiiformes - Ardea cinerea, Egretta garzetta, Nycticorax nycticorax,
Plegadis falcinellus
 Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.), Numida meleagris
 Charadriiformes - Alca torda, Larus argentatus, Larus canus, Larus fuscus,
Larus hyperboreus, Larus ridibundus, Recurvirostra avosetta,
Rissa tridactyla, Sterna hirundo, Sterna paradisaea
 Columbiformes - Columba livia (dom.)
 Strigiformes - Asio otus [exper.]
 Passeriformes - Carduelis chloris [exper.]
 MAMMALIA - Insectivora - Erinaceus europaeus
 Rodentia - Rattus norvegicus (lab.) [exper.]
 Lagomorpha - Oryctolagus cuniculus [exper.]
 Carnivora - Alopex lagopus, Canis familiaris [exper.], Felis catus,
Mustela vison [exper.], Vulpes vulpes
 Artiodactyla - Sus scrofa (dom.) [exper.]

HABITAT: Intestine, ceca.

DISTRIBUTION: Europe, Asia (Azerbaijan, Yakutia, Primorsk), N. America (USA).

Cryptocotyle cryptocotyloides

STATUS AS WATERFOWL PARASITE: Rare, normally in fish-eating birds; reported once in wild duck.

DESCRIPTION: Isaïchikov, 1923; Smogorzhevskaja, 1956. Copy: Morozov, 1952.

SYNONYMY:

Ciureana cryptocotyloides Isaïchikov, 1923

Cryptocotyle cryptocotyloides (Isaïchikov, 1923) Witenberg, 1929

LIFE CYCLE: Unknown; probably similar to that of C. concavum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

Gaviiformes - Gavia arctica

Pelecaniformes - Phalacrocorax carbo

Ciconiiformes - Ardea cinerea, Egretta garzetta, Nycticorax nycticorax

HABITAT: Small intestine.

DISTRIBUTION: Europe (Crimea, USSR - Dneiper River).

Cryptocotyle jejuna

STATUS AS WATERFOWL PARASITE: Rare, typically in lariform birds; reported once (?) in wild ducks (original citation not found).

DESCRIPTION: Nicoll, 1907; Ciurea, 1924. Copy: Ransom, 1920; Morozov, 1952.

SYNONYMY:

Tocotrema jejunum Nicoll, 1907

Cryptocotyle jejuna (Nicoll, 1907) Ransom, 1920

LIFE CYCLE: Cercariae develop in marine snails; metacercariae encysted in fins and beneath scales of marine fish, infective to final host in at least 2 weeks; mature in final host in at least 4 weeks after ingestion. (Ciurea, 1933; Rothschild, 1938)

FIRST INTERMEDIATE HOSTS: Hydrobia ulvae

SECOND INTERMEDIATE HOSTS: Gobius melanostomus, Gobius minutus, Gobius ruthensparri

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria sp. - [Yamaguti, 1958; original citation not found.]

Mergini - Mergus merganser

Pelecaniformes - Phalacrocorax

Charadriiformes - Cephus grylle, Fratercula, Larus argentatus, Larus canus, Larus ridibundus, Rissa, Stercorarius, Sterna hirundo, Thalasseus sandvicensis, Tringa totanus, Uria

MAMMALIA - Carnivora - Canis familiaris [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe.

Cryptocotyle lingua

STATUS AS WATERFOWL PARASITE: Infrequent, typically in lariform birds and fish-eating mammals; reported 4 times in wild ducks, once experimentally in domestic duck.

DESCRIPTION: Yamaguti, 1939; Dubois & Mahon, 1959. Copy: Ransom, 1920; Morozov, 1952; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distoma lingua Creplin, 1825

Distomum (Dicrocoelium) lingua Creplin, 1825 of Stossich, 1892

Tocotrema lingua (Creplin, 1825) Looss, 1899

Cotylogonimus (Cryptocotyle) lingua (Creplin, 1825) Lühe, 1899

Cryptocotyle lingua (Creplin, 1825) Fiscoeder, 1903

Hallum lingua (Creplin, 1825) Isačnikov, 1925

Dermocystis ctenolabri Stafford, 1905

Hallum caninum Wigdor, 1918

Hallum ransomii Isačnikov, 1924

Cryptocotyle americana Ciurea, 1924 - [Stiles & Baker, 1935]

LIFE CYCLE: Eggs passed in feces, miracidia develop in 10 days in water, eggs probably hatch after ingestion by snail; cercariae develop in marine snail, infection may continue in snail at least 7 years; metacercariae encysted in fins and gills of marine fish; mature in 6 days after ingestion by final host. (Ciurea, 1931; Morozov, 1952; Rothschild, 1939, 1942a, 1942b; Stunkard, 1927, 1928, 1930; Stunkard & Willey, 1929; Willey, 1933a)

FIRST INTERMEDIATE HOSTS: Hydrobia ulvae, Hydrobia ventrosa, Littorina litorea, Littorina rudis, Littorina scutulata, Littorina sitkana, Paludetrina stagnalis

SECOND INTERMEDIATE HOSTS: Acanthocottus aeneus, Brevoortia tyrannus, Cottus scorpius, Gadus callarius, Gobius flavescens, Gobius minutus, Gobius ruthensparri, Gobius scorpio, Hemitrinterus americanus, Labrus bergylta, Lophopsetta maculata, Macrozoarces americanus, Menedia notata, Menticirrhus saxatilis, Microgadus tomcod, Mullus auratus, Onos tricirratatus, Osmerus mordax, Pholis gunnellus, Pleuronectes flesus, Pleuronectes platessa, Pollachius virens, Pomatomus saltatrix, Poronotus tricanthus, Pseudopleuronectes americanus, Scomber scombrus, Syngnathus typhle, Tautoga onitis, Tautogolabris adspersus, Trachinotus falcatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Somateriini - Somateria mollissima

Mergini - Mergus merganser, Mergus serrator

Gaviiformes - Gavia immer, Gavia stellata

Podicipediformes - Podiceps auratus

Pelecaniformes - Morus bassanus, Phalacrocorax aristotalis
 Ciconiiformes - Butorides virescens, Nycticorax nycticorax
 Charadriiformes - Alca torda, Cephus grylle, Fratercula arctica,
Larus argentatus, Larus atricilla, Larus canus, Larus crassirostris,
Larus delawarensis, Larus fuscus, Larus glaucescens, Larus hyperboreus,
Larus marinus, Larus occidentalis, Larus ridibundus,
Larus schistisagus, Numenius arquata, Rissa tridactyla, Stercorarius parasiticus,
Sterna dougalli, Sterna hirundo, Sterna paradisaea, Thalasseus sandvicensis,
Tringa ochropus, Tringa totanus,
Uria aalge, Uria lomvia
 MAMMALIA - Rodentia - Cavia porcellus [exper.], Rattus norvegicus
 Carnivora - Alopex lagopus, Canis familiaris, Felis catus [exper.],
Lutra lutra, Mustela vison (dom.), Vulpes fulva, Vulpes fulva
 (dom.), Vulpes vulpes
 Pinnipedia - Halichoerus grypus, Mirounga angustirostris, Phoca caspica,
Phoca vitulina

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Siberia, Primorsk, Kamchatka, Japan, Sakhalin, Kurile Is.), N. America (USA, Canada).

Galactosomum baylisi

STATUS AS WATERFOWL PARASITE: Rare; reported once (?) (original citation not found) in wild goose, twice in domestic goose.

STATUS AS SPECIES: Synonym of G. aharonii - Leonov, 1957; Dubois & Mahon, 1959; retained as distinct species by Morozov, 1952.

DESCRIPTION: Nazmi Gohar, 1930; Smogorzhevskaja, 1956. Copy: Morozov, 1952; Shevtsov & Zaskind, 1960.

SYNONYMY:

Cercarioides baylisi Gohar, 1930
Galactosomum baylisi (Gohar, 1930) Price, 1932

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), [Anser anser - Shevtsov & Zaskind, 1960, original citation not found]

Charadriiformes - Larus ichthyaetus, Sterna hirundo

HABITAT: Intestine.

DISTRIBUTION: Europe (Ukraine), Asia (Palestine), Africa (Egypt).

Stictodora japonica

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Yamaguti, 1939. Copy: Morozov, 1952.

SYNONYMY:

Stictodora japonica Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of S. sawakinensis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser, Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan, Kamchatka).

Stictodora mergi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Validity doubtful - Chen, 1951.

DESCRIPTION: Yamaguti, 1939. Copy: Morozov, 1952.

SYNONYMY:

Stictodora mergi Yamaguti, 1939

LIFE CYCLE: Unknown; probably similar to that of S. sawakinensis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan).

Stictodora sawakinensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Looss, 1899; Witenberg, 1929; Bykhovskaja-Pavlovskaja, 1954a. Copy: Morozov, 1952.

SYNONYMY:

Stictodora sawakinensis Looss, 1899

Stictodora manilensis Africa & Garcia, 1935 - [Morozov, 1952; Bykhovskaja-Pavlovskaja, 1959]

LIFE CYCLE: Metacercariae encysted in brackish water fish. (Witenberg, 1929)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Beleophthalmus pectinorostris, Mugil capito, Mugil cephalus, Tilapia nilotica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Procellariiformes - Puffinus kuhlii

Charadriiformes - Larus argentatus, Larus crassirostris, Larus ridibundus, Larus schistisagus, Sterna albifrons, Sterna hirundo

MAMMALIA - Carnivora - Canis familiaris, Felis catus

HABITAT: Intestine.

DISTRIBUTION: Europe (France, Ukraine), Asia (W. Siberia, Palestine, Tadzhikistan, USSR - Far East, Philippine Is.), Africa (Tunisia, Egypt).

Haplorchis pumilio

STATUS AS WATERFOWL PARASITE: Accidental, normally in fish-eating birds; reported once in domestic ducks from experimental infection.

DESCRIPTION: Chen, 1936; Balozet & Callot, 1939; Kuntz & Chandler, 1956; Shen, 1959; Pearson, 1964. Copy: Morozov, 1952.

SYNONYMY: Dawes, 1956.

Monostomum pumilio Looss, 1896

Haplorchis pumilio (Looss, 1896) Looss, 1899

Haplorchis (Monorchotrema) pumilio (Looss, 1896) of Srivastava, 1935

Monorchotrema taihokui Nishigori, 1924 - [Chen, 1936; Witenberg, 1930]

Haplorchis taihokui (Nishigori, 1924) Yamaguti, 1958

Kasr aini Khalil, 1932

Haplorchis milvi Gohar, 1934 - [Kuntz & Chandler, 1956; Pearson, 1964]

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae in fresh- and brackish-water fish, in scales, gills, and fins; mature in final host after ingestion. (Africa & Garcia, 1940; Balozet & Callot, 1938; Faust & Nishigori, 1926; Hsü, 1950b; Nishigori, 1924; Ujiie, 1936b; Witenberg, 1929)

FIRST INTERMEDIATE HOSTS: Melania reiniana hidachiensis, Pirenella conica, Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Acanthogobius flavimanus, Ambassis buruensis, Anabis testudineus, Astatotilaria desfontainesi, Barbus canus, Barbus longiceps, Carassius auratus, Channa formosana, Clarias fuscus, Clarotes latipes, Ctenophalus tadianus, Ctenopharyngodon idellus, Cyprinus carpio, Gambusia affinis, Gerres filamentosus, Glossogobius giurus, Hypothalmichthys nobilis, Macropodus opercularis, Misgurnus anguillicaudatus, Mugil affinis, Mugil capito, Mugil cephalus, Ophicephalus striatus, Parasilurus asotus, Pseudorasbora parva, Puntius semifasciatus, Rhodeus ocellatus, Teuthis javus, Therapon plumbeus, Tilapia galilea, Tilapia nilotica, Tilapia simonis, Zacco platypus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Pelecaniformes - Haliastur melanoleucos, Pelecanus crispus, Pelecanus onocrotalus, Pelecanus philippinensis, Phalacrocorax

Ciconiiformes - Bubulcus ibis, Egretta intermedia, Nycticorax nycticorax, Pseudibis papillosa

Falconiformes - Haliastur indus, Milvus migrans

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus sp., Numenius phaeopus

Columbiformes - Columba livia (dom.) [exper.]

MAMMALIA - Insectivora - Crocidura olivieri

Primates - Homo sapiens, Macacus cymologus

Rodentia - Cavia porcellus [exper.], Hydromys chrysogaster, Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.]

Lagomorpha - Oryctolagus cuniculus [exper.]

Carnivora - Canis familiaris [exper.], Felis catus [exper.], Vulpes vulpes

REPTILIA - Cerberus rhynchops, Varanus salvator

HABITAT: Small intestine - lower third.

DISTRIBUTION: Europe (Volga delta), Asia (Israel, India, Philippine Is., China, Taiwan), Africa (Tunisia, Egypt), Australia.

Haplorchis taichui

STATUS AS WATERFOWL PARASITE: Accidental, normally in fish-eating birds; reported once in domestic duck as result of experimental infection.

DESCRIPTION: Nishigori, 1924, Faust & Nishigori, 1926; Witenberg, 1929; Gohar, 1934; Bhalerao, 1936; Chen, 1936; Kuntz & Chandler, 1956; Martin, 1958; Pearson, 1964. Copy: Morozov, 1952.

SYNONYMY: Pearson, 1964.

Monorchotrema taichui Nishigori, 1924

Haplorchis taichui (Nishigori, 1924) Witenberg, 1930

Haplorchis (Monorchotrema) taichui (Nishigori, 1924) of Srivastava, 1935

Monorchotrema microrchia Katsuta, 1932 - [Africa & Garcia, 1940]

Haplorchis microrchia (Katsuta, 1932) Yamaguti, 1958

Procerovum microrchia (Katsuta, 1932) Price, 1940

Haplorchis rayi Saxena, 1955

LIFE CYCLE: Eggs passed in feces, hatch in water; miracidia penetrate fresh-water prosobranch snail, cercariae develop in 5-6 weeks; metacercariae encyst on palate and gill filaments of fresh-water fish; mature in 7-9 days after ingestion by final host. (Africa & Garcia, 1940; Faust & Nishigori, 1926; Hsü, 1950b; Martin, 1958; Ujiie, 1936b)

FIRST INTERMEDIATE HOSTS: Semisulcospira libertina, Thiara granifera, Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Anabas testudineus, Barbus canus, Carasius auratus, Ctenopharyngodon idellus, Cyprinus carpio, Gambusia affinis, Macropodus opercularis, Mollienesia formosa, Mugil affinis, Mugil cephalus, Orhicephalus striatus, Oryzias latipes, Pseudorasbora parva, Puntius semifasciatus, Rhodeus ocellatus, Tilapia simonis, Varicorhinus sp., Zacco platypus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Pelecaniformes - Pelecanus philippinensis

Ciconiiformes - Bubulcus ibis, Nycticorax nycticorax, Pseudibis papillosus

Falconiformes - Haliastur indus, Milvus migrans

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus sp.

MAMMALIA - Primates - Homo sapiens

Rodentia - Cavia porcellus [exper.], Mus musculus (lab.) [exper.],

Rattus norvegicus (lab.) [exper.]

Lagomorpha - Oryctolagus cuniculus [exper.]

Carnivora - Canis familiaris [exper.], Felis catus, Vulpes vulpes

HABITAT: Small intestine - middle and posterior portion.

DISTRIBUTION: Asia (Israel, India, Philippine Is., China, Taiwan), Africa (Egypt), Oceania (USA - Hawaii).

Procerovum cheni

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally

in domestic duck. Natural host unknown.

DESCRIPTION: Hsü, 1950a; Pearson, 1964.

SYNONYMY:

Procerovum cheni Hsü, 1950

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snails; metacercariae in fresh-water fish; mature in final host after ingestion. (Hsü, 1950b, 1951)

FIRST INTERMEDIATE HOSTS: Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Macrorodus opercularis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Carnivora - Felis catus [exper.]

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (China).

Procerovum varium

STATUS AS WATERFOWL PARASITE: Accidental; reported once experimentally in domestic duck. Natural host unknown.

DESCRIPTION: Onji & Nishio, 1924; Africa, 1938 (as Haplorchis sisoni); Kobayashi, 1942 (as Haplorchis minutus, etc.); Chen, 1940 (as F. calderoni); Pearson, 1964. Copy: Morozov, 1952; Shevtsov & Zaskind, 1960.

SYNONYMY: Pearson, 1964.

Procerovum varium Onji & Nishio, 1924

Haplorchis sisoni Africa, 1938

Procerovum sisoni (Africa, 1938) Chen, 1940

Haplorchis minutus Kobayashi, 1942

Procerovum minutum (Kobayashi, 1942) Yamaguti, 1958

Haplorchis microvesica Kobayashi, 1942 (?)

Procerovum microvesica (Kobayashi, 1942) Yamaguti, 1958

Haplorchis hoihowensis Kobayashi, 1942

Procerovum hoihowensis (Kobayashi, 1942) Yamaguti, 1958

Haplorchis cordatus Kobayashi, 1942

Procerovum cordatus (Kobayashi, 1942) Yamaguti, 1958

Haplorchis macrovesica Kobayashi, 1942

Procerovum macrovesica (Kobayashi, 1942) Yamaguti, 1958

Procerovum calderoni (Africa & Garcia) of Chen, 1949

LIFE CYCLE: Cercariae develop in fresh-water snails; metacercariae in muscles of fresh- or brackish-water fish; mature in final host after ingestion. (Africa, 1938; Africa & Garcia, 1940; Chen, 1949; Hsü, 1950b, 1951; Kobayashi, 1942; Vasquez-Colet & Africa, 1940)

FIRST INTERMEDIATE HOSTS: Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Acanthogobius flavimanus, Anabas testudineus, Carassius sp., Clarias fuscus, Cyprinus carpio, Hemiculter kneri, Macropodus opercularis, Misgurnus sp., Mugil affinis, Ophicephalus maculatus, Oryzias laticeps, Parabramis bramula, Puntius semifasciatus, Therapon plumbeus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Rodentia - Hydromys chrysogaster

Carnivora - Canis familiaris [exper.], Felis catus

HABITAT: Small intestine - posterior third.

DISTRIBUTION: Asia (Philippine Is., China, Japan), Australia.

Procerovum sp.

STATUS AS WATERFOWL PARASITE: Accidental; reported once from duck, and once from duckling as result of experimental infection.

STATUS AS SPECIES: Distinguished by Pearson, 1964; not named because type could not be designated.

DESCRIPTION: Chen, 1949 (as Procerovum sisoni).

SYNONYMY: Pearson, 1964.

Procerovum sisoni (Africa) of Chen, 1949

Procerovum calderoni (Africa & Garcia) of Hsü, 1950, 1951

Procerovum sp. Pearson, 1964

LIFE CYCLE: Cercariae develop in fresh-water prosobranch snail; metacercariae in fresh-water fish. (Chen, 1949; Hsü, 1950b, 1951)

FIRST INTERMEDIATE HOSTS: Thiara tuberculata

SECOND INTERMEDIATE HOSTS: Macropodus opercularis, Oryzias latipes, Puntius semifasciatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.], Anas sp.

Galliformes - Gallus gallus (dom.) [exper.]

MAMMALIA - Carnivora - Felis catus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Asia (China).

Amphimerus anatis

STATUS AS WATERFOWL PARASITE: Common; reported 19 times in wild ducks, 3 times in domestic ducks.

STATUS AS SPECIES: Synonym of Opisthorchis simulans - Bisseru, 1957a.

DESCRIPTION: Yamaguti, 1933, 1939; Bykhovskaja-Pavlovskaja, 1954a (fig. only). Copy: Skrjabin & Petrov, 1950.

SYNONYMY:

Opisthorchis anatis Yamaguti, 1933

Amphimerus anatis (Yamaguti, 1933) Gower, 1938

Amphimerus filiformis Ishii, 1935 - [Bisseru, 1957a; Yamaguti, 1958]

Opisthorchis tsingkiangpuensis Hsü & Chow, 1938 - [Chin, 1950]

LIFE CYCLE: Unknown; probably similar to that of A. elongatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas falcata, Anas poecilorhyncha, Anas querquedula

Aythiini - Aythya ferina, Aythya fuligula

Galliformes - Gallus gallus (dom.)

HABITAT: Gall bladder, bile duct.

DISTRIBUTION: Europe (Danube delta, Volga delta), Asia (W. Siberia, Azerbaïdzhan, Uzbekistan, Tadzhikistan, Kazakhstan, Tuva, Yakutia, China, Amur, Kamchatka, Japan, Sakhalin).

Amphimerus elongatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks, once in captive ducks. Described as cause of mortality in waterfowl by Gower, 1938b; O'Roke, 1935.

DESCRIPTION: Gower, 1938b. Cony: Skrjabin & Petrov, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY:

Amphimerus elongatus Gower, 1938

Amphimerus (Erschoviorchis) elongatus Gower, 1938 of Dollfus, 1946
Opisthorchis (Erschoviorchis) elongatus (Gower, 1938) Bisseru, 1957

LIFE CYCLE: Cercariae emerge from fresh-water prosobranch snail, encyst in fish; mature in final host after ingestion. (Gower, 1938b; Wallace, 1939a, 1940)

FIRST INTERMEDIATE HOSTS: Amnicola limosa

SECOND INTERMEDIATE HOSTS: Notropis deliciosus, Pimephales promelas; perhaps Perca flavescens, Lepomis macrochirus, Micropterus dolomieu

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, Cygnus cygnus

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas americana, Anas bahamensis, Anas rubripes

Aythiini - Aythya affinis, Aythya americana, Aythya vallisneria

Mergini - Bucephala clangula

Galliformes - Gallus gallus (dom.) [exper.]

HABITAT: Pancreatic ducts, bile ducts.

DISTRIBUTION: N. America (USA).

Amphimerus lintoni

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Linton, 1928. Cony: Skrjabin & Petrov, 1950.

SYNONYMY:

Haematotréphus foediens Linton, 1928, e.p.

Amphimerus lintoni Gower, 1939

Erschoviorchis lintoni (Gower, 1939) Skrjabin, 1945

Amphimerus (Erschoviorchis) lintoni Gower, 1939 of Dollfus, 1946

Opisthorchis (Erschoviorchis) lintoni (Gower, 1939) Bisseru, 1957

LIFE CYCLE: Unknown; probably similar to that of A. elongatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta

Athyini - Aythya fuligula

Cairinini - Aix galericulata

Mergini - Clangula hyemalis, Histrionicus histrionicus, Mergus albellus

Gaviiformes - Gavia immer

Charadriiformes - Larus ridibundus, Sterna hirundo

HABITAT: Cysts in pancreatic glands, bile duct.

DISTRIBUTION: Asia (Yakutia, Primorsk, Amur, Kamchatka), N. America (USA).

Clonorchis sinensis

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental, normally occurs in mammals; reported once in domestic duck.

DESCRIPTION: Copy: Skrjabin & Petrov, 1950.

SYNONYMY: Stiles & Hassall, 1908; Brumpt, 1936.

Distoma sinense Cobbold, 1875

Distoma chinense Cobbold, 1876

Opisthorchis sinensis (Cobbold, 1875) R. Blanchard, 1895

Dicrocoelium sinense (Cobbold, 1875) Moniez, 1896

Clonorchis sinensis (Cobbold, 1875) Looss, 1907

Clonorchis sinensis var. major Verdun & Bruyant, 1908

Clonorchis sinensis var. minor Verdun & Bruyant, 1908

Distomum spathulatum Leuckart, 1876, not Rudolphi, 1819

Distomum macconnelli Cobbold, 1876

Distomum hepatis innocuum Baelz, 1883

Distomum hepatis perniciosum Baelz, 1883

Distomum hepatis endemicum Baelz, 1883

Clonorchis endemicus (Baelz, 1883) Looss, 1907

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by fresh-water prosobranch snails; cercariae develop in snails, encyst in flesh of fresh-water fish, using nearly every species available, but especially in cyprinids, also in fresh-water decapod crustacea. Mature in final host, usually a mammal, in about 3 weeks after ingestion; young worms reach liver by bile duct. (Komiya & Kondo, 1951)

FIRST INTERMEDIATE HOSTS: Bithynia fuchsiana, Bithynia longicornis, Melania hongkongensis, Parafossarulus manchouricus, Parafossarulus sinensis, Semisulcospira libertina, Thiara granifera, Thiara scabra

SECOND INTERMEDIATE HOSTS: OSTEICHTHYES - Over 75 species reported as host. Includes: Carassius auratus, Ctenopharyngodon idellus, Gnathopogon elongatus, Hypothalmichthys nobilis, Labeo jordani, Orchi-

Cephalus argus, Pseudorasbora parva, Rhodeus ocellatus, Sarcocheilichthys variegatus, Tribolodon hakuensis, CRUSTACEA - Caridina nilotica, Macrobrachium superbum, Palaemonetes sinensis

FINAL HOSTS: MAMMALIA

Primates - Homo sapiens, Macaca philippinensis

Rodentia - Mus musculus (lab.) [exper.], Rattus norvegicus, Rattus rattus

Carnivora - Canis familiaris, Felis catus, Martes sp., Meles sp., Mustela nivalis, Nyctereutes procyonoides

Artiodactyla - Sus scrofa (dom.)

AVES - Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Ciconiiformes - Nycticorax nycticorax

HABITAT: Gall bladder, bile passage of liver.

DISTRIBUTION: Asia (Indo-china, China, Korea, Primorsk, Japan).

Euamphimerus cygnoides

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Ogata, 1942.

SYNONYMY:

Euamphimerus cygnoides Ogata, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "wild fowl"

Galliformes - Gallus gallus (dom.)

HABITAT: Intestine.

DISTRIBUTION: Oceania (Palau Is.)

Metorchis bilis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild, twice in domestic, and once in captive ducks. If synonymy of Odening (1962d) is correct, this species is common in waterfowl - reported 27 times in wild, 17 times in domestic, and twice in captive waterfowl. Pathology described by Gräfner & Graubman, 1965; Gräfner, Graubman, & Betke, 1965; mortality reported by Gräfner & Graubman, 1965.

DESCRIPTION: Odening, 1962, 1964c; Gräfner & Graubman, 1965; Gräfner, Graubman, & Betke, 1965. Copy: Skrjabin & Petrov, 1950 (as M. crassiusculus).

SYNONYMY: Odening, 1962; Dollfus & Callot, 1945.

Planaria bilis Braun, 1790

Fasciola bilis (Braun, 1790) Gmelin, 1790

Metorchis bilis (Braun, 1790) Odening, 1962

Distoma crassiusculum Rudolphi, 1809

Distomum (Brachylaemus) crassiusculum Rudolphi, 1809 of Stossich, 1892

Prosthometra crassiusculus (Rudolphi, 1809) [Looss, 1896]

Opisthorchis crassiuscula (Rudolphi, 1809) Kowalewski, 1898

Metorchis crassiusculus (Rudolphi, 1809) Looss, 1899

Parametorchis crassiusculus (Rudolphi, 1809) Yamaguti, 1958

Metorchis xanthosomus (Crepin, 1846) Braun, 1902 - [Odening, 1962d]

Opisthorchis xanthosoma var. compascua Kowalewski, 1898

Metorchis compascua (Kowalewski, 1898) Kowalewski, 1902 - [Sprehn, 1932]; perhaps distinct, Dollfus & Callot, 1945

Metorchis xanthosomus var. compascuus (Kowalewski, 1898) Nicoll, 1923

Metorchis coeruleus Braun, 1902 - [Odening, 1962d]

Metorchis pinguinicola Skrjabin, 1913 - [Odening, 1962d]

Metorchis intermedius Heinemann, 1937 - [Odening, 1962d]

LIFE CYCLE: Metacercariae in fresh-water fish; mature in final host after ingestion. (Gräfner, Graubman, & Betke, 1965)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Abramis brama, Acerina cernua, Alburnus bipunctatus, Blicca bjoerkna, Carassius vulgaris, Coregonus albula, Cyprinus carpio, Esox lucius, Leucaspis delineatus, Leuciscus rutilus, Lucioperca sandra, Perca fluviatilis, Scardinius erythrophthalmus, Tinca tinca

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas querquedula

Mergini - Mergus serrator

Pelecaniformes - Pelecanus crispus, Pelecanus oncorhynchus

Ciconiiformes - Ciconia ciconia, Sphenorhynchus abdimii

Falconiformes - Aquila chrysaetos, Aquila heliaca, Buteo buteo, Buteo lagopus, Circus aeruginosus, Falco tinnunculus, Haliaeetus albicilla, Milvus migrans

Galliformes - Gallus gallus (dom.) [exper.]

Gruiformes - Psophia viridis

Strigiformes - Nyctea scandiaca

HABITAT: Gall bladder, ducts of liver, bile duct.

DISTRIBUTION: Europe, Africa (N. Africa).

Metorchis coeruleus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive waterfowl.

STATUS AS SPECIES: Doubtful. Synonym of M. xanthosomus - Dollfus & Callot, 1945; synonym (with M. xanthosomus) of M. bilis - Odening, 1962d.

DESCRIPTION: Braun, 1902. Cony: Skrjabin & Petrov, 1950.

SYNONYMY:

Metorchis coeruleus Braun, 1902

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: S. America? (Brasil? - Source of bird examined in zoological garden, Germany).

Metorchis elegans

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Belogurov & Leonov, 1963.

SYNONYMY:

Metorchis elegans Belogurov & Leonov, 1963

Metametorchis elegans (Belogurov & Leonov, 1963) Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

HABITAT: Liver.

DISTRIBUTION: Asia (Kamchatka).

Metorchis hovorkai

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Macko, 1955.

SYNONYMY:

Metorchis hovorkai Macko, 1955

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

HABITAT: Bile ducts of liver.

DISTRIBUTION: Europe (Czechoslovakia).

Metorchis intermedius

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck, once in domestic duck.

STATUS AS SPECIES: Doubtful. Synonym of M. xanthosomus - Dollfus & Callot, 1945; synonym (with M. xanthosomus) of M. bilis - Odening, 1962d.

DESCRIPTION: Heinemann, 1937a. Copy: Skrjabin & Petrov, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY:

Metorchis intermedius Heinemann, 1937

LIFE CYCLE: Cercariae produced in fresh-water prosobranch snail, encyst as metacercariae in fresh-water fish in muscles, cysts formed in 17 days. Mature in final host in 13 days or less after ingestion. (Heinemann, 1937a; Dollfus & Callot, 1945; Vojtek, 1961)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Cobitis taenia, Cyprinus carpio

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas acuta

Aythiini - Aythya fuligula

Gaviiformes - Gavia stellata

Pelecaniformes - Pelecanus crispus, Pelecanus oncorotalus, Phalacrocorax carbo

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Europe (Germany, Bulgaria, USSR).

Metorchis nettioni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baugh, 1958.

SYNONYMY:

Metorchis nettioni Baugh, 1958

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Gall bladder.

DISTRIBUTION: Asia (India).

Metorchis orientalis

STATUS AS WATERFOWL PARASITE: Frequent; reported 7 times in wild ducks, 7 times in domestic waterfowl. Pathology of infection described by Hsü & Hoeppli, 1940.

DESCRIPTION: Tanabe, 1920; Yamaguti, 1933, 1934. Copy: Skrjabin & Petrov, 1950; Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Metorchis orientalis Tanabe, 1920

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water pulmonate snail; metacercariae encysted in fresh-water fish, especially in Cyprinidae; eggs in feces of final host 16 days after ingestion of metacercariae. (Hasegawa, 1934; Hsü & Chow, 1938a; Ishii & Matsuoka, 1935; Komiya & Murase, 1952; Muto & Oshima, 1923; Okabe, 1939, 1940; Tao, 1948; Yamaguti, 1933, 1934)

FIRST INTERMEDIATE HOSTS: Bulinus striatus

SECOND INTERMEDIATE HOSTS: Pseudogobio rivularis, Pseudorasbora parva, Sarcocheilichthys sinensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas formosa, Anas poecilorhyncha, Anas strepera

Cairinini - Aix galericulata

Mergini - Bucephala clangula

Podicipediformes - Podiceps ruficollis

Ciconiiformes - Bubulcus ibis

Falconiformes - Milvus lineatus

Galliformes - Coturnix coturnix [exper.], Gallus gallus (dom.) [exper.],

Phasianus colchicus

Strigiformes - Strix uralensis

Coraciiformes - Eurystomus orientalis

MAMMALIA - Carnivora - Canis familiaris [exper.], Felis catus [exper.]

Rodentia - Cavia porcellus [exper.], Mus musculus [exper.]

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Asia (Kazakhstan, Tuva, Yakutia, China, Primorsk, Taiwan, Japan, Kamchatka).

Metorchis pinguinicola

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Doubtful. Synonym of M. xanthosomus - Dollfus & Callot, 1945a; synonym (with M. xanthosomus) of M. bilis - Odening, 1962.

DESCRIPTION: Skrjabin, 1913. Copy: Dollfus & Callot, 1945; Skrjabin & Petrov, 1945a, 1950.

SYNONYMY:

Metorchis pinguinicola Skrjabin, 1913

Metorchis pinguinicola Skrjabin of Alekseev, 1963, lapsus

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - [Anas platyrhynchos - Lapage, 1961, erroneous report],

Anas acuta

[Mergini - Mergus serrator - Lapage, 1961, erroneous report]

Impennes - Spheniscus demersus

Galliformes - Gallus gallus (dom.)

Gruiformes - Porphyrio porphyrio

HABITAT: Gall bladder.

DISTRIBUTION: Europe (Germany - Berlin Zoological Garden, Astrakhan),
Asia (Primorsk).

Metorchis taiwanensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in domestic ducks.

DESCRIPTION: Morishita & Tsuchimochi, 1925. Copy: Skrjabin & Petrov, 1950; Kasimov, 1956.

SYNONYMY:

Metorchis taiwanensis Morishita & Tsuchimochi, 1925

LIFE CYCLE: Metacercariae encysted in fresh-water fish, cysts develop in 18-30 days. Mature in final host (eggs in feces) 11 days after ingestion. (Hsü & Chow, 1938a; Tao, 1942)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Pseudogobio rivularis, Pseudorasbora parva, Sarcocheilichthys sinensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anserini - Anser anser (dom.) - Lepage, 1961, erroneous citation]

Anatini - Anas platyrhynchos (dom.)

Falconiformes - Accipiter virgatus [exper.]

Galliformes - Coturnix coturnix [exper.], Gallus gallus (dom.) [exper.]

Gruiformes - Gallicrex cinerea

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Asia (China, Taiwan).

Metorchis tener

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Kowalewski, 1903. Copy: Skrjabin & Petrov, 1950.

SYNONYMY:

Metorchis tener Kowalewski, 1903

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Europe (Poland, USSR).

Metorchis xanthosomus

STATUS AS WATERFOWL PARASITE: Common; reported 21 times in wild, 15 times in domestic, and once in captive waterfowl.

STATUS AS SPECIES: Doubtful. Synonym of M. bilis, separated only by supposed host specificity - Odening, 1962d.

DESCRIPTION: Kurashvili, 1957; Beverley-Burton, 1961. Cory: Skrjabin & Petrov, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956; Dollfus & Callot, 1945; Stiles & Hassall, 1908.

Distomum xanthosomum Creplin, 1846

Prosthometra xanthosoma (Creplin, 1846) [Looss, 1896]

Opisthorchis xanthosoma (Creplin, 1846) Kowalewski, 1898

Metorchis xanthosomus (Creplin, 1846) Braun, 1902

Opisthorchis crassiuscula var. janus Kowalewski, 1898

Campula janus (Kowalewski, 1898) Railliet, 1898

Opisthorchis janus (Kowalewski, 1898) Kowalewski, 1898

Metorchis coeruleus Braun, 1902 - [Dollfus & Callot, 1945]

Metorchis pinguincola Skrjabin, 1913 - [Dollfus & Callot, 1945;

Falm, 1965]

Metorchis intermedius Heinemann, 1937 - [Dollfus & Callot, 1945]

LIFE CYCLE: Eggs passed in feces; cercariae develop in fresh-water prosobranch snails; metacercariae encysted in muscles, fins, and gills of fresh-water fish; mature in final host after ingestion. (Brumpt & Buttner, 1949; Dollfus & Buttner, 1954; Shevchenko, 1965)

FIRST INTERMEDIATE HOSTS: Bithynia tentaculata

SECOND INTERMEDIATE HOSTS: Cobitis taenia, Gasterosteus pungitius, Nemachilus barbatulus, Phoxinus phoxinus, Rhodeus amarus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Cygnus atratus, Cygnus cygnus
Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas
acuta, Anas crecca, Anas falcata, Anas formosa, Anas penelope,
Anas querquedula, Anas strepera
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila
Cairinini - Cairina moschata (dom.) [exper.]
Mergini - Clangula hyemalis, Melanitta nigra, Mergus serrator
Sphenisciformes - Spheniscus demersus
Gaviiformes - Gavia stellata
Podicipediformes - Podiceps ruficollis
Pelecaniformes - Fhalacrocorax carbo
Ciconiiformes - Leptoptilos crumeniferus, Sphenorhynchus abdimii
Falconiformes - Circus aeruginosus
Galliformes - Gallus gallus (dom.)
Gruiformes - Fulica atra, Porphyrio porphyrio
Charadriiformes - Alca torda, Chlidonias nigra [exper.], Haematopus
ostralegus, Larus argentatus, Larus ridibundus, Sterna hirundo
Passeriformes - Corvus corone

HABITAT: Gall bladder, bile ducts of liver, intestine.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kazakhstan, Yakutia, Zai-
bikal, China, Primorsk, Kamchatka).

Metorchis xanthosomus var. minor

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic water-
fowl.

STATUS AS SPECIES: Doubtful.

DESCRIPTION: Nardelli, 1946.

SYNONYMY:

Metorchis xanthosomus var. minor Nardelli, 1946

LIFE CYCLE: Unknown; probably like that of M. xanthosomus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata (dom.)

HABITAT: Probably bile ducts of liver.

DISTRIBUTION: Europe (Italy).

Metorchis zacharovi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Layman, 1926. Copy: Skrjabin & Petrov, 1950.

SYNONYMY:

Metorchis zacharovi Layman, 1926

LIFE CYCLE: Unknown; probably similar to that of M. orientalis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, Anas querquedula

Passeriformes - Pica pica

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Europe (USSR).

Opisthorchis choledoca

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Linstow, 1883.

SYNONYMY: Stiles & Hassall, 1908.

Distomum choledocum Linstow, 1883

Distomum (Dicrocoelium) choledocum Linstow, 1883 of Stossich, 1892

Prosthometra choledoca (Linstow, 1883) [Looss, 1896]

Opisthorchis choledoca (Linstow, 1883) Kowalewski, 1898

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

HABITAT: Probably bile ducts of liver.

DISTRIBUTION: Europe.

Opisthorchis geminus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild ducks.

DESCRIPTION: Barker, 1911. Copy: Skrjabin & Petrov, 1950; Kurashvili, 1957.

SYNONYMY: Dawes, 1956.

Distomum geminum Looss, 1896

Prosthometra gemina (Looss, 1896) [Looss, 1896]

Opisthorchis geminus (Looss, 1896) Kowalewski, 1898

Opisthorchis tenuicollis geminus (Looss, 1896) Erhardt, 1935

Opisthorchis geminus var. kirghisensis Skrjabin, 1913

Opisthorchis cheelis Lal, 1939 - [Jaiswal, 1957]

Opisthorchis geminus var. falconis Tang, 1941 - [Bisseru, 1957a]

Opisthorchis allahabadii Mehra, 1941 - [Bisseru, 1957a]

Opisthorchis altaevi Saidov, 1954 - [Turemuratov, 1963]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna viduata

Anatini - Anas platyrhynchos

Cairinini - Plectropterus gambensis

Ciconiiformes - Ardea cinerea, Ardea purpurea, Ardeola ralloides

Falconiformes - Aquila clanga, Aquila rapax, Circus aeruginosus,

Circus cyaneus, Circus melanoleucus, Circus spilonotus, Falco

sp., Milvus migrans, Sarcogyps calvus

Gruiformes - Fulica atra

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, India, Primorsk), Africa (Egypt).

Opisthorchis longissimus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks, once in domestic duck. Characteristic of herons; reported as Notaulus asiaticus in Falconiformes.

DESCRIPTION: Sulgostowska, 1960b; Bykhovskaja-Pavlovskaja, 1954a (as Notaulus asiaticus, fig. only). Copy: Skrjabin & Petrov, 1950 (as O. longissimus and Notaulus asiaticus); Shevtsov & Zaskind, 1960.

SYNONYMY: Stiles & Hassall, 1908.

Distomum longissimum Linstow, 1883

Distomum (Dicrocoelium) longissimum Linstow, 1883 of Stossich, 1892

Prosthometra longissima (Linstow, 1883) [Looss, 1896]

Opisthorchis longissimus (Linstow, 1883) Stiles & Hassall, 1908

Hepatiarius longissimus (Linstow, 1883) Feizullaev, 1961

Notaula asiaticus Skrjabin, 1913 - distinct, Bykhovskaja-Pavlovskaja, 1962

Opisthorchis asiaticus (Skrjabin, 1913) Morgan, 1927 - [Bisseru, 1957a]
Opisthorchis longissimus asiaticus (Skrjabin, 1913) Erhardt, 1935
Opisthorchis anhingii Mehra, 1941 - [Bisseru, 1957a]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas crecca

Aythiini - Aythya nyroca

Ciconiiformes - Ardea cinerea, Ardea purpurea, Ardeola bacchus, Botaurus stellaris, Egretta garzetta, Nycticorax nycticorax

Falconiformes - Aquila heliaca, Circus aeruginosus, Circus cinereus, Milvus migrans

HABITAT: Bile ducts of liver.

DISTRIBUTION: Europe (England, Poland, USSR), Asia (W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Inner Mongolia, Manchuria, Kamchatka).

Opisthorchis obsequens

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks and twice in domestic ducks.

DESCRIPTION: Nicoll, 1914b; Bykhovskaja-Pavlovskaja, 1954a (fig. only). Copy: Skrjabin & Petrov, 1950.

SYNONYMY:

Opisthorchis obsequens Nicoll, 1914

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Aythiini - Netta rufina

Falconiformes - Ieracidea berigora

HABITAT: Bile ducts of liver.

DISTRIBUTION: Asia (W. Siberia, India), Australia.

Opisthorchis simulans

STATUS AS WATERFOWL PARASITE: Common; reported 13 times in wild

waterfowl, 14 times in domestic waterfowl. Parasite of Falconiformes and anatids.

DESCRIPTION: Barker, 1911. Copy: Skrjabin & Petrov, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY: Dawes, 1956.

Distomum simulans Looss, 1896

Prosthometra simulans (Looss, 1896) [Looss, 1896]

Opisthorchis simulans (Looss, 1896) Kowalewski, 1898

Opisthorchis longissimus simulans (Looss, 1896) Erhardt, 1935

Opisthorchis simulans var. poturzyensis Kowalewski, 1898

Campla simulans poturzyensis (Kowalewski, 1898) Railliet, 1898

Metorchis poturzyensis (Kowalewski, 1898) Hollack, 1902

Opisthorchis anatis Yamaguti, 1933 - [Bisseru, 1957a]

Amphimerus filiformis Ishii, 1935 - [Bisseru, 1957a]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser albifrons

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas penelope

Aythiini - Aythya fuligula, Aythya marila

Ciconiiformes - Egretta garzetta

Falconiformes - Circus aeruginosus, Pernis apivorus

Gruiformes - Fulica atra

HABITAT: Bile ducts of liver.

DISTRIBUTION: Europe, Asia (Azerbaijan, Armenia, Kirgizia, Kazakhstan, India, Primorsk), Africa (Egypt).

Opisthorchis skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Zhukova, 1934. Copy: Skrjabin & Petrov, 1950; Shevtsov & Zaskind, 1960.

SYNONYMY:

Opisthorchis skrjabini Zhukova, 1934

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Bile ducts of liver.

DISTRIBUTION: Asia (Siberia, Altai).

Pachytrema calculus

STATUS AS WATERFOWL PARASITE: Rare, normally in Charadriiformes, mostly gulls; reported twice in wild ducks.

DESCRIPTION: Yamaguti, 1939; Bykhovskaiâ-Pavlovskaiâ, 1954a. Copy: Skrjabin & Petrov, 1950.

SYNONYMY:

Pachytrema calculus Looss, 1907

Minuthorchis sanguineus Linton, 1928 - [Shcherbovich, 1946]

Pachytrema sanguineus (Linton, 1928) Purvis, 1937

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas falcata

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Crocethia alba, Gelochelidon nilotica, Larus argentatus, Larus atricilla, Larus canus, Larus fuscus, Larus ridibundus, Numenius phaeopus, Sterna hirundo, Tringa totanus

HABITAT: Gall bladder, bile ducts of liver.

DISTRIBUTION: Europe, Asia (W. Siberia, Primorsk, Japan, Kamchatka), N. America (USA).

Diphyllobothrium cordiceps

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Description inadequate for identification. Synonym of D. dendriticum - Markowski, 1949. May be mixture of forms.

DESCRIPTION: Linton, 1891; Scott, 1955.

SYNONYMY:

Dibothrium cordiceps Leidy, 1871

Diphyllobothrium cordiceps (Leidy, 1871) Meggitt, 1924

Dibothriocephalus cordiceps (Leidy, 1871) Wardle, McLeod, & Stewart,
1947

LIFE CYCLE: Plerocercoid larvae encysted in muscles and body cavity of salmonid fresh-water fish; adults develop in fish-eating birds and mammals. (Kuhlow, 1953; Linton, 1891; Scott, 1935; Simms & Shaw, 1931; Woodbury, 1932)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Oncorhynchus kisutch, Salmo clarki, Salmo gairdneri, Salvelinus fontinalis, Thymallus signifer

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

Pelecaniformes - Pelecanus erythrorhynchos

Charadriiformes - Larus californicus

MAMMALIA - Carnivora - Ursus americanus, Ursus horribilis

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Diphyllobothrium dendriticum

STATUS AS WATERFOWL PARASITE: Rare, commonly in gulls; reported once in wild ducks.

DESCRIPTION: Lühe, 1910; Markowski, 1949; Kuhlow, 1953.

SYNONYMY:

Bothriocephalus dendriticus Nitzsch, 1824

Dibothrium dendriticum (Nitzsch, 1824) Diesing, 1850

Dibothriocephalus dendriticus (Nitzsch, 1824) Lühe, 1899

Diphyllobothrium dendriticum (Nitzsch, 1824) Lühe, 1910

Dibothrium cordiceps Leidy, 1871 - [Markowski, 1949]

Dibothrium exile Linton, 1892 - [Markowski, 1949]
Diphyllobothrium canadense Cooper, 1921 - [Markowski, 1949]
Diphyllobothrium strictum of Neveu-Lemaire, 1936 - [Kuhlow, 1953]
Diphyllobothrium laruei Vergeer, 1942 - [Markowski, 1949]
Diphyllobothrium oblongatum Thomas, 1946 - [Markowski, 1949]
Bothriocephalus fissiceps 1829 - [Markowski, 1949; Kuhlow, 1953]

LIFE CYCLE: Eggs passed in feces of host; hatch in 6-8 days in fresh water; coracidia ingested by fresh-water copepod crustacea, forms proceroid larvae; plerocercoids develop in fresh-water fish; mature in final host 6 days after ingestion. (Chizhova & Gofman-Kadoshnikov, 1960; Hickey & Harris, 1947; Hilliard, 1960; Kuhlow, 1953)

FIRST INTERMEDIATE HOSTS: Cyclops kolensis baicalensis [exper.], Cyclops strenuus, Diaptomus gracilis [exper.], Diaptomus graciloides [exper.], Diaptomus vulgaris [exper.], Epischura baicalensis [exper.]

SECOND INTERMEDIATE HOSTS: Coregonus lavaretus, Coregonus migratorius, Gasterosteus aculeatus [exper.], Fungitius pungitius [exper.], Salmo gairdneri, Salmo trutta, Thymallus arcticus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

Gaviiformes - Gavia stellata

Pelecaniformes - Pelecanus erythrorhynchus

Charadriiformes - Larus argentatus [exper.], Larus californicus,

Larus canus, Larus crassirostris, Larus delawarensis, Larus fuscus,

Larus glaucescens, Larus ichthyaetus, Larus marinus, Larus ridibundus [exper.], Rissa tridactyla, Sterna hirundo [exper.]

MAMMALIA - Rodentia - Rattus norvegicus (lab.) [exper.], Mus musculus (lab.) [exper.]

Carnivora - Canis familiaris [exper.], Felis catus [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Yakutia, Primorsk, Sakhalin), N. America (USA - Alaska).

Diphyllobothrium ditremum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

STATUS AS SPECIES: Regarded as species inquirenda by Wardle & McLeod, 1952.

DESCRIPTION: Markowski, 1949; Kuhlow, 1953.

SYNONYMY: Markowski, 1949.

Bothriocephalus ditremus Creplin, 1825

Dibothrium ditremum (Creplin, 1825) Diesing, 1850

Dibothriocephalus ditremus (Creplin, 1825) Lühe, 1899

Diphyllobothrium ditremum (Creplin, 1825) Lühe, 1910

LIFE CYCLE: Eggs hatch in fresh water in 9 days; proceroid larvae in fresh-water copepod crustacea; plerocercoid larvae develop in salmonid fishes after ingestion; mature in fish-eating birds. (Hickey & Harris, 1947; Hilliard, 1960; Kuhlow, 1953)

FIRST INTERMEDIATE HOSTS: Cyclops strenuus abyssorum, Diaptomus gracilis

SECOND INTERMEDIATE HOSTS: Osmerus eperlanus, Salmo trutta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Mergini - Mergus albellus, Mergus merganser, Mergus serrator

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Pelecaniformes - Phalacrocorax aristotelis, Phalacrocorax carbo

Ciconiiformes - Ardea cinerea

Charadriiformes - Larus argentatus, Larus canus, Larus hyperboreus,
Rissa tridactyla

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Kamchatka), N. America (USA - Alaska).

Diphyllobothrium osmeri

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck from experimental infection; natural host unknown.

DESCRIPTION: Kuhlow, 1953.

SYNONYMY:

Bothriocephalus osmeri Linstow, 1878

Dibothrium osmeri (Linstow, 1878) Ariola, 1900

Diphyllobothrium osmeri (Linstow, 1878)

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 11 days; pleurocercoid larvae encysted on viscera of anadromous fish; mature in final host after ingestion. Prepatent period 30 days in gulls, indicating these are probably not natural hosts. Kuhlow believes fish become infected in marine waters, no infections found in young fish that had never been in the ocean, natural host perhaps a marine mammal. (Hilliard, 1960; Kuhlow, 1953; Vik, 1963, 1964; Wikgren,

1964; Wikgren & Muroma, 1956)

FIRST INTERMEDIATE HOSTS: Unknown; probably similar to that of D. ditremum.

SECOND INTERMEDIATE HOSTS: Coregonus albula, Gasterosteus aculeatus, Osmerus dentex, Osmerus eperlanus, Salvelinus alpinus, Salmo salar

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator [exper.]

Gaviiformes - Gavia arctica [exper.]

Ciconiiformes - Ardea cinerea [exper.]

Charadriiformes - Larus argentatus [exper.], Larus ridibundus [exper.]

MAMMALIA - Carnivora - Canis familiaris [exper.]

HABITAT: Small intestine - posterior portion.

DISTRIBUTION: Europe (Germany, Finland, Norway), N. America (USA - Alaska).

Digramma nemachili

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Dubinina, 1958, 1966.

SYNONYMY: Dubinina, 1966.

Digramma nemachili Dubinina, 1958

Digramma alternans (Creplin) Kholodkovsky, 1915

Digramma alternans (Rudolphi, 1810) Kholodkovsky, 1915 of Yamaguti, 1959

LIFE CYCLE: Plerocercoids develop in 10-12 months after ingestion by fresh-water fish of Family Cobitidae; mature in fish-eating birds in 45-50 hours after ingestion (Dubinina, 1958).

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Nemachilus sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus albellus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tadzhikistan). Probably western Europe and south-eastern Asia (Dubinina, 1966).

Digamma interrupta

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks, twice in domestic waterfowl as result of experimental infection.

STATUS AS SPECIES: Included in Ligula intestinalis in most records.

DESCRIPTION: Dubinina, 1954b, 1966; Bezubik, 1954a.

SYNONYMY: Dubinina, 1966.

Ligula abdominalis carassi Gmelin, 1790

Ligula abdominalis ciprinorum Gmelin, 1790

Ligula carassi (Gmelin, 1790) Zeder, 1803

Ligula interrupta Rudolphi, 1810

Digamma interrupta (Rudolphi, 1810) Kholodkovsky, 1914

Ligula mergorum (?) Rudolphi, 1810

Ligula constringens Rudolphi, 1810

Ligula caprionis Rudolphi, 1810

Ligula digamma Creplin, 1839

Diplogonoporus brauni Leon, 1907

Digamma alternans (Rudolphi) of Yamaguti, 1934

LIFE CYCLE: Proceroid develops in fresh-water copepod crustacea; after ingestion plerocercoid develops in fresh-water fish in 10-12 months; mature in fish-eating birds in 45-50 hours after ingestion; survive 6-12 days in final host. Matured experimentally in fish with temperature over 35 C. (Bařanov & Sharislamova, 1965; Dubinina, 1954b, 1960, 1966; Monchenko, 1956)

FIRST INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops vernalis, Acanthocyclops viridis [exper.], Cyclops furcifer [exper.], Cyclops insignis, Cyclops strenuus, Eucyclops serrulatus [exper.], Macrocyclus albidus, Macrocyclus fuscus, Paracyclus fimbriatus, Acanthodiptomus denticornis [exper.], Diaptomus glacialis, Diaptomus gracilis, Eudiptomus graciloides [exper.], Heterocopa appendiculata

SECOND INTERMEDIATE HOSTS: Verified: Abramis brama, Abramis sapa, Barbus lacerta, Carassius auratus, Carassius carassius, Cyrrinus carpio, Gobio albipennatus, Gobio gobio, Leuciscus brandti, Rhodeus sericeus, Rutilus rutilus, Saurogobio dabryi

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Anatini - Anas platyrhynchos (dom.) [exper.]

Mergini - Bucephala clangula [exper.], Mergus albellus, Mergus merganser

Gaviiformes - Gavia arctica, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps caspicus [exper.],
Podiceps cristatus

Ciconiiformes - Ardea cinerea
Falconiformes - Buteo lagopus [exper.], Falco tinnunculus [exper.],
Haliaeetus albicilla
Galliformes - Gallus gallus (dom.) [exper.]
Charadriiformes - Capella megala [exper.], Larus argentatus, Larus fuscus, Larus ridibundus [exper.], Sterna sp., Vanellus vanellus [exper.]
Columbiformes - Columba livia (dom.) [exper.]
Strigiformes - Asio flammeus [exper.]
Passeriformes - Corvus frugilegus [exper.], Corvus monedula [exper.]
MAMMALIA - Carnivora - Canis familiaris [exper.], Felis catus [exper.]

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Altai, Fribaik-
alia, China, Yakutia, Amur, Japan).

Ligula colymbi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

STATUS AS SPECIES: Included in L. intestinalis in most records.

DESCRIPTION: Linton, 1927 (as L. intestinalis); Dubinina, 1950a,
1957, 1966; Byrd, 1955 (as L. intestinalis).

SYNONYMY: Dubinina, 1966.

Taenia capitata Frisch, 1740

Ligula abdominalis cobitidis Gmelin, 1790

Ligula cobitidis (Gmelin, 1790) Zeder, 1803

Ligula colymbi Zeder, 1803

Ligula uniserialis Rudolphi, 1810

Ligula sparsa Rudolphi, 1810

Ligula colymbi cristata Rudolphi, 1810

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 5-6 days
at 24-30 C., releasing coracidium; procercooids develop in fresh-water
copepod crustacea in 10 days, remain infective 3-4 days; plerocercoid
develops in fresh-water fish, primarily of Family Cobitidae, in over
365 days after ingestion; mature in final host in few days after in-
gestion of plerocercoid, survive in final host 4-7 days. (Dubinina,
1950, 1957, 1964, 1966; Monchenko, 1956)

FIRST INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus [exper.],
Acanthocyclops viridis [exper.], Cyclops strenuus [exper.], Eucyclops
macrurus [exper.], Eucyclops serrulatus [exper.], Mesocyclops oitho-
noides [exper.], Microcyclops gracilis [exper.], Diaptomus gracilis
[exper.], Eudiaptomus graciloides [exper.]

SECOND INTERMEDIATE HOSTS: Barbus brachycephalus, Cobitis taenia, Gobio gobio, Leucaspis delineatus, Nemachilus kuschewitschi, Nemachilus dorsalis, Nemachilus stoliczkai, Nemachilus strauchi

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Netta rufina

Mergini - Mergus merganser

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podilymbus podiceps

Falconiformes - Circus aeruginosus

Gruiformes - Fulica atra [exper.]

Columbiformes - Columba livia [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kazakhstan, Kirgizia, India), N. America (USA).

Ligula intestinalis

STATUS AS WATERFOWL PARASITE: Common; reported 25 times in wild and 4 times in domestic waterfowl. Most reports precede modern classification, could be misidentified to species. Mortality and pathology described by Hare, 1945.

STATUS AS SPECIES: Regarded as collective species by Dubinina, three species named, indications of others (Dubinina, 1966). Usually includes large number of forms named for intermediate hosts.

DESCRIPTION: Cooper, 1919; Dubinina, 1953, 1966; Bezubik, 1957a.

SYNONYMY: Dubinina, 1966.

Fasciola intestinalis Linnaeus, 1758

Ligula intestinalis (Linnaeus, 1758) Gmelin, 1790, e.p.

Taenia cingulum Fallas, 1781

Ligula cingulum (Pallas, 1781) Rudolphi, 1810

Ligula piscium Bloch, 1782, e.p.

Ligula avium Bloch, 1782, e.p.

Fasciola abdominalis Goeze, 1782

Ligula abdominalis (Goeze, 1782) Gmelin, 1790, e.p.

Ligula simplicissima Rudolphi, 1802

Ligula alternans Rudolphi, 1810

Ligula contortrix Rudolphi, 1810

Ligula edulis Briganti, 1819

Ligula uniserialis Rudolphi of Creplin, 1839

Monogramma uniserialis (Rudolphi, 1810) Kholodkovsky, 1915

Ligula monogramma Creplin, 1839

Dibothrium ligula Donnadieu, 1877, e.p.

LIFE CYCLE: Eggs hatch in fresh water, releasing coracidia, in 5-8 days; coracidia infect fresh-water copepod crustacea, proceroid larvae develop in 10-15 days; plerocercoid develops in body cavity of fresh-water fish after ingestion, infective in 12-14 months with growth virtually completed; mature in final host 45-60 hours after ingestion, survive in final host 95-125 hours. Plerocercoids regarded as very host specific, L. intestinalis in Cyprinidae; no specificity for final host. (Dence, 1958; Dubinina, 1950a, 1954b, 1960, 1966; Heinemann, 1937b; Jarecka, 1960a; Joyeux & Baer, 1936b, 1942; Mikhailov, 1957; Monchenko, 1956; Rosen, 1920; Voore, 1950)

FIRST INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops viridis [exper.], Cyclops strenuus, Eucyclops serrulatus [exper.], Macrocyclops albidus, Mesocyclops leuckarti [exper.], Mesocyclops oithonoides [exper.], Diaptomus glacialis, Diaptomus gracilis, Diaptomus sarsi, Eudiaptomus graciloides [exper.]

SECOND INTERMEDIATE HOSTS: Verified: Abramis ballerus, Abramis brama, Abramis sapa, Alburnus alburnus, Alburnus charusini, Alburnus filippii, Alburnoides bipunctatus, Barbus lacerta, Blicca bjoerkna, Chalcalburnus chalcoides, Gobio gobio, Leuciscus cephalus, Leuciscus idus, Leuciscus leuciscus, Pelecus cultratus, Phoxinus phoxinus, Rhodeus sericeus, Rutilus rutilus, Scardinius erythrophthalmus, Schizothorax argentatus, Schizothorax intermedius, Varicorhinus capoeta
Reported, not verified by recent classification - About 80 additional species, in genera: Alburnus, Anguilla, Barbus, Boleosoma, Carassius, Catostomus, Chirostoma, Chondrostoma, Chrosomus, Cobitis, Coregonus, Couesius, Cyprinus, Cyprinopsis, Engraulicypris, Esox, Gadus, Gila, Gnathopogon, Gobius, Hybopsis, Hyborhynchus, Idus, Labeo, Leucaspius, Lucioperca, Micropterus, Mylocheilus, Nemachilus, Neogobius, Notropis, Oncorhynchus, Opsopoeodus, Osmerus, Perca, Phoxinus, Pimephales, Prosopium, Ptychocheilus, Pungitius, Richardsonius, Salmo, Salvelinus, Schizopygopsis, Semotilus, Siluris, Tinca, Vimba

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas penelope, Anas strepera

Aythiini - Aythya ferina

Mergini - Bucephala clangula, Mergus albellus, Mergus merganser, Mergus serrator

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis

Pelecaniformes - Haliastur africanus, Haliastur pygmaeus, Pelecanus oncorhynchus, Phalacrocorax aristotelis, Phalacrocorax carbo

Ciconiiformes - Ardea cinerea, Botaurus stellaris, Casmerodius albus, Ciconia ciconia, Ciconia nigra, Nycticorax nycticorax, Plegadis

falcinellus

Falconiformes - Aquila chrysaetos, Gyps fulvus, Haliaeetus albicilla
Charadriiformes - Alca torda, Charadrius alexandrinus, Chlidonias nigra, Larus argentatus, Larus canus, Larus ichthyaetus, Larus marinus, Larus minutus, Larus novae-hollandiae, Larus ridibundus, Rissa tridactyla, Stercorarius parasiticus, Sterna hirundo, Tringa nebularis
Passeriformes - Corvus corone cornix
MAMMALIA - Lagomorpha - Oryctolagus cuniculus [exper.]
Carnivora - Canis familiaris [exper.], Felis catus [exper.], Alonex lagopus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Turkmenistan, Kazakhstan, Altai, Irkutsk, India, China), Africa (Mozambique, Rhodesia, S. Africa), N. America (Mexico, USA, Canada).

Schistocephalus nemachili

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Dubinina, 1959a, 1959b, 1966.

SYNONYMY:

Schistocephalus nemachili Dubinina, 1959

LIFE CYCLE: Similar to that of S. solidus. Plerocercoid larvae in fresh-water fish of family Cobitidae. (Dubinina, 1959a, 1959b, 1966)

FIRST INTERMEDIATE HOSTS: Unknown.

SECOND INTERMEDIATE HOSTS: Nemachilus crassus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia, China).

Schistocephalus pungitii

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

DESCRIPTION: Dubinina, 1959a, 1959b, 1966.

SYNONYMY:

Schistocephalus pungitii Dubinina, 1959

LIFE CYCLE: Eggs passed in feces of host, hatch in fresh water; coracidia infect fresh-water copepod crustacea, form proceroid larvae; plerocercoid larvae develop in fresh-water fish after ingestion (restricted to nine-spined stickleback of family Gasterosteidae), infective in 57 days; mature in final host after ingestion. (Dubinina, 1959a, 1959b, 1966)

FIRST INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus [exper.], Acanthocyclops gigas [exper.], Acanthocyclops viridis [exper.], Cyclops furcifer [exper.], Cyclops strenuus [exper.], Macrocyclus albidus [exper.], Macrocyclus fuscus [exper.], Diaptomus gracilis [exper.]

SECOND INTERMEDIATE HOSTS: Pungitius pungitius

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.) [exper.]

Somateriini - Somateria mollissima

[Aythyini - Aythya marila - Spasskiĭ & Bobova, 1961 - misidentified, Dubinina, 1966]

Mergini - [Mergus albellus - Spasskiĭ & Bobova, 1961, misidentified], Bucephala clangula, Clangula hyemalis, Mergus merganser, Mergus serrator

Podicipediformes - Podiceps cristatus, Podiceps grisegena

Galliformes - Gallus gallus (dom.) [exper.]

Charadriiformes - Larus ridibundus, Sterna hirundo, Tringa nebularia

Columbiformes - Columba livia (dom.) [exper.]

Fasseriformes - Corvus frugilegus [exper.], Corvus monedula [exper.]

HABITAT: Small intestine.

DISTRIBUTION: Europe (N. Europe, Ukraine), Asia (Kazakhstan, Krasnoyarsk, Tamyр, Yakutia, Kamchatka, Amur, Chukotka), N. America (Canada).

Schistocephalus solidus

STATUS AS WATERFOWL PARASITE: Common; reported 28 times in wild ducks, twice in domestic waterfowl; reported as cause of mortality by Callot & Desportes, 1934. Most reports precede modern classification, could be misidentified to species.

STATUS AS SPECIES: Regarded as collective species, each form host-

specific for second intermediate host: three species distinguished so far (Dubinina, 1959a, 1959b, 1966).

DESCRIPTION: Cooper, 1919; Linton, 1927; Bezubik, 1957a; Dubinina, 1966.

SYNONYMY: Dubinina, 1966.

Hirudo depressa alba Linnaeus, 1745

Fasciola hepatica Linnaeus, 1758, e.p.

Taenia solida Müller, 1776

Rhytis solida (Müller, 1776) Zeder, 1800

Bothriocephalus solidus (Müller, 1776) Rudolphi, 1810

Schistocephalus solidus (Müller, 1776) Steenstrup, 1857

Taenia gasterostei Fabricius, 1780

Schistocephalus gasterostei (Fabricius, 1780) Lühe, 1910

Taenia acutissima Pallas, 1781, e.p.

Taenia gasterostei-aculeati Goeze, 1782

Taenia lanceolata nodosa Bloch, 1782

Halysis lanceolato nodosa Zeder, 1800

Bothriocephalus nodosus (Bloch, 1782) Rudolphi, 1810

Schistocephalus nodosus (Bloch, 1782) Lühe, 1899

Taenia nodularis Schrank, 1788

Schistocephalus dimorphus Creplin, 1829

Schistorhynchus dimorphus (Creplin, 1829) Zschokke, 1896

Dibothrium ligula Donnadieu, 1877, e.p.

LIFE CYCLE: Eggs passed in feces, hatch in fresh water in 10-12 days at 22-25 C., 17-19 days at 16-18 C.; coracidia infect fresh-water copepod crustacea, proceroid larvae infective in 7-14 days; plerocercoid larvae develop in fresh-water fish (restricted to three-spined stickleback, family Gasterosteidae) in 117-177 days; mature in final host in 25-48 hours after ingestion, survive in final host 2-18 days. Carnivorous fish reported to serve as auxiliary hosts. (Bråten, 1966; Callot & Desportes, 1934; Clarke, 1953, 1954; Dubinina, 1957a, 1957b, 1959a, 1964, 1966; Hopkins & Smyth, 1951; McCaig & Hopkins, 1963; Monchenko, 1956; Nybelin, 1919; Vik, 1954)

FIRST INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops gigas [exper.], Acanthocyclops vernalis, Acanthocyclops viridis, Cyclops furcifer, Cyclops strenuus, Cyclops vicinus [exper.], Eucyclops macrurus [exper.], Eucyclops macruroides [exper.], Eucyclops serrulatus, Macrocyclus albidus [exper.], Macrocyclus fuscus [exper.], Mesocyclops leuckarti [exper.], Diaptomus gracilis, Eudiaptomus graciloides [exper.]

SECOND INTERMEDIATE HOSTS: Verified: Cottus gobio, Cottus kaganowski, Gasterosteus aculeatus. Reported - 19 additional fish species, one amphibian, in the genera: Anguilla, Cottus, Gasterosteus, Leucaspis, Leuciscus, Nemachilus, Pungitius, Fygosteus, Rhynchithys, Salmo, Salvelinus, Uraniidea, Rana

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Somateriini - Somateria fischeri

Aythiini - Aythya fuligula, Aythya marila, Aythya nyroca

Cairinini - Aix galericulata

Mergini - Bucephala clangula, Clangula hyemalis, Mergus albellus,

Mergus cucullatus, Mergus merganser, Mergus serrator

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis, Podilymbus podiceps

Procellariiformes - Puffinus kuhlii

Pelecaniformes - Phalacrocorax aristotelis

Ciconiiformes - Ardea cinerea, Ardea purpurea, Botaurus stellaris,

Ciconia ciconia, Ciconia nigra

Falconiformes - Aquila rapax

Galliformes - Gallus gallus (dom.) [exper.]

Gruiformes - Fulica atra

Charadriiformes - Alca torda, Chlidonias nigra, Cephus grylle, Erolia maritima, Haematopus ostralegus, Larus argentatus, Larus canus, Larus ichthyaetus [exper.], Larus marinus, Larus ridibundus, Recurvirostra avosetta, Stercorarius parasiticus, Sterna albifrons, Sterna hirundo, Sterna paradisaea, Tringa totanus, Uria aalge

Columbiformes - Columba livia [exper.]

Passeriformes - Corvus corax, Corvus corone cornix, Corvus frugilegus [exper.], Sturnus vulgaris [exper.], Turdus iliacus [exper.]

MAMMALIA - Rodentia - Mesocricetus auratus [exper.], Rattus norvegicus [exper.]

Carnivora - Felis catus [exper.], Lutra lutra, Phoca vitulina

HABITAT: Small intestine.

DISTRIBUTION: Europe (N. Europe, Iceland), Asia (Amur, Primorsk, Kamchatka, Sakhalin), Africa (Tanganika), N. America (USA, Canada, Greenland).

Tetrabothrium immerinus

STATUS AS WATERFOWL PARASITE: Accidental, perhaps erroneous, normally in gaviiform birds; reported once in wild duck. Unidentified forms reported twice in wild ducks.

DESCRIPTION: Baer, 1954. Copy: Lühe, 1910.

SYNONYMY: Baer, 1954.

Taenia immerina Abildgaard, 1790

Rhytis immerinus (Abildgaard, 1790) Zeder, 1803

Tetrabothrium immerinus (Abildgaard, 1790) Kowalewski, 1904

Bothriocephalus macrocephalus Rudolphi, 1810
Tetrabothrius macrocephalus (Rudolphi, 1810) Blainville, 1828
Prosthecotyle macrocephalus (Rudolphi, 1810) Fuhrmann, 1808
Bothriocephalus junceus Baird, 1862
Prosthecotyle juncea (Baird, 1862) Fuhrmann, 1899
Tetrabothrius junceus (Baird, 1862) Fuhrmann, 1906
Tetrabothrium arcticum Linstow, 1901
Tetrabothrium lobatum Linstow, 1905
Paratetrabothrius lobatus (Linstow, 1905) Yamaguti, 1940
Tetrabothrium perfidum Joyeux & Baer, 1934
Tetrabothrium rostratula Yamaguti, 1940
Paratetrabothrius orientalis Yamaguti, 1940, e.p.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima - [perhaps erroneous - Baer, 1954]

Gaviiformes - Gavia arctica, Gavia immer, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus

Falconiformes - Sarcorhamphus papa

Charadriiformes - Rostratula benghalensis, Tringa glareola, Uria aalge

HABITAT: Intestine.

DISTRIBUTION: Europe (Arctic, Spitzbergen), N. America.

Cittotaenia avicola

STATUS AS WATERFOWL PARASITE: Rare; reported once from duck (specimen dates to period of 1774-1793). Correctness of host record doubted by Spasskiĭ, 1951a, 1951b. Described from vial in museum, labeled by Goeze, no other record.

DESCRIPTION: Fuhrmann, 1897. Copy: Baer, 1927; Spasskiĭ, 1951b.

SYNONYMY:

Cittotaenia avicola Fuhrmann, 1897

Ctenotaenia avicola (Fuhrmann, 1897) Spasskiĭ, 1951

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Unknown (Museum Coll., Geneva, Switzerland).

Tatria acanthorhyncha

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in grebes; reported once in wild duck.

DESCRIPTION: Joyeux & Baer, 1936; Yamaguti, 1940; Johri, 1959; Singh, 1960; Movsesian, 1963b.

SYNONYMY:

Taenia acanthorhyncha Wedl, 1855

Amoebotaenia acanthorhyncha (Wedl, 1855) Cohn, 1899

Tatria acanthorhyncha (Wedl, 1855) Kowalewski, 1904

LIFE CYCLE: Larvae in dragonflies (Odonata); larvae developed experimentally in fresh-water copepod crustacea. (Jarecka, 1960; Linstow, 1892; Mrazek, 1907)

INTERMEDIATE HOSTS: Macrocyclus albidus [exper.], Agrion puella

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps dominicus, Podiceps ruficollis

Gruiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, Tadzhikistan, India, Japan).

Cotugnia fastigata

STATUS AS WATERFOWL PARASITE: Rare; reported once from domestic duck.

DESCRIPTION: Meggitt, 1920. Copy: Shevtsov & Zaskind, 1960; Artukh, 1966.

SYNONYMY:

Cotugnia fastigata Meggitt, 1920

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Burma).

Cotugnia fila

STATUS AS WATERFOWL PARASITE: Rare; reported twice from ducks, probably domestic.

DESCRIPTION: Meggitt, 1931. Copy: Shevtsov & Zaskind, 1960; Artiukh, 1966.

SYNONYMY:

Cotugnia fila Meggitt, 1931

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae) - "duck"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma, India).

Ophryocotyle spp.

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck and once in domestic duck.

DESCRIPTION:

SYNONYMY: Fuhrmann, 1932.

Ophryocotyle insignis Lönnberg, 1890, e.p.

Ophryocotyle sp. Fuhrmann, 1932

Ophryocotyle sp. Davies, 1938

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos (dom.)
Mergini - Mergus serrator

HABITAT: Probably small intestine.

DISTRIBUTION: Europe.

Raillietina anatina

STATUS AS WATERFOWL PARASITE: Rare; reported 3 times in domestic ducks.

DESCRIPTION: Fuhrmann, 1909b. Copy: Shevtsov & Zaskind, 1960; Artiukh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Davainea crassula of Wolffhügel, 1900

Davainea anatina Fuhrmann, 1908

Raillietina anatina (Fuhrmann, 1908) Fuhrmann, 1921

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Columbiformes - Columba sp., Treron phoenicopterus

HABITAT: Intestine.

DISTRIBUTION: Europe (Italy, Rumania), Asia (India).

Raillietina birmanica

STATUS AS WATERFOWL PARASITE: Rare, perhaps erroneous or accidental, normally in domestic fowl; reported once in domestic duck.

DESCRIPTION: Meggitt, 1926. López-Neyra, 1931. Copy: Artiukh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Raillietina (Fuhrmanetta) birmanica Meggitt, 1926

Davainea birmanica (Meggitt, 1926) López-Neyra, 1929

Idiogenoides birmanica (Meggitt, 1926) López-Neyra, 1931

Fuhrmanetta birmanica (Meggitt, 1926) Johri, 1933

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.)

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Burma).

Raillietina cesticillus

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported twice in domestic ducks.

DESCRIPTION: Gvozdev, 1958. Copy: Kasimov, 1956; Artūkh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Taenia cesticillus Molin, 1858

Raillietina cesticillus (Molin, 1858) Railliet, 1921

Davainea cesticillus (Molin, 1858) Blanchard, 1891

Raillietina (Skrjabinia) cesticillus (Molin, 1858) of Joyeux, 1923

Skrjabinia cesticillus (Molin, 1858) Baer, 1925

Brumptiella cesticillus (Molin, 1858) López-Neyra, 1931

LIFE CYCLE: Gravid proglottids passed in feces of host, ingested by ground and dung beetles (over 100 species of over 10 families reported), cysticercoids infective in 3-4 weeks; mature in final host 2-3 weeks after ingestion; may survive in final host up to 18.5 months, probably usually survive only 5-6 months. (Alicata, 1938; Ackert & Reid, 1936a; Case & Ackert, 1938, 1940; Jones, 1930a, 1932; Reid, Ackert, & Case, 1938; Sawada, 1952; Sawada & Okada, 1955; Watanabe, et al., 1953; Wetzel, 1934, 1938)

INTERMEDIATE HOSTS: Genera: Agonoderus, Alphitobius, Amara, Anaferonia, Anisodactylus, Anisotarsus, Anthicus, Aphodius, Brachycellus, Bradytus, Calathus, Chlaenius, Choeridium, Cratacanthus, Dermestes, Discoderus, Epierus, Gonocephalus, Harpalus, Podabrus, Pterostichus, Rhagadus, Selenophorus, Stenocellus, Stenolophus, Tachys, Tenebrio, Tribolium, Triplectrus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) - [doubtful, Reid, 1962]

Galliformes - Colinus virginianus, Coturnix coturnix, Gallus gallus (dom.), Gallus sonneratii, Lagopus lagopus, Lagopus scoticus, Lyrurus tetrix, Meleagris gallinavo (dom.), Numida meleagris (dom.), Perdix perdix, Phasianus colchicus, Tetrao urogallus, Tetrastes bonasia

Gruiformes - Chlamydotis undulata - [doubtful, Reid, 1962]

Passeriformes - Serinus canarius [exper.] - [doubtful, Reid, 1962]

HABITAT: Small intestine - duodenum and jejunem.

DISTRIBUTION: Cosmopolitan.

Raillietina clerici

STATUS AS WATERFOWL PARASITE: Rare, perhaps erroneous; reported

once in duck, original citation not found.

DESCRIPTION: Fuhrmann, 1920b.

SYNONYMY: Hughes & Schultz, 1942.

Davainea crassula of Clerc, 1906, not Rudolphi, 1819

Davainea clerici Fuhrmann, 1920

Raillietina (Ransomia) clerici (Fuhrmann, 1920) Joyeux, 1923, e.n.

Ransomia clerici (Fuhrmann, 1920) Joyeux, 1923, e.n.

Raillietina (Raillietina) clerici (Fuhrmann, 1920) of Joyeux & Houde-
mer, 1927

Kotlania clerici (Fuhrmann, 1920) López-Neyra, 1931

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos - [reported by Hughes & Schultz, 1942;
original citation not found]

Columbiformes - Columba livia, Streptopelia turtur

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), S. America? (Brazil - in African bird
in Zoological Garden).

Raillietina cyrtus

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck.

DESCRIPTION: Skrjabin, 1914a. Copy: Artiukh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Davainea cyrtus Skrjabin, 1914

Raillietina (Ransomia) cyrtus (Skrjabin, 1914) Fuhrmann, 1920

Raillietina (Raillietina) cyrtus (Skrjabin, 1914) of López-Neyra,
1931

Kotlania cyrtus (Skrjabin, 1914) López-Neyra, 1931

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

HABITAT: Probably small intestine.

DISTRIBUTION: S. America (Paraguay).

Raillietina fecunda

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck, probably domestic.

DESCRIPTION: Meggitt, 1931. Copy: Shevtsov & Zaskind, 1960; Artiukh, 1966.

SYNONYMY:

Raillietina fecunda Meggitt, 1931

Raillietina (Paroniella) fecunda Meggitt, 1931 of Fuhrmann, 1932

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "duck"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Raillietina microcotyle

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Skrjabin, 1914d. Copy: Shevtsov & Zaskind, 1960; Artiukh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Davainea microcotyle Skrjabin, 1914

Raillietina (Skrjabinia) microcotyle (Skrjabin, 1914) Fuhrmann, 1920

Brumptiella microcotyle (Skrjabin, 1914) López-Neyra, 1931

Skrjabinia microcotyle (Skrjabin, 1914) López-Neyra, 1954

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Europe (Italy).

Raillietina osakensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Iwata & Tamura, 1933. Copy: Artfukh, 1966.

SYNONYMY:

Raillietina osakensis Iwata & Tamura, 1933

Raillietina (Raillietina) osakensis Iwata & Tamura, 1933 of Iwata,
1939

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Japan).

Raillietina parviuncinata

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild (?)
and once in domestic duck.

DESCRIPTION: Meggitt & Maung Po Saw, 1924. Copy: Shevtsov & Zaskind,
1960; Artfukh, 1966.

SYNONYMY: Hughes & Schultz, 1942.

Raillietina (Ransomia) parviuncinata Meggitt & Po Saw, 1924

Davainea parviuncinata (Meggitt & Po Saw, 1924) López-Neyra, 1929

Raillietina (Raillietina) parviuncinata Meggitt & Po Saw, 1924 of
Southwell, 1930

Kotlania parviuncinata (Meggitt & Po Saw, 1924) López-Neyra, 1931

LIFE CYCLE: Unknown; probably similar to that of R. cesticillus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Burma, China).

Raillietina pseudocyrus

STATUS AS WATERFOWL PARASITE: Rare: reported once in duck, probably
domestic.

DESCRIPTION: Meggitt, 1931. Copy: Shevtsov & Zaskind, 1960; Artiukh, 1966.

SYNONYMY:

Raillietina pseudocyrtus (sp. dub.) Meggitt, 1931
Raillietina (Raillietina) pseudocyrtus Meggitt, 1931 of Fuhrmann, 1932

LIFE CYCLE: Unknown; probably similar to that of R. cestici'llus.

FINAL HOSTS: AVES
Anseriformes (Anatidae) - "duck"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Amoebotaenia cuneata

STATUS AS WATERFOWL PARASITE: Accidental, perhaps erroneous, normally in domestic chickens; reported once in duck, presumably domestic.

DESCRIPTION: Meggitt, 1914; Yamaguti, 1935b. Copy: Kasimov, 1956; Shevtsov & Zaskind, 1960; Matevosian, 1963.

SYNONYMY: Sprehn, 1932.

Taenia cuneata Linstow, 1872, not Batsch, 1786
Dicranotaenia cuneata (Linstow, 1872) Railliet, 1893
Amoebotaenia cuneata (Linstow, 1872) Cohn, 1900
Taenia sphenoides Railliet, 1892
Dicranotaenia sphenoides (Railliet, 1892) Railliet, 1896
Amoebotaenia sphenoides (Railliet, 1892) Cohn, 1899

LIFE CYCLE: Eggs with onchospheres passed in feces, ingested by earthworms; cysticercoids develop in 14 days; mature in final host 27 days after ingestion. (Kosinova, 1965; Mönnig, 1926)

INTERMEDIATE HOSTS: Allolobophora chlorotica, Eisenia foetida, Lumbricus rubellus, Ocnerodrilus (Ilyogenia) africanus, Pheretina neguana

FINAL HOSTS: AVES
Anseriformes (Anatidae) - "duck" - [probably an error, Fuhrmann, 1932]
Galliformes - Gallus gallus, Gallus gallus (dom.), Perdix perdix

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Cosmopolitan.

Anomotaenia ciliata

STATUS AS WATERFOWL PARASITE: Common; reported 25 times in wild waterfowl, 4 times in domestic ducks.

DESCRIPTION: Fuhrmann, 1913; Bezubik, 1957a; Macko, 1960a; Jarecka, 1961 (ova); Spasskaia, 1962; Belokobylenko, 1963. Copy: Matevosian, 1963.

SYNONYMY:

Anomotaenia (?) ciliata Fuhrmann, 1913

Platyscolex ciliata (Fuhrmann, 1913) Spasskaia, 1962

Unciunia ciliata (Fuhrmann, 1913) Matevosian, 1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop after ingestion by fresh-water cladoceran crustacea; mature in final host after ingestion. (Jarecka, 1956, 1958a, 1960a, 1961)

INTERMEDIATE HOSTS: Simocephalus exspinosus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis, Cygnus columbianus bewickii

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta,

Anas clypeata, Anas crecca, Anas discors, Anas falcata, Anas

formosa, Anas penelope, Anas poecilorhyncha, Anas querquedula,

Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta

rufina

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra,

Mergus albellus

Gaviiformes - Gavia stellata

Galliformes - Gallus gallus (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Tamyra, Amur, Kamchatka), N. America (USA).

Anomotaenia citrus

STATUS AS WATERFOWL PARASITE: Rare; normally in charadriiform birds; reported once in wild duck.

DESCRIPTION: Dubinina, 1954a (fig.); Spasskaia, 1950. Copy: Matevosian, 1963.

SYNONYMY: Matevosian, 1963.

Taenia citrus Krabbe, 1869

Choanotaenia citrus (Krabbe, 1869) Clerc, 1903

Anomotaenia citrus (Krabbe, 1869) Fuhrmann, 1908

Dichoanotaenia citrus (Krabbe, 1869) López-Neyra, 1944

Monopylidium cayennensis Fuhrmann, 1907

Choanotaenia citrus var. africana (Joyeux & Baer, 1928) Fuhrmann,
1932

LIFE CYCLE: Cysticeroid in fresh-water mollusk (auxiliary host?).
(Matevosian, 1963)

INTERMEDIATE HOSTS: Succinea putris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca deglandi

Charadriiformes - Actitis hypoleucos, Arenaria interpres, Belonopterus chilensis, Capella gallinago, Capella media, Capella stenura, Charadrius dubius, Erolia alpina, Erolia minuta, Euroda veredus, Heteroscelus incanus, Limosa limosa, Lymnocyrtus minimus, Philomachus pugnax, Scolopax rusticola, Tringa glareola, Tringa ochropus, Tringa totanus, Xenus cinereus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Tuva, China, Primorsk, Yakutia, Sakhalin), Africa, S. America (Brazil).

Chitonorecta agnosta

STATUS AS WATERFOWL PARASITE: Rare, perhaps erroneous; reported once in waterfowl, original citation not found.

STATUS AS SPECIES: Synonym of Liga brevicollis - Sandeman, 1959.
Chitonorecta synonym of genus Anomotaenia - Joyeux & Baer, 1961; this species cannot be in Anomotaenia - Spasskiĭ & Spasskaĭa, 1966.

DESCRIPTION: Meggitt, 1927b. Copy: Matevosian, 1963.

SYNONYMY:

Chitonorecta agnosta Meggitt, 1927

Anomotaenia agnosta (Meggitt, 1927) Matevosian, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - [listed by Fuhrmann, 1932, original citation not found]

Charadriiformes - Hoplopterus spinosus

HABITAT: Intestine.

DISTRIBUTION: Africa (Egypt).

Choanotaenia bhattacharai

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Chatterji, 1954. Copy: Matevosian, 1963.

SYNONYMY:

Choanotaenia bhattacharai Chatterji, 1954

LIFE CYCLE: Unknown; probably similar to that of C. infundibulum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Choanotaenia infundibulum

STATUS AS WATERFOWL PARASITE: Infrequent, normally in gallinaceous birds; reported twice in wild ducks and 3 times in domestic ducks.

DESCRIPTION: Guberlet, 1916; Gvozdev, 1958. Copy: Kasimov, 1956; Matevosian, 1963.

SYNONYMY:

Globus stercoreus Scopoli, 1772

Taenia infundibulum Bloch, 1779

Drepanidotaenia infundibulum (Bloch, 1779) Stossich, 1895

Choanotaenia infundibulum (Bloch, 1779) Cohn, 1899

Monopylidium infundibulum (Bloch, 1779) Kowalewski, 1904

Taenia avium Pallus, 1781, e.p.

Taenia articulis conoideis Bloch, 1782

Taenia infundibuliformis Goeze, 1782

Alyselminthes infundibuliformis (Goeze, 1782) Zeder, 1800

Halysis infundibuliformis (Goeze, 1782) Zeder, 1803

Drepanidotaenia infundibuliformis (Goeze, 1782) Railliet, 1893

Monopylidium infundibuliformis (Goeze, 1782) Clerc, 1903

Choanotaenia infundibuliformis (Goeze, 1782) Railliet, 1896

Taenia anatis avium Gmelin, 1790

Taenia serrata Rosa, 1794

Monopylidium infundibulum var. polyorchis Klaptocz, 1908

Chcanotaenia polyorchis (Klaptocz, 1908) Baer, 1925 - [Matevosian, 1963]

Choanotaenia fuhrmanni Skrjabin, 1914 - [Matevosian, 1963]

LIFE CYCLE: Gravid proglottids passed in feces, ingested by insects (Coleoptera, Orthoptera, Diptera); cysticercoïds become infective in grasshopper in 17-20 days at 24-32 C., in beetle in 48 days at 16-24 C.; mature in final host 2-3 weeks after ingestion. (Ackert & Reid, 1936b; Alicata, 1947; Case & Ackert, 1940; Guberlet, 1916; Horsfall, 1938; Horsfall & Jones, 1937; Reid & Ackert, 1937; Wetzel, 1935, 1938)

INTERMEDIATE HOSTS: Over 30 species in over 13 families of insects. Genera: Alphitotagus, Amara, Anaferonia, Aphodius, Anocellus, Ataenius, Calathus, Cratacanthus, Dermestes, Dicromorpha, Dixirpus, Enitragus, Geotrupes, Gonocephalus, Hylobius, Hygrotus, Lebia, Lucilia, Melanoplus, Musca, Nebria, Niptus, Reticulotermes, Stenocellus, Stenolophus, Tenebrio, Tenebrioides, Tribolium

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas penelope

Falconiformes - Falco naumanni, Milvus migrans

Galliformes - Alectoris barbara, Alectoris graeca, Alectoris rufa, Bonasa umbellus, Coturnix coturnix, Francolinus pintadeanus, Gallus gallus (dom.), Lyrurus tetrix, Meleagris gallinavo (dom.), Numida meleagris (dom.), Pavo cristatus, Pedioecetes phasianellus, Ferdix perdix, Phasianus colchicus, Tetrao urogallus, Tetrastes bonasia

Gruiformes - Otis tetrix

Columbiformes - ?Columba livia, ?Goura sp.

Passeriformes - Amospiza maritima, Corvus corone, Passer domesticus

HABITAT: Small intestine - jejunem.

DISTRIBUTION: Cosmopolitan.

Lallum magniparuterina

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of Hymenolepis megalops - Spasskiĭ, 1964.

DESCRIPTION: Johri, 1960.

SYNONYMY:

Lallum magniparuterina Johri, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas crecca

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Lateriporus aecophylus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Diagonaliporus synonym of Trichocephaloides - Joyeux & Baer, 1961.

DESCRIPTION: Oshmarin, 1950. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus aecophylus Oshmarin, 1950
Diagonaliporus aecophilus (Oshmarin, 1950) Krotov, 1954

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Histrionicus histrionicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Primorsk, Kamchatka, Sakhalin).

Lateriporus biuterinus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and once in captive waterfowl.

STATUS AS SPECIES: Spasskiĭ (1966b) believes European material (from Melanitta nigra) should be rechecked, doubts if this occurs both in S. America and Europe, especially as none of the extensive Soviet collections have disclosed it.

DESCRIPTION: Fuhrmann, 1908c. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus biuterinus Fuhrmann, 1908
Fuhrmanacanthus biuterinus (Fuhrmann, 1908) Spasskiĭ, 1966

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna autumnalis

Tadornini - Neochen jubatus

Cairinini - Amazonetta brasiliensis, Cairina moschata, Sarkidior-
nis melanotos

Mergini - Melanitta fusca

[Charadriiformes - Larus melanocephalus - probably erroneous, Fuhr-
mann, 1932]

HABITAT: Small intestine.

DISTRIBUTION: Europe, S. America (Brazil).

Lateriporus clerici

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental, normally in lariform birds; reported once in wild duck as adult, larvae reported once encysted in gizzard of wild ducks.

DESCRIPTION: Ablasov, 1957. Copy: Matevosian, 1963.

SYNONYMY: Sprehn, 1932.

Taenia cylindrica Clerc, 1902, not Kreffft, 1871

Dilepis cylindrica (Clerc, 1902) Clerc, 1903

Lateriporus cylindrica (Clerc, 1902) Lühe, 1910

Taenia clerici Johnston, 1912

Choanotaenia clerici (Johnston, 1912) Johnston, 1912

Lateriporus clerici (Johnston, 1912) Fuhrmann, 1932

LIFE CYCLE: Larvae develop in crustacea; mature in lariform birds after ingestion. Larvae apparently may sometimes encyst in gizzard after ingestion by Anatidae. (Ablasov, 1957)

INTERMEDIATE HOSTS:

AUXILIARY HOSTS: AVES

Anseriformes - Anas platyrhynchos, Anas acuta, Anas strepera, Aythya nyroca

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Gruiformes - Fulica atra

Charadriiformes - Larus argentatus, Larus canus, Larus melanocephalus,
Larus minutus, Larus ridibundus, Sterna hirundo

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), Asia (Siberia, Kirgizia, Yakutia).

Lateriporus destitutus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck (in 1889).

STATUS AS SPECIES: Description inadequate; not listed by Matevosian, 1963, nor Spasskiĭ, 1966b.

DESCRIPTION: Lönnberg, 1889.

SYNONYMY:

Taenia destituta Lönnberg, 1889

Lateriporus destitutus (Lönnberg, 1889) Hughes, 1941

Taenia destituata Lönnberg of Fuhrmann, 1908, lapsus

Lateriporus destituata (Lönnberg, 1889) Fuhrmann, 1908

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Sweden).

Lateriporus geographicus

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of L. teres - Schiller, 1955a.

DESCRIPTION: Cooper, 1921. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus geographicus Cooper, 1921

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)
Somateriini - Somateria mollissima
Mergini - Clangula hyemalis

HABITAT: Probably small intestine.

DISTRIBUTION: N. America (Arctic Canada).

Lateriporus mathevossianae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Ryzhikov & Gubanov, 1962. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus mathevossianae Ryzhikov & Gubanov, 1962

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis, Melanitta fusca deglandi

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tamy, Yakutia).

Lateriporus propeteres

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Fuhrmann, 1907. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus propeteres Fuhrmann, 1907

Fuhrmanacanthus propeteres (Fuhrmann, 1907) Spasskiĭ, 1966

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Amazonetta brasiliensis

HABITAT: Not given, probably small intestine.

DISTRIBUTION: S. America (Brazil).

Lateriporus skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild ducks.

DESCRIPTION: Matevosian, 1946. Copy: Matevosian, 1963.

SYNONYMY:

Lateriporus skrjabini Matevosian, 1946

LIFE CYCLE: Unknown; probably similar to that of L. teres.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca

Aythiini - Aythya fuligula, Aythya marila

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Europe (N. Russia), Asia (W. Siberia, Kirgizia, Kazakhstan, Tuva, Yakutia, Tamy, Komandorsky Is.).

Lateriporus teres

STATUS AS WATERFOWL PARASITE: Frequent; reported 17 times in wild ducks.

DESCRIPTION: Schiller, 1955a; Mahon, 1956; Spasskaia, 1965. Copy: Matevosian, 1963.

SYNONYMY:

Taenia teres Krabbe, 1869

Diplacanthus (Lepidotrias) teres (Krabbe, 1869) Cohn, 1890

Hymenolepis teres (Krabbe, 1869) Railliet, 1899

Lateriporus teres (Krabbe, 1869) Fuhrmann, 1907

Cysticercus pachyacanthus (Linstow, 1892) Lihe, 1910 - [Spasskii,
1954]

Lateriporus geographicus Cooper, 1921 - [Schiller, 1955a]; distinct,
Matevosian, 1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in marine and fresh-water amphipod crustacea after ingestion; mature after ingestion by final host. (Spasskaia, 1954; Uspenskaia, 1960)

INTERMEDIATE HOSTS: Gammarus locusta, Gammarus pulex

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca, Anas penelope, Anas querquedula

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila

Mergini - Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca deglandi, Melanitta nigra

[Charadriiformes - Larus melanocephalus - probably erroneous, Fuhrmann, 1932]

[Fasseriformes - Corvus brachyrhynchos - probably erroneous]

HABITAT: Small intestine.

DISTRIBUTION: Europe (Norway, Murmansk, Iceland), Asia (Kirgizia, Yakutia, Kamchatka, Chukotka), N. America (USA - Alaska, Canada, Greenland).

Liga brevis

STATUS AS WATERFOWL PARASITE: Accidental or erroneous, normally in Charadriiformes; reported once in wild duck. Host given as "shilokhvost" [Anas acuta] in text of paper, listed as Recurvirosta avosetta [shiloklivka] in table at end (Dubinina, 1954a).

DESCRIPTION: Dubinina, 1954a; Williams, 1962. Copy: Matevosian, 1963.

SYNONYMY:

Taenia brevis Linstow, 1884

Amoebotaenia brevis (Linstow, 1884) Fuhrmann, 1908

Liga brevis (Linstow, 1884) López-Neyra, 1952

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

Charadriiformes - Charadrius hiaticula, Charadrius mongolus, Pluvialis apricaria, Pluvialis dominica, Recurvirostra avosetta, Squatarola squatarola

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Great Britain), Asia (Siberia).

Metroliaesthes lucida

STATUS AS WATERFOWL PARASITE: Accidental, perhaps erroneous, normally in gallinaceous birds, especially in turkeys; reported once in domestic geese.

STATUS AS SPECIES: Metroliaesthes is synonym of genus Rhabdometra - Joyeux & Baer, 1961.

DESCRIPTION: Copy: Kasimov, 1956.

SYNONYMY:

Metroliaesthes lucida Ransom, 1900

LIFE CYCLE: Eggs with onchospheres passed in feces: cysticeroid larvae develop after ingestion by grasshoppers (Orthoptera), become infective in 15 days in summer, up to 6 weeks in winter; mature in about 21 days after ingestion by final host. (Jones, 1936)

INTERMEDIATE HOSTS: Chorthippus curtipennis, Melanoplus femur-rubrum, Paroxya clavuliger

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Alectoris rufa, Coturnix coturnix, Gallus gallus (dom.), Gallus gallus bankiva, Guttera edouardi, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris

HABITAT: Small intestine.

DISTRIBUTION: Cosmopolitan.

Paradilepis scolecina

STATUS AS WATERFOWL PARASITE: Accidental, normally in Pelecaniformes; reported once in wild duck.

DESCRIPTION: Yamaguti, 1940a; Spasskiĭ & Spasskaĭa, 1960. Copy: Matevosĭan, 1963.

SYNONYMY: Spasskiĭ & Spasskaĭa, 1960.

Taenia scolecina Rudolphi, 1819

Dilepis scolecina (Rudolphi, 1819) Fuhrmann, 1908

Paradilepis scolecina (Rudolphi, 1819) Hsü, 1935

Paradilepis duboisi Hsü, 1935

Paradilepis brevis Burt, 1940

Dilepis minima Goss, 1940

Paradilepis minima (Goss, 1940) Freeman, 1954

LIFE CYCLE: Cysticeroid reported in marine fish (auxiliary host?).
(Yamaguti, 1940a)

INTERMEDIATE HOSTS: Gnathopogon elongatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas falcata

Pelecaniformes - Haliator africanus, Haliator melanoleucos, Haliator pygmaeus, Phalacrocorax capillatus, Phalacrocorax carbo, Phalacrocorax fuscicollis, Phalacrocorax novae-hollandiae, Phalacrocorax varius

HABITAT: Small intestine - embedded in diverticula of wall.

DISTRIBUTION: Europe, Asia (Armenia, Tadzhikistan, Kirgizia, Kazakhstan, Ceylon, China, Japan), Africa, Australia.

Paradilepis urceus

STATUS AS WATERFOWL PARASITE: Rare, probably accidental; reported once in wild duck.

DESCRIPTION: Mahon, 1955; Spasskiĭ & Spasskaĭa, 1960. Copy: Hughes, 1941a; Matevosĭan, 1963.

SYNONYMY: Spasskiĭ & Spasskaĭa, 1960; Matevosĭan, 1963.

Taenia urceus Wedl, 1855

Dilepis urceus (Wedl, 1855) Fuhrmann, 1908

Hymenolepis urceus (Wedl, 1855) Meggitt, 1927

Meggittiella urceus (Wedl, 1855) L6rez-Neyra, 1942

Paradilepis urceus (Wedl, 1855) Joyeux & Baer, 1950

Taenia capito Dujardin, 1845 - [Matevosĭan, 1963]

Hymenolepis lloydi Southwell, 1926

Paradilepis lloydi (Southwell, 1926) Spasskiĭ, 1954 - [Matevosĭan, 1963]

Hymenolepis multihamata Meggitt, 1927

Meggittiella multihamata (Meggitt, 1927) L6rez-Neyra, 1942

Skrjabinolepis multihamata (Meggitt, 1927) Matevosĭan, 1945

Paradilepis multihamata (Meggitt, 1927)

Oligorchis hieraticos Johri, 1934

Hymenolepis varicanthos Southwell & Lake, 1939

Skrjabinolepis varicanthos (Southwell & Lake, 1939) Matevosĭan, 1945

Meggittiella varicanthos (Southwell & Lake, 1939) Spasskiĭ, 1952 - [Matevosĭan, 1963]

Paradilepis varicanthos (Southwell & Lake, 1939)

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

Gaviiformes - Gavia arctica

Pelecaniformes - Pelecanus oncorhynchus

Ciconiiformes - Ciconia sp., Ibis ibis, Platalea leucorodia, Plegadis falcinellus

Falconiformes - Milvus migrans

HABITAT: Small intestine.

DISTRIBUTION: Europe (Austria, Hungary), Asia (Kazakhstan, Tuva, India), Africa (Egypt, Nigeria, Congo region).

Paricterotaenia borealis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild and once in captive waterfowl.

DESCRIPTION: Linstow, 1905a; Baer, 1962. Copy: Matevosian, 1963.

SYNONYMY:

Aporina borealis Linstow, 1905

Choanotaenia borealis (Linstow, 1905) Fuhrmann, 1908, not C. borealis (Krabbe) Clerc, 1906

Paricterotaenia borealis (Linstow, 1905) Fuhrmann, 1932

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos

Mergini - Clangula hyemalis, Melanitta nigra

[Coraciiformes and

Passeriformes - 28 species listed erroneously in McDonald, 1965, through confusion with Choanotaenia borealis (Krabbe)]

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Great Britain, Iceland), Asia (Tamyra).

Sphaeruterina longiceps

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental, probably normally in passerine birds; reported once in waterfowl.

DESCRIPTION: Fuhrmann, 1908a.

SYNONYMY:

Taenia longiceps Rudolphi, 1819

Biuterina longiceps (Rudolphi, 1819) Fuhrmann, 1908

Sphaeruterina longiceps (Rudolphi, 1819) Fuhrmann, 1932

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - ?Cairina moschata

Passeriformes - Cassicus affinis, Psarocolius decumanus

HABITAT: Probably small intestine.

DISTRIBUTION: S. America (Brazil), [N. America - Yamaguti, 1959, erroneous].

Trichocephaloides megaloccephala

STATUS AS WATERFOWL PARASITE: Rare, normally in charadriiform birds; reported once in wild duck.

DESCRIPTION: Clerc, 1902, 1903; Yamaguti, 1940; Spasskaïa, 1957.

Copy: Matevosian, 1963.

SYNONYMY:

Taenia megaloccephala Krabbe, 1869

Trichocephaloides megaloccephala (Krabbe, 1869) Clerc, 1902

Trichocephaloides inermis Sinitsin, 1896 - [Clerc, 1902]

Dilepis hamasigi Yamaguti, 1940

Lateriporus hamasigi (Yamaguti, 1940) Belopol'skaïa, 1953 - [Matevosian, 1963; Spasskaïa, 1957]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Charadriiformes - Calidris canutus, Crocethia alba, Erolia alpina, Erolia maritima, Erolia minuta, Erolia subminuta, Erolia temminckii, Erolia testacea, Larus canus, Limicola falcinellus, Philomachus pugnax, Tringa totanus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Primorsk, Yakutia, Kamchatka, Japan, Sakhalin).

Unciunia acapillicirrosa

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and once in domestic waterfowl.

STATUS AS SPECIES: Unciunia is synonym of Choanotaenia - Joyeux & Baer, 1961.

DESCRIPTION: Moghe, 1933. Copy: Matevosian, 1963.

SYNONYMY:

Unciunia acapillicirrosa Moghe, 1933

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "Anseriformes"
Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Valipora spasskyi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Diagonaliporus synonym of genus Trichocephaloides - Joyeux & Baer, 1961.

SYNONYMY:

Diagonaliporus spasskyi Krotov, 1951

Valipora spasskyi (Krotov, 1951) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis [Bucephala clangula - Ryzhikov, 1963a,
erroneous citation]

HABITAT: Small intestine.

DISTRIBUTION: Asia (Sakhalin).

Progynotaenia evaginata

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform

birds; reported once in wild duck.

DESCRIPTION: Fuhrmann, 1909.

SYNONYMY:

Progynotaenia evaginata Fuhrmann, 1909

Progynotaenia pauciannulata Baczynska, 1911, e.p. - [Baer, 1940]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Charadriiformes - Burhinus oedicephalus, Burhinus senegalensis

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Ukraine), Africa (Egypt, W. Africa).

Nematoparataenia brabantiae

STATUS AS WATERFOWL PARASITE: Rare; reported once from swans.

STATUS AS SPECIES: As in N. paradoxa, probably an Onchryocotyle sp. in abnormal host.

DESCRIPTION: Cotteleer & Schyns, 1961.

SYNONYMY:

Nematoparataenia brabantiae Cotteleer & Schyns, 1961

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus [olor?]

HABITAT: Small intestine.

DISTRIBUTION: Europe (Belgium).

Nematoparataenia paradoxa

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild waterfowl.

STATUS AS SPECIES: Probably an Onchryocotyle sp. in abnormal host - Heck, 1958a, 1958b.

DESCRIPTION: Maplestone & Southwell, 1922.

SYNONYMY:

Nematoparataenia paradoxa Maplestone & Southwell, 1922

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, [Cygnus olor - Lapage, 1961, erroneous citation]

Anatini - Anas platyrhynchos

HABITAT: Intestine.

DISTRIBUTION: Asia (Armenia SSR), Australia.

Nematoparataenia skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice from wild swan.

STATUS AS SPECIES: As in N. paradoxa, probably an Ophryocotyle sp. in abnormal host.

DESCRIPTION: Matevosian & Okorokov, 1959; Maksimova, 1963a.

SYNONYMY:

Nematoparataenia skrjabini Matevosian & Okorokov, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Kazakhstan).

Nematoparataenia southwelli

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times from wild swans and twice from captive waterfowl.

STATUS AS SPECIES: Probably an Ophryocotyle sp. in abnormal host - Heck, 1958a, 1958b.

DESCRIPTION: Fuhrmann, 1934, 1937.

SYNONYMY:

Nematoparataenia southwelli Fuhrmann, 1934

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagicus, Cygnus olor

HABITAT: Small intestine.

DISTRIBUTION: Europe (Sweden, Netherlands, England).

Polytestilepis chitinocloacis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Oshmarin, 1960. Copy: Spasskaïa, 1966.

SYNONYMY:

Polytestilepis chitinocloacis Oshmarin, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix galericulata

HABITAT: Intestine.

DISTRIBUTION: Asia (USSR - Primorsk).

Gastrotaenia cygni

STATUS AS WATERFOWL PARASITE: Common, although reported only 5 times in wild waterfowl. Pathology and mortality due to infection reported by Heck, 1958a, 1958b.

STATUS AS SPECIES: Neotenic larva as described for G. dogieli by Ginetsinskaiâ (1944); probably a Diorchis sp. in abnormal host and location - Heck, 1958a, 1958b. Product of "fimbriarization", probably of Hymenolepis liophallos - Lóvez-Neyra, 1943b.

DESCRIPTION: Wolfshügel, 1938; Heck, 1958a.

SYNONYMY:

Gastrotaenia cygni Wolffhügel, 1938

Apora dogieli Ginetsinskaja, 1944

Gastrotaenia dogieli (Ginetsinskaja, 1944) Spasskiĭ, 1958 - [Matevosian & Okorokov, 1959]; distinct, Czaplinski & Ryzhikov, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) [9 additional hosts listed by McDonald, 1965, due to synonymy with G. dogieli, or identification not verified]

Anserini - Cygnus atratus, Cygnus melanocoryphus

Anatini - Anas platyrhynchos, Anas acuta, Anas americana, Anas clypeata, Anas discors, Anas strepera, Anas versicolor

Aythiini - Aythya affinis

Mergini - Bucephala clangula, Clangula hyemalis

Oxyurini - Oxyura jamaicensis

HABITAT: Gizzard - under lining.

DISTRIBUTION: N. America (USA), S. America (Uruguay).

Gastrotaenia dogieli

STATUS AS WATERFOWL PARASITE: Frequent: reported 17 times in wild waterfowl, once in captive, and once in domestic ducks.

STATUS AS SPECIES: Neotenic larvae of Hymenolepididae - Ginetsinskaja, 1944; probably a Diorchis sp. in abnormal host and location, as with G. cygni - Heck, 1958a, 1958b. Synonym of G. cygni - Matevosian & Okorokov, 1959; maintained as distinct by Czaplinski & Ryzhikov, 1966.

DESCRIPTION: Ginetsinskaja, 1944, 1949a; Dubinina, 1954a; Matevosian & Okorokov, 1959. Copy: Spasskaja, 1966.

SYNONYMY:

Apora dogieli Ginetsinskaja, 1944

Gastrotaenia dogieli (Ginetsinskaja, 1944) Spasskiĭ, 1958

Gastrotaenia cygni Wolffhügel of Maksimova, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta peposaca, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca deglandi, Melanitta nigra, Mergus merganser

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Poland, USSR), Asia (W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Tuva, Tamyр, Yakutia, Kamchatka).

Gastrotaenia paracygni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and captive swans.

DESCRIPTION: Czapliński & Ryzhikov, 1966.

SYNONYMY:

Gastrotaenia paracygni Czapliński & Ryzhikov, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus cygnus, Cygnus olor

HABITAT: Proventriculus, more rarely gizzard (under lining).

DISTRIBUTION: Europe (Poland, USSR - Moscow Zoo).

Diplogynia oligorchis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Maplestone, 1922; Baer, 1925; Davis, 1944 (as Cittotaenia sandgroundi). Copy: Skrjabin & Matevosian, 1945

SYNONYMY:

Diploposthe laevis (Bloch) of Johnston, 1913 - [Maplestone, 1922]

Cotugnia oligorchis Maplestone, 1922

Diplogynia oligorchis (Maplestone, 1922) Baer, 1925

Cittotaenia sandgroundi Davis, 1944

Diplogynia sandgroundi (Davis, 1944) Davis, 1947 - [Spasskiĭ, 1949a, 1951a]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna arcuata, Dendrocygna javanica

HABITAT: Intestine.

DISTRIBUTION: Asia (Java), Australia.

Diploposthe laevis

STATUS AS WATERFOWL PARASITE: Very common, a characteristic helminth of waterfowl; reported 61 times in wild waterfowl, 6 times in domestic, and 4 times in captive waterfowl.

STATUS AS SPECIES: Considered a teratological form by Flores-Barroeta, 1955.

DESCRIPTION: Jacobi, 1897; Fuhrmann, 1900; Skrjabin, 1914c; Linton, 1927; Yamaguti, 1935b; Flores-Barroeta, 1955; Czapliński, 1956d; Bezubik, 1957a; Ryšavý, 1961b; Jarecka, 1961 (ova); Beverley-Burton, 1964. Copy: Skrjabin & Matevosian, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Fuhrmann, 1905.

Taenia laevis Bloch, 1782

Halysis laevis (Bloch, 1782) Zeder, 1803

Diploposthe laevis (Bloch, 1782) Jacobi, 1896

Drepanidotaenia laevis (Bloch, 1782) Clerc, 1903, lapsus

Taenia bifaria Siebold in Creplin, 1846

Cotugnia bifaria (Siebold, 1846) Diamare, 1893

Taenia tuberculata Kreffft, 1871

Ophryocotyle tuberculata (Kreffft, 1871) Blanchard, 1891

Taenia trichosoma Linstow, 1882

Hymenolepis trichosoma (Linstow, 1882) Yamaguti, 1959

Diploposthe lata Fuhrmann, 1900, nomen nudum

Diploposthe sui-generis Kowalewski, 1903 - Retained as distinct species by Jarecka, 1960b.

Diploposthe skrjabini Matevosian, 1942 - [Czapliński, 1956d]; synonym of D. sui-generis - [Jarecka, 1960b]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 14 days after ingestion by fresh-water copepod and ostracod crustacea; only two worms believed to mature per host. (Jarecka, 1956, 1958b, 1960a, 1960b, 1961; Ryšavý, 1964b)

INTERMEDIATE HOSTS: Acanthocyclops viridis [exper.], Macrocyclus albidus, Macrocyclus fuscus [exper.], Mesocyclops leuckartii, Cypriodopsis vidua [exper.], Heterocypris incongruens

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna arcuata

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides, Branta canadensis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas castanea, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Lapage, 1961, erroneous citation], Anas erythrorhynchos, Anas penelope, Anas querquedula, Anas rubripes (A. obscura), Anas strepera, Anas superciliosa

Aythiini - Aythya affinis, Aythya africana, Aythya americana, Aythya australis, Aythya baeri, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta erythrophthalma, Netta rufina

Mergini - Bucephala clangula, Melanitta nigra, Mergus albellus, Mergus serrator

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps cristatus, Podiceps grisegena

Ciconiiformes - Ardea sp.

Gruiformes - Fulica atra

Charadriiformes - Arenaria interpres

Passeriformes - Corvus corone

HABITAT: Small intestine.

DISTRIBUTION: Cosmopolitan. Europe, Asia, Africa, N. America, S. America, Australia.

Diploposthe mathevossianae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild waterfowl.

DESCRIPTION: Matevosîan, 1942 (as Diploposthe sp.); Ryšavý, 1961.
Copy: Spasskaîa, 1966.

SYNONYMY:

Diploposthe sp. Matevosîan, 1942 - placed in D. sui-generis by Jarocka, 1940

Diploposthe mathevossianae Ryšavý, 1961

LIFE CYCLE: Unknown; probably similar to that of D. laevis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya ferina

HABITAT: Small intestine.

DISTRIBUTION: Europe (Czechoslovakia), Asia (Azerbaijan).

Diploposthe sui-generis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild waterfowl.

STATUS AS SPECIES: Included as synonym of D. laevis by Fuhrmann, 1905; Czapliński, 1956d.

DESCRIPTION: Matevosian, 1942; Jarecka, 1960b. Copy: Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY: Jarecka, 1960b.

Diploposthe sui-generis Kowalewski, 1903

Diploposthe skrjabini Matevosian, 1942

Diploposthe sp. Matevosian, 1942

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 14 days after ingestion by fresh-water copepod and ostracod crustacea. Dioecious; only two worms, male and female, mature in final host. (Jarecka, 1958b, 1960b, 1961)

INTERMEDIATE HOSTS: Acanthocyclops viridis [exper.], Macrocylops albidus, Macrocylops fuscus [exper.], Mesocyclops leuckarti [exper.], Cyclocypris laevis [exper.], Cypridopsis vidua [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas penelope

Aythini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland, S. USSR), Asia (Azerbaijan, Uzbekistan, Tadzhikistan, Kazakhstan).

Fimbriaria amurensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in domestic ducks.

DESCRIPTION: Kotel'nikov, 1960; Petrochenko & Kotel'nikov, 1962b. Copy: Spasskaia, 1966.

SYNONYMY:

Fimbriaria amurensis Kotel'nikov, 1959, nomen nudum

Fimbriaria amurensis Kotel'nikov, 1960

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids

develop in fresh-water copepod crustacea 7-12 days after ingestion of eggs; mature in final host 9 days after ingestion of larvae. (Kotel'nikov, 1959b, 1960b; Petrochenko & Kotel'nikov, 1959a, 1959b, 1962b)

INTERMEDIATE HOSTS: Eucyclops serrulatus, Mesocyclops crassus [exper.], Mesocyclops leuckarti, Diaptomus sarsi, Cypridae [exper.]

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos (dom.)

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (USSR - Amur).

Fimbriaria fasciolaris

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 94 times in wild, 78 times in domestic, and 3 times in captive waterfowl. Frequently a cause of illness in ducks and geese - Sprehn, 1932.

STATUS AS SPECIES: Considered a teratological form of Hymenolepis tenuirostris and perhaps Diorchis acuminata by López-Neyra (1931a, 1931b, 1943a), produced by a process he calls "fimbriarization".

DESCRIPTION: Linton, 1892, 1927; Wolffhügel, 1898, 1900a; Bezubik, 1957a; Ryšavý, 1961b; Jarecka, 1961 (ova); Beverley-Burton, 1964. Copy: Skrjabin & Matevosian, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY:

Taenia anatis Müller, 1780
Taenia fasciolaris Pallas, 1781
Taenia anatis fasciolaris Gmelin, 1790
Fimbriaria fasciolaris (Pallas, 1781) Wolffhügel, 1899
Taenia malleus Goeze, 1782
Taenia anatis malleus Gmelin, 1790
Alyselminthus malleus (Goeze, 1782) Zeder, 1800
Fimbriaria malleus (Goeze, 1782) Froelich, 1802
Halysis malleus (Goeze, 1782) Zeder, 1803
Taenia trilineata Batsch, 1786
Fimbriaria mitra Froelich, 1802
Taenia pediformis Kreffft, 1871
Epision plicatus Linton, 1892
Notobothrium arcticum Linstow, 1905
Fimbriaria plana Linstow, 1905 - [Wolffhügel, 1936]; listed as distinct by Skrjabin & Matevosian, 1945; Yamaguti, 1959

LIFE CYCLE: Eggs with oncospheres passed in feces, in strings of 4-10 eggs; cysticercoids develop in 33 days at 10 C., 7 days at 24 C. after ingestion by fresh-water copepod and ostracod crustacea, also reported in amphipod crustacea; mature in 10-16 days after ingestion by final host. (Dobrokhotova, 1964, 1965; Garkavi, 1950a; Kotelnikov, 1965; Jarecka, 1958b, 1961; Mrazek, 1896; Neradová, 1967; Ryšavý, 1964b)

INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops vernalis, Acanthocyclops viridis, Cyclops gigas, Cyclops strenuus, Cyclops vicinus, Eucyclops serrulatus, Macrocyclus albidus, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides, Paracyclops fimbriatus, Diaptomus vulgaris, Cyclocypris laevis [exper.], Cypridopsis vidua [exper.], Physocypris fadeevi, Gammarus lacustris, Gammarus locusta, Gammarus maeoticus, Pontogammarus obesus, Cloeon dipterum [not verified experimentally]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides, Anser cygnoides (dom.), Anser erythrorus, Branta sandvicensis, Cygnus olor (dom.)

Tadornini - Alopochen aegyptiaca, Chloephaga picta, Chloephaga poliocephala, Cyanochen cyanoptera, Lophonetta specularioides, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, [Anas americana - Larage, 1961, erroneous], Anas castanea, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Larage, 1961, erroneous], Anas discors, Anas falcata, Anas formosa, Anas penelope, Anas poecilorhyncha, Anas punctata, Anas querquedula, Anas rubripes, Anas specularis, Anas strepera, Anas superciliosa, Anas versicolor

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Aythya vallisneria, Netta erythroptalma, Netta rufina

Cairinini - Amazonetta brasiliensis, Cairina moschata (dom.), Sarkidiornis melanotos

Mergini - Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Melanitta perspicillata, Mergus albellus, Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps cristatus

Pelecaniformes - Fhalacrocorax carbo

Falconiformes - Accipiter gentilis

Galliformes - Francolinus pintadeanus, Gallus gallus (dom.)

Gruiformes - Fulica atra

Charadriiformes - Erolia maritima, Haematopus ostralegus bachmani,

Larus canus

Ficiformes - Dendrocoptes medius

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Cosmopolitan.

Fimbriaria kubanika

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Kotel'nikov, 1965.

SYNONYMY:

Fimbriaria kubanika Kotel'nikov, 1965

LIFE CYCLE: Cysticercoids develop in fresh-water copepod and ostracod crustacea, in 7 days at 24 C. and in 31 days at 10 C.; mature in 10-11 days after ingestion by final host. (Kotel'nikov, 1965)

INTERMEDIATE HOSTS: Arctodiaptomus dentifer, Cyclops sp., Diaptomus mirus, Mesocyclops crassus, Mesocyclops leuckarti, Cypridae

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine probably.

DISTRIBUTION: Europe (S. Russia).

Fimbriariella falciformis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks; report in domestic duck in Brazil seems doubtful.

STATUS AS SPECIES: Considered a teratological form of Hymenolepis fruticosa by López-Neyra, 1943.

DESCRIPTION: Webster, 1943. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY: Webster, 1943.

Fimbriaria falciformis Linton, 1927, e.p.

Fimbriarioides falciformis (Linton, 1927) Fuhrmann, 1932, e.p.

Fimbriariella falciformis (Linton, 1927) Wolffhügel, 1936, e.p.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Cairinini - Cairina moschata (dom.) - doubtful]

Mergini - Clangula hyemalis, Melanitta fusca deglandi

HABITAT: Intestine.

DISTRIBUTION: N. America (USA), [S. America (Brazil) - doubtful].

Fimbriarioides intermedia

STATUS AS WATERFOWL PARASITE: Frequent; reported 9 times in wild, once in domestic, and once in captive waterfowl.

DESCRIPTION: Fuhrmann, 1913; Belopol'skaia, 1952b; Schiller, 1955a; Jarecka, 1961 (ova). Copy: Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Fimbriaria intermedia Fuhrmann, 1913

Fimbriarioides intermedia (Fuhrmann, 1913) Fuhrmann, 1932

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 14 days after ingestion by fresh-water copepod and ostracod crustacea, reported probably in cirriped crustacea; mature in final host after ingestion. (Belopol'skaia, 1953; Jarecka, 1958b, 1961)

INTERMEDIATE HOSTS: Acanthocyclops viridis, Eucyclops serrulatus, Macrocyclops albidus, Macrocyclops fuscus [exper.], Cyclocypris laevis, Cypridopsis vidua [exper.], Balanus balanoides (?)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons

Tadornini - Cereopsis novae-hollandiae

Anatini - Anas platyrhynchos (dom.)

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya fuligula, Aythya nyroca, Netta rufina

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Europe (N. Europe, Moldavia), Asia (Azerbaijan, Uzbekistan, India - Zoological Garden), N. America (USA - Alaska, Canada).

Fimbriarioides lintoni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Webster, 1943.

SYNONYMY: Webster, 1943.

Fimbriaria falciformis Linton, 1927, e.p.

Fimbriarioides falciformis (Linton, 1927) Fuhrmann, 1932, e.p.

Fimbriariella falciformis (Linton, 1927) Wolffhügel, 1936, e.p.

Fimbriarioides lintoni Webster, 1943

LIFE CYCLE: Unknown; probably similar to that of F. intermedia.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anatini - Anas americana - Lapage, 1961, erroneous citation]

Mergini - Clangula hyemalis, Melanitta fusca deglandi, Melanitta perspicillata

Gruiiformes - Fulica americana

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Skrjabinoparaksis tatianae

STATUS AS WATERFOWL PARASITE: Infrequent: reported 6 times in wild ducks.

DESCRIPTION: Krotov, 1949; Dubinina, 1954a; Maksimova, 1963a. Copy: Spasskaïa, 1966.

SYNONYMY:

Skrjabinoparaksis tatianae Krotov, 1949

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas clypeata

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Asia (W. Siberia, Kazakhstan, Sakhalin).

Aploparaksis birulai

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Linstow, 1905a; Spasskaïa, 1965. Copy: Skrjabin & Matevosian, 1945; Spasskii, 1963; Spasskaïa, 1966.

SYNONYMY:

Aploparaksis birulai Linstow, 1905

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri, Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya marila

Mergini - Clangula hyemalis

HABITAT: Small intestine.

DISTRIBUTION: Europe (Iceland), Asia (Tamy, Yakutia, Kamchatka, Chukotka).

Aploparaksis fuligulosa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Insufficiently described; Spasskii (1963) recommends removal from list of valid species.

DESCRIPTION: Solov'ev, 1911a; Jarecka, 1961 (ova). Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Aploparaksis fuligulosa Solov'ev, 1911

Haploparaxis fuliginosa Solowiow of Fuhrmann, 1932, lapsus

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca

Aythiini - Aythya ferina, Aythya fuligula

Gruiformes - Fulica atra

HABITAT: Intestine.

DISTRIBUTION: Europe.

Aploparaksis furcigera

STATUS AS WATERFOWL PARASITE: Very common, characteristic for waterfowl; reported 66 times in wild, 16 times in domestic, and twice in captive waterfowl. Pathology of infection described by Šlais, 1961.

DESCRIPTION: Skrjabin, 1914c; Gasowska, 1931; Baer, 1956; Czapliński, 1956d; Ablasov, 1957; Bezubik, 1957a; Jarecka, 1961 (ova); Macko, 1961b; Spasskaia, 1961b; Spasskiĭ, 1963; Beverley-Burton, 1964.
Copy: Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY:

Taenia furcigera Nitzsch in Rudolphi, 1819
Dicranotaenia furcigera (Nitzsch, 1819) Stiles, 1896
Diplacanthus (Dilepis) furcigera (Nitzsch, 1819) Cohn, 1899
Hymenolepis furcigera (Nitzsch, 1819) Railliet, 1899
Hymenolepis (Drepanidotaenia) furcigera (Nitzsch, 1819) of Cohn, 1901
Aploparaksis furcigera (Nitzsch, 1819) Fuhrmann, 1908
Taenia lineata Bloch, 1779
Taenia anatis lineata Gmelin, 1790
Taenia longirostris Froelich, 1803, not Rudolphi, 1819
Taenia trilineata Batsch of Rudolphi, 1819
Taenia rhomboidea Dujardin, 1845
Dicranotaenia rhomboidea (Dujardin, 1845) Railliet, 1893
Aploparaksis rhomboidea (Dujardin, 1845) Linstow, 1905
Taenia conica Molin, 1858
Taenia caecalis Geibel, 1866
Aploparaksis pseudofurcigera Matevosian in Skrjabin & Matevosian, 1945 - [Czapliński, 1956d; Spasskaia, 1961b]
Haploparaxis japonensis Yamaguti, 1935 - [Baer, 1956; Ablasov, 1957; Spasskiĭ & Freze, 1961]

LIFE CYCLE: Eggs with onchospheres passed in feces in packets of 2-9; cysticercoids develop in 19 days after ingestion by fresh-water oligochaetes; mature in final host 18 days after ingestion. (Gässlein, 1954; Harper, 1930; Jarecka, 1960a; Karmanova, 1962)

INTERMEDIATE HOSTS: Limnodrilus sp. [exper.], Lumbricus variegatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Lophonetta specularioides, Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Lapage, 1961, erroneous], Anas discors, Anas falcata, Anas

formosa, Anas penelope, Anas poecilorhyncha, Anas querquedula,
Anas rubripes, Anas strepera
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya
nyroca, Netta rufina
Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca
deglandi, Mergus albellus, Mergus merganser
Podicipediformes - Podiceps ruficollis
Gruiformes - Fulica atra

HABITAT: Small intestine, large intestine, ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kazakhstan,
Tamy, Yakutia, Amur, Primorsk, Kamchatka, Japan), N. America (USA).

Aploparaksis groenlandica

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild
ducks.

DESCRIPTION: Baer, 1956; Spasskiĭ & ĭurpalova, 1966b. Copy: Hughes,
1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Taenia groenlandica Krabbe, 1869
Diplacanthus (Dilepis) groenlandica (Krabbe, 1869) Cohn, 1899
Hymenolepis groenlandica (Krabbe, 1869) Railliet, 1899
Drepanidotaenia groenlandica (Krabbe, 1869) Cohn, 1901
Hymenolepis (Hymenolepis) groenlandica (Krabbe, 1869) of Sprehn, 1932
Dicranotaenia (Dicranotaenia) groenlandica (Krabbe, 1869) L6pez-Neyra,
1942
Haploparaksis groenlandica (Krabbe, 1869) Baer, 1956
Haploparaksis polystictae Schiller, 1955 - [Baer, 1962]

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya marila

Mergini - Clangula hyemalis

HABITAT: Intestine, ceca.

DISTRIBUTION: Iceland, Asia (Yakutia, Kamchatka), N. America (Green-
land).

Aploparaksis murmanica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Not in genus Aploparaksis - Spasskii, 1963.

DESCRIPTION: Baylis, 1919. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Aploparaksis murmanica Baylis, 1919

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Europe (USSR - Murman Coast).

Aploparaksis polystictae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of A. groenlandica - Baer, 1962.

DESCRIPTION: Schiller, 1955a. Copy: Spasskii, 1963.

SYNONYMY:

Haploparaksis polystictae Schiller, 1955

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri, Somateria fischeri, Somateria spectabilis

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Asia (Chukotka), N. America (USA - Alaska).

Aploparaksis veitchi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Species inquirenda, cannot be in Aploparaksis, in Diorchis or Microsomacanthus depending upon number of testes - Spasskii & Freze, 1961.

DESCRIPTION: Baylis, 1934a. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Aploparaksis veitchi Baylis, 1934

LIFE CYCLE: Unknown; probably similar to that of A. furcigera.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas discors, Anas gibberifrons, Anas strepera

Mergini - Mergus sp.

HABITAT: Intestine.

DISTRIBUTION: Europe (Lithuania), N. America (USA), Australia.

Diorchis acicula-sinuata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, in 1909.

STATUS AS SPECIES: Insufficiently described - Joyeux & Baer, 1936a.
Species inquirenda - Spasskiĭ, 1963.

DESCRIPTION: Rosseter, 1909a. Copy: Schultz, 1940; Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis acicula-sinuata Rosseter, 1909

Diorchis acicula-sinuata (Rosseter, 1909) Schultz, 1940

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, [Anas platyrhynchos (dom.) - listed by López-Neyra, 1942, original record not found]

HABITAT: Small intestine.

DISTRIBUTION: Europe (England).

Diorchis acuminata

STATUS AS WATERFOWL PARASITE: Frequent; reported 19 times in wild ducks.

STATUS AS SPECIES: Original description probably included two forms, D. acuminata and D. ransomi - Rybicka, 1957.

DESCRIPTION: Clerc, 1903. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Kurashvili, 1957; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Drepanidotaenia acuminata Clerc, 1902

Taenia acuminata (Clerc, 1902) Clerc, 1903, lapsus

Diorchis acuminata (Clerc, 1902) Clerc, 1903

Hymenolepis acuminata (Clerc, 1902) Fuhrmann, 1906

Diorchis (Nudiorchis) acuminata (Clerc, 1902) of Skrjabin & Matevosian, 1945

Diorchis (Diorchis) acuminata (Clerc, 1902) of Spasskiĭ, 1952

Fimbriaria fasciolaris (Pallas, 1781) Wolffhügel, 1899, p.p. monstro-
siad - [Lórez-Neyra, 1931b, 1944]

Fimbriaria plana Linstow, 1905 - [Lórez-Neyra, 1944]

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, [Anas clypeata, Anas falcata - reported in Spasskaia, 1961; forms transferred to D. spasskajae], Anas crecca, Anas crecca carolinensis, Anas penelope, Anas querquedula, Anas strepera, [Anas superciliosa - Lapage, 1961, erroneous citation]

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila

[Gruiformes - Fulica atra - questionable, Skrjabin & Matevosian, 1945; Rybicka, 1957; Fulica americana - Skrjabin, 1914c, error]

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Armenia, Uzbekistan, Tadzhikistan, Kirgizia, Sakhalin), N. America (USA, USA - Alaska).

Diorchis anivi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Krotov, 1953 (thesis). Copy: Spasskaia, 1966.

SYNONYMY:

Diorchis anivi Krotov in Spasskaia, 1966

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya marila

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Sakhalin).

Diorchis anomala

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Schmelz, 1941. Copy: Spasskiĭ, 1963.

SYNONYMY:

Diorchis anomala Schmelz, 1941

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas sp.

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (China).

Diorchis arsenjevi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Oshmarin, 1959b. Copy: Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Skrjabinoparaksis arsenjevi Oshmarin, 1959
Diorchis arsenjevi (Oshmarin, 1959) Spasskiĭ, 1963

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya marila

HABITAT: Intestine.

DISTRIBUTION: Asia (USSR - Primorsk).

Diorchis asiatica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Spasskaïa, 1961 (as D. danutae). Copy: Spasskiï, 1963; Spasskaïa, 1966.

SYNONYMY:

Diorchis danutae Czapliński of Spasskaïa, 1961

Diorchis danutae asiatica Spasskiï, 1963

Diorchis asiatica (Spasskiï, 1963) Spasskaïa, 1966

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas falcata, Anas penelope, Anas strepera

HABITAT: Small intestine.

DISTRIBUTION: Asia (USSR - Tuva).

Diorchis bulbodes

STATUS AS WATERFOWL PARASITE: Frequent; reported 11 times in wild ducks and twice in domestic ducks.

DESCRIPTION: Mayhew, 1929; Flores-Barroeta, 1955. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Kurashvili, 1957; Spasskiï, 1963; Spasskaïa, 1966.

SYNONYMY:

Diorchis bulbodes Mayhew, 1929

Diorchis (Nudiorchis) bulbodes (Mayhew, 1929) of Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown; probably similar to that of D. nyrocae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anserini - Anser sp. - Lapage, 1961, erroneous citation]

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix sponsa

Mergini - Melanitta fusca

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe (Czechoslovakia, Esthonia, Ukraine), Asia (Azerbaijan, Kirgizia, Yakutia), N. America (Mexico, USA).

Diorchis danutae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Czapliński, 1956d. Copy: Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis (Nudiorchis) danutae Czapliński, 1956

LIFE CYCLE: Unknown; probably similar to that of D. nyrocae.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anatini - Anas falcata, Anas penelope, Anas strepera - Spasskaia, 1961; forms transferred to D. asiatica]

Aythini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland, USSR - Kaliningrad), Asia (Kazakhstan).

Diorchis diorchis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Fuhrmann, 1913; Baer, 1962. Copy: Hughes, 1941a; Skrzjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis diorchis Fuhrmann, 1913

Weinlandia diorchis (Fuhrmann, 1913) Mayhew, 1925

Microsomacanthus diorchis (Fuhrmann, 1913) López-Neyra, 1942

Diorchis diorchis (Fuhrmann, 1913) Baer, 1962

Diorchis ransomi Schultz, 1940 - [Baer, 1962]

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas penelope

Somateriini - Somateria mollissima

Mergini - Clangula hyemalis

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Europe (Iceland, England, Sweden, Murmansk).

Diorchis donis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Cannot be clearly separated from several other species, near D. nyrocae - Spasskiĭ, 1963.

DESCRIPTION: Azhinov, 1960a. Copy: Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Diorchis (Diorchis) donis Azhinov, 1960

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Europe (S. Russia).

Diorchis elisae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Near or identical with D. nyrocae - Spasskiĭ, 1963.

DESCRIPTION: Skrjabin, 1914c; Cooper, 1921 (?); Czapliński, 1956d.
Copy: Skrjabin & Matevosĭan, 1945; Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Aploparaksis elisae Skrjabin, 1914

Diorchis elisae (Skrjabin, 1914) Spasskiĭ & Freze, 1961

Diorchis nyrocae Yamaguti, 1935 - [Spasskaĭa, 1966]

Diorchis skrjabini Udintzev, 1937 - [Spasskaĭa, 1966]

Diorchis abuladze Krotov, 1949 - [Spasskaĭa, 1966]

Aploparaksis stefanskii Czapliński, 1955 - [Spasskaĭa, 1966]

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya ferina, Aythya nyroca, [Netta rufina - Lapage, 1961, erroneous]

Passeriformes - Passerella iliaca (?)

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland), Asia (Kazakhstan), N. America (Canada)(?).

Diorchis endacantha

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

STATUS AS SPECIES: Synonym of D. inflata - Spasskaïā, 1966.

DESCRIPTION: Dubinina, 1954a. Copy: Spasskiĭ, 1963.

SYNONYMY:

Aploparaksis endacantha Dubinina, 1954

Skrjabinoparaksis endacantha (Dubinina, 1954) Oshmarin, 1959

Diorchis endacantha (Dubinina, 1954) Spasskiĭ, 1963

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata

Aythyini - Aythya fuligula

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (Czechoslovakia), Asia (W. Siberia, Kazakhstan).

Diorchis excentricus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

STATUS AS SPECIES: Near or identical with D. nyrocae - Spasskiĭ, 1963.

DESCRIPTION: Mayhew, 1925; Dubinina, 1954a. Copy: Schultz, 1940;

Skrjabin & Matevosian, 1945; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis excentricus Mayhew, 1925

Diorchis (Nudiorchis) excentricus Mayhew, 1925 of Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya affinis, Aythya fuligula

Oxyurini - Oxyura jamaicensis, Oxyura leucocephala

HABITAT: Large intestine.

DISTRIBUTION: Asia (Azerbaijan, W. Siberia), N. America (USA).

Diorchis flavescens

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

STATUS AS SPECIES: Forms identified as D. flavescens from Asia and North America are D. inflata - Spasskiĭ, 1963.

DESCRIPTION: Johnston, 1912b. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Taenia flavescens Kreffft, 1871

Diorchis flavescens (Kreffft, 1871) Johnston, 1912

Diorchis (Diorchis) flavescens (Kreffft, 1871) of Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae) [8 additional hosts listed by McDonald, 1965; forms transferred to D. inflata]

Dendrocygnini - Dendrocygna arcuata

Anatini - Anas castanea, Anas gibberifrons, Anas rhynchotis, Anas superciliosa

Aythiini - Aythya australis

HABITAT: Intestine.

DISTRIBUTION: Australia, New Zealand.

Diorchis formosensis

STATUS AS WATERFOWL PARASITE: Frequent; reported 5 times in wild ducks and 6 times in domestic ducks.

DESCRIPTION: Sugimoto, 1934a. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis formosensis Sugimoto, 1934

Diorchis (Diorchis) formosensis Sugimoto, 1934 of Skrjabin & Matevosian, 1945

Diorchis (Acanthodiorchis) formosensis Sugimoto, 1934 of Vasil'ev, 1959

Diorchis tshanensis Krotov, 1949 - [Spasskiĭ, 1963]

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca, Anas strepera

HABITAT: Ceca, small intestine - duodenum.

DISTRIBUTION: Europe (Belorussia), Asia (W. Siberia, Uzbekistan, Kirgizia, Primorsk, Taiwan).

Diorchis inflata

STATUS AS WATERFOWL PARASITE: Frequent; reported 18 times in wild ducks, once in domestic waterfowl; also frequent in gnuiform birds.

DESCRIPTION: Dubinina, 1954a; Czapliński, 1956d; Bezubik, 1957a; Rybicka, 1957; Jarecka, 1961 (ova); Spasskiĭ, 1963. Copy: Schultz, 1940; Spasskaia, 1966.

SYNONYMY: Schultz, 1940.

Taenia fulicarum Gmelin, 1790

Halysis fulicarum (Gmelin, 1790) Zeder, 1803

Taenia serpentiformis fulicarum (Gmelin, 1790) Rudolphi, 1810

Taenia fulicae Rudolphi, 1810

Taenia inflata Rudolphi, 1819

Diplacanthus (Dilepis) inflata (Rudolphi, 1819) Cohn, 1899

Drepanidotaenia inflata (Rudolphi, 1819) Parona, 1899

Hymenolepis inflata (Rudolphi, 1819) Railliet, 1899

Hymenolepis (Drepanidotaenia) inflata (Rudolphi, 1819) of Cohn, 1901

Diorchis inflata (Rudolphi, 1819) Fuhrmann, 1932

Diorchis (Nudiorchis) inflata (Rudolphi, 1819) of Skrjabin & Matevosian, 1945
Diorchis (Diorchis) inflata (Rudolphi, 1819) of Dubinina, 1954
Diorchis americana Ransom, 1909 - [Spasskiĭ, 1963]
Diorchis americana var. turkestanica Skrjabin, 1914
Diorchis (Diorchis) turkestanica (Skrjabin, 1914) Skrjabin & Matevosian, 1945 - [Spasskiĭ, 1963]
Aploparaksis endacantha Dubinina, 1954 - [Spasskaia, 1966]
Diorchis stefanskii Czaplinski, 1956 - [Spasskiĭ, 1962]
Diorchis (Nudiorchis) longicirrosa Meggitt of Ginetsinskaiā, 1952 - [Spasskiĭ, 1963]
Diorchis flavescens (Kreffft) of Ablasov; Ryzhikov; et al.; in Eurasia and N. America - [Spasskiĭ, 1963]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 18 days after ingestion by fresh-water ostracod crustacea; mature in final host after ingestion. (Jarecka, 1958b, 1960a, 1961; Neradová, 1967; Rybicka, 1957; Ryšavý, 1964b)

INTERMEDIATE HOSTS: Cyclocypris laevis, Cypridopsis vidua, Diaptomus vulgaris, Eucypris sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas clypeata, Anas crecca, Anas formosa, Anas rubripes, Anas strepera

Somateriini - Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, [Netta rufina - Lapage, 1961 & Spasskiĭ, 1963, erroneous citations]

Cairinini - Cairina moschata

Mergini - Clangula hyemalis

Fodicipediformes - Podiceps cristatus

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica americana, Fulica atra, Gallinula chloropus

Passeriformes - Dendrocitta sp.

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Tamyр, India, Kamchatka), Africa (Egypt), N. America (USA, West Indies).

Diorchis jacobii

STATUS AS WATERFOWL PARASITE: Accidental, normally in Fulica; reported in wild ducks.

STATUS AS SPECIES: Validity doubtful, probably D. ransomi - Rybicka, 1957.

DESCRIPTION: Jacobi, 1898; Clerc, 1903. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskii, 1963.

SYNONYMY:

Taenia inflata Rudolphi of Jacobi, 1898

Diorchis inflata (Rudolphi) of Clerc, 1903

Diorchis jacobii Fuhrmann, 1932

Diorchis (Nudiorchis) jacobii Fuhrmann, 1932 of Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, Anas querquedula

Gruiformes - Fulica atra

HABITAT: Intestine.

DISTRIBUTION: Europe.

Diorchis kodonodes

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mayhew, 1929. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskii, 1963.

SYNONYMY:

Diorchis kodonodes Mayhew, 1929

Diorchis (Nudiorchis) kodonodes Mayhew, 1929 of Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas discors, [Anas querquedula - Gower, 1930 & Spasskii, 1963, error]

[Charadriiformes - Micropalama himantopus (?)]

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Diorchis lintoni

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Linton, 1927. Copy: Spasskiĭ, 1963.

SYNONYMY:

Diorchis acuminata Clerc of Linton, 1927

Diorchis lintoni Johri, 1939

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya americana [Aythya ferina americana - Spasskiĭ, 1963, error]

HABITAT: Not given, probably small intestine.

DISTRIBUTION: N. America (USA).

Diorchis longicirrosa

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Inadequately described, validity very doubtful - Fuhrmann, 1932; Joyeux & Baer, 1936a. Species inquirenda - Spasskiĭ, 1963; species dubia, doubtfully in genus Diorchis - Spasskaĭa, 1966.

DESCRIPTION: Meggitt, 1927b; Mahon, 1958. Copy: Schultz, 1940; Skrjabin & Matevosĭan, 1945; Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Diorchis longicirrosa Meggitt, 1927

Diorchis (Nudiorchis) longicirrosa Meggitt, 1927 of Skrjabin & Matevosĭan, 1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca [Anas crecca carolinensis - Lapage, 1961; Anas discors - Spasskiĭ, 1963; erroneous citations]

Gruiformes - Fulica atra

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Europe (USSR), Africa (Egypt).

Diorchis longiovum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Schiller, 1953. Copy: Spasskiĭ, 1963.

SYNONYMY:

Diorchis longiovum Schiller, 1953

Diorchis (Diorchis) longiovum Schiller, 1953 of Czapliński, 1956

Schillerius longiovum (Schiller, 1953) Yamaguti, 1959

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA - Alaska).

Diorchis markewitschi

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Species inquirenda - Spasskiĭ, 1963.

DESCRIPTION: Pashchenko, 1952a. Copy: Shevtsov & Zaskind, 1960;
Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Diorchis (Diorchis) markewitschi Pashchenko, 1952

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe (USSR).

Diorchis mathevossianae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Species inquirenda - Spasskiĭ, 1963.

DESCRIPTION: Krotov, 1949. Copy: Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Diorchis (Diorchis) mathevossianae Krotov, 1949

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya ferina

Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia).

Diorchis microcirrosa

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Mayhew, 1929. Copy: Schultz, 1940; Skrjabin & Matevosĭan, 1945; Spasskiĭ, 1963.

SYNONYMY:

Diorchis microcirrosa Mayhew, 1929

Diorchis (Nudiorchis) microcirrosa Mayhew, 1929 of Skrjabin & Matevosĭan, 1945

Diorchis nyrocae Yamaguti, 1935 - [Baer, 1962]

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas discors, [Anas querquedula - Gower, 1939, & Spasskiĭ, 1963; error]

HABITAT: Not given, probably small intestine.

DISTRIBUTION: N. America (USA).

Diorchis nyrocae

STATUS AS WATERFOWL PARASITE: Very common; reported 38 times in wild, 13 times in domestic, and once in captive waterfowl.

STATUS AS SPECIES: Synonym of D. microcirrosa - Baer, 1962; synonym of D. elisae - Spasskiĭ & Freze, 1961; Spasskaia, 1966.

DESCRIPTION: Yamaguti, 1935b; Dubinina, 1954a; Czapliński, 1956d; Jarecka, 1961 (ova); Macko, 1961b; Ryšavý, 1961b; Spasskaia, 1961b; Belokobylenko, 1962; Spasskiĭ, 1963; Beverley-Burton, 1964. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945.

SYNONYMY:

Diorchis nyrocae Yamaguti, 1935

Diorchis (Diorchis) nyrocae Yamaguti, 1935 of Skrjabin & Matevosian, 1945

Diorchis skrjabini Udintzev, 1937 - [Dubinina, 1954a; Czapliński, 1956d; Ryšavý, 1961]

Schillerius skrjabini (Udintzev, 1937) Yamaguti, 1959

Diorchis (Diorchis) abuladze Krotov, 1949 - [Dubinina, 1954a; Czapliński, 1956d; Ryšavý, 1961]

Haploparaxis stefanskii Czapliński, 1955 - [Spasskiĭ, 1962, 1963]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 15 days after ingestion by fresh-water ostracod and copepod crustacea; mature in final host after ingestion. (Jarecka, 1956, 1958b, 1960a, 1961; Ryšavý, 1964b)

INTERMEDIATE HOSTS: Cyclocypris laevis, Cypridopsis vidua, Dolerocypris fasciatus, Notodromas monacha, Diantomus vulgaris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Chloephaga poliocephala, Lophonetta specularioides, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas angustirostris, Anas clypeata, Anas crecca, Anas discors, Anas luzonica, Anas poecilorhyncha, Anas querquedula, Anas strepera

Aythiini - Aythya australis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta erythrophthalma, Netta rufina

Cairinini - Cairina hartlaubi

HABITAT: Ceca, small intestine - middle region, large intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Armenia, Uzbekistan, Kirgizia, Kazakhstan, Tuva, Mongolia, Amur, Primorsk, Japan, Sakhalin), N. America (USA).

Diorchis nyrocoides

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Spasskaia, 1961b; Spasskiĭ & Īurpalova, 1966b. Copy: Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis nyrocoides Spasskaia, 1961

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (USSR - Tuva, Tamyra, Yakutia).

Diorchis ransomi

STATUS AS WATERFOWL PARASITE: Common; reported 28 times in wild ducks, once in domestic duck. Frequently found in gruiform birds also.

STATUS AS SPECIES: Synonym of D. diorchis - Baer, 1962.

DESCRIPTION: Ransom, 1909; Dubinina, 1954a; Czapliński, 1956d; Bezubik, 1957a; Rybicka, 1957; Jarecka, 1961 (ova); Ryšavý, 1961b; Beverley-Burton, 1964; Spasskaia, 1965. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis acuminata Clerc of Ransom, 1909

Diorchis ransomi Johri, 1939; and Schultz, 1940

Diorchis (Diorchis) ransomi Johri, 1939 of Skrjabin & Matevosian, 1945

Diorchis parvogenitalis Matevosian, 1945 - [Spasskiĭ & Bobova, 1962b; Spasskiĭ, 1963]

Schillerius parvogenitalis (Matevosian, 1945) Yamaguti, 1959

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 15 days after ingestion by fresh-water ostracod and copepod crustacea; mature in final host after ingestion. (Jarecka, 1956, 1958b, 1960a, 1961; Rybicka, 1957, 1958; Ryšavý, 1964b)

INTERMEDIATE HOSTS: Cyclocypris laevis, Cyclocypris ovum, Cypridopsis vidua, Dolerocypris fasciata, Notodromas monacha, Diaptomus caeruleus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas penelope, Anas querquedula, Anas strepera

Aythiini - Aythya americana, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca

Oxyurini - Oxyura leucocephala

HABITAT: Small intestine - middle region.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Uzbekistan, Kirgizia, Kazakhstan, Tuva, Yakutia, Amur, Kamchatka, Sakhalin), N. America (USA).

Diorchis sobolevi

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice from wild ducks and once in domestic duck.

DESCRIPTION: Spasskaia, 1950; Spasskiĭ & Turpalova, 1966b. Copy: Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis sobolevi Spasskaia, 1950

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas penelope, Anas strepera

Gruiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Europe (Ukraine), Asia (W. Siberia, Kirgizia, Yakutia).

Diorchis spasskajae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Spasskaia, 1961 (as D. acuminata). Copy: Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis acuminata Clerc of Spasskaïa, 1961
Diorchis spasskajae Spasskiï, 1963

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas falcata

Aythini - Aythya fuligula

HABITAT: Small intestine.

DISTRIBUTION: Asia (USSR - Tuva).

Diorchis spinata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks.

DESCRIPTION: Mayhew, 1929; Czapliński, 1956^d. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskiï, 1963; Spasskaïa, 1966.

SYNONYMY:

Diorchis spinata Mayhew, 1929

Diorchis (Nudiorchis) spinata Mayhew, 1929 of Skrjabin & Matevosian,
1945

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas acuta, Anas americana, Anas clypeata, Anas crecca, Anas penelope, Anas strepera

Podicipediformes - Fodiceps ruficollis

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland, USSR), Asia (Uzbekistan, Kirgizia, Kazakhstan), N. America (USA).

Diorchis spiralis

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Cannot be in Diorchis, some characters of Sobolevianthus - Spasskiï, 1963.

DESCRIPTION: Szpotanska, 1931. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945.

SYNONYMY:

Diorchis spiralis Szpotanska, 1931

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Australia.

Diorchis stefanskii

STATUS AS WATERFOWL PARASITE: Common; reported 8 times in wild, 16 times in domestic, and twice in captive waterfowl.

STATUS AS SPECIES: Synonym of D. inflata - Spasskiĭ, 1962.

DESCRIPTION: Czapliński, 1956d; Jarecka, 1961 (ova); Belokobylenko, 1962; Beverley-Burton, 1964; Gräfner, 1964. Copy: Shevtsov & Zaskind, 1960; Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Diorchis (Diorchis) stefanskii Czapliński, 1956

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop experimentally in fresh-water copepod and ostracod crustacea; development was so slow that the species used were not regarded as the true intermediate hosts; mature in final host after ingestion. (Jarecka, 1956, 1958b, 1960a, 1961)

INTERMEDIATE HOSTS: Cyclocypris ovum [exper.], Cypridopsis vidua [exper.], Dolerocypris fasciata [exper.], Notodromas monacha, Macrocyclus fuscus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (com.)

Tadornini - Cyanochen cyanopterus, Lophonetta specularioides,
Neochen jubatus

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas cyanoptera, Anas georgica, Anas penelope, Anas strepera

Aythiini - Aythya affinis, Aythya australis, Aythya ferina, Aythya

novae-seelandiae, Aythya nyroca, Netta rufina
Cairinini - Chenonetta jubata
Mergini - Melanitta nigra
Oxyurini - Oxyura leucocephala

HABITAT: Small intestine - posterior region, large intestine.

DISTRIBUTION: Europe, Iceland, Asia (Kazakhstan).

Diorchis tuvensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Spasskaïa, 1961 (as D. parvogenitalis); Tolkacheva, 1966. Copy: Spasskiï, 1963; Spasskaïa, 1966.

SYNONYMY:

Diorchis parvogenitalis Matevosian of Spasskaïa, 1961
Diorchis tuvensis Spasskiï, 1963.

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Aythiini - Aythya fuligula, Aythya marila

Mergini - Clangula hyemalis

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tuva, Tamy, Kamchatka).

Diorchis vigisi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Krotov, 1949. Copy: Spasskiï, 1963; Spasskaïa, 1966.

SYNONYMY:

Diorchis (Diorchis) vigisi Krotov, 1949

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Uzbekistan).

Diorchis wigginsi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Near or identical with D. nyrocae - Spasskiĭ, 1963; probably a synonym of D. acuminata - Baer, 1962.

DESCRIPTION: Long & Wiggins, 1939. Copy: Schultz, 1940; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Diorchis nyrocae Long & Wiggins, 1939, not Yamaguti, 1935

Diorchis wigginsi Schultz, 1940

Diorchis (Diorchis) wigginsi Schultz, 1940 of Skrjabin & Matevosian,
1945

Diorchis longae Schmelz, 1941

LIFE CYCLE: Unknown; probably similar to that of D. inflata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, [Anas querquedula - Spasskiĭ, 1963, original
citation not found]

Aythini - Aythya vallisneria

HABITAT: Small intestine.

DISTRIBUTION: Europe (Tatar ASSR), N. America (USA).

Hymenofimbria merganseris

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks, in 1914 and 1964.

STATUS AS SPECIES: Regarded as teratological form of Hymenolepis creplini by López-Neyra, 1931a, 1945a; synonym of Hymenolepis aequabilis - Spasskiĭ, 1962. Probably based on immature and contracted specimen, separateness doubtful, cannot be H. creplini - Czapliński, 1967.

DESCRIPTION: Skrjabin, 1914c. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenofimbria merganser Skrjabin, 1914

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Kazakhstan, Mongolia).

Microsomacanthus abortiva

Hymenolepis abortiva

STATUS AS WATERFOWL PARASITE: Common; reported 24 times in wild and 4 times in domestic waterfowl.

DESCRIPTION: Linstow, 1904a; Fuhrmann, 1913; Czapliński, 1956d; Beverley-Burton, 1959, 1964; Jarecka, 1961 (ova); Spasskaïa & Spasskiï, 1961. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaïa, 1966.

SYNONYMY:

Taenia abortiva Linstow, 1904

Hymenolepis abortiva (Linstow, 1904) Linstow, 1905

Weinlandia abortiva (Linstow, 1904) Mayhew, 1925

Hymenolepis (Hymenolepis) abortiva (Linstow, 1904) of Sprehn, 1932

Microsomacanthus abortiva (Linstow, 1904) Lónez-Neyra, 1942

Abortilepis abortiva (Linstow, 1904) Yamaguti, 1959

Microsomacanthus (Abortilepis) abortivus (Linstow, 1904) of Spasskiï, 1962

Taenia voluta Linstow, 1904, lapsus

Hymenolepis voluta (Linstow, 1904) Fuhrmann, 1924

Hymenolepis upsilon Rosseter, 1911 - [Fuhrmann, 1924]

LIFE CYCLE: Eggs with onchospheres passed in feces, in strings or packets; cysticercoids develop in fresh-water amphipod crustacea; mature in final host after ingestion. (Jarecka, 1960a, 1961; Shtein, 1959)

INTERMEDIATE HOSTS: Gammarus pulex

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata

Aythiini - Aythya ferina, Aythya fuligula

Cairinini - Cairina moschata (dom.)

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus, Mergus serrator

HABITAT: Ceca, small intestine.

DISTRIBUTION: Europe, Asia (Kirgizia, Kazakhstan, Buriat-Mongol ASSR, Tamyр, Yakutia, Amur, Primorsk, Kamchatka), Africa (Egypt).

Microsomacanthus acus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Spasskiĭ & Īurpalova, 1965, 1966a. Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus acus Spasskiĭ & Īurpalova, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Wardium aequabilis

Hymenolepis aequabilis

STATUS AS WATERFOWL PARASITE: Common; reported 21 times in wild and once in domestic waterfowl, commonly in swans. Pathology of infection described by Wehrmann, 1909; mortality during possible epizootic reported by Endrigkeit, 1940a; Hilprecht, 1956; Czapliński, 1965.

DESCRIPTION: Clerc, 1903; Ryzhikov & Gubanov, 1959; Jarecka, 1961 (ova); Spasskaĭa, 1961b; Baer, 1962; Czapliński, 1956b; Spasskiĭ & Īurpalova, 1966b. Copy: Lühe, 1910; Hughes, 1941a; Skrjabin & Matevosĭan, 1945; Spasskaĭa, 1966.

SYNONYMY: Hughes, 1940.

Taenia aequabilis Rudolphi, 1810

Dicranotaenia aequabilis (Rudolphi, 1810) Railliet, 1803

Diplacanthus (Lepidotrias) aequabilis (Rudolphi, 1810) Cohn, 1899
Hymenolepis aequabilis (Rudolphi, 1810) Railliet, 1899
Drepanidotaenia aequabilis (Rudolphi, 1810) Cohn, 1900
Hymenolepis (Drepanidotaenia) aequabilis (Rudolphi, 1810) of Cohn, 1901
Hymenolepis (Hymenolepis) aequabilis (Rudolphi, 1810) of Sprehn, 1932
Dicranotaenia (Dicranotaenia) aequabilis (Rudolphi, 1810) of Lóñez-Neyra, 1942
Wardium aequabilis (Rudolphi, 1810) Spasskiĭ & Spasskaĭa, 1954
Hymenofimbria aequabilis (Rudolphi, 1810) Spasskiĭ, 1961
Hymenolepis creplini (Krabbe, 1869) Railliet, 1899 - [Spasskiĭ, 1963]
Hymenolepis pingi Shen Tseng, 1932 - [Spasskaĭa, 1961b; Spasskiĭ, 1963]
Hymenofimbria merganseris Skrjabin, 1914 - [Spasskiĭ, 1961]
Drepanidotaenia muscosa Clerc, 1902 - [Spasskaĭa, 1966]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 12 days after ingestion by fresh-water ostracod and copepod crustacea; mature in final host after ingestion. (Jarecka, 1958a, 1960a, 1961)

INTERMEDIATE HOSTS: Cyclocypris laevis, Macrocyclus fuscus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser fabalis, Cygnus cygnus, Cygnus olor, Cygnus olor (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas penelope, Anas querquedula

Aythyini - Aythya ferina, Aythya fuligula, Aythya marila

Mergini - Bucephala clangula, Mergus cucullatus

HABITAT: Small intestine - posterior portion, ceca.

DISTRIBUTION: Iceland, Europe, Asia (W. Siberia, Tuva, Mongolia, Yakutia), N. America (USA).

Limnolepis amphitricha
Hymenolepis amphitricha

STATUS AS WATERFOWL PARASITE: Accidental, normally in Charadriiformes; reported once in wild duck.

DESCRIPTION: Clerc, 1903; Deblock & Rosé, 1962. Copy: Spasskaĭa, 1966.

SYNONYMY: Hughes, 1940.

Taenia amphitricha Rudolphi, 1819

Drepanidotaenia amphitricha (Rudolphi, 1819) Cohn, 1901

Hymenolepis amphitricha (Rudolphi, 1819) Fuhrmann, 1906

Weinlandia amphitricha (Rudolphi, 1819) Mayhew, 1925
Dicranotaenia (Dicranotaenia) amphitricha (Rudolphi, 1819) López-
Neyra, 1942
Limnolepis amphitricha (Rudolphi, 1819) Spasskiĭ & Spasskaïa, 1954
Hymenolepis (Hymenolepis) amphitricha (Rudolphi, 1819) of Deblock
& Rosé, 1962
Hymenolepis hamasigi (Yamaguti, 1940) Baer, 1962 - [Deblock, 1964];
distinct - Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Charadriiformes - Actitis hypoleucos, Calidris canutus, Capella gal-
linago, Crocethia alba, Erolia alpina, Erolia maritima, Erolia
temminckii, Limosa limosa, Scolopax rusticola, Tringa glareola,
Tringa ochropus, Tringa stagnatilis, Tringa totanus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kamchatka).

Drepanidolepis anatina
Hymenolepis anatina

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 31 times in wild and 39 times in domestic waterfowl. Frequent cause of disease (Sprehn, 1932); pathology described by Galli-Valerio, 1939.

STATUS AS SPECIES: H. anatina (Krabbe) must be regarded as unrecognizable, H. anatina of Cohn, 1901 different from Taenia anatina of Schmidt, 1894; the former very similar to Diorchis stefanskiĭ - Beverley-Burton, 1964.

DESCRIPTION: Clerc, 1903; Yamaguti & Mitunaga, 1943a; Spasskaïa, 1961b. Copy: Stiles, 1896; Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskiĭ, 1963; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Taenia anatina Krabbe, 1869

Drepanidotaenia anatina (Krabbe, 1869) Railliet, 1893

Diplacanthus (Dilepis) anatina (Krabbe, 1869) Cohn, 1900

Hymenolepis anatina (Krabbe, 1869) Railliet, 1899

Dicranotaenia anatina (Krabbe, 1869) Wolffhügel, 1900

Hymenolepis (Drepanidotaenia) anatina (Krabbe, 1869) of Cohn, 1901

Hymenolepis (Hymenolepis) anatina (Krabbe, 1869) of Sprehn, 1932

Drepanidotaenia (Drepanidolepis) anatina (Krabbe, 1869) of López-
Neyra, 1942

Echinocotyle anatina (Krabbe, 1869) Yamaguti, 1959
Anatinella anatina (Krabbe, 1869) Spasskaia, 1961
Drepanidolepis anatina (Krabbe, 1869) Spasskiĭ, 1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 14 days after ingestion by fresh-water ostracod, copepod, and amphipod crustacea; mature in final host after ingestion. (Gel'sbergen, 1934; Monchenko, 1956; Schmidt, 1804)

INTERMEDIATE HOSTS: Cyprinotus incongruens, Cypris ophthalmica, Cypris pubera, Eucypris crassa, Acanthocyclops bicuspidatus, Acanthocyclops vernalis, Gammarus pulex

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Cygnus olor, Cygnus olor (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, Anas neneloe, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca

Cairinini - Cairina moschata (dom.)

Mergini - Bucephala clangula, Melanitta fusca, Melanitta fusca deglandi

Galliformes - Ferdix perdix

Gruiformes - Fulica atra

HABITAT: Small intestine - posterior portion, large intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Tuva, India, Indonesia, China, Sakhalin, Japan), Africa (Egypt), N. America (USA).

Dicranotaenia anceps

Hymenolepis anceps

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Probably individual variation of H. coronula - Spasskiĭ, 1956a, 1963; synonym of H. fallax - Spasskiĭ, 1961b.

DESCRIPTION: Linton, 1927. Copy: Hughes, 1941a.

SYNONYMY:

Hymenolepis anceps Linton, 1927

Dicranotaenia (Dicranotaenia) anceps (Linton, 1927) López-Neyra,

1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Cairinini - Aix sponsa
Mergini - Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Monosaccanthes andrejewoi
Hymenolepis andrejewoi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Skrjabin & Matevosian, 1945; Matevosian, 1946; Ablasov, 1957. Copy: Kurashvili, 1957; Spasskaia, 1966.

SYNONYMY:

Dicranotaenia andrejewoi Matevosian in Skrjabin & Matevosian, 1945
Sphenacanthus andrejewoi (Matevosian, 1945) Ablasov, 1957
Microsomacanthus andrejewoi (Matevosian, 1945) Kurashvili, 1957
Hymenolepis andrejewoi (Matevosian, 1945) McDonald, 1965
Myxolepis andrejewoi (Matevosian, 1945) Spasskaia, 1966
Monosaccanthes andrejewoi (Matevosian, 1945) Czapliński, 1967

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas acuta, Anas crecca
Mergini - Melanitta fusca

HABITAT: Small intestine.

DISTRIBUTION: Europe (Georgia SSR), Asia (USSR - Chita Obl., Kirgizia, Sakhalin).

Hymenolepis angularostris

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Description inadequate.

DESCRIPTION: Sugimoto, 1934a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960.

SYNONYMY:

Hymenolepis angularostris Sugimoto, 1934

Hymenolepis (Hymenolepis) angularostris Sugimoto, 1934 of Iwata, 1939

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Taiwan).

Wardium arctica
Hymenolepis arctica

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Schiller, 1955a. Copy: Spasskaia, 1966.

SYNONYMY:

Hymenolepis arctica Schiller, 1955

Wardium arctica (Schiller, 1955) Spasskiĭ, 1959

Decacanthus arcticus (Schiller, 1955) Yamaguti, 1959

Wardium nyrocae Ryzhikov & Gubanov, 1959 - [Spasskiĭ, 1961b; Spasskaia, 1966]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya fuligula

Mergini - Clangula hyemalis, Melanitta fusca deglandi

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Asia (Yakutia, Chukotka), N. America (USA - Alaska).

Microsomacanthus arcuata
Hymenolepis arcuata

STATUS AS WATERFOWL PARASITE: Frequent; reported 19 times in wild ducks, once in domestic duck.

DESCRIPTION: Kowalewski, 1904; Czapliński, 1956d; Spasskaia & Spasskiĭ, 1961; Spasskiĭ & Bobova, 1962b. Copy: Lühe, 1910; Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis arcuata Kowalewski, 1904

Weinlandia arcuata (Kowalewski, 1904) Mayhew, 1925

Hymenolepis (Hymenolepis) arcuata Kowalewski, 1904 of Sprehn, 1932

Hispaniolepis arcuata (Kowalewski, 1904) López-Neyra, 1942

Microsomacanthus arcuata (Kowalewski, 1904) Spasskiĭ & Spasskaia, 1954

Hispaniolepidoides arcuata (Kowalewski, 1904) Yamaguti, 1950

Hymenolepis villosoides Solov'ev, 1911 - [Joyeux & Baer, 1936a; Spasskiĭ & Spasskaia, 1954a]

Hispaniolepis villosoides (Solov'ev, 1911) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas crecca

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Melanitta fusca deglandi

HABITAT: Intestine.

DISTRIBUTION: Europe, Iceland, Asia (Kazakhstan, Tuva, Yakutia, Khabarovsk, Primorsk, Kamchatka), N. America (USA - Alaska).

Sobolevicanthus aspirantica

Hymenolepis aspirantica

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild waterfowl.

DESCRIPTION: Zaskind, 1961. Copy: Spasskaia, 1966.

SYNONYMY:

Hymenolepis aspirantica Zaskind, 1961

Sobolevicanthus aspirantica (Zaskind, 1961) Maksimova, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Anatini - Anas acuta

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kazakhstan).

Anserilepis barrowensis
Hymenolenis barrowensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild geese.

DESCRIPTION: Schiller, 1952a, 1954; Spasskiĭ & Tolkacheva, 1965.
Copy: Spasskaia, 1966.

SYNONYMY:

Hymenolepis barrowensis Schiller, 1952

Drepanidotaenia barrowensis (Schiller, 1952) Yamaguti, 1959

Anserilepis barrowensis (Schiller, 1952) Spasskiĭ & Tolkacheva, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons, Anser canagicus, Anser fabalis, Branta bernicla, Branta canadensis

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka), N. America (USA - Alaska).

Amphipetrovia biaculeata
Hymenolepis biaculeata

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild waterfowl and twice in captive waterfowl.

DESCRIPTION: Fuhrmann, 1909a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis biaculeata Fuhrmann, 1909

Drepanidotaenia biaculeata (Fuhrmann, 1909) Skrjabin & Matevosian,
1945

Amphipetrovia biaculeata (Fuhrmann, 1909) Spasskiĭ & Spasskaia, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Alopochen aegyptiacus

HABITAT: Intestine.

DISTRIBUTION: Africa (Sudan, S. Africa), [Asia (Burma) and Europe (Ukraine) - probably captive birds].

Drepanidotaenia bilateralis
Hymenolepis bilateralis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild waterfowl.

DESCRIPTION: Linstow, 1905a; Dubinina, 1954a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis bilateralis Linstow, 1905

Hymenolepis (Drepanidotaenia) bilateralis Linstow, 1905 of Fuhrmann, 1924

Hymenolepis (Hymenolepis) bilateralis Linstow, 1905 of Sprehn, 1932

Drepanidotaenia (Drepanidotaenia) bilateralis (Linstow, 1905) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Branta bernicla, Cygnus cygnus

Aythini - Aythya ferina

HABITAT: Intestine.

DISTRIBUTION: Asia (Tamy Peninsula, W. Siberia).

Bisaccanthes bisaccata bisaccata
Hymenolepis bisaccata bisaccata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild waterfowl.

DESCRIPTION: Fuhrmann, 1906a; Dubinina, 1954a; Czapliński, 1956d; Spasskaia, 1961b; Ryšavý, 1961b; Spasskiĭ, 1963. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis bisaccata Fuhrmann, 1906

Drepanidotaenia (Drepanidolepis) bisaccata (Fuhrmann, 1906) López-Neyra, 1942

Bisaccanthes bisaccata (Fuhrmann, 1906) Spasskiĭ & Spasskaĭa, 1954
Sobolevicanthus bisaccata (Fuhrmann, 1906) Czapliński, 1956
Bisaccanthes bisaccata bisaccata (Fuhrmann, 1906) of Khuan Shen-i,
1962
Hymenolepis bisaccata bisaccata Fuhrmann, 1906 of McDonald, 1965

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop after ingestion by fresh-water copepod crustacea. (Jarecka, 1958b; Kotecki, 1964)

INTERMEDIATE HOSTS: Macrocyclus albidus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser fabalis

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas falcata,
Anas formosa, Anas penelope, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, [Netta
rufina - Lapage, 1961; Spasskiĭ, 1963; Spasskaĭa, 1966; error]

Cairinini - Amazonetta brasiliensis, Cairina moschata

HABITAT: Small intestine.

DISTRIBUTION: Europe (Czechoslovakia, Poland, USSR), Asia (Azerbaijan, W. Siberia, Tadzhikistan, Kazakhstan, Tuva, Tamyra), S. America (Brazil).

Bisaccanthes bisaccata orientalis
Hymenolepis bisaccata orientalis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Khuan Shen-i, 1962b.

SYNONYMY:

Bisaccanthes bisaccata subsp. orientalis Khuan Shen-i, 1962

Hymenolepis bisaccata orientalis (Khuan Shen-i, 1962) McDonald, 1965

LIFE CYCLE: Unknown; probably similar to that of H. bisaccata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas falcata, Anas for-
mosa

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (USSR - Amur).

Hymenolepis bisacculata

STATUS AS WATERFOWL PARASITE: Infrequent: reported twice in wild ducks and once in domestic duck.

STATUS AS SPECIES: Synonym of Retinometra pittalugai - Spasskaia, 1966.

DESCRIPTION: Krotov, 1949.

SYNONYMY:

Dicranotaenia bisacculata Krotov, 1949

Hymenolepis bisacculata (Krotov, 1949) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Aythiini - Aythya ferina, Aythya marila

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Sakhalin).

Parabisaccanthes bisacculina

Hymenolepis bisacculina

STATUS AS WATERFOWL PARASITE: Infrequent: reported 3 times in wild swans, once in captive swans.

DESCRIPTION: Szpotanska, 1931; Joyeux & Baer, 1950. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Drepanidotaenia bisacculina Szpotanska, 1931

Hymenolepis bisacculina (Szpotanska, 1931) Hughes, 1940

Drepanidotaenia (Drepanidotaenia) bisacculina Szpotanska, 1931 of
López-Neyra, 1942

Hymenolepis (Drepanidotaenia) bisacculina (Szpotanska, 1931) of Joy-
eux & Baer, 1950

Parabisaccanthes bisacculina (Szpotanska, 1931) Maksimova, 1963

LIFE CYCLE: Eggs with oncospheres passed in feces; cysticercoïds develop in 20 days at 8 C. after ingestion of eggs by fresh-water copepod crustacea. (Joyeux & Baer, 1950)

INTERMEDIATE HOSTS: Macrocyclus fuscus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, Cygnus cygnus, Cygnus olor

HABITAT: Intestine.

DISTRIBUTION: Europe (Iceland, Sweden, Switzerland, Poland), Australia.

Microsomacanthus borealis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ryzhikov, 1965.

SYNONYMY:

Microsomacanthus borealis Ryzhikov, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Echinocotyle brachycephala

Hymenolepis brachycephala

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in Charadriiformes ; reported once in wild duck.

DESCRIPTION: Copy: Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY: Spasskaia, 1966.

Taenia brachycephala Creplin, 1829

Hymenolepis brachycephala (Creplin, 1829) Railliet, 1899

Drepanidotaenia brachycephala (Creplin, 1829) Cohn, 1900

Hymenolepis (Drepanidotaenia) brachycephala (Creplin, 1829) of Cohn, 1901

Tschertkovilepis brachycephala (Creplin, 1829) Yamaguti, 1959

Hymenolepis (Echinocotyle) brachycephala (Creplin, 1829) of Deblock, 1964

Echinocotyle brachycephala (Creplin, 1829) Spasskaia, 1966

Monosaccanthes brachycephala (Creplin, 1829) Czapliński, 1967

Hymenolepis oweni Moghe, 1933

Echinocotyle oweni (Moghe, 1933) Macko, 1962

Echinocotyle hypoleuci Singh, 1952

Hymenolenis quasioweni Dubinina, 1954

Echinocotyle uralensis Clerc, 1902 - [Deblock, 1964]

LIFE CYCLE: Cysticercoïds in fresh-water copepod crustacea. (Daday, 1900; Joyeux & Baer, 1936)

INTERMEDIATE HOSTS: Acanthocyclops viridis, Cyclops crassicornis,
Paracyclops fimbriatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Charadriiformes - Haematopus ostralegus, Larus ridibundus, Philomachus pugnax, Tringa glareola, Tringa nebularia, Tringa totanus

HABITAT: Probably small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, India, Yakutia), Africa (Egypt).

Retinometra bulbocirrosus

Hymenolepis bulbocirrosus

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

DESCRIPTION: Pfeiffer, 1960.

SYNONYMY:

Hymenosphenacanthus bulbocirrosus Pfeiffer, 1960

Hymenolepis bulbocirrosus (Pfeiffer, 1960) McDonald, 1965

Retinometra bulbocirrosus (Pfeiffer, 1960) Czapliński, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus melanocoryphus

HABITAT: Small intestine - anterior portion.

DISTRIBUTION: S. America (Argentina - Source of bird examined in Vienna Zool. Garden).

Nadejdolepis cambrensis
Hymenolepis cambrensis

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in Charadriiformes; reported once in wild duck.

DESCRIPTION: Davies, 1939; Deblock & Rosé, 1962. Copy: Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis cambrensis Davies, 1939

Nadejdolepis cambrensis (Davies, 1939) Spasskii & Spasskaia, 1954

Hymenolepis (Hymenolepis) cambrensis (Davies, 1939) of Deblock & Rosé, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Charadriiformes - Haematopus ostralegus

HABITAT: Small intestine.

DISTRIBUTION: Europe (England), Asia (Primorsk).

Retinometra clausa
Hymenolepis clausa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Linstow, 1906a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis clausa Linstow, 1906

Sphenacanthus clausa (Linstow, 1906) López-Neyra, 1942

Dicranotaenia clausa (Linstow, 1906) Skrjabin & Matevosian, 1945

Retinometra clausa (Linstow, 1906) Spasskii, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

Columbiformes - Columba livia

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma, Ceylon, India).

Arhynchotaenia clausovaginata
Hymenolepis clausovaginata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Saakova, 1959. Copy: Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY:

Arhynchotaenia clausovaginata Saakova, 1959

Hymenolepis clausovaginata (Saakova, 1959) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Netta rufina

HABITAT: Intestine.

DISTRIBUTION: Europe (S. Russia).

Echinocotyle clerici

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Matevosĭan & Krotov, 1949; Dubinina, 1954a, 1956.

Copy: Spasskaĭa, 1966.

SYNONYMY:

Echinocotyle clerici Matevosĭan & Krotov, 1949

Hymenolepis clerici (Matevosĭan & Krotov, 1949) McDonald, 1965, not

H. clerici Shen Tseng, 1932

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in fresh-water copepod crustacea; mature in final host after ingestion. (Jarecka, 1958b, 1961)

INTERMEDIATE HOSTS: Acanthocyclops viridis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas crecca, Anas querquerula

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland), Asia (W. Siberia, Kazakhstan).

Myxolepis collaris
Hymenolepis collaris

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 54 times in wild, 74 times in domestic, and twice in captive waterfowl. Reported as cause of pathology by Dot-senko, 1954.

DESCRIPTION: Skrjabin, 1914e; Abuladze, 1936; Murashkinzevi, 1938; Dubinina, 1954a; Bezubik, 1957a; Ryšavý, 1961b; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia collari nigro Bloch, 1782

Taenia collaris Batsch, 1786

Hymenolepis collaris (Batsch, 1786) Fuhrmann, 1908

Weinlandia collaris (Batsch, 1786) Mayhew, 1925

Hymenolepis (Hymenolepis) collaris (Batsch, 1786) of Sprehn, 1932

Hymenolepis (Weinlandia) collaris (Batsch, 1786) of Iwata, 1939

Microsomacanthus collaris (Batsch, 1786) López-Neyra, 1942

Dicranotaenia collaris (Batsch, 1786) Skrjabin & Matevosian, 1945

Sobolevicanthus collaris (Batsch, 1786) Ryzhikov, 1956

Myxolepis collaris (Batsch, 1786) Spasskii, 1959

Myxacanthus collaris (Batsch, 1786) Oshmarin, 1963

Taenia torquata Gmelin, 1790

Halysis torquata (Gmelin, 1790) Zeder, 1803

Taenia breviarticulata Goeze in Zeder, 1800

Alyselminthus sinuosus Zeder, 1800

Halysis sinuosa (Zeder, 1800) Zeder, 1803

Taenia sinuosa (Zeder, 1800) Rudolphi, 1810

Hymenolepis (Lepidotrias) sinuata (Zeder, 1800) Weinland, 1858

Drepanidotaenia sinuosa (Zeder, 1800) Railliet, 1893

Diplacanthus (Dilepis) sinuosa (Zeder, 1800) Cohn, 1899

Hymenolepis sinuosa (Zeder, 1800) Railliet, 1899

Hymenolepis (Drepanidotaenia) sinuosa (Zeder, 1800) of Cohn, 1901

Taenia infundibuliformis (anserum) of Diesing, 1850

Taenia bairdii Kreffft, 1871

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop after ingestion by fresh-water copepod, ostracod, and amphipod crustacea; cysticercoids survive in gastropod mollusks after ingestion of ostracods; mature in final host after ingestion. (Joyeux, 1929; Lesin'sh & Murmietse, 1963; Monchenko, 1956; Rosseter, 1904)

INTERMEDIATE HOSTS: Acanthocyclons bicuspidatus, Acanthocyclons

vernalis, Acanthocyclops viridis, Cyclops lucidulus, Cyclops strenuus, Eucyclops agilis, Eucyclops serrulatus, Mesocyclops leuckarti, Mesocyclops oithonoides, Diaptomus coeruleus, Cypris sp., Gammarus pulex

AUXILIARY HOSTS: Lymnaea palustris, Lymnaea vulgaris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser cygnoides (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas angustirostris, Anas castanea, Anas clypeata, Anas crecca, Anas formosa, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes, Anas strepera, Anas superciliosa

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Amazonetta brasiliensis, Cairina moschata (dom.)

Mergini - Bucephala clangula, Melanitta sp., Mergus albellus

Ciconiiformes - Flegadis falcinellus

Galliformes - Gallus gallus (dom.)

Caprimulgiformes

Passeriformes - Corvus

HABITAT: Small intestine - total length.

DISTRIBUTION: Europe, Asia (W. Siberia, Armenia, Uzbekistan, Kirgizia, Kazakhstan, Burma, Indonesia, China, Amur, Primorsk, Taiwan, Sakhalin), Africa (Egypt), N. America (USA, USA - Alaska), Australia.

Microsomacanthus compressa

Hymenolepis compressa

STATUS AS WATERFOWL PARASITE: Very common; reported 43 times in wild waterfowl, 13 times in domestic waterfowl.

DESCRIPTION: Skrjabin, 1914e; Dubinina, 1954a; Czapliński, 1956d; Bezubik, 1957a; Jarecka, 1961 (ova); Ryšavý, 1961b; Spasskiĭ & Spasskaĭa, 1961; Beverley-Burton, 1964. Cory: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaĭa, 1966.

SYNONYMY:

Taenia compressa Linton, 1892

Hymenolepis compressa (Linton, 1892) Kowalewski, 1904

Hymenolepis (Hymenolepis) compressa (Linton, 1892) of Sprehn, 1932

Microsomacanthus compressa (Linton, 1892) Lórez-Neyra, 1942

Hymenolepis megarostellis Solov'ev, 1911 - [Skrjabin, 1914c]

Hymenolepis solowiowi Skrjabin, 1914 - [Lórez-Neyra, 1941; Spasskiĭ, 1956b]; distinct, Beverley-Burton, 1964

Nadejdolepis solowiowi (Skrjabin, 1914) Yamaguti, 1959

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in fresh-water copepod crustacea; mature in final host 11-12 days after ingestion. Cysticercoïds accumulate and survive in gastropod mollusks through ingestion of copepods; snails rendered sterile by overwintering cysticercoïds. (Jarecka, 1956, 1958b, 1960a, 1961; Kiseliënë, 1966; Neradová, 1967; Ryšavý, 1964a, 1964b; Supperer, 1959)

INTERMEDIATE HOSTS: Cyclops strenuus, Macrocyclus albidus, Mesocyclops leuckarti

AUXILIARY HOSTS: Anisus spirorbis, Lymnaea corneus, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Planorbis planorbis, Valvata cristata, Viviparus viviparus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, [Anas americana - Lapage, 1961, error], Anas clypeata, Anas crecca, Anas formosa, Anas penelope, Anas querquedula, Anas rubripes, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Aythya vallisneria, [Netta rufina - Lapage, 1961, error]

Cairinini - Aix galericulata, Amazonetta brasiliensis

Mergini - Bucephala clangula, Histrionicus histrionicus, Melanitta fusca, Melanitta nigra, Mergus albellus, Mergus merganser

Podicipediformes - Podiceps caspicus, Podiceps ruficollis

Gruiformes - Gallinula chloropus

HABITAT: Small intestine - total length.

DISTRIBUTION: Europe, Asia (Azerbaidzhan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Tuva, Tamyр, Yakutia, Burma, China, Amur, Primorsk, Kamachatka, Sakhalin), N. America (USA).

Dicranotaenia coronula

Hymenolepis coronula

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 76 times in wild, 70 times in domestic, and 3 times in captive waterfowl. Frequent cause of disease in waterfowl; pathology described by Wehrmann, 1909; mortality reported by Schofield, 1932; Pillers, 1923.

DESCRIPTION: Abuladze, 1936; Fedushin, 1937; Dubinina, 1954a; Baer, 1956; Czapliński, 1956d; Ablasov, 1957; Bezubik, 1957a; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945;

Shevtsov & Zaskind, 1960; Spasskiĭ, 1963; Spasskaĭa, 1966.

SYNONYMY: Hughes, 1940.

Taenia coronula Dujardin, 1845

Dicranotaenia coronula (Dujardin, 1845) Railliet, 1892

Drepanidotaenia coronula (Dujardin, 1845) Farona, 1899

Diplacanthus (Lepidotrias) coronula (Dujardin, 1845) Cohn, 1899

Hymenolepis coronula (Dujardin, 1845) Railliet, 1899

Hymenolepis (Drepanidotaenia) coronula (Dujardin, 1845) of Cohn,
1901

Weinlandia coronula (Dujardin, 1845) Mayhew, 1925

Hymenolepis (Hymenolepis) coronula (Dujardin, 1845) of Sprehn, 1932

Hymenolepis (Weinlandia) coronula (Dujardin, 1845) of Iwata, 1939

Dicranotaenia (Dicranotaenia) coronula (Dujardin, 1845) of López-
Neyra, 1942

Hymenolepis megalhystera Linstow, 1905

Hymenolepis querquedula Fuhrmann, 1920

Weinlandia querquedula (Fuhrmann, 1920) Mayhew, 1925

Dicranotaenia (Dicranotaenia) querquedula (Fuhrmann, 1920) of López-
Neyra, 1942 - [Spasskiĭ, 1956a]

Weinlandia introversa Mayhew, 1925

Hymenolepis introversa (Mayhew, 1925) Fuhrmann, 1932

Dicranotaenia (Dicranotaenia) introversa (Mayhew, 1925) López-Neyra,
1942 - [Czapliński, 1956d; Spasskiĭ, 1956a]

Weinlandia macrostrobiloides Mayhew, 1925

Hymenolepis macrostrobiloides (Mayhew, 1925) Fuhrmann, 1932

Dicranotaenia (Dicranotaenia) macrostrobiloides (Mayhew, 1925) López-
Neyra, 1942 - [Czapliński, 1956d; Spasskiĭ, 1956a]

Dicranotaenia coronula macrostrobiloides (Mayhew, 1925) Spasskiĭ,
1963

Hymenolepis sacciperium Mayhew, 1925

Dicranotaenia (Dicranotaenia) sacciperium (Mayhew, 1925) López-Neyra,
1942 - [Spasskiĭ, 1956a]; distinct, Beverley-Burton, 1964

Hymenolepis anceps Linton, 1929 - [Spasskiĭ, 1963]

Hymenolepis mergi Yamaguti, 1940

Dicranotaenia mergi (Yamaguti, 1940) Skrjabin & Matevosĭan, 1945 -
[Czapliński, 1956d; Spasskiĭ, 1956a]

Dicranotaenia coronula mergi (Yamaguti, 1940) Spasskiĭ, 1963

Dicranotaenia deglandi Skrjabin & Matevosĭan, 1942 - [Spasskiĭ, 1963]

Hymenolepis parvisaccata Shepard, 1943

Dicranotaenia parvisaccata (Shepard, 1943) Spasskiĭ & Spasskaĭa, 1954
- [Czapliński, 1956d; Spasskiĭ, 1956a]; synonym of D. fallax,
Spasskiĭ, 1961

Dicranotaenia coronula parvisaccata (Shepard, 1943) Spasskiĭ, 1963

Hymenolepis ancaris Sharma, 1943 - [Czapliński, 1956d]

Dicranotaenia ancaris (Sharma, 1943) Yamaguti, 1950

Dicranotaenia coronula micracantha Matevosĭan in Skrjabin & Matevo-
sĭan, 1945 - [Czapliński, 1956d]; synonym of D. fallax, Sras-
skiĭ, 1961

Dicranotaenia kutassi Matevosĭan, 1945 - [Spasskiĭ, 1961, 1963]

Dicranotaenia pseudocoronula Matevosĭan in Skrjabin & Matevosĭan,

1945 - [Czapliński, 1956d; Spasskiĭ, 1956a; Ablasov, 1957]
Hymenolepis makundi Singh, 1952 - [Spasskiĭ, 1963]
Hymenolepis cameroni Singh, 1960 - [McDonald, 1965]

LIFE CYCLE: Eggs with oncospheres passed in feces; cysticercoïds develop in 10-14 days after ingestion by fresh-water ostracod and copepod crustacea; mature in final host after ingestion. Cysticercoïds survive in gastropod mollusks after ingestion of infected ostracods. (Jarecka, 1956, 1958b, 1960a, 1961; Joyeux, 1929; Kiseliene, 1966; Mrazek, 1890; Rosseter, 1891b, 1897c, 1900; Ryšavý, 1961a, 1961c, 1964a, 1964b)

INTERMEDIATE HOSTS: Candona candida, Cyclocypris cinerea, Cyclocypris globosa, Cyclocypris laevis, Cyclocypris ovum, Cypridopsis vidua [exper.], Cypris ophthalmica, Dolerocypris fasciata [exper.], Eucypris virens, Heterocypris incongruens, Notodromas monacha, Physocypris fadeevi, Eucyclops agilis, Mesocyclops oithonoides

AUXILIARY HOSTS: Lymnaea ovata, Lymnaea palustris, Lymnaea vulgaris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Branta ruficollis

Tadornini - Chloephaga picta, Chloephaga poliocephala, Cyanochen cyanopterus, Lophonetta specularioides, Neochen jubatus, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas bahamensis, Anas capensis, Anas castanea, Anas clypeata, Anas crecca, Anas falcata, Anas formosa, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes, Anas specularis, Anas strepera

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya novae-seealandiae, Aythya nyroca, Netta rufina

Cairinini - Aix galericulata, Amazonetta brasiliensis, Cairina hartlaubi, Cairina moschata (dom.), Chenonetta jubata

Mergini - Bucephala clangula, Bucephala islandica, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta nigra, Melanitta perspicillata, Mergus albellus, Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra

Charadriiformes - Larus ridibundus

HABITAT: Small intestine - tends to occur posteriorly, ceca.

DISTRIBUTION: Iceland, Europe, Asia (Azerbaijan, W. Siberia, Uz-

bekistan, Kirgizia, Kazakhstan, India, Burma, China, Tamyr, Yakutia, Primorsk, Kamchatka, Taiwan, Japan, Sakhalin), Africa, N. America (USA, USA - Alaska).

Hymenolepis crecca

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of H. teresoides - Spasskiĭ, 1963; Spasskaia, 1966.

DESCRIPTION: Singh, 1952

SYNONYMY:

Hymenolepis crecca Singh, 1952

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India).

Wardium creplini
Hymenolepis creplini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild waterfowl, in geese and swans.

STATUS AS SPECIES: Synonym of H. aequabilis - Spasskiĭ, 1961, 1963.

DESCRIPTION: Dubinina, 1954a; Spasskaia, 1965. Copy: Lühe, 1910; Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia creplini Krabbe, 1869

Dicranotaenia creplini (Krabbe, 1869) Stossich, 1898

Diplacanthus (Dilepis) creplini (Krabbe, 1869) Cohn, 1899

Hymenolepis creplini (Krabbe, 1869) Railliet, 1899

Drepanidotaenia creplini (Krabbe, 1869) Cohn, 1901

Hymenolepis (Drepanidotaenia) creplini (Krabbe, 1869) of Cohn, 1901

Hymenolepis (Hymenolepis) creplini (Krabbe, 1869) of Sprehn, 1932

Dicranotaenia (Dicranotaenia) creplini (Krabbe, 1869) of López-Neyra,
1942

Wardium creplini (Krabbe, 1869) Spasskiĭ & Spasskaĭa, 1954
Hymenofimbria merganseri Skrjabin, 1914 - [López-Neyra, 1931]
Hymenolepis pingi Shen Tseng, 1932 - [Spasskiĭ, 1956b]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser albifrons, Anser brachyrhynchus,
Anser erythropus, Anser fabalis, Cygnus cygnus, Cygnus olor
Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Europe (England, France, Italy), Asia (W. Siberia, Kazakhstan, Kamchatka), N. America (USA).

Hymenolepis cuneata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Mayhew, 1925. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis cuneata Mayhew, 1925

Sphenacanthus cuneata (Mayhew, 1925) López-Neyra, 1942

Tschertkovilepis cuneata (Mayhew, 1925) Yamaguti, 1959

LIFE CYCLE: Cysticercoïds reported in fresh-water copepod crustacea, not verified experimentally (Essex, 1932).

INTERMEDIATE HOSTS: Diaptomus oregonensis

FINAL HOSTS: AVES

Anseriformes (Anatidae) "wild duck"

[Anatini - Anas platyrhynchos - Gower, 1939; López-Neyra, 1942;
erroneous]

HABITAT: Not given, probably small intestine.

DISTRIBUTION: N. America (USA).

Monosaccanthes curiosa
Hymenolepis curiosa

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

DESCRIPTION: Szpotanska, 1931. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Drepanidotaenia curiosa Szpotanska, 1931

Hymenolepis curiosa (Szpotanska, 1931) Hughes, 1940

Drepanidotaenia (Drepanidotaenia) curiosa Szpotanska, 1931 of López-Neyra, 1942

Monosaccanthes curiosa (Szpotanska, 1931) Czapliński, 1967

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Australia.

Retinometra cyrtoides

Hymenolenis cyrtoides

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Mayhew, 1925. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Weinlandia cyrtoides Mayhew, 1925

Hymenolepis cyrtoides (Mayhew, 1925) Fuhrmann, 1932

Sphenacanthus cyrtoides (Mayhew, 1925) López-Neyra, 1942

Hymenosphenacanthus cyrtoides (Mayhew, 1925) Yamaguti, 1959

Retinometra cyrtoides (Mayhew, 1925) Spasskiĭ, 1963

Hymenolepis ondatrae Rider & Macy, 1947 - [Spasskiĭ, 1953]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Oxyura jamaicensis

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Sobolevicanthus dafilae
Hymenolepis dafilae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild ducks.

STATUS AS SPECIES: Synonym of H. stolli - Schiller, 1954.

DESCRIPTION: Folk, 1942a; Spasskaïa, 1961a; Spasskiĭ & Bobova, 1962b; Ryzhikov & Timofeeva, 1962. Copy: Spasskaïa, 1966.

SYNONYMY:

Hymenolepis dafilae Folk, 1942

Sobolevicanthus dafilae (Folk, 1942) Yamaguti, 1959

Hymenolepis stolli Brock of Schiller, 1954, e.n. - [Spasskaïa, 1966]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas querquedula

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tuva, Tamyra, Yakutia, Amur, Kamchatka), N. America (USA).

Dicranotaenia deglandi
Hymenolepis deglandi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Appears to be synonym of H. coronula, strobila corresponds to H. coronula, hooks to H. c. micracantha - Spasskiĭ, 1956a; synonym of H. fallax - Spasskiĭ, 1961.

DESCRIPTION: Linton, 1927. Copy: Skrjabin & Matevosian, 1942, 1945.

SYNONYMY:

Hymenolepis sp. Linton, 1927

Dicranotaenia deglandi Skrjabin & Matevosian, 1942

Hymenolepis deglandi (Skrjabin & Matevosian, 1942) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca deglandi

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Hymenolepis echinocotyle

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild waterfowl, once in domestic duck, and once in captive waterfowl.

DESCRIPTION: Fuhrmann, 1907; Meggitt, 1933; Beverley-Burton, 1964.
Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis echinocotyle Fuhrmann, 1907

Hymenolepis (Hymenolepis) echinocotyle Fuhrmann, 1907 of Sprehn, 1932

Dicranotaenia echinocotyle (Fuhrmann, 1907) López-Neyra, 1942

Echinocotyle echinocotyle (Fuhrmann, 1907) Yamaguti, 1959

Hymenolepis longistylusa Shen Tseng, 1932 - [Spasskiĭ, 1956b]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagicus, Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas querquedula

HABITAT: Small intestine - tends to occur in anterior half, ceca.

DISTRIBUTION: Europe, Asia (India, China), N. America (USA, USA - Alaska).

Dicranotaenia echinorostrae

Hymenolepis echinorostrae

STATUS AS WATERFOWL PARASITE: Rare; reported once in ducks.

DESCRIPTION: Schiller, 1957.

SYNONYMY:

Hymenolepis echinorostrae Schiller, 1957

Dicranotaenia echinorostrae (Schiller, 1957) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya affinis

HABITAT: Small intestine - duodenum.

DISTRIBUTION: N. America (USA - Alaska).

Dicranotaenia fallax
Hymenolepis fallax

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks.

STATUS AS SPECIES: Not definitely distinguished from D. coronula - Spasskiĭ, 1963.

DESCRIPTION: Belopol'skaiĭ, 1952b; Schiller, 1955a. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945; Spasskaiĭ, 1966.

SYNONYMY:

Taenia fallax Krabbe, 1869
Diplacanthus (Lepidotrias) fallax (Krabbe, 1869) Cohn, 1890
Hymenolepis fallax (Krabbe, 1869) Railliet, 1890
Hymenolepis (Hymenolepis) fallax (Krabbe, 1869) of Sprehn, 1932
Dicranotaenia (Dicranotaenia) fallax (Krabbe, 1869) López-Neyra, 1942
Hymenolepis anceps Linton, 1927 - [Spasskiĭ, 1961]
Dicranotaenia deglandi Skrjabin & Matevosĭan, 1942 - [Spasskiĭ, 1961]
Hymenolepis parvisaccata Shepard, 1943 - [Spasskiĭ, 1961]
Dicranotaenia coronula micracantha Matevosĭan, 1945 - [Spasskiĭ, 1961]
Hymenolepis makundi Singh, 1952 - [Spasskiĭ, 1961]

LIFE CYCLE: Cysticercoids reported in fresh-water amphipod crustacea, not verified experimentally. (Joyeux & Baer, 1936)

INTERMEDIATE HOSTS: Gammarus pulex

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas penelope, Anas querquedula
Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila
Mergini - Bucephala clangula

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Yakutia, Chukotka), N. America (USA - Alaska, Greenland).

Variolenis farciminosa
Hymenolepis farciminosa

STATUS AS WATERFOWL PARASITE: Accidental, normally in Passeriformes; reported once in wild duck.

DESCRIPTION: Makarenko, 1952; Mettrick, 1958. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia farciminosa Goeze, 1782

Halysis farciminosa (Goeze, 1782) Zeder, 1803

Hymenolepis farciminosa (Goeze, 1782) Railliet, 1899

Weinlandia farciminosa (Goeze, 1782) Mayhew, 1925

Dicranotaenia farciminosa (Goeze, 1782) Lopez-Neyra, 1942

Variolepis farciminosa (Goeze, 1782) Spasskiĭ & Spasskaia, 1954

Taenia farciminalis Batsch, 1786

Halysis farciminalis (Batsch, 1786) Blainville, 1828

Hymenolepis farciminalis (Batsch, 1786) Fuhrmann, 1906

Diplacanthus farciminalis (Batsch, 1786) Volz, 1899

Hymenolepis dahurica (Linstow) of Southwell, 1922

Wardium variabile Mayhew, 1925

Hymenolepis variabile (Mayhew, 1925) Fuhrmann, 1932

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in grasshoppers (Orthoptera) in 7-10 days after ingestion, at 29 C.; mature in 10 days after ingestion by final host. (Dutt & Mehra, 1962)

INTERMEDIATE HOSTS: Acrida exaltata [exper.], Acrotylus humberianus [exper.], Aiolopus sp. [exper.], Crotogonus sp. [exper.], Cedaleus abruptus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya ferina

Galliformes - Gallus gallus (dom.)

Passeriformes - Acridotheres albocinctus, Acridotheres tristis, Acrocephalus agricola, Corvus albus, Corvus macrorhynchus, Corvus monedula, Cyanopica cyana, Emberiza aureola, Emberiza cioides, Garrulus glandarius, Nucifraga caryocatactes, Oriolus oriolus, Perisoreus infaustus, Fica pica, Sturnus malabaricus, Sturnus nigricollis, Sturnus unicolor, Sturnus vulgaris, Turdus merula, Turdus pilaris, Turdus viscivorus

HABITAT: Probably small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kirgizia, Tadzhikistan, India, Indochina, Primorsk, Japan), N. America (USA, Canada), S. America (Argentina).

Microsomacanthus fausti
Hymenolepis fausti

STATUS AS WATERFOWL PARASITE: Common; reported 24 times in wild ducks, once in domestic duck.

STATUS AS SPECIES: Synonym of H. paramicrosoma - Ryšavý, 1961.

DESCRIPTION: Shen Tseng, 1932b; Dubinina, 1954a; Spasskaïa & Spasskiï, 1961. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945, Spasskaïa, 1966.

SYNONYMY:

Fuhrmaniella fausti Shen Tseng, 1932

Hymenolepis fausti (Shen Tseng, 1932) Fuhrmann, 1932

Microsomacanthus fausti (Shen Tseng, 1932) López-Neyra, 1942

Dicranotaenia fausti (Shen Tseng, 1932) Skrjabin & Matevosian, 1945

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in fresh-water copepod crustacea; mature in final host after ingestion. Cysticercoids survive in gastropods after ingestion of copepods. (Spasskaïa, 1966)

INTERMEDIATE HOSTS: Acanthocyclops viridis, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides

AUXILIARY HOSTS: Planorbidae

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas formosa, Anas penelope, Anas querquedula, Anas rubripes, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Melanitta fusca deglandi, Mergus albellus, Mergus serrator

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe (Esthonia), Asia (W. Siberia, Uzbekistan, Kazakhstan, China, Yakutia, Tamy, Amur, Primorsk, Kamchatka), N. America (USA, USA - Alaska).

Echinatrium filusomum

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Spasskiĭ & Īurpalova, 1965. Copy: Spasskaĭa, 1966.

SYNONYMY:

Echinatrium filusomum Spasskiĭ & Īurpalova, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia, Chukotka).

Sobolevicanthus filumferens

Hymenolepis filumferens

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Brock, 1942. Copy: Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis filumferens Brock, 1942

Sobolevicanthus filumferens (Brock, 1942) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas discors

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Retinometra fimula

Hymenolepis fimula

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive waterfowl.

DESCRIPTION: Meggitt, 1933. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis fimula Meggitt, 1933
Sphenacanthus fimula (Meggitt, 1933) López-Neyra, 1942
Hymenosphenacanthus fimula (Meggitt, 1933) Yamaguti, 1959
Retinometra fimula (Meggitt, 1933) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya ferina

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India - Calcutta Zool. Garden).

Retinometra fista
Hymenolepis fista

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Meggitt, 1933. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis fista Meggitt, 1933
Sphenacanthus fista (Meggitt, 1933) López-Neyra, 1942
Hymenosphenacanthus fista (Meggitt, 1933) Yamaguti, 1959
Retinometra fista (Meggitt, 1933) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Cairinini - Nettapus coromandelianus

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India - Calcutta Zool. Garden).

Sobolevicanthus flagellata
Hymenolepis flagellata

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of H. gracilis - López-Neyra, 1942.

DESCRIPTION: Fuhrmann, 1906a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis flagellata Fuhrmann, 1906

Weinlandia flagellata (Fuhrmann, 1906) Mayhew, 1925

Dicranotaenia flagellata (Fuhrmann, 1906) Skrjabin & Matevosian, 1945

Sobolevicanthus flagellata (Fuhrmann, 1906) Spasskiĭ & Spasskaĭa, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas bahamensis

HABITAT: Intestine.

DISTRIBUTION: West Indies, S. America (Brazil).

Microsomacanthus floreata

Hymenolepis floreata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Meggitt, 1927b; Beverley-Burton, 1964; Spasskaĭa, 1965.

Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaĭa, 1966.

SYNONYMY:

Hymenolepis pauciovata Meggitt, 1927, not Fuhrmann, 1906

Abortilepis pauciovata (Meggitt, 1927) Yamaguti, 1959

Hymenolepis fidelis Meggitt, 1928

Hymenolepis floreata Meggitt, 1930

Microsomacanthus floreata (Meggitt, 1930) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Mergini - Histrionicus histrionicus

HABITAT: Small intestine - midregion.

DISTRIBUTION: Europe (England), Asia (Kamchatka), Africa (Egypt).

Hymenolepis fona

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

DESCRIPTION: Meggitt, 1933. Copy: Hughes, 1941a; Skrjabin & Matvosian, 1945.

SYNONYMY:

Hymenolepis fona Meggitt, 1933

Sphenacanthus fona (Meggitt, 1933) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India - Calcutta Zool. Garden).

Microsomacanthus formosa

Hymenolepis formosa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

DESCRIPTION: Dubinina, 1954a; Spasskaia & Spasskiĭ, 1961. Copy: Spasskaia, 1966.

SYNONYMY:

Hymenolepis formosa Dubinina, 1954

Microsomacanthus formosus (Dubinina, 1954) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta

Somateriini - Polysticta stelleri, Somateria fischeri, Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Tuva, Tamyra, Amur, Chukotka).

Microsomacanthus formosoides
Hymenolepis formosoides

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Spasskaia & Spasskii, 1961; Tolkacheva, 1966; Spasskii & Turpalova, 1966a. Copy: Spasskaia, 1966.

SYNONYMY:

Microsomacanthus formosoides Spasskaia & Spasskii, 1961

Hymenolepis formosoides (Spasskaia & Spasskii, 1961) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula, Melanitta fusca, Melanitta fusca deglandi

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (Tuva, Tamyra, Chukotka).

Hymenolepis foveata

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Meggitt, 1933. Copy: Hughes, 1941a.

SYNONYMY:

Hymenolepis foveata Meggitt, 1933

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas poecilorhyncha

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India - Calcutta Zool. Garden).

Sobolevicanthus fragilis
Hymenolepis fragilis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild

waterfowl, once in domestic goose.

STATUS AS SPECIES: Hymenolepis fragilis (Krabbe) renamed H. krabbeella by Hughes, 1940, because of prior use of fragilis in Taenia. Dubinina (1954a) separated H. fragilis (Krabbe) of Fuhrmann, 1906 from Taenia fragilis Krabbe, and applied the name krabbeella to Fuhrmann's form.

DESCRIPTION: Dubinina, 1954a; Spasskaïa, 1961a. Copy: Spasskaïa, 1966.

SYNONYMY:

Taenia fragilis Krabbe, 1869, not Rudolphi, 1802

Hymenolepis fragilis (Krabbe, 1869) Dubinina, 1954, not Fuhrmann, 1906

Sobolevicanthus fragilis (Krabbe, 1869) Czapliński, 1956, not Spasskiï & Spasskaïa, 1954a

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser fabalis, Cygnus olor

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya nyroca

Mergini - Bucephala clangula

Oxyurini - Oxyura leucocephala

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Kazakhstan, Tuva, Tamyр, Yakutia, Primorsk, Kamchatka).

Hymenolepis fructifera

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Meggitt, 1927b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis fructifera Meggitt, 1927

Drepanidotaenia fructifera (Meggitt, 1927) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Africa (Egypt).

Hymenolepis fruticosa

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Meggitt, 1927b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis fruticosa Meggitt, 1927

Hymenolepis fruticosa Meggitt of Fuhrmann, 1932, Larsus

Drepanidotaenia (Drepanidotaenia) fruticosa (Meggitt, 1927) Lónez-Neyra, 1942

Dicranotaenia fruticosa (Meggitt, 1927) Lónez-Neyra, 1943

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Africa (Egypt).

Retinometra giranensis

Hymenolepis giranensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 7 times in wild ducks, twice in domestic ducks.

DESCRIPTION: Sugimoto, 1934a; Spasskaia, 1961a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY:

Hymenolepis giranensis Sugimoto, 1934

Hymenolepis (Hymenolepis) giranensis Sugimoto, 1934 of Iwata, 1939

Sphenacanthus (Retinometra) giranensis (Sugimoto, 1934) Spasskiĭ & Spasskaia, 1954

Hymenosphenacanthus giranensis (Sugimoto, 1934) Yamaguti, 1959

Retinometra giranensis (Sugimoto, 1934) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas querquedula, Anas strepera

Aythiini - Aythya baeri

Mergini - Bucephala clangula, Histrionicus histrionicus

HABITAT: Small intestine.

DISTRIBUTION: Europe (Lithuania, Russia), Asia (Armenia, Tuva, Tamyр, Amur, Taiwan, Kamchatka).

Sobolevicanthus gladium

Hymenolepis gladium

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Spasskiĭ & Bobova, 1962b; Spasskiĭ & Īurpalova, 1966b.
Copy: Spasskaĭa, 1966.

SYNONYMY:

Sobolevicanthus gladium Spasskiĭ & Bobova, 1962

Hymenolepis gladium (Spasskiĭ & Bobova, 1962) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, Anas formosa

Aythiini - Aythya marila

Mergini - Melanitta fusca deglandi

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka, Chukotka).

Sobolevicanthus gracilis

Hymenolepis gracilis

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 57 times in wild, 76 times in domestic, and 4 times in captive waterfowl. One of the principal helminthic infections; pathology of infection described by Wehrmann, 1909.

DESCRIPTION: López-Neyra, 1941; Dubinina, 1954a; Czaplinski, 1956d; Bezubik, 1957a; Jarecka, 1961 (ova); Ryšavý, 1961b; Spasskaia, 1961a; Petrochenko & Kotel'nikov, 1962b; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia collo longissimo Bloch, 1782

Halysis gracilis Zeder, 1803

Taenia gracilis (Zeder, 1803) Rudolphi, 1810

Drepanidotaenia gracilis (Zeder, 1803) Railliet, 1893

Diplacanthus (Dilepis) gracilis (Zeder, 1803) Cohn, 1890

Hymenolepis gracilis (Zeder, 1803) Railliet, 1890

Hymenolepis (Drepanidotaenia) gracilis (Zeder, 1803) of Cohn, 1901

Weinlandia gracilis (Zeder, 1803) Mayhew, 1925

Hymenolepis (Hymenolepis) gracilis (Zeder, 1803) of Sprehn, 1932

Fuhrmaniella gracilis (Zeder, 1803) Shen Tseng, 1932

Hymenolepis (Weinlandia) gracilis (Zeder, 1803) of Neveu-Lemaire, 1936

Sphenacanthus gracilis (Zeder, 1803) López-Neyra, 1942

Sobolevicanthus gracilis (Zeder, 1803) Spasskiĭ & Spasskaia, 1954

Drepanidotaenia meleagris Clerc, 1902

Hymenolepis meleagris (Clerc, 1902) Fuhrmann, 1906 - [López-Neyra, 1941]

Hymenolepis flagellata Fuhrmann, 1906 - [López-Neyra, 1941]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 6-12 days after ingestion by fresh-water ostracod and copepod crustacea (much more frequent and develop faster in ostracods than in copepods); mature in final host in 9-11 days after ingestion. Cysticercoïds survive in snails after ingestion of infected ostracods; reported once in fish. Duration of life cycle not over 6-8 months. (Blanchard, 1891a; Buša, 1964h; Dobrokhotova, 1964, 1965; Dobrokhotova & Butenko, 1964; Dobrokhotova & Kasymzhanova, 1964; Jarecka, 1956, 1958b, 1960, 1961; Joyeux, 1929, 1931; Kotel'nikov, 1959b, 1964; Lindner, 1921; Linstow, 1872; Monchenko, 1956; Mrazek, 1891; Neradová, 1967; Petrochenko & Kotel'nikov, 1959a, 1959b; Rosseter, 1897c; Ryšavý, 1964b; Skryl'kov, 1965b)

INTERMEDIATE HOSTS: Candona compressa, Candona neglecta, Candona rostrata, Cyclocypris dispersa, Cyclocypris globosa, Cypridopsis vidua, Cypris ophthalmica, Dolerocypris fasciata [exper.], Eucypris virens, Heterocypris incongruens, Notodromas monacha, Acanthocyclops viridis, Cyclops vicinus, Eucyclops serrulatus, Macrocylops albidus, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides, Paracyclops fimbriatus, Diaptomus sarsi, Diaptomus spinosus, Eudiaptomus graciloides, Eudiaptomus vulgaris

AUXILIARY HOSTS: Lymnaea palustris, Lymnaea vulgaris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides (dom.),
Cygnus cygnus, Cygnus olor

Tadornini - Chloephaga poliocephala, Cyanochen cyanopterus, Tadorna ferruginea, Tadorna radjah, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas castanea, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Lapage, 1961, error], Anas falcata, Anas formosa, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes, Anas strepera, [Anas bahamensis - López-Neyra, 1942, original citation not found]

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya novae-zeelandiae, Aythya nyroca, Netta erythrophthalma, Netta rufina

Cairinini - Cairina moschata, Cairina moschata (dom.)

Mergini - Bucephala clangula, Histrionicus histrionicus, Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

[Ciconiiformes - Phoenicopterus antiquorum - probably another species of cestode, Fuhrmann, 1932]

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.)

[Gruiformes - Chlamydotis undulata - probably erroneous label, Fuhrmann, 1932]

[Columbiformes - Treron phoenicopterus - misidentified, Fuhrmann, 1932]

HABITAT: Small intestine - entire length.

DISTRIBUTION: Europe, Asia, Africa (Egypt), N. America (USA).

Retinometra guberiana

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swan.

DESCRIPTION: Czapliński, 1965a.

SYNONYMY:

Retinometra guberiana Czapliński, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Small intestine - anterior portion.

DISTRIBUTION: Europe (Poland).

Retinometra hamulacanthos
Hymenolepis hamulacanthos

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Linton, 1927. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis hamulacanthos Linton, 1927

Sphenacanthus hamulacanthos (Linton, 1927) López-Neyra, 1942

Dicranotaenia hamulacanthos (Linton, 1927) Skrjabin & Matevosian, 1945

Hymenosphenacanthus hamulacanthos (Linton, 1927) Yamaguti, 1959

Retinometra hamulacanthos (Linton, 1927) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythiini - Aythya americana, [Aythya affinis - Fuhrmann, 1932, & authors, apparently erroneous]

HABITAT: Intestine.

DISTRIBUTION: Europe (Tatar ASSR), N. America (USA).

Microsomacanthus heterospinus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Spasskiĭ & Īurpalova, 1964, 1965, 1966a. Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus heterospinus Spasskiĭ & Īurpalova, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Duodenum, small intestine.

DISTRIBUTION: Asia (Chukotka).

Microsomacanthus hopkinsi
Hymenolepis hopkinsi

STATUS AS WATERFOWL PARASITE: Common in N. America, although reported only 4 times in wild ducks.

DESCRIPTION: Schiller, 1951a. Copy: Spasskaïa, 1966.

SYNONYMY:

Hymenolepis hopkinsi Schiller, 1951

Mayhewia hopkinsi (Schiller, 1951) Yamaguti, 1959

Microsomacanthus hopkinsi (Schiller, 1951) Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas penelope, Anas rubripes, Anas strepera

Aythini - Aythya marila

HABITAT: Ceca.

DISTRIBUTION: Asia (Kazakhstan), N. America (USA, USA - Alaska).

Microsomacanthus hystrix
Hymenolepis hystrix

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Spasskaïa & Spasskiï, 1961. Copy: Spasskaïa, 1966.

SYNONYMY:

Microsomacanthus hystrix Spasskaïa & Spasskiï, 1961

Hymenolepis hystrix (Spasskaïa & Spasskiï, 1961) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya fuligula

Mergini - Melanitta fusca

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (Tamy, Tuva).

Amhipetrovia inflatocirrosa

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of Amhipetrovia retracta - Spasskaïa, 1966.

DESCRIPTION: Oshmarin, 1963a.

SYNONYMY:

Amhipetrovia inflatocirrosa Oshmarin, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca, Anas formosa

HABITAT: Small intestine.

DISTRIBUTION: Asia (Primorsk, Amur).

Hymenolepis infrequens

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck, presumably domestic.

DESCRIPTION: Sharma, 1943. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis infrequens Sharma, 1943

Staphylepis infrequens (Sharma, 1943) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Microsomacanthus jaegerskioldi

Hymenolepis jaegerskioldi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild

ducks.

DESCRIPTION: Fuhrmann, 1913. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis jaegerskioeldi Fuhrmann, 1913

Weinlandia jaegerskioeldi (Fuhrmann, 1913) Mayhew, 1925

Microsomacanthus jaegerskioeldi (Fuhrmann, 1913) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca

Somateriini - Somateria mollissima

Aythiini - Aythya affinis

Mergini - Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Europe (Iceland, N. Europe), Asia (Primorsk), N. America (USA - Alaska).

Microsomacanthus jamunicus

Hymenolepis jamunica

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck, presumably domestic.

DESCRIPTION: Sharma, 1943. Copy: Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis jamunica Sharma, 1943

Microsomacanthus jamunicus (Sharma, 1943) Yamaguti, 1950

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Sobolevicanthus javanensis
Hymenolepis javanensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Davis, 1945.

SYNONYMY:

Hymenolepis javanensis Davis, 1945

Sobolevicanthus javanensis (Davis, 1945) Spasskiĭ & Spasskaĭa, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (E. Indies).

Monosaccanthes kazachstanica
Hymenolepis kazachstanica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swans;
most frequent in downy cygnets.

DESCRIPTION: Maksimova, 1963b; Czapliński, 1967. Copy: Spasskiĭ,
1963; Spasskaĭa, 1966.

SYNONYMY:

Farabisaccanthes kazachstanica Maksimova, 1963

Hymenolepis kazachstanica (Maksimova, 1963) McDonald, 1965

Monosaccanthes kazachstanica (Maksimova, 1963) Czapliński, 1967

Drepanidotaenia bisacculina (Szpotanska) of Jarecka, 1960

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds
develop in fresh-water copepod crustacea after ingestion; mature
in final host after ingestion. (Jarecka, 1958a, 1960a, 1961; Czap-
liński & Kotecki, 1967)

INTERMEDIATE HOSTS: Acanthocyclops viridis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland), Asia (Kazakhstan).

Retinometra kenaiensis
Hymenolepis kenaiensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Schiller, 1952b.

SYNONYMY:

Hymenolepis kenaiensis Schiller, 1952

Hymenosphenacanthus kenaiensis (Schiller, 1952) Yamaguti, 1959

Retinometra kenaiensis (Schiller, 1952) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya marila

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA - Alaska).

Hymenolepis kowalewskii

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: In genus Hymenofimbria - Spasskiĭ, 1961, 1963.

DESCRIPTION: Baczynska, 1914. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis kowalewskii Baczynska, 1914

Hymenolepis (Hymenolepis) kowalewskii Baczynska, 1914 of Sprehn, 1932

Dicranotaenia (Dicranotaenia) kowalewskii (Baczynska, 1914) López-Neyra, 1942

Wardium kowalewskii (Baczynska, 1914) Spasskiĭ & Spasskaia, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya fuligula

[Gruiformes - Fulica atra - probably an error, Fuhrmann, 1932]

HABITAT: Intestine.

DISTRIBUTION: Europe (Germany).

Sobolevicanthus krabbeella
Hymenolepis krabbeella

STATUS AS WATERFOWL PARASITE: Common; reported 35 times in wild ducks, 3 times in domestic waterfowl.

STATUS AS SPECIES: Hughes (1940) gave the new name, H. krabbeella, to Taenia fragilis Krabbe, 1869. However, Dubinina (1954a) separated T. fragilis and H. fragilis of Fuhrmann, 1906, and assigned krabbeella to the form described by Fuhrmann, retaining fragilis as a species. H. fragilis in the literature usually refers to krabbeella.

DESCRIPTION: Czapliński, 1956d; Dubinina, 1956; Ablasov, 1957; Macko, 1960a; Ryšavý, 1961b; Spasskaïa, 1961a. Copy: Hughes, 1941a; Skrajabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Diplacanthus (Dilepis) fragilis (Krabbe, 1869) Cohn, 1899
Hymenolepis fragilis (Krabbe, 1869) Railliet, 1899; Fuhrmann, 1906
Drepanidotaenia fragilis (Krabbe, 1869) Cohn, 1901
Hymenolepis (Hymenolepis) fragilis (Krabbe, 1869) of Sprehn, 1932
Sphenacanthus fragilis (Krabbe, 1869) López-Neyra, 1942
Sobolevicanthus fragilis (Krabbe, 1869) Spasskiĭ & Spasskaïa, 1954
Hymenolepis krabbeella Hughes, 1940
Sobolevicanthus krabbeella (Hughes, 1940) Czapliński, 1956

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Lapage, 1961, error], Anas formosa, Anas querquedula, Anas strepera

Aythiini - Aythya ferina

Cairinini - Aix galericulata

Mergini - Bucephala clangula, Melanitta fusca

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Tuva, Tamy, China, Amur, Primorsk, Kamchatka, Chukotka).

Tschertkovilepis krabbei
Hymenolepis krabbei

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild and once in domestic waterfowl. Mortality due to infection reported by Cram, 1924 (as H. tenuirostris).

STATUS AS SPECIES: Confused with H. tenuirostris and H. setigera by authors.

DESCRIPTION: Ryšavý, 1961b (as Dicranotaenia tenuirostris); Czapliński & Jarecka, in press.

SYNONYMY:

Taenia krabbei Kowalewski, 1894

Drepanidotaenia krabbei (Kowalewski, 1894) Zürn, 1898

Hymenolepis krabbei (Kowalewski, 1894) Joyeux & Baer, 1936

Tschertkovilepis krabbei (Kowalewski, 1894) Czapliński & Jarecka, in
press

Taenia conscripta Railliet & Henry, 1909

Hymenolepis conscripta (Railliet & Henry, 1909) Fuhrmann, 1924

Drepanidotaenia ? conscripta (Railliet & Henry, 1909) López-Neyra,
1942

Tschertkovilepis conscripta (Railliet & Henry, 1909) Yamaguti, 1959

Hymenolepis (Drepanidotaenia) tenuirostris (Rudolphi) of Cohn, 1901,
et al.

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in fresh-water copepod crustacea; mature in final host after ingestion. (Czapliński & Jarecka, in press; Hall, 1929; Mrazek, 1891; Rosseter, 1897c, 1903)

INTERMEDIATE HOSTS:

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus

Anatini - Anas platyrhynchos

Aythiini - Aythya ferina, Aythya marila

Mergini - Melanitta fusca, Mergus albellus, Mergus merganser,
Mergus serrator

Charadriiformes - Rissa tridactyla

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia), N. America (USA).

Dicranotaenia kutassi
Hymenolepis kutassi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Perhaps an aberrant form of D. coronula - Spasskiĭ, 1956a; synonym of D. coronula - Spasskiĭ, 1961; and Spasskaĭa, 1966.

DESCRIPTION: Skrjabin & Matevosĭan, 1945; Matevosĭan, 1946.

SYNONYMY:

Dicranotaenia kutassi Matevosĭan in Skrjabin & Matevosĭan, 1945
Hymenolepis kutassi (Matevosĭan, 1945) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia).

Hymenolepis lamellata

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Woodland, 1930. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis lamellata Woodland, 1930

Dicranotaenia lamellata (Woodland, 1930) Skrjabin & Matevosĭan, 1945

Staphylepis lamellata (Woodland, 1930) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna radjah or T. tadornoides, "probably the former"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Australia? (England - London Zool. Garden).

Drepanidotaenia lanceolata
Hymenolepis lanceolata

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl, typically in Anserini; reported 36 times in wild waterfowl, 107 times in domestic, and 5 times in captive waterfowl. Very frequent cause of disease in young geese; pathology described by Caemmerer, 1909; Emets, 1929; Lucet, 1892; Dotsenko, 1954. Mortality reported by Potemkina, 1938, 1940; and Fillers, 1923.

DESCRIPTION: Skrjabin, 1914c; Maplestone & Southwell, 1922; Mahon, 1956; Czapliński, 1956d; Jarecka, 1961 (ova). Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia anseris Bloch, 1779

Taenia acutissima Pallas, 1781, e.p.

Taenia lanceolata Bloch, 1782

Taenia lanceolata Goeze, 1782

Taenia lanceola Batsch, 1786

Taenia lanceolata anseris Goeze, 1792

Halysis lanceolata (Bloch, 1782) Zeder, 1803

Hymenolepis (Dilepis) lanceolata (Bloch, 1782) Weinland, 1858

Drepanidotaenia lanceolata (Bloch, 1782) Railliet, 1893

Diplacanthus (Dilepis) lanceolata (Bloch, 1782) Cohn, 1899

Hymenolepis (Drepanidotaenia) lanceolata (Bloch, 1782) of Cohn, 1901

Hymenolepis (Hymenolepis) lanceolata (Bloch, 1782) of Iwata, 1930

Drepanidotaenia (Drepanidotaenia) lanceolata (Bloch, 1782) of López-Neyra, 1942

Taenia anserum Frisch, 1727 in Rudolphi, 1810

Hymenolepis anserum (Frisch, 1727) Fuhrmann, 1908

Drepanidotaenia lanceolata var. lobata Szpotanska, 1931, not H. lobata Fuhrmann, 1906

Drepanidotaenia lobata (Szpotanska, 1931) Skrjabin & Matevosian, 1945

Hymenolepis lanceolata var. szpotanskaica Hughes, 1940 - [Czapliński, 1956d]

LIFE CYCLE: Eggs with onchospheres passed in feces, viable in water up to 26 days; cysticercoids develop in 10-18 days at 18-20 C. after ingestion by fresh-water copepod crustacea, infective in 20-30 days; mature in 15-25 days after ingestion by final host; duration of life cycle about 6 months. (Daday, 1901; Dobrokhotova, 1964, 1965; Geller, 1959; Kisieleska, 1955, 1957, 1959; Kotel'nikov, 1959b; Monchenko, 1956; Farukhin, 1957; Petrochenko & Kotel'nikov, 1959a, 1959b; Potemkina, 1937b, 1938; Ruzzkowski, 1932a, 1932b; Selivanova-Fartseva, 1959a; Zakhriálov & Savinkova, 1962a) Development and survival in intermediate host depends on age and sex of host, season, number of cysticercoids (Kisieleska, 1957, 1959). During winter, worms undergo destrobilization, scolices survive without reproduction (Fed-

Pushin, 1943; Feoktistov, 1953). Ecology of seasonal rise in incidence discussed by Buša, 1964g; Okorokov, 1963b.

INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops vernalis [exper.], Acanthocyclops viridis, Cyclops diaphanus, Cyclops furcifer, Cyclops globosus, Cyclops insignis, Cyclops strenuus, Cyclops vicinus, Eucyclops macruroides, Eucyclops macrurus, Eucyclops serrulatus, Eucyclops speratus, Macrocyclus albidus, Macrocyclus fuscus, Mesocyclops crassus, Mesocyclops dybowskii, Mesocyclops leuckarti, Mesocyclops oithonoides, Paracyclops affinis, Paracyclops fimbriatus, Tropocyclops prasinus, Diaptomus gracilis, Diaptomus sarsi, Diaptomus spinosus

AUXILIARY HOSTS: Lymnaea auricularia

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser caerulescens, Anser canagica, Anser cygnoides, Anser erythropus, Anser fabalis, Anser indicus, Branta bernicla, Branta canadensis, Cygnus atratus, Cygnus columbianus, Cygnus cygnus, [Cygnus olor - Lapage, 1961, erroneous citation]

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas penelope, Anas querquedula, Anas rubrines, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, Netta rufina

Cairinini - Cairina moschata

Mergini - Bucephala clangula

Oxyurini - Oxyura leucocephala

Gaviiformes - Gavia immer

Podicipediformes - Podiceps sp.

Ciconiiformes - Phoenicopterus antiquorum

Galliformes - Gallus gallus (dom.)

MAMMALIA - Primates - Homo sapiens

HABITAT: Small intestine - posterior half.

DISTRIBUTION: Europe, Asia, N. America, Australia.

Nadejdolepis lauriei
Hymenolepis lauriei

STATUS AS WATERFOWL PARASITE: Rare; probably accidental, normally in charadriiform birds; reported once in wild duck.

STATUS AS SPECIES: Synonym of H. nitida - Baer, 1956.

DESCRIPTION: Davies, 1939; Deblock, Biguet, & Capron, 1960; Maksimova, 1963a. Copy: Deblock & Rosé, 1962; Spasskaïa, 1966.

SYNONYMY:

Hymenolepis lauriei Davies, 1939
Najedolepis lauriei (Davies, 1939) Spasskiï & Spasskaïa, 1954
Hymenolepis (Hymenolepis) lauriei Davies, 1939 of Deblock & Rosé,
1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

Charadriiformes - Crocethia alba, Erolia alpina, Haematopus ostralegus, Larus ridibundus, Tringa totanus, Xenus cinereus

HABITAT: Intestine.

DISTRIBUTION: Europe (Great Britain), Asia (Kazakhstan, E. Siberia, Primorsk).

Hymenolepis linea

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported once in domestic goose.

DESCRIPTION: Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Kasimov, 1956.

SYNONYMY: Hughes, 1940.

Taenia linea Goeze, 1782

Alyselminthus linea (Goeze, 1782) Zeder, 1800

Halysis linea (Goeze, 1782) Zeder, 1803

Hymenolepis linea (Goeze, 1782) Wolffhügel, 1809

Hymenolepis (Drepanidotaenia) linea (Goeze, 1782) of Cohn, 1901

Drepanidotaenia linea (Goeze, 1782) Cohn, 1901

Dicranotaenia (Dicranotaenia) linea (Goeze, 1782) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser sp.

Galliformes - Alectoris barbara, Alectoris graeca, Coturnix coturnix, Gallus gallus (dom.), Lagopus scoticus, Perdix perdix

Passeriformes - Alauda arvensis, Monticola saxatilis

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Uzbekistan), Africa.

Retinometra lintoni
Hymenolepis lintoni

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild duck.

DESCRIPTION: Linton, 1927. Copy: López-Neyra, 1932; Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY:

Hymenolepis macrocanthus (Linstow) of Linton, 1927

Hymenolepis lintoni López-Neyra, 1932

Sphenacanthus lintoni (López-Neyra, 1932) López-Neyra, 1942

Hymenosphenacanthus lintoni (López-Neyra, 1932) Yamaguti, 1950

Retinometra lintoni (López-Neyra, 1932) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Histrionicus histrionicus, Mergus serrator

HABITAT: Intestine.

DISTRIBUTION: Asia (Mongolia, Amur), N. America (USA).

Hymenolepis liophallos

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild waterfowl, 3 times in captive waterfowl.

STATUS AS SPECIES: H. liophallos of Beverley-Burton, 1964 same as Microsomacanthus spiralicirrata.

DESCRIPTION: Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Taenia liophallos Krabbe, 1869

Diplacanthus (Dilepis) liophallos (Krabbe, 1869) Cohn, 1890

Hymenolepis liophallos (Krabbe, 1869) Railliet, 1890

Drepanidotaenia liophallos (Krabbe, 1869) Cohn, 1901

Hymenolepis (Hymenolepis) liophallos (Krabbe, 1869) of Sprehn, 1932

Drepanidotaenia (Drepanidolepis) liophallos (Krabbe, 1869) of López-Neyra, 1942

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticeroids reported in fresh-water copepod and ostracod crustacea, unverified experimentally. (Hall, 1929; Joyeux & Baer, 1936a; Rosseter, 1897b)

INTERMEDIATE HOSTS: Cyclops crassicaudis, Cyclocypris cinerea, Cyclocypris dispersa, Cyclocypris globosa

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, Cygnus cygnus, Cygnus olor

Anatini - Anas clypeata

HABITAT: Intestine - anterior region.

DISTRIBUTION: Europe (England).

Dicranotaenia lobata
Hymenolepis lobata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Structure of segments corresponds to that of H. coronula - Spasskiĭ, 1956a; inadequately described, doubtful species - Spasskiĭ, 1963.

DESCRIPTION: Fuhrmann, 1906a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis lobata Fuhrmann, 1906

Weinlandia lobata (Fuhrmann, 1906) Mayhew, 1925

Dicranotaenia lobata (Fuhrmann, 1906) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas bahamensis

HABITAT: Not given, probably small intestine.

DISTRIBUTION: S. America (Brazil).

Retinometra longicirrosa
Hymenolepis longicirrosa

STATUS AS WATERFOWL PARASITE: Very common, especially in Anserini;

reported 25 times in wild, 26 times in domestic, and 4 times in captive waterfowl. Frequent cause of disease in young geese - Sprehn, 1932.

STATUS AS SPECIES: Confused with H. setigera by earlier authors. Most recent records entered as H. fasciculata.

DESCRIPTION: Fuhrmann, 1906b; Skrjabin, 1914c; Skrjabin, 1915a (as H. fasciata); Meggitt, 1933; López-Neyra, 1941 (fig., as S. fasciculata); Ablasov, 1957 (as H. fasciculata); Spasskaïa, 1965 (as R. fasciculata). Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Alyselminthus crenatus (Goeze, 1782) Zeder, 1800, e.p.

Halysis crenata (Goeze, 1782) Zeder, 1803, e.p.

Taenia fasciata Rudolphi of Feuereisen, 1868, and Krabbe, 1869

Diplacanthus (Dilepis) fasciata (Krabbe, 1869) Cohn, 1899

Drepanidotaenia fasciata (Krabbe, 1869) Railliet, 1893 - [Sprehn, 1932]

Hymenolepis fasciata (Krabbe, 1869) Railliet, 1899

Hymenolepis (Drepanidotaenia) fasciata (Rudolphi, 1810) of Cohn, 1901

Hymenolepis longicirrosa Fuhrmann, 1906

Hymenolepis (Hymenolepis) longicirrosa Fuhrmann, 1906 of Sprehn, 1932

Hymenosphenacanthus longicirrosa (Fuhrmann, 1906) Yamaguti, 1959

Retinometra longicirrosa (Fuhrmann, 1906) Spasskiï, 1963

Hymenolepis fasciculata Ransom, 1909 - [Dubinina, 1948; Ablasov, 1957; Spasskiï, 1963]

Sphenacanthus fasciculata (Ransom, 1909) López-Neyra, 1942

Hymenosphenacanthus fasciculata (Ransom, 1909) Yamaguti, 1959

Retinometra fasciculata (Ransom, 1909) Spasskaïa, 1965

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in fresh-water copepod crustacea after ingestion; mature in final host after ingestion. (Mrazek, 1890, 1891; Monchenko, 1956)

INTERMEDIATE HOSTS: Acanthocyclops viridis, Cyclops strenuus, Eucyclops agilis, Eucyclops serrulatus, Mesocyclops leuckarti, Diaptomus coeruleus, Diaptomus sarsi

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser cygnoides, Anser erythropus, Anser fabalis, Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas penelope, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Armenia, Kirgizia, Kazakhstan, Yakutia, India, China, Primorsk, Japan, Chukotka).

Retinometra longistylosa
Hymenolepis longistylosa

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild geese.

STATUS AS SPECIES: Original description combined strobila of Sphenacanthus sp., hooks of H. echinocotyle - Spasskiĭ, 1956b.

DESCRIPTION: Shen Tseng, 1932b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis longistylosa Shen Tseng, 1932

Dicranotaenia (Dicranotaenia) longistylosa (Shen Tseng, 1932) López-Neyra, 1942

Sphenacanthus longistylosa (Shen Tseng, 1932) Spasskiĭ & Spasskaia, 1954

Stylolepis longistylosa (Shen Tseng, 1932) Yamaguti, 1950

Retinometra longistylosa (Shen Tseng, 1932) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, [Anser anser (dom.) - Lapage, 1961, erroneous citation], Anser fabalis

HABITAT: Intestine.

DISTRIBUTION: Asia (Kirgizia, China).

Retinometra longivaginata
Hymenolepis longivaginata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl, once in captive bird.

STATUS AS SPECIES: Insufficiently described - Joyeux & Baer, 1936a.

DESCRIPTION: Fuhrmann, 1906b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis longivaginata Fuhrmann, 1906

Hymenolepis (Hymenolepis) longivaginata Fuhrmann, 1906 of Sprehn, 1932

Drepanidotaenia (Drepanidotaenia) longivaginata (Fuhrmann, 1906)

López-Neyra, 1942

Hymenosphenacanthus (?) longivaginatus (Fuhrmann, 1906) Yamaguti, 1959

Retinometra longivaginata (Fuhrmann, 1906) Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta leucopsis

Anatini - Anas platyrhynchos, Anas americana, Anas crecca

Cairinini - Aix galericulata

HABITAT: Small intestine.

DISTRIBUTION: Europe (Arctic Coast), Asia (Primorsk), N. America (USA).

Microsomacanthus macracanthissima

Hymenolepis macracanthissima

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Oshmarin, 1950. Copy: Spasskaïa, 1966.

SYNONYMY:

Hymenolepis macracanthissima Oshmarin, 1950

Sphenacanthus macracanthissima (Oshmarin, 1950) Spasskiï & Spasskaïa, 1954

Nadejdolepis macracanthissima (Oshmarin, 1950) Yamaguti, 1959

Microsomacanthus macracanthissima (Oshmarin, 1950) Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Histrionicus histrionicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka).

Retinometra macracanthos
Hymenolepis macracanthos

STATUS AS WATERFOWL PARASITE: Frequent; reported 17 times in wild ducks.

DESCRIPTION: Fuhrmann, 1924; Dubinina, 1954a; Spasskaïa, 1961a; Spasskiï & Īurpalova, 1966b. Copy: Hughes, 1941a; Skrjabin & Matevosïan, 1945; Spasskaïa, 1966.

SYNONYMY:

Taenia macracanthos Linstow, 1877
Drepanidotaenia macracanthos (Linstow, 1877) Cohn, 1901
Hymenolepis macracanthos (Linstow, 1877) Fuhrmann, 1906
Hymenolepis (Hymenolepis) macracanthos (Linstow, 1877) of Sprehn, 1932
Sphenacanthus macracanthos (Linstow, 1877) López-Neyra, 1942
Hymenosphenacanthus macrocanthos (Linstow, 1877) Yamaguti, 1959
Retinometra macracanthos (Linstow, 1877) Spasskiï, 1963
Hymenolepis macracanthoides López-Neyra, 1932 - [Fuhrmann, 1932]
Sphenacanthus macracanthoides (López-Neyra, 1932) López-Neyra, 1942
Hymenolepis skrjabini Matevosïan in Skrjabin & Matevosïan, 1945
Sphenacanthus skrjabini (Matevosïan, 1945) Spasskiï & Spasskaïa, 1954 - [Spasskaïa, 1961a]
Hymenosphenacanthus skrjabini (Matevosïan, 1945) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas strepera

Somateriini - Somateria spectabilis

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca

Mergini - Bucephala clangula, Melanitta nigra, Mergus merganser,
Mergus serrator

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps cristatus

Columbiformes - Columba livia

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Armenia, Kazakhstan, Tuva, Tamyр, Nepal, Kamchatka, Komandorsky Is.), N. America (USA - Alaska).

Retinometra macrocephala
Hymenolepis macrocephala

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild ducks.

STATUS AS SPECIES: Perhaps synonymous with H. venusta - Beverley-Burton, 1964; synonym of H. venusta - Spasskaïa, 1966.

DESCRIPTION: Fuhrmann, 1913; Czapliński, 1956d; Bezubik, 1957a; Jarecka, 1961 (ova); Spasskaïa, 1961a; Tolkacheva, 1966. Cony: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis macrocephala Fuhrmann, 1913

Sphenacanthus macrocephalus (Fuhrmann, 1913) Lórez-Neyra, 1942

Hymenosphenacanthus macrocephala (Fuhrmann, 1913) Yamaguti, 1959

Retinometra macrocephala (Fuhrmann, 1913) Spasskiï, 1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in fresh-water ostracod crustacea after ingestion; mature after ingestion by final host. (Jarecka, 1956, 1958a, 1960a, 1961)

INTERMEDIATE HOSTS: Cyclocypris laevis [exper.], Notodromas monacha

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas discors

Aythini - Aythya ferina, Aythya nyroca, [Netta rufina - Lanage, 1961, erroneous citation]

HABITAT: Small intestine.

DISTRIBUTION: Europe (N. Europe), Asia (Armenia, Tuva, Tamyr), N. America (USA).

Dicranotaenia makundi
Hymenolepis makundi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of H. fallax - Spasskiï, 1961; synonym of H. coronula - Spasskiï, 1963.

DESCRIPTION: Singh, 1952.

SYNONYMY:

Hymenolepis makundi Singh, 1952

Dicranotaenia makundi (Singh, 1952) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "wild duck"

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India).

Hymenolepis malaccensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Lee, 1966.

SYNONYMY:

Hymenolepis malaccensis Lee, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Malaysia).

Hymenolepis mandabbi

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive duck.

DESCRIPTION: Beverley-Burton, 1960.

SYNONYMY:

Hymenolepis mandabbi Beverley-Burton, 1960.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya fuligula

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Europe (England - St. James' Park).

Cloacotaenia megalops

Hymenolepis megalops

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth

of waterfowl; reported 69 times in wild, 28 times in domestic, and twice in captive waterfowl.

DESCRIPTION: Ransom, 1902; Tretiakova, 1940; Larios Rodriguez, 1944; Dubinina, 1954a; Czaplinski, 1956d; Ablasov, 1957; Bezubik, 1957a; Jarecka, 1961 (ova); Spasskaia, 1961b; Beverley-Burton, 1964; Tolka-cheva, 1966. Copy: Hughes, 1941a; Skrijabin & Matevosian, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskiĭ, 1963; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia anatis-marilae Creplin, 1825

Taenia megalops Nitzsch in Creplin, 1829

Hymenolepis megalops (Nitzsch, 1829) Farona, 1899

Drepanidotaenia megalops (Nitzsch, 1829) Hutyrá & Marek, 1906

Weinlandia megalops (Nitzsch, 1829) Mayhew, 1925

Cloacotaenia megalops (Nitzsch, 1829) Wolffhügel, 1938

Hymenolepis (Weinlandia) megalops (Nitzsch, 1829) of Iwata, 1939

Orlovilepis megalops (Nitzsch, 1829) Spasskiĭ & Spasskaia, 1954

Taenia cylindrica Kreffft, 1871

Lallum magniparuterina Johri, 1960 - [indicated by Spasskiĭ, 1964]

LIFE CYCLE: Eggs with oncospheres passed in feces; cysticercoïds develop in 18 days after ingestion by fresh-water ostracod crustacea, the particular species active only in spring; mature in final host after ingestion. (Jarecka, 1958c, 1960a, 1961)

INTERMEDIATE HOSTS: Cypris pubera

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

Anserini - Anser anser (dom.), Anser brachyrhynchus, Branta canadensis, Coscoroba coscoroba, Cygnus cygnus, Cygnus melanocoryphus, Cygnus olor

Tadornini - Lophonetta specularioides, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas castanea, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas cyanoptera, Anas discors, Anas georgica, Anas penelope, Anas platalea, Anas querquedula, Anas rubripes, Anas sibilatrix, Anas spinicauda, Anas strepera, Anas superciliosa, Anas versicolor

Aythiini - Aythya africana, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta erythrophthalma, Netta perosaca, Netta rufina

Cairinini - Amazonetta brasiliensis, Cairina moschata

Mergini - Clangula hyemalis, Melanitta fusca

Oxyurini - Oxyura leucocephala

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica americana

HABITAT: Cloaca, distal end of large intestine.

DISTRIBUTION: Cosmopolitan.

Anatinella meggitti
Hymenolepis meggitti

STATUS AS WATERFOWL PARASITE: Frequent; reported 12 times in wild ducks.

STATUS AS SPECIES: Original description included rostellar hooks of another species - Spasskiĭ, 1956b; in part a synonym of Anatinella spinulosa - Spasskaĭa, 1966.

DESCRIPTION: Shen Tseng, 1932b; Ryzhikov, 1956a; Spasskiĭ, 1956b; Spasskaĭa, 1961b; Macko, 1961b. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis meggitti Shen Tseng, 1932

Dicranotaenia (Dicranotaenia) meggitti (Shen Tseng, 1932) López-Neyra, 1942

Anatinella meggitti (Shen Tseng, 1932) Spasskiĭ & Spasskaĭa, 1954

Drepanidotaenia spinulosa Dubinina, 1954 - [Spasskiĭ, 1961]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas querquedula

Aythiini - Aythya ferina, Netta rufina

Mergini - Bucephala clangula

HABITAT: Intestine.

DISTRIBUTION: Europe (Czechoslovakia, Esthonia, Russia, Komi), Asia (Uzbekistan, Tadzhikistan, Kirgizia, Kazakhstan, Tuva, China, Kamchatka).

Retinometra meggitti
Hymenolepis sharmi

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck, probably domestic.

DESCRIPTION: Sharma, 1943. Copy: Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis meggitti Sharma, 1943, not H. meggitti Shen Tseng, 1932
Hymenosphenacanthus meggitti (Sharma, 1943) Yamaguti, 1959
Retinometra meggitti (Sharma, 1943) Spasskiĭ, 1963
Hymenolepis sharmi Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Hymenolepis mehrai

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck.

STATUS AS SPECIES: Probably synonym of H. coronula.

DESCRIPTION: Chatterji, 1940.

SYNONYMY:

Hymenolepis mehrai Chatterji, 1940

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "duck"

HABITAT: Intestine.

DISTRIBUTION: Asia (India).

Microsomacanthus melanittae

Hymenolepis melanittae

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck.

DESCRIPTION: Ryzhikov, 1952b. Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus melanittae Ryzhikov, 1962

Hymenolepis melanittae (Ryzhikov, 1962) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Melanitta fusca deglandi

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia).

Echinatrium melanittae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Tolkacheva, 1966.

SYNONYMY:

Echinatrium melanittae Tolkacheva, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tamyra).

Hymenolepis micrancristrota

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild and twice probably in captive waterfowl.

DESCRIPTION: Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Taenia micrancristrota Wedl, 1855

Diplacanthus (Lepidotrias) micrancristrota (Wedl, 1855) Cohn, 1899

Hymenolepis micrancristrota (Wedl, 1855) Railliet, 1899

Hymenolepis (Hymenolepis) micrancristrota (Wedl, 1855) of Sprehn,

1932

Dicranotaenia (Dicranotaenia) micrancristrota (Wedl, 1855) López-

Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus, Cygnus cygnus, Cygnus olor

Mergini - Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Europe, Australia.

Microsomacanthus microskrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Spasskiĭ & Īurpalova, 1964, 1966a; Tol'kacheva, 1966.

Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus microskrjabini Spasskiĭ & Īurpalova, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra

HABITAT: Small intestine, large intestine, ceca.

DISTRIBUTION: Asia (Chukotka, Tamyр).

Microsomacanthus microsoma
Hymenolepis microsoma

STATUS AS WATERFOWL PARASITE: Common; reported 31 times in wild and 8 times in domestic waterfowl.

DESCRIPTION: Czaplinski, 1956d; Ablasov, 1957. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Kurashvili, 1957; Spasskaĭa, 1966.

SYNONYMY: Hughes, 1940.

Taenia microsoma Creplin, 1829

Diplacanthus (Dilepis) microsoma (Creplin, 1829) Cohn, 1890

Drepanidotaenia microsoma (Creplin, 1829) Parona, 1899

Hymenolepis microsoma (Creplin, 1829) Railliet, 1890

Taenia (Drepanidotaenia) microsoma Creplin, 1829 of Parona, 1900

Hymenolepis (Drepanidotaenia) microsoma (Creplin, 1829) of Cohn, 1907

Weinlandia microsoma (Creplin, 1829) Mayhew, 1925

Hymenolepis (Hymenolepis) microsoma (Creplin, 1829) of Sprehn, 1932
Microsomacanthus microsoma (Creplin, 1829) López-Neyra, 1942
Monocercus lymnaei Villot, 1883
Cysticercus lymnaei (Villot, 1883) Lühe, 1910
Microsomacanthus paramicrosoma (Gasowska, 1932) Ablasov, 1957 - [Ablasov, 1957]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids reported in fresh-water copepod crustacea and snails, not verified experimentally; cysticercoids in marine amphipod crustacea: mature in final host after ingestion. (Alekseev, 1963c; Belopol'skaiã, 1952b; Oshmarin, et al., 1963; Oshmarin, Oparin, & Rummel, 1958a, 1958b; Rosseter, 1893; Shtein, 1959; Uspenskaiã, 1960)

INTERMEDIATE HOSTS: Eucyclops agilis, Eucyclops serrulatus [not verified experimentally], Gammarus locusta, Ampithoe rubricata, Fal-lasea quadrispinosa [not verified experimentally]

AUXILIARY HOSTS: Lymnaea lagotus, Lymnaea peregra [not verified experimentally]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Cygnus olor

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas penelope, Anas poecilorhyncha, Anas strepera

Somateriini - Polysticta stelleri, Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra

[Charadriiformes - Larus hyperboreus - erroneous, Fuhrmann, 1932]

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kirgizia, Tamyр, Amur, Primorsk, Kamchatka, Chukotka), N. America (USA - Alaska, Greenland).

Microsomacanthus minimus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ryzhikov, 1965.

SYNONYMY:

Microsomacanthus minimus Ryzhikov, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri

HABITAT: Small intestine - anterior part.

DISTRIBUTION: Asia (Chukotka).

Echinocotyle minutissima

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Singh, 1952.

SYNONYMY:

Echinocotyle minutissima Singh, 1952

Hymenolepis minutissima (Singh, 1952) McDonald, 1965, not H. minutissima Meggitt, 1927

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India).

Microsomacanthus mirabilis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Spasskiĭ & Īurpalova, 1964, 1966a; Tol'kacheva, 1966.
Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus mirabilis Spasskiĭ & Īurpalova, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka, Tamyр).

Hymenolepis monoposthe

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

DESCRIPTION: Dubinina, 1954a. Copy: Spasskaïa, 1966.

SYNONYMY:

Hymenolepis arcuata (Kowalewski) of Dubinina, 1950

Hymenolepis monoposthe Dubinina, 1954

Tschertkovilepis monoposthe (Dubinina, 1954) Yamaguti, 1959

Hispaniolepis monoposthe (Dubinina, 1954) Sultanov, 1963

Diploposthe monoposthe (Dubinina, 1954) Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Aythiini - Aythya ferina, Netta rufina

Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Europe (S. Russia), Asia (W. Siberia, Uzbekistan, Tadzhikistan, Kazakhstan).

Colymbilepis multistriatus

Hymenolepis multistriata

STATUS AS WATERFOWL PARASITE: Infrequent, probably accidental, normally in grebes; reported 3 times in wild ducks.

DESCRIPTION: Solomon, 1932; Singh, 1960b; Dollfus, 1961; Ryšavý, 1961b; Spasskaïa, 1965. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Taenia multistriata Rudolphi, 1810

Dicranotaenia multistriata (Rudolphi, 1810) Stossich, 1898

Diplacanthus (Dilepis) ? multistriata (Rudolphi, 1810) Cohn, 1899

Hymenolepis multistriata (Rudolphi, 1810) Railliet, 1890

Drepanidotaenia multistriata (Rudolphi, 1810) Cohn, 1901

Hymenolepis (Drepanidotaenia) multistriata (Rudolphi, 1810) of Cohn, 1901
Hymenolepis (Hymenolepis) multistriata (Rudolphi, 1810) of Sprehn, 1932
Dicranotaenia (Dicranotaenia) multistriata (Rudolphi, 1810) of López-Neyra, 1942
Dubinolepis multistriata (Rudolphi, 1810) Spasskiĭ & Spasskaĭa, 1954
Colymbilepis multistriatus (Rudolphi, 1810) Spasskaĭa, 1966

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids reported in ephemeropteran insect (not verified experimentally). (Golikova, 1960a)

INTERMEDIATE HOSTS: Cloeon sp. [not verified experimentally]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

Mergini - Bucephala clangula, Mergus merganser

Podicipediformes - Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Tadzhikistan, India, Kamchatka), Africa (Kenya).

Hymenolepis neomeggittilis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Meggitt, 1927b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis birmanica Meggitt, 1927, not H. rugosa birmanica Meggitt, 1924

Drepanidotaenia (Drepanidolepis) birmanica (Meggitt, 1927) López-Neyra, 1942

Echinocotyle birmanica (Meggitt, 1927) Yamaguti, 1959

Hymenolepis neomeggittilis Hughes, 1940

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Africa (Egypt).

Najadolepis nitidulans
Hymenolepis nitidulans

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform birds; reported once in wild duck.

STATUS AS SPECIES: Descriptions confused; type is lost, must use Southwell, 1924, as earliest description corresponding to the type; other descriptions based on misidentifications - Deblock & Rosé, 1962.

DESCRIPTION: Southwell, 1924; Davies, 1939. Copy: Hughes, 1941a; Skrzjabin & Matevosian, 1945; Baer, 1956; Spasskaia, 1966.

SYNONYMY:

Taenia nitidulans Krabbe, 1882

Hymenolepis (Echinocotyle) nitidulans (Krabbe, 1882) Fuhrmann, 1906

Echinocotyle nitidulans (Krabbe, 1882) Fuhrmann, 1924

Najadolepis nitidulans (Krabbe, 1882) Spasskii & Spasskaia, 1954

Hymenolepis (Hymenolepis) nitidulans (Krabbe, 1882) of Deblock & Rosé, 1962

Hymenolepis (Echinocotyle) nitida of Clerc, 1902 - [Baer, 1956]

Hymenolepis charadrii Yamaguti, 1935 - [Deblock, 1964]

Echinocotyle glareolae Singh, 1952 - [Baer, 1956]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids reported in fresh-water snail (auxiliary host?), not verified experimentally. (Harper, 1930)

INTERMEDIATE HOSTS: Unknown.

AUXILIARY HOSTS?: Lymnaea peregra [not verified experimentally]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya fuligula, [Aythya marila - Hughes, 1940; original citation not found]

Charadriiformes - Charadrius hiaticula, Erolia alpina, Erolia maritima, Tringa glareola

Passeriformes - Turdus merula

HABITAT: Intestine.

DISTRIBUTION: Europe.

Wardoides nyrocae
Hymenolepis nyrocae

STATUS AS WATERFOWL PARASITE: Infrequent: reported 7 times in wild waterfowl.

DESCRIPTION: Yamaguti, 1935b; Czapliński, 1964, 1966; Spasskaïa, 1965. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY:

Hymenolepis nyrocae Yamaguti, 1935

Hymenolepis (Hymenolepis) nyrocae Yamaguti, 1935 of Iwata, 1939

Dicranotaenia (Dicranotaenia) nyrocae (Yamaguti, 1935) López-Neyra, 1942

Drepanidotaenia nyrocae (Yamaguti, 1935) Skrjabin & Matevosian, 1945

Wardoides nyrocae (Yamaguti, 1935) Spasskiï, 1964

Wardium nyrocae Ryzhikov & Gubanov, 1959 - [Spasskaïa, 1966]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in fresh-water copepod crustacea after ingestion; mature in final host after ingestion. (Kotecki, 1967)

INTERMEDIATE HOSTS: Cyclops strenuus, Cyclops vicinus, Eucyclops macrurus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagica, Branta canadensis, Cygnus olor

Anatini - Anas platyrhynchos, Anas querquedula

Somateriini - Somateria spectabilis

Aythiini - Aythya affinis, Aythya marila

Mergini - Clangula hyemalis, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland, Lithuania), Asia (Kamchatka, Japan, Sakhalin), N. America (USA - Alaska).

Wardium nyrocae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Synonym of H. arctica - Spasskiï, 1962; synonym of Wardoides nyrocae - Spasskaïa, 1966.

DESCRIPTION: Ryzhikov & Gubanov, 1959.

SYNONYMY:

Wardium nyrocae Ryzhikov & Gubanov, 1959

Hymenolepis nyrocae (Ryzhikov & Gubanov, 1959) McDonald, 1965, not
H. nyrocae Yamaguti, 1935

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria spectabilis

Aythiini - Aythya fuligula

Mergini - Clangula hyemalis, Melanitta fusca deglandi

HABITAT: Small intestine.

DISTRIBUTION: Asia (Yakutia, Amur).

Sobolevicanthus octacantha

Hymenolepis octacantha

STATUS AS WATERFOWL PARASITE: Common; reported 26 times in wild ducks, 6 times in domestic ducks.

DESCRIPTION: Fuhrmann, 1906b; Dubinina, 1954a; Czapliński, 1956d; Ablasov, 1957; Macko, 1961b; Ryšavý, 1961b; Spasskaïa, 1961a; Beverley-Burton, 1964; Belogurov & Kulikov, 1966. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Taenia octacantha Krabbe, 1869

Diplacanthus (Dilepis) ? octacantha (Krabbe, 1869) Cohn, 1890

Hymenolepis octacantha (Krabbe, 1869) Railliet, 1899

Drepanidotaenia octacantha (Krabbe, 1869) Cohn, 1901

Hymenolepis (Drepanidotaenia) octacantha (Krabbe, 1869) of Cohn,
1901

Weinlandia octacantha (Krabbe, 1869) Mayhew, 1925

Hymenolepis (Hymenolepis) octacantha (Krabbe, 1869) of Sprehn, 1932

Sphenacanthus octacantha (Krabbe, 1869) López-Neyra, 1942

Dicranotaenia octacantha (Krabbe, 1869) Skrjabin & Matevosian, 1945

Sobolevicanthus octacantha (Krabbe, 1869) Spasskiï & Spasskaïa, 1954

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 19-20 days in fresh-water copepod and ostracod crustacea; mature in over 14 days after ingestion by final host. Cysticercoids common in copepods, rare in ostracods. (Ryšavý, 1960b, 1964b)

INTERMEDIATE HOSTS: Cyclops vicinus, Eucyclops serrulatus, Mesocyclops oithonoides, Heterocynris incongruens

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, [Anas crecca carolinensis - Lapage, 1961, error], Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, [Netta rufina - Lapage, 1961, error]

Cairinini - Plectropterus gambensis

Mergini - Bucephala clangula, Melanitta sp.

Falconiformes - Circus aeruginosus

HABITAT: Small intestine - posterior region more generally.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Armenia, Uzbekistan, Tadzhikistan, Kirgizia, Kazakhstan, Tuva, Amur, Kamchatka), Africa (Egypt, Congo region).

Sobolevicanthus octacanthoides

Hymenolepis octacanthoides

STATUS AS WATERFOWL PARASITE: Accidental, normally in lariform birds; reported twice in wild ducks.

DESCRIPTION: Fuhrmann, 1960b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Drepanidotaenia octacantha (Krabbe) of Cohn, 1901

Hymenolepis (Drepanidotaenia) octacantha (Krabbe) of Cohn, 1901

Hymenolepis octacanthoides Fuhrmann, 1906

Hymenolepis (Hymenolepis) octacanthoides Fuhrmann, 1906 of Sprehn,
1932

Sphenacanthus octacanthoides (Fuhrmann, 1906) López-Neyra, 1942

Dicranotaenia octacanthoides (Fuhrmann, 1906) Skrjabin & Matevosian,
1945

Sobolevicanthus octacanthoides (Fuhrmann, 1906) Spasskiĭ & Spasskaia,
1954

Hymenolepis (Echinocotyle) octacanthoides Fuhrmann, 1906 of Deblock,
Biguet, & Capron, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

Aythiini - Aythya ferina

Falconiformes - Circus aeruginosus

Charadriiformes - Larus argentatus, Larus minutus, Larus ridibundus

HABITAT: Small intestine.

DISTRIBUTION: Europe (W. Europe, USSR), Asia (W. Siberia, Uzbekistan, Kazakhstan), Africa.

Microsomacanthus oidemiae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Spasskiĭ & Īurpalova, 1964, 1966a. Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus oidemiae Spasskiĭ & Īurpalova, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Wardoides oidemiae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Spasskaĭa, 1965 (as W. nyrocae); Spasskiĭ, 1965. Copy: Spasskaĭa, 1966.

SYNONYMY:

Wardoides nyrocae of Spasskaĭa, 1965

Wardoides oidemiae Spasskaĭa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis, Melanitta nigra

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kamchatka).

Hymenolepis orthacantha

STATUS AS WATERFOWL PARASITE: Rare; reported once in swan.

STATUS AS SPECIES: Cannot be in Dubininolepis - Czapliński, 1967.

DESCRIPTION: Fuhrmann, 1906b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis orthacantha Fuhrmann, 1906

Sphenacanthus orthacantha (Fuhrmann, 1906) López-Neyra, 1942

Dubininolepis orthacantha (Fuhrmann, 1906) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Coscoroba coscoroba

HABITAT: Small intestine.

DISTRIBUTION: S. America.

Retinometra oshimai

Hymenolepis oshimai

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Sugimoto, 1934a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960.

SYNONYMY:

Hymenolepis oshimai Sugimoto, 1934

Sphenacanthus oshimai (Sugimoto, 1934) Spasskiĭ & Spasskaĭa, 1954

Hymenosphenacanthus oshimai (Sugimoto, 1934) Yamaguti, 1959

Retinometra oshimai (Sugimoto, 1934) Spasskiĭ, 1963

Hymenolepis (Hymenolepis) oshimai Sugimoto, 1934 of Iwata, 1939

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (Taiwan).

Hymenolepis oweni

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform birds; reported twice in ducks.

STATUS AS SPECIES: Probably identical with H. brachysoma - López-Neyra, 1942; synonym of H. brachycephala - Deblock, 1964 and Spasskaïa, 1966.

DESCRIPTION: Moghe, 1933. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Echinocotyle oweni Moghe, 1933

Drepanidotaenia (Drepanidotaenia) oweni (Moghe, 1933) López-Neyra, 1942

Hymenolepis oweni (Moghe, 1933) Skrjabin & Matevosian, 1945

Hymenolepis (Hymenolepis) oweni (Moghe, 1933) of Deblock & Rosé, 1962

Hymenolepis quasioweni Dubinina, 1954 - [Macko, 1962]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "ducks"

Anatini - Anas crecca

Charadriiformes - Larus ridibundus, Philomachus pugnax

HABITAT: Intestine.

DISTRIBUTION: Europe (Czechoslovakia), Asia (India, E. Siberia).

Retinometra oxyuri

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Spasskaïa, 1966.

SYNONYMY:

Retinometra oxyuri Maksimova in Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Oxyura leucocephala

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kazakhstan).

Microsomacanthus pachycephala
Hymenolepis pachycephala

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild ducks, once in domestic duck.

DESCRIPTION: Yamaguti, 1940a; Spasskaïa & Spasskiï, 1961; Belokobylenko, 1963; Tolkacheva, 1966. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY:

Taenia pachycephala Linstow, 1872

Drepanidotaenia pachycephala (Linstow, 1872) Linstow, 1904

Hymenolepis pachycephala (Linstow, 1872) Fuhrmann, 1906

Microsomacanthus pachycephala (Linstow, 1872) López-Neyra, 1942

LIFE CYCLE: (Skryl'kov, 1965a)

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos - [Spasskaïa, 1966, original citation not found], Anas platyrhynchos (dom.), Anas strepera

Aythiini - Aythya fuligula

Mergini - Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca deglandi, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Europe (Germany), Asia (Tuva, Tamyra, Kazakhstan, Amur, Kamchatka, Japan).

Sobolevicanthus papillata
Hymenolepis papillata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and once in domestic ducks.

DESCRIPTION: Fuhrmann, 1906a. Copy: Hughes, 1941a; Skrjabin &

Matevosian, 1945.

SYNONYMY:

Hymenolepis papillata Fuhrmann, 1906
Weinlandia papillata (Fuhrmann, 1906) Mayhew, 1925
Hymenolepis (Weinlandia) papillata Fuhrmann, 1906 of Carvalho, 1940
Dicranotaenia papillata (Fuhrmann, 1906) Skrjabin & Matevosian, 1945
Sobolevicanthus papillata (Fuhrmann, 1906) Spasskiĭ & Spasskaia, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata, Cairina moschata (dom.)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: S. America (Brazil).

Microsomacanthus paracompressa
Hymenolepis paracompressa

STATUS AS WATERFOWL PARASITE: Common; reported 14 times in wild and 16 times in domestic waterfowl.

DESCRIPTION: Czapliński, 1956d; Jarecka, 1961 (ova); Ryšavý, 1961b; Spasskaia & Spasskiĭ, 1961; Petrochenko & Kotel'nikov, 1962b; Belokobylenko, 1963. Copy: Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY:

Hymenolepis paracompressa Czapliński, 1956
Microsomacanthus paracompressa (Czapliński, 1956) Spasskaia & Spasskiĭ,
1961

LIFE CYCLE: Eggs with oncospheres passed in feces; cysticeroids develop in 14 days after ingestion by fresh-water copepod crustacea; mature in final host after ingestion. Cysticeroids survive and accumulate in gastropod mollusks after ingestion of copepods. (Dobrokhotova, 1965; Golikova, 1960a; Jarecka, 1956, 1958b, 1960a, 1961; Kisielienė, 1966; Petrochenko & Kotel'nikov, 1959b; Ryšavý, 1961c, 1962a, 1964a, 1964b)

INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops viridis, Cyclops gigas, Eucyclops macruroides, Eucyclops serrulatus, Macrocyclus albidus, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides, Paracyclops fimbriatus

AUXILIARY HOSTS: Acroloxus lacustris, Acroloxus palustris, Amphipepla gluteosa, Lymnaea ampla, Lymnaea auricularis, Lymnaea ovata,

Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Planorbis planorbis, Viviparus viviparus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas falcata, Anas querquedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca, [Netta rufina - Lapage, 1961, error; Spasskaia, 1966, original citation not found]

Mergini - Bucephala clangula, Histrionicus histrionicus, Melanitta nigra

Charadriiformes - Larus ridibundus

HABITAT: Small intestine.

DISTRIBUTION: Iceland, Europe, Asia (Kazakhstan, Tuva, Tamyr, Amur, Kamchatka).

Microsomacanthus paramicrosoma
Hymenolepis paramicrosoma

STATUS AS WATERFOWL PARASITE: Common; reported 17 times in wild ducks, 19 times in domestic waterfowl.

STATUS AS SPECIES: Synonym of H. microsoma - Ablasov, 1957.

DESCRIPTION: Gasowska, 1932; Dubinina, 1954a; Czapliński, 1956d; Ryšavý, 1961b; Petrochenko & Kotel'nikov, 1962b; Beverley-Burton, 1964; Tolkacheva, 1966. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY:

Hymenolepis (Drepanidotaenia) microsoma (Creplin) of Cohn, 1901

Hymenolepis paramicrosoma Gasowska, 1932

Microsomacanthus paramicrosoma (Gasowska, 1932) Ablasov, 1957

Hymenolepis microsoma (Creplin) of Vojtechovska-Mayerova, 1953 -
[Czapliński, 1956d]

Fuhrmanniella fausti Shen Tseng, 1932 - [Czapliński, 1956d; Ryšavý,
1961]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticeroids develop in 11-12 days after ingestion by fresh-water copepod crustacea; mature in 15 days after ingestion by final host. Cysticeroids survive and accumulate in gastropod mollusks after ingestion of copepods. (Dobrokhotova, 1964, 1965; Golikova, 1960a; Jarecka, 1958b, 1961; Kotel'nikov, 1959b; Petrochenko & Kotel'nikov, 1959a,

1959b; Ryšavý, 1962a, 1964b)

INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Acanthocyclops viridis [exper.], Eucyclops serrulatus, Macrocyclops albidus, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides, Paracyclops fimbriatus, Diaptomus sarsi

AUXILIARY HOSTS: Lymnaea auricularia, Lymnaea ovata, Lymnaea palustris, Lymnaea peregra, Lymnaea stagnalis, Planorbis planorbis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca, Anas penelope, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, [Netta rufina - Lapage, 1961, error; Spasskaïa, 1966. original citation not found]

Mergini - Clangula hyemalis, Melanitta nigra, Mergus serrator

HABITAT: Small intestine - anterior and midregion.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kazakhstan, Tamyр, Buryat-Mongolia, Amur, Primorsk, Kamchatka, Sakhalin), N. America (USA).

Microsomacanthus parvula
Hymenolepis parvula

STATUS AS WATERFOWL PARASITE: Common; reported 13 times in wild ducks and 14 times in domestic ducks. Pathology of infection described by Šlais, 1961.

DESCRIPTION: Abuladze, 1937; Czapliński, 1956d; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrzjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaïa, 1966.

SYNONYMY:

Hymenolepis parvula Kowalewski, 1904

Weinlandia parvula (Kowalewski, 1904) Mayhew, 1925

Hymenolepis (Hymenolepis) parvula Kowalewski, 1904 of Sprehn, 1932

Dicranotaenia (Dicranolepis) parvula (Kowalewski, 1904) López-Neyra, 1942

Kowalewskius parvulus (Kowalewski, 1904) Yamaguti, 1959

Microsomacanthus parvula (Kowalewski, 1904) Spasskaïa, 1957

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds in Hirudinea; mature in at least 19 days after ingestion by final host. (de Giusti & Kingston, 1962; Joyeux, 1922a; Joyeux & Baer,

1936a; Soliman, 1955)

INTERMEDIATE HOSTS: Erpobdella atomaria, Erpobdella octocolata,
Erpobdella punctata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas crecca, Anas poecilorhyncha, Anas querquedula
Aythyini - Aythya ferina, Aythya fuligula, Aythya nyroca, [Netta rufina - Lapage, 1961, error]
Mergini - Bucephala clangula, Mergus albellus

HABITAT: Small intestine - generally in anterior half.

DISTRIBUTION: Europe, Asia (Kazakhstan, Yakutia, Primorsk, Kurile Is.), N. America (USA).

Hymenolepis pauciannulata

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Meggitt, 1927b, 1931; Mahon, 1958. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis pauciannulata Meggitt, 1927
Microsomacanthus pauciannulata (Meggitt, 1927) López-Neyra, 1942
Abortilepis pauciannulata (Meggitt, 1927) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas querquedula

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Africa (Egypt).

Parabisaccanthes philactes
Hymenolepis philactes

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl; most common in downy cygnets (Maksimova, 1963b).

DESCRIPTION: Schiller, 1951c; Czapliński & Ryzhikov, 1964b. Copy:

Spasskaïa, 1966.

SYNONYMY:

Hymenolepis philactes Schiller, 1951

Drepanidotaenia philactes (Schiller, 1951) Yamaguti, 1959

Parabisaccanthes philactes (Schiller, 1951) Spasskiï & Reznik, 1963

Parabisaccanthes cygni Maksimova, 1963 - [Czapliński & Ryzhikov, 1964]

Hymenolepis cygni (Maksimova, 1963) McDonald, 1965

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in 23 days after ingestion by fresh-water copepod crustacea; mature in final host after ingestion. (Czapliński & Kotecki, 1967; Kotecki, 1964a, 1964b)

INTERMEDIATE HOSTS: Cyclops strenuus [exper.], Eucyclops serrulatus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser canagica, Cygnus columbianus bewickii, Cygnus olor

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Europe (Poland), Asia (Kazakhstan, Yakutia), N. America (USA - Alaska).

Hymenolepis pigmentata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, in 1872.

STATUS AS SPECIES: Insufficiently described for generic determination - Spasskiï & Spasskaïa, 1954a.

DESCRIPTION: Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Taenia pigmentata Linstow, 1872

Hymenolepis pigmentata (Linstow, 1872) Fuhrmann, 1906

Hymenolepis (Hymenolepis) pigmentata (Linstow, 1872) of Sprehn, 1932

Microsomacanthus pigmentata (Linstow, 1872) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya marila

HABITAT: Intestine.

DISTRIBUTION: Europe (Germany).

Wardium pingi
Hymenolepis pingi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild geese.

STATUS AS SPECIES: Synonym of H. creplini - Spasskiĭ, 1956b, and Spasskaĭa, 1966; synonym of H. aequabilis - Spasskaĭa, 1961b; Spasskiĭ, 1961, 1963.

DESCRIPTION: Shen Tseng, 1932b. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis pingi Shen Tseng, 1932

Dicranotaenia (Dicranotaenia) pingi (Shen Tseng, 1932) López-Neyra,
1942

Wardium pingi (Shen Tseng, 1932) Ablasov, 1955

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, [Anser anser (dom.) - Lapage, 1961, error],

Anser fabalis

HABITAT: Intestine.

DISTRIBUTION: Asia (China, Kirgizia).

Retinometra pittalugai
Hymenolepis pittalugai

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Lopez-Neyra, 1932; Spasskiĭ & Bobova, 1962b. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945; Spasskaĭa, 1966.

SYNONYMY:

Hymenolepis pittalugai López-Neyra, 1932

Sphenacanthus pittalugai (López-Neyra, 1932) López-Neyra, 1942

Dicranotaenia pittalugai (López-Neyra, 1932) Skrjabin & Matevosĭan,
1945

Hymenosphenacanthus pittalugai (López-Neyra, 1932) Yamaguti, 1950

Retinometra pittalugai (López-Neyra, 1932) Spasskiĭ, 1963

Dicranotaenia bisacculata Krotov, 1949 - [Spasskaïa, 1966]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, [Anas platyrhynchos (dom.) - Spasskaïa, 1966, original source not found]

Aythini - Aythya marila, [Aythya ferina - Spasskaïa, 1966, original source not found]

Mergini - Bucephala clangula

HABITAT: Intestine.

DISTRIBUTION: Europe (Spain), Asia (Kamchatka).

Confluarina podicipina
Hymenolepis podicipina

STATUS AS WATERFOWL PARASITE: Accidental, normally in grebes; reported once in wild duck.

DESCRIPTION: Szymanski, 1905; Voge & Read, 1954. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY:

Hymenolepis podicipina Szymanski, 1905

Hymenolepis (Hymenolepis) podicipina Szymanski, 1905 of Sprehn, 1932

Hymenolepis podicipedina Szymanski of Joyeux & Baer, 1936, lapsus

Dicranotaenia (Dicranotaenia) podicipina (Szymanski, 1905) López-Neyra, 1942

Dubinolepis podicipina (Szymanski, 1905) Spasskiï & Spasskaïa, 1954

Confluarina podicipina (Szymanski, 1905) Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya fuligula

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps griseus, Podiceps ruficollis

HABITAT: Probably small intestine.

DISTRIBUTION: Europe, Asia (Kirgizia), N. America (USA).

Microsomacanthus praeputialis
Hymenolepis praeputialis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Oshmarin, 1950. Copy: Spasskaĭa, 1966.

SYNONYMY:

Hymenolepis praeputialis Oshmarin, 1950

Sobolevicanthus praeputialis (Oshmarin, 1950) Spasskiĭ & Spasskaĭa,
1954

Nadejdolepis praeputialis (Oshmarin, 1950) Yamaguti, 1959

Microsomacanthus praeputialis (Oshmarin, 1950) Spasskaĭa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR - Kaliningrad), Asia (Kamchatka).

Drepanidotaenia przewalskii
Hymenolepis przewalskii

STATUS AS WATERFOWL PARASITE: Common; reported 9 times in wild and 27 times in domestic waterfowl; typically in anserine birds, and a principal helminth of domestic waterfowl in USSR. Pathology of infection described by Petrochenko, 1960.

DESCRIPTION: Skrjabin, 1914c; Czapliński, 1956d; Storozheva, 1950; Petrochenko, 1960; Belokobylenko, 1963. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945; Shevtsov & Zaskind, 1960; Spasskaĭa, 1966.

SYNONYMY:

Hymenolepis przewalskii Skrjabin, 1914

Hymenolepis (Drepanidotaenia) przewalskii Skrjabin, 1914 of Fuhrmann,
1924

Hymenolepis (Hymenolepis) przewalskii Skrjabin, 1914 of Sprehn, 1932

Drepanidotaenia (Drepanidotaenia) przewalskii (Skrjabin, 1914) López-Neyra, 1942

Hymenolepis tenuirostris (Rudolphi) of Fedĭushin, 1937, & Dubinina,
1948 - [Czapliński, 1956d]; synonym of Tschertkovilepis setigera,
Czapliński, 1967

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 12 days after ingestion by fresh-water copepod crustacea;

mature in final host after ingestion. Present in gastropod mollusks (auxiliary host). (Petrochenko, 1960; Petrochenko & Kotel'nikov, 1959a, 1959b)

INTERMEDIATE HOSTS: Eucyclops serrulatus, Mesocyclops crassus, Mesocyclops leuckarti, Mesocyclops oithonoides

AUXILIARY HOSTS: Lymnaea auricularia

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus, Anser fabalis

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas clypeata, Anas crecca, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya fuligula

HABITAT: Small intestine - anterior part of duodenum.

DISTRIBUTION: Europe (E. Europe), Asia (Azerbaijan, W. Siberia, Kazakhstan, Yakutia, Amur, Kamchatka).

Hymenolepis pseudosetigera

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baer, 1962.

SYNONYMY:

Hymenolepis pseudosetigera Baer, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

HABITAT: Large intestine, ceca.

DISTRIBUTION: Europe (Iceland).

Dicranotaenia querquedula
Hymenolepis querquedula

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Inadequately described and doubtful - Spasskiĭ, 1963; H. querquedula of Shen Tseng a synonym of H. coronula - Spasskiĭ, 1956b.

DESCRIPTION: Fuhrmann, 1920a; Shen Tseng, 1932b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis querquedula Fuhrmann, 1920

Weinlandia querquedula (Fuhrmann, 1920) Mayhew, 1925

Dicranotaenia (Dicranotaenia) querquedula (Fuhrmann, 1920) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta eatoni, Anas crecca, [Anas discors - Gower, 1939, error]

Mergini - Mergus cucullatus

HABITAT: Intestine.

DISTRIBUTION: Asia (China), N. America (USA), Antarctica.

Microsomacanthus rangdonensis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Spasskiĭ, Dang Van-Ngy, & Īurpalova, 1963.

SYNONYMY:

Microsomacanthus rangdonensis Spasskiĭ, Dang Van-Ngy, & Īurpalova, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Ciconiiformes - Ixobrychus sp.

HABITAT: Small intestine.

DISTRIBUTION: Asia (Vietnam).

Retinometra rangoonica
Hymenolepis rangoonica

STATUS AS WATERFOWL PARASITE: Rare; reported once in duck, probably domestic.

DESCRIPTION: Sharma, 1943.

SYNONYMY:

Hymenolepis rangoonica Sharma, 1943

Hymenosphenacanthus rangoonicus (Sharma, 1943) Yamaguti, 1959

Retinometra rangoonica (Sharma, 1943) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (Burma).

Hymenolepis rapida

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

DESCRIPTION: Szpotanska, 1931. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis rapida Szpotanska, 1931

Drepanidotaenia (Drepanidotaenia) rapida (Szpotanska, 1931) López-Neyra, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Intestine.

DISTRIBUTION: Australia.

Hymenolepis rarus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Synonym of H. teresoides - López-Neyra, 1942; Czapliński, 1956d; Spasskaia, 1966.

DESCRIPTION: Skrjabin, 1914c. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis rarus Skrjabin, 1914

Weinlandia rara (Skrjabin, 1914) Mayhew, 1925

Hymenolepis (Hymenolepis) rarus Skrjabin, 1914 of Sprehn, 1932

Microsomacanthus rarus (Skrjabin, 1914) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Netta rufina

HABITAT: Ceca, intestine.

DISTRIBUTION: Asia (Kazakhstan).

Hymenolepis rauschi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Schiller, 1950.

SYNONYMY:

Hymenolepis rauschi Schiller, 1950

Echinocotyle rauschi (Schiller, 1950) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Oxyura jamaicensis

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Microsomacanthus recurvata
Hymenolepis recurvata

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Spasskaïa & Spasskiï, 1961; Spasskiï & Īurpalova, 1966a.
Copy: Spasskaïa, 1966.

SYNONYMY:

Microsomacanthus recurvata Spasskaïa & Spasskiï, 1961
Hymenolepis recurvata (Spasskaïa & Spasskiï, 1961) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas querquedula

Aythiini - Aythya fuligula, Aythya marila

HABITAT: Small intestine, ceca.

DISTRIBUTION: Asia (Tuva, Kamchatka).

Amphipetrovia retracta
Hymenolepis retracta

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

DESCRIPTION: Linstow, 1905a; Spasskiï & Spasskaïa, 1964; Tolkacheva, 1966. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY:

Hymenolepis retracta Linstow, 1905
Variolepis (?) retracta (Linstow, 1905) Yamaguti, 1959
Amphipetrovia retracta (Linstow, 1905) Spasskaïa, 1966
Amphipetrovia inflatocirrosa Oshmarin, 1963 - [Spasskaïa, 1966]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya marila

Mergini - Clangula hyemalis, Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Asia (Tamyra, Yakutia, Kamchatka, Chukotka).

Dicranotaenia riggenbachi
Hymenolepis riggenbachi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

STATUS AS SPECIES: Perhaps an aberrant form of H. coronula - Spasskiĭ, 1956a; inadequately described, doubtful - Spasskiĭ, 1963.

DESCRIPTION: Mola, 1913. Copy: Hughes, 1941a; Skrzjabin & Matevosĭan, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis riggenbachi Mola, 1913

Dicranotaenia (Dicranotaenia) riggenbachi (Mola, 1913) López-Neyra,
1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Netta rufina

HABITAT: Small intestine.

DISTRIBUTION: Europe (Sardinia).

Hymenolepis robertsi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Baylis, 1934a. Copy: Hughes, 1941a; Skrzjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis robertsi Baylis, 1934

Drepanidotaenia (Drepanidolepis) robertsi (Baylis, 1934) López-Neyra,
1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas gibberifrons

HABITAT: Intestine.

DISTRIBUTION: Australia.

Echinocotyle rosseteri
Hymenolepis rosseteri

STATUS AS WATERFOWL PARASITE: Common; reported 16 times in wild, 4 times in domestic, and once in captive ducks.

DESCRIPTION: Singh, 1952; Czapliński, 1956d; Mahon, 1956; Ryzhikov, 1956a; Macko, 1961b; Beverley-Burton, 1964; Spasskaia, 1965. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Taenia lanceolata Goeze of Rosseter, 1891

Echinocotyle rosseteri Blanchard, 1891

Taenia rosseteri (Blanchard, 1891) Braun, 1894

Taenia (Echinocotyle) rosseteri (Blanchard, 1891) of Braun, 1898

Hymenolepis (Echinocotyle) rosseteri (Blanchard, 1891) Clerc, 1903

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop after ingestion by fresh-water ostracod crustacea; mature in final host after ingestion. Cysticercoids present in gastropod mollusks (auxiliary hosts). (Jarecka, 1958b; Rosseter, 1891a, 1891c, 1911; Ryšavý, 1961c, 1962a, 1964a, 1964b)

INTERMEDIATE HOSTS: Cyclocypris cinerea, Cyclocypris dispersa, Cyclocypris globosa, Cypris ophthalmica, Cypris pubera

AUXILIARY HOSTS: Lymnaea ampla, Lymnaea ovata, Lymnaea peregra, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorni ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas discors, Anas penelope, Anas querquedula

Mergini - Clangula hyemalis, Histrionicus histrionicus

Passeriformes - Spermospiza haematina

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Europe, Asia (Kazakhstan, India, Amur, Kamchatka), Africa (Congo region), N. America (Canada, USA).

Echinocotyle ryjikovi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Ryzhikov, 1956a; Jogis, 1963. Copy: Spasskaia, 1966.

SYNONYMY:

Echinocotyle sp. Ryzhikov, 1956

Echinocotyle singhi Ryzhikov of Khuan Shen-i, 1962, nomen nudum

Echinocotyle ryjikovi Jogis, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (USSR, Esthonia), Asia (Khabarovsk).

Dicranotaenia sacciperium

Hymenolepis sacciperium

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

STATUS AS SPECIES: Synonym of H. coronula - Spasskiĭ, 1956a and Spasskaia, 1966; distinct - Beverley-Burton, 1964.

DESCRIPTION: Mayhew, 1925; Jarecka, 1961 (ova); Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskiĭ, 1963.

SYNONYMY:

Hymenolepis sacciperium Mayhew, 1925

Dicranotaenia (Dicranotaenia) sacciperium (Mayhew, 1925) López-Neyra,
1942

Dicranotaenia coronula sacciperium (Mayhew, 1925) Spasskiĭ, 1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds developed experimentally in 30 days in fresh-water ostracod crustacea (long period explained as indicating abnormal host); mature in final host after ingestion. (Jarecka, 1960a, 1961)

INTERMEDIATE HOSTS: Cyclocypris laevis [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria fischeri, Somateria mollissima

Aythiini - Aythya marila, Aythya fuligula

HABITAT: Intestine - middle region.

DISTRIBUTION: Europe (England, Poland), Asia (Yakutia), N. America (USA, USA - Alaska).

Tschertkovilepis setigera

Hymenolepis setigera

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 31 times in wild, 75 times in domestic, and twice in captive waterfowl; typically in Anserini. Often a cause of disease in young geese (Sprehn, 1932).

STATUS AS SPECIES: Confused with H. longicirrosa (fasciata) in early literature.

DESCRIPTION: Skrjabin, 1914c; Dubinina, 1954a; Czapliński, 1956d; Spasskaïa, 1965; Spasskiĭ & Īurpalova, 1966b. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Spasskaïa, 1966.

SYNONYMY: Hughes, 1940.

Taenia setigera Froelich, 1789

Alyselminthus setigerus (Froelich, 1789) Zeder, 1800

Halysis setigera (Froelich, 1789) Zeder, 1803

Drepanidotaenia setigera (Froelich, 1789) Railliet, 1893

Diplacanthus (Dilepis) setigera (Froelich, 1789) Cohn, 1899

Hymenolepis setigera (Froelich, 1789) Railliet, 1899

Hymenolepis (Drepanidotaenia) setigera (Froelich, 1789) of Cohn,

1901

Hymenolepis (Hymenolepis) setigera (Froelich, 1789) of Sprehn, 1932

Drepanidotaenia (Drepanidotaenia) setigera (Froelich, 1789) of López-

Neyra, 1942

Tschertkovilepis setigera (Froelich, 1789) Spasskiĭ & Spasskaïa,

1954

Hymenolepis (Tschertkovilepis) setigera (Froelich, 1789) of Pĭvi &

Vilumets, 1962

Taenia setosa Rudolphi, 1810

Taenia fasciata Rudolphi, 1810

Drepanidotaenia fasciata (Rudolphi, 1810) Railliet, 1893

Taenia krabbei Kowalewski, 1894 - [Kowalewski, 1902b]; distinct,

Czapliński & Jarecka, in litt.

Hymenolepis anseris Skrjabin & Matevosĭan, 1942 - [Spasskiĭ & Spasskaïa, 1954a; Czapliński, 1956d]

LIFE CYCLE: Eggs with oncospheres passed in feces; cysticercoïds develop in fresh-water copepod and ostracod crustacea and in marine amphipod crustacea; mature in 13-14 days in final host after ingestion. Present in fresh-water gastropod mollusks (auxiliary hosts?); mature more rapidly (7-8 days) in final host after ingestion in mollusks than after ingestion of larvae in copepods. (Belopol'skaïa, 1952b; Harper, 1930; Linstow, 1892; Lesin'sh & Murnietse, 1963; Monchenko, 1956; Petrochenko & Kotel'nikov, 1959a, 1959b; Ransom, 1909; Southwell, 1914; Uspenskaïa, 1960)

INTERMEDIATE HOSTS: Acanthocyclops bicuspidatus, Cyclops gigas, Cyclops strenuus, Eucyclops serrulatus, Eucyclops sneratus, Mesocyclops leuckarti, Mesocyclops oithonoides, Diaptomus coeruleus, Diaptomus sarsi, Cypris pubera, Anonyx nugax, Gammarus locusta

AUXILIARY HOSTS: Lymnaea auricularia, Lymnaea ovata, Lymnaea palustris, Lymnaea stagnalis, Planorbarius corneus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser cygnoides, Anser erythropus, Anser fabalis, Anser indicus, Branta bernicla, Branta canadensis, Branta leucopsis, Cygnus cygnus, Cygnus olor, Cygnus olor (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca, Anas penelope, Anas querquedula, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Netta rufina

Mergini - Clangula hyemalis

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Armenia, Uzbekistan, Kirgizia, Kazakhstan, Yakutia, India, Mongolia, Primorsk, Kamchatka, Taiwan), N. America (USA, USA - Alaska).

Hymenolepis sibirica

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Linstow, 1905a; Schiller, 1955a. Copy: Schultz, 1940; Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaïa, 1966.

SYNONYMY:

Diorchis sibirica Linstow, 1905

Hymenolepis sibirica (Linstow, 1905) Fuhrmann, 1908

Dicranotaenia sibirica (Linstow, 1905) Skrjabin & Matevosian, 1945

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri, Somateria mollissima, Somateria spectabilis

HABITAT: Intestine.

DISTRIBUTION: Asia (Tamyр, Yakutia), N. America (USA - Alaska).

Drepanidotaenia signachiana

Hymenolepis signachiana

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Kurashvili, 1950a, 1957. Copy: Spasskaia, 1966.

SYNONYMY:

Drepanidotaenia signachiana Kurashvili, 1950

Hymenolepis signachiana (Kurashvili, 1950) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Small intestine.

DISTRIBUTION: Europe (Georgia).

Hymenolepis simplex

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks and once in captive duck.

STATUS AS SPECIES: Original description based on combination of strobila of Sobolevicanthus, seemingly S. gracilis, and scolex of Dicranotaenia coronula; report by Shen Tseng, 1932, erroneous as to hooks, does not establish validity of species - Spasskiĭ, 1956b, 1963.

DESCRIPTION: Fuhrmann, 1906b. Copy: Hughes, 1941a; Skrjabin &

Matevosian, 1945.

SYNONYMY:

Hymenolepis simplex Fuhrmann, 1906

Weinlandia simplex (Fuhrmann, 1906) Mayhew, 1925

Hymenolepis (Hymenolepis) simplex Fuhrmann, 1906 of Sprehn, 1932

Dicranotaenia (Dicranotaenia) simplex (Fuhrmann, 1906) López-Neyra,
1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna cristata, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas formosa

Mergini - Mergus cucullatus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (India - Calcutta Zool. Garden, China),
N. America (USA).

Retinometra skrjabini
Hymenolepis skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild
waterfowl.

STATUS AS SPECIES: Synonym of H. macracanthos - Spasskaia, 1961a;
retained as distinct by Spasskaia, 1966.

DESCRIPTION: Matevosian, 1946; Dubinina, 1954a; Bezubik, 1957a.

Copy: Skrjabin & Matevosian, 1945; Kurashvili, 1957; Spasskaia,
1966.

SYNONYMY:

Hymenolepis skrjabini Matevosian in Skrjabin & Matevosian, 1945

Sphenacanthus skrjabini (Matevosian, 1945) Spasskiĭ & Spasskaia,
1954

Hymenosphenacanthus skrjabini (Matevosian, 1945) Yamaguti, 1959

Retinometra skrjabini (Matevosian, 1945) Spasskiĭ, 1963

LIFE CYCLE: Cysticeroid larvae reported in fresh-water copepod
crustacea. (Kotel'nikov, 1964a)

INTERMEDIATE HOSTS: Hemidiaptomus sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea
Anatini - Anas platyrhynchos, Anas penelope, Anas strepera
Aythyini - Aythya ferina, Aythya fuligula, Aythya marila
Mergini - Bucephala clangula

HABITAT: Small intestine.

DISTRIBUTION: Europe (E. Europe), Asia (W. Siberia, Kazakhstan).

Echinocotyle skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Matevosian & Krotov, 1949. Copy: Spasskaia, 1966.

SYNONYMY:

Echinocotyle skrjabini Matevosian & Krotov, 1949

Hymenolepis skrjabini (Matevosian & Krotov, 1949) McDonald, 1965,
not H. skrjabini Matevosian, 1945

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata, Anas crecca, Anas formosa, Anas strepera

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Asia (W. Siberia, Kazakhstan).

Microsomacanthus skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Spasskaia, 1963. Copy: Spasskaia, 1966.

SYNONYMY:

Microsomacanthus skrjabini Spasskaia, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri

Mergini - Histrionicus histrionicus

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kamchatka, Chukotka).

Echinatrium skrjabini

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Spasskiĭ & ĭurpalova, 1965. Copy: Spasskaĭa, 1966.

SYNONYMY:

Echinatrium skrjabini Spasskiĭ & ĭurpalova, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya marila

Mergini - Melanitta fusca deglandi, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Hymenolepis smythi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Singh, 1960b.

SYNONYMY:

Hymenolepis smythi Singh, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Nettapus coromandelianus

HABITAT: Not given, probably small intestine.

DISTRIBUTION: Asia (India).

Microsomacanthus scbolevi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Spasskiĭ & Īurpalova, 1964, 1966a; Tolkacheva, 1966.
Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus sobolevi Spasskiĭ & Īurpalova, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Clangula hyemalis

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tamyр, Chukotka).

Hymenolepis solowiowi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

STATUS AS SPECIES: Inadequately described. Synonym of H. compressa - L6pez-Neyra, 1941; Spasskiĭ, 1956b; Spasskaĭa, 1966.

DESCRIPTION: Skrjabin, 1914c; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Hymenolepis solowiowi Skrjabin, 1914

Hymenolepis (Hymenolepis) solowiowi Skrjabin, 1914 of Sprehn, 1932

Nadejdolepis (?) solowiowi (Skrjabin, 1914) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta

Aythiini - Aythya ferina, Aythya fuligula, Aythya nyroca

HABITAT: Small intestine - entire length.

DISTRIBUTION: Europe (England), Asia (Kazakhstan, China).

Microsomacanthus somateriae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Ryzhikov, 1965.

SYNONYMY:

Microsomacanthus somateriae Ryzhikov, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

HABITAT: Small intestine.

DISTRIBUTION: Asia (Chukotka).

Australiolepis southwelli

Hymenolepis southwelli

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild and twice in captive waterfowl.

DESCRIPTION: Maplestone & Southwell, 1922; Szpotanska, 1931. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945. Spasskii, 1963.

SYNONYMY:

Echinorhynchotaenia nana Maplestone & Southwell, 1922

Hymenolepis southwelli Szpotanska, 1931

Sphenacanthus southwelli (Szpotanska, 1931) López-Neyra, 1942

Australiolepis southwelli (Szpotanska, 1931) Spasskii & Spasskaia,
1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta sandvicensis, Cygnus atratus

HABITAT: Intestine - jejunem.

DISTRIBUTION: Europe (England - Aviary), Australia.

Microsomacanthus spasskii

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Tolkacheva, 1965.

SYNONYMY:

Microsomacanthus spasskii Tolkacheva, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas acuta, Anas penelope

Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Tamyр).

Confluaria spasskii

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Spasskaïa, 1966.

SYNONYMY:

Confluaria spasskii Ablasov in Spasskaïa, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya fuligula

HABITAT: Probably small intestine.

DISTRIBUTION: Asia (Kirgizia).

Anatinella spinulosa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

STATUS AS SPECIES: Synonym of H. meggitti - Spasskiĭ, 1961.

DESCRIPTION: Dubinina, 1954a. Copy: Spasskiĭ, 1963; Spasskaïa, 1966.

SYNONYMY:

Drepanidotaenia spinulosa Dubinina, 1954

Hymenolepis spinulosa (Dubinina, 1954) McDonald, 1965, not H. spinulosa Kholodkovskii, 1906

Anatinella spinulosa (Dubinina, 1954) Spasskiĭ, 1963
Hymenolepis meggitti Shen Tseng, 1932, p.p.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca

Aythiini - Aythya ferina, Aythya marila, Netta rufina

Mergini - Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (W. Siberia, Uzbekistan, Tamyra, Yakutia, Kamchatka, Komandorsky Is.).

Microsomacanthus spirallibursata
Hymenolepis spirallibursata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild, 3 times in domestic, and once in captive ducks.

DESCRIPTION: Czapliński, 1956d; Ryšavý, 1961b; Jarecka, 1961 (ova); Belokobylenko, 1963.

SYNONYMY:

Hymenolepis spirallibursata Czapliński, 1956

Microsomacanthus spirallibursata (Czapliński, 1956) Belokobylenko,
1963

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 14 days after ingestion by fresh-water copepod crustacea; cysticercoïds survive and accumulate in mollusks after ingestion of copepods. (Jarecka, 1956, 1958b, 1960a, 1961; Ryšavý, 1961c, 1962a, 1964a, 1964b)

INTERMEDIATE HOSTS: Acanthocyclops viridis, Macrocyclops albidus,
Mesocyclops leuckarti

AUXILIARY HOSTS: Anodonta piscinalis, Lymnaea ampla, Lymnaea auricularia, Lymnaea ovata, Lymnaea peregra, Lymnaea stagnalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas querquedula

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, [Netta rufina - Lapage, 1961, erroneous citation]

HABITAT: Small intestine - entire length.

DISTRIBUTION: Europe (England, Poland, Czechoslovakia), Asia (Kazakhstan).

Microsomacanthus spiralicirrata
Hymenolepis spiralicirrata

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks and once in domestic duck.

STATUS AS SPECIES: Same as H. liophallos of Beverley-Burton, 1964.

DESCRIPTION: Maksimova, 1963a; Belokobylenko, 1963. Copy: Spasskaia, 1966.

SYNONYMY:

Microsomacanthus spiralicirrata Maksimova, 1963

Hymenolepis spiralicirrata (Maksimova, 1963) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas clypeata,

Anas crecca

Aythiini - Aythya fuligula

HABITAT: Intestine.

DISTRIBUTION: Asia (Kazakhstan).

Sobolevicanthus stolli
Hymenolepis stolli

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Brock, 1941; Polk, 1942b (as H. mastigopraedita); Schiller, 1954; Spasskiĭ & Bobova, 1962b. Copy: Spasskaia, 1966.

SYNONYMY:

Hymenolepis stolli Brock, 1941

Sobolevicanthus stolli (Brock, 1941) Czapliński, 1956

Hymenolepis mastigopraedita Polk, 1942 - [Schiller, 1954; Spasskiĭ & Bobova, 1962b]

Sobolevicanthus mastigopraedita (Polk, 1942) Spasskiĭ & Spasskaĭa,
1954
Hymenolepis dafilae Polk, 1942 - [Schiller, 1954]; distinct, Spasskiĭ
& Bobova, 1962b.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas formosa

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kamchatka), N. America (USA, USA - Alaska).

Hymenolepis tenerrima

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks,
once experimentally in domestic duck.

DESCRIPTION: Copy: Hughes, 1941a; Skrjabin & Matevosĭan, 1945.

SYNONYMY:

Taenia tenerrima Linstow, 1882

Hymenolepis tenerrima (Linstow, 1882) Fuhrmann, 1906

Hymenolepis (Echinocotyle) tenerrima (Linstow, 1882) of Fuhrmann,
1908

Hymenolepis (Hymenolepis) tenerrima (Linstow, 1882) of Sprehn, 1932

Sphenacanthus tenerrima (Linstow, 1882) López-Neyra, 1942

Hymenosphenacanthus tenerrima (Linstow, 1882) Yamaguti, 1959

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids
present in fresh-water ostracod crustacea; immature strobilae in
final host 20 days after ingestion. (Harper, 1930)

INTERMEDIATE HOSTS: Herpetocypris reptans

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Aythini - Aythya affinis, Aythya fuligula, Aythya marila

HABITAT: Large intestine.

DISTRIBUTION: Europe, N. America (USA).

Monosaccanthes tenuirostris
Hymenolepis tenuirostris

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

STATUS AS SPECIES: Established by Czapliński, 1967; previously confused with Tschertkovilepis krabbei and Drepanidotaenia przewalskii, descriptions and reported hosts in literature (35 reports) based on mixtures of these forms.

DESCRIPTION: Czapliński, 1956d, 1967.

SYNONYMY: Czapliński, 1967.

Taenia tenuirostris Rudolphi, 1819, p.p.

Drepanidotaenia tenuirostris (Rudolphi, 1819) Railliet, 1893, p.p.

Diplacanthus (Dilepis) tenuirostris (Rudolphi, 1819) Cohn, 1899

Hymenolepis tenuirostris (Rudolphi, 1819) Railliet, 1899

Hymenolepis (Hymenolepis) tenuirostris (Rudolphi, 1819) of Sprehn,
1932

Drepanidotaenia (Drepanidotaenia) tenuirostris (Rudolphi, 1819) of
López-Neyra, 1942

Dicranotaenia tenuirostris (Rudolphi, 1819) López-Neyra, 1943

Microsomacanthus tenuirostris (Rudolphi, 1819) Yamaguti, 1959

Monosaccanthes tenuirostris (Rudolphi, 1819) Czapliński, 1967

Taenia krabbei Kowalewski, 1894, not Moniez, 1879 - [Skrjabin & Matevosian, 1945]; distinct, Czapliński, 1967

Taenia conscripta Railliet & Henry, 1909 - [Lühe, 1910; et al.];
synonym of T. krabbei

Hymenolepis tritesticulata Fuhrmann, 1907

Weinlandia tritesticulata (Fuhrmann, 1907) Mayhew, 1925

Drepanidotaenia (Drepanidolepis) tritesticulata (Fuhrmann, 1907)
López-Neyra, 1942

Microsomacanthus (?) tritesticulata (Fuhrmann, 1907) Yamaguti, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Mergus albellus, Mergus merganser, Mergus serrator

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (China, Japan).

Hamatolepis teresoides

Hymenolepis teresoides

STATUS AS WATERFOWL PARASITE: Common; reported 19 times in wild

waterfowl, twice in captive waterfowl.

DESCRIPTION: Fuhrmann, 1906a; Dubinina, 1954a; Czapliński, 1956d.
Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Taenia teres Krabbe of Linstow, 1890

Hymenolepis teresoides Fuhrmann, 1906

Weinlandia teresoides (Fuhrmann, 1906) Mayhew, 1925

Hymenolepis (Hymenolepis) teresoides Fuhrmann, 1906 of Sprehn, 1932

Drepanidotaenia (Drepanidolepis) teresoides (Fuhrmann, 1906) López-Neyra, 1942

Microsomacanthus teresoides (Fuhrmann, 1906) Yamaguti, 1950

Sphenacanthus teresoides (Fuhrmann, 1906) Borgarenko, 1961

Hamatolepis teresoides (Fuhrmann, 1906) Spasskiĭ, 1964

Hymenolepis globulosa Szpotanska, 1931 - [López-Neyra, 1941; Czapliński, 1956d]

Armadoskrjabinia globulosa (Szpotanska, 1931) Yamaguti, 1959

Hymenolepis rarus Skrjabin, 1914 - [López-Neyra, 1941; Czapliński, 1956d]

Hymenolepis crecca Singh, 1952 - [Spasskiĭ, 1961]

LIFE CYCLE: Eggs with onchospheres passed in feces; larvae infected fresh-water ostracod crustacea, but did not complete development. (Jarecka, 1958b)

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Cygnus atratus

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas penelope, Anas strepera

Aythiini - Aythya nyroca, Netta rufina

Mergini - Melanitta fusca deglandi

HABITAT: Small intestine, ceca.

DISTRIBUTION: Europe, Asia (W. Siberia, Azerbaidzhan, Armenia, Uzbekistan, Kazakhstan, Primorsk, Sakhalin), N. America (USA), Australia.

Sobolevicanthus terraereginae

Hymenolepis terraereginae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild waterfowl.

DESCRIPTION: Johnston, 1913a. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis terraereginae Johnston, 1911

Dicranotaenia terraereginae (Johnston, 1911) Skrjabin & Matevosian, 1945

Sobolevicanthus terraereginae (Johnston, 1911) Spasskiĭ & Spasskaia, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmata

HABITAT: Intestine.

DISTRIBUTION: Australia.

Microsomacanthus trichorhynchus
Hymenolepis trichorhyncha

STATUS AS WATERFOWL PARASITE: Rare; reported once (?) in wild ducks.

DESCRIPTION: Yoshida, 1908, 1910. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Spasskaia, 1966.

SYNONYMY:

Hymenolepis trichorhyncha Yoshida, 1908

Hymenolepis (Hymenolepis) trichorhyncha Yoshida, 1908 of Sprehn, 1932

Dicranotaenia trichorhynchus (Yoshida, 1908) Skrjabin & Matevosian, 1945

Microsomacanthus trichorhynchus (Yoshida, 1908) Spasskiĭ & Spasskaia, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - [Anas platyrhynchos - Iwata, 1939, probable error],

Anas platyrhynchos (dom.) - [Spasskaia, 1966, original citation not found], Anas crecca

HABITAT: Small intestine - duodenum.

DISTRIBUTION: Europe (S. Russia), Asia (Japan).

Microsomacanthus trifolium
Hymenolepis trifolium

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

STATUS AS SPECIES: Perhaps synonym of Diploposthe laevis - Fuhrmann, 1932.

DESCRIPTION: Linstow, 1905b; Ryšavý, 1961b. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945.

SYNONYMY:

Hymenolepis trifolium Linstow, 1905
Weinlandia trifolium (Linstow, 1905) Mayhew, 1925
Hymenolepis (Hymenolepis) trifolium Linstow, 1905 of Sprehn, 1932
Drepanidotaenia (Drepanidolepis) trifolium (Linstow, 1905) López-Neyra, 1942
Dicranotaenia trifolium (Linstow, 1905) Skrjabin & Matevosian, 1945
Microsomacanthus trifolium (Linstow, 1905) Spasskiĭ & Spasskaĭa, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos, Anas strepera

HABITAT: Intestine.

DISTRIBUTION: Europe (Germany, Czechoslovakia, England).

Microsomacanthus tuvensis
Hymenolepis tuvensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild ducks.

DESCRIPTION: Spasskaĭa & Spasskiĭ, 1961; Maksimova, 1963a; Tolkačeva, 1966. Copy: Spasskaĭa, 1966.

SYNONYMY:

Microsomacanthus tuvensis Spasskaĭa & Spasskiĭ, 1961
Hymenolepis tuvensis (Spasskaĭa & Spasskiĭ, 1961) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas falcata

Aythini - Aythya fuligula, Aythya marila, Aythya nyroca
Mergini - Bucephala clangula, Melanitta nigra

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kazakhstan, Tuva, Tamyр, Kamchatka).

Retinometra venusta
Hymenolepis venusta

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild and twice in domestic ducks.

DESCRIPTION: Dubinina, 1954a; Beverley-Burton, 1964. Copy: Hughes, 1941a; Skrjabin & Matevosian, 1945; Shevtsov & Zaskind, 1960; Spasskaia, 1966.

SYNONYMY: Hughes, 1940.

Cysticercus venusta Rosseter, 1897

Taenia venusta (Rosseter, 1897) Rosseter, 1897

Drepanidotaenia venusta (Rosseter, 1897) Rosseter, 1897

Hymenolepis venusta (Rosseter, 1897) Railliet & Henry, 1909

Sphenacanthus venusta (Rosseter, 1897) Lopez-Neyra, 1942

Hymenosphenacanthus venustus (Rosseter, 1897) Yamaguti, 1959

Retinometra venusta (Rosseter, 1897) Spasskaia, 1966

Hymenolepis macrocephala Fuhrmann, 1913 - [Spasskaia, 1966]

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoids develop in fresh-water ostracod and copepod crustacea; mature in final host after ingestion. (Rosseter, 1897a; Spasskaia, 1966)

INTERMEDIATE HOSTS: Cyclocypris dispersa, Cyclocypris laevis, Notodromas monacha, Acanthocyclops viridis, Eucyclops macruroides, Macrocylops albidus, Macrocylops fuscus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta

Aythini - Aythya ferina, Netta rufina

HABITAT: Small intestine - anterior region.

DISTRIBUTION: Europe, Asia (W. Siberia, Kirgizia, Amur).

Hymenolepis vistulae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Czapliński, 1960; Jarecka, 1961 (ova).

SYNONYMY:

Hymenolepis vistulae Czapliński, 1960

LIFE CYCLE: Eggs with onchospheres passed in feces; cysticercoïds develop in 16 days at 18 C. after ingestion by fresh-water copepod crustacea (Czapliński, 1960)

INTERMEDIATE HOSTS: Cyclops strenuus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Small intestine.

DISTRIBUTION: Europe (Poland).

Hymenolepis wardlei

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Dubey & Pande, 1964.

SYNONYMY:

Hymenolepis wardlei Dubey & Pande, 1964

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas poecilorhyncha

HABITAT: Small intestine.

DISTRIBUTION: Asia (India).

Sobolevicanthus wizniewskii

Hymenolepis wizniewskii

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks and once in domestic duck.

DESCRIPTION: Czapliński, 1956d. Copy: Spasskaïa, 1966.

SYNONYMY:

Sobolevicanthus wizniewskii Czapliński, 1956
Hymenolepis wizniewskii (Czapliński, 1956) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya ferina, Aythya nyroca

HABITAT: Intestine.

DISTRIBUTION: Europe (Poland), Asia (Kazakhstan).

Hymenolepis yoshidai

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Not in genus Kowalewskius as defined by Czapliński, 1967.

DESCRIPTION: Yamaguti, 1956.

SYNONYMY:

Kowalewskius yoshidai Yamaguti, 1956

Hymenolepis yoshidai (Yamaguti, 1956) McDonald, 1965

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Asia (Japan).

Wardium yukonensis
Hymenolepis yukonensis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Schiller, 1954.

SYNONYMY:

Hymenolepis yukonensis Schiller, 1954

Wardium yukonensis (Schiller, 1954) Spasskiĭ, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria fischeri

HABITAT: Small intestine - duodenum.

DISTRIBUTION: N. America (Alaska).

Capillaria anatis

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 35 times in wild, 56 times in domestic, and 5 times in captive waterfowl.

DESCRIPTION: Mettrick, 1959a; Czapliński, 1962b; Wakelin, 1965a. Copy: Madsen, 1945; Kasimov, 1956; Skrjabin, Shikhobalova, & Orlov, 1957; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Madsen, 1952.

Trichocephalus anatis Schrank, 1790

Trichosoma anatis Railliet, 1895

Capillaria anatis (Schrank, 1790) Travassos, 1915, e.p.

Thominx anatis (Schrank, 1790) Skrjabin & Shikhobalova, 1954

Capillaria tumida Zeder, 1803

Capillaria semiteres Zeder, 1803, e.p. (?)

Hamularia nodulosa Rudolphi, 1809, e.p. (?)

Trichocephalus capillaris Rudolphi, 1809, e.p.

Trichosoma brevicolle Rudolphi, 1819, e.p.

Trichosoma longicolle Rudolphi, 1819

Trichosoma resectum Dujardin, 1843 - distinct, Le-van Hoa, 1960

Trichosoma collare Linstow, 1873

Capillaria collare (Linstow, 1873) Travassos, 1915

Echinocoleus collare (Linstow, 1873) López-Neyra, 1947

Thominx collaris (Linstow, 1873)

Orthothominx collaris (Linstow, 1873) Freitas & da Silva, 1960

Trichosoma dubium Kowalewski, 1894

Trichosoma retusum Railliet, 1895

Capillaria corvorum (Rudolphi, 1819) Travassos, 1915 - distinct,
Le-van Hoa, 1960

Capillaria uruguayensis Calzada, 1937 (?)

Echinocoleus uruguayensis (Calzada, 1937) López-Neyra, 1947

Thominx uruguayensis (Calzada, 1937) Skrjabin & Shikhobalova, 1954

LIFE CYCLE: Direct, prepatent period 28 days. (Wetzel & Quittek, 1940)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser caerulescens, Branta canadensis, Branta ruficollis, Cygnus atratus, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus olor

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas capensis, Anas castanea, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas cyanoptera, Anas falcata, Anas formosa, Anas leucophrys, Anas penelope, Anas querquedula, Anas rubripes, Anas sibilatrix, Anas specu-

laris, Anas strepera

Athyini - Aythya affinis, Aythya americana, Aythya collaris,
Aythya ferina, Aythya fuligula, Aythya novae-seelandiae, Aythya
nyroca, Aythya vallisneria, Netta rufina

Cairinini - Aix galericulata, Aix sponsa, Cairina moschata (dom.)

Mergini - Bucephala albeola, Bucephala clangula, Clangula hyemalis,
Melanitta fusca, Mergus merganser, Mergus serrator

Oxyurini - Oxyura jamaicensis

Podicipediformes - Podiceps grisegena

Galliformes - Gallus gallus (dom.), Lyrurus tetrix, Meleagris gallo-
pavo (dom.), Perdix perdix, Phasianus colchicus

Gruiformes - Fulica atra

Charadriiformes - Larus ridibundus

Columbiformes - Columba palumbus

Fasseriformes - Corvus corax, Corvus corone, Corvus frugilegus, Cor-
vus monedula, Garrulus glandarius, Nucifraga carvocatactes

HABITAT: Ceca, occasionally small intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Kirgizia,
Uzbekistan, Kazakhstan, Primorsk, Amur, Kamchatka, Chukotka), N.
America (USA, Canada), S. America.

Capillaria annulata

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous
birds; reported once in domestic duck. Cause of serious pathology
and losses in gallinaceous birds; losses described by Cram, 1936.

STATUS AS SPECIES: Stated to be host-reaction form of C. contorta
by Madsen, 1951; maintained as distinct species by other authors.

DESCRIPTION: Cram, 1936. Copy: Kasimov, 1956; Skryabin, Shikhoba-
lova, & Orlov, 1957.

SYNONYMY: Cram, 1936.

Capillaria semiteres Zeder, 1803, e.p. - [Yamaguti, 1961]

Trichosomum annulatum Molin, 1858

Trichosoma annulata (Molin, 1858) Cram, 1925

Capillaria annulata (Molin, 1858) Cram, 1926

Eucoleus annulatus (Molin, 1858) López-Neyra, 1947

Ritaklossia annulata (Molin, 1858) Freitas & da Silva, 1960

Trichosoma strumosum Reibisch, 1893

Capillaria strumosa (Reibisch, 1893) Travassos, 1915

Thominx strumosa (Reibisch, 1893) Travassos, 1915

Eucoleus strumosa (Reibisch, 1893) Wassilkowa & Gushanskaja, 1930

Trichosoma delicatissimum Perroncito & Tomiolo, 1899

Capillaria oblata Graham, Thorp, & Hectorne, 1929 - [Yamaguti, 1961]

LIFE CYCLE: Eggs passed in feces, embryonated in 24-47 days or longer, do not develop at 4-6 C. or 37 C.; eggs hatch after ingestion by earthworm, larvae penetrate longitudinal muscles; larvae infective for final host in 14-28 days, varying with species of earthworms; eggs in feces of final host 19-26 days after ingestion. (Allen, 1949, 1950; Wehr & Allen, 1945).

INTERMEDIATE HOSTS: Alloloborhora caliginosa, Eisenia foetida, Lumbricus terrestris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Falconiformes - Accipiter nisus, Buteo buteo

Galliformes - Bonasa umbellus, Chrysolophus pictus, Colinus virginianus, Gallus gallus (dom.), Lyrurus tetrax, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida sp., Perdix perdix, Phasianus colchicus, Syrnaticus reevesii, Tetrao urogallus

Strigiformes - Bubo bubo

HABITAT: Esophagus - embedded in mucosa.

DISTRIBUTION: Cosmopolitan. Europe, Asia, N. America, S. America.

Capillaria bursata

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental, normally in domestic fowl; reported twice in domestic geese.

STATUS AS SPECIES: Synonym of C. caudinflata - Madsen, 1952; distinct - Wakelin, 1965a.

DESCRIPTION: Freitas & Almeida, 1934; Todd, 1947; López-Neyra, 1947; Wakelin, 1965a. Copy: Kasimov, 1956; Skrjabin, Shikhobalova, & Orlov, 1957; Gvozdev, 1958.

SYNONYMY:

Capillaria bursata Teixeira de Freitas & Lins de Almeida, 1934

Aonchotheca bursata (Freitas & Almeida, 1934) López-Neyra, 1946

LIFE CYCLE: Eggs passed in feces of host, larvae develop in 13-15 days at 18-20 C., in 8 days at 28-30 C.; eggs hatch after ingestion by earthworm; larvae infective to final host in 22-25 days; mature in final host 20-26 days after ingestion. (Savvateeva, 1965; Shlikas, 1966)

INTERMEDIATE HOSTS: Allolobophora longa, Bimastus tenuis, Dendrobaena octaedra [exper.], Eisenia foetida, Lumbricus rubellus [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.), Perdix perdix, Phasianus colchicus, Tetrao parvirostris

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Kirgizia, Uzbekistan, Kazakhstan, Primorsk), N. America (USA), S. America (Brazil).

Capillaria cairinae

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Freitas & Almeida, 1935a. Copy: Madsen, 1945; Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Capillaria cairinae Teixeira de Freitas & Lins de Almeida, 1935

Eucoleus cairinae (Freitas & Almeida, 1935) López-Neyra, 1947

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata (dom.)

HABITAT: Esophagus.

DISTRIBUTION: S. America (Brazil).

Capillaria caudinflata

STATUS AS WATERFOWL PARASITE: Infrequent, normally in gallinaceous birds; reported 5 times in domestic waterfowl. Associated with pathological conditions in chickens.

DESCRIPTION: Wakelin, 1965a. Copy: Madsen, 1945; Kasimov, 1956; Skrjabin, Shikhobalova, & Orlov, 1957; Gvozdev, 1958; Shevtsov & Zaskind, 1960.

SYNONYMY: Madsen, 1952.

Calodium caudinflatum Molin, 1858

Capillaria caudinflata (Molin, 1858) Travassos, 1915

Filaria gallinae Schrank, 1788 (?)

Capillaria semiteres Zeder, 1803, e.p. (?)

Hamularia nodulosa Rudolphi, 1809, e.p. (?)
Trichosoma columbae Rudolphi, 1819 (?)
Trichosoma longicolle Rud. of Mehlis, 1831. and Shipley, 1809
Calodium tenue Dujardin, 1845 (?)
Trichosomum gallinum Kowalewski, 1894
Trichosoma papillosum Blome, 1909
Trichosoma papilligera Railliet & Henry, 1911
Capillaria papilligera Railliet & Henry, 1911
Trichosoma meleagris-gallopavo Barile, 1912
Capillaria meleagris (Barile, 1912) Travassos, 1915
Eucoleus meleagridis (Barile, 1912) nom. emended, López-Neyra, 1947
Thominx meleagridis (Barile, 1912) Skrjabin & Shikhobalova, 1954
Pterothominx meleagridis (Barile, 1912) Freitas, 1959
Capillaria dujardini Travassos, 1914, not C. dujardini of Trav.,
 1915
Capillaria longicolle (Rudolphi, 1819) Travassos, 1915, e.p. of
 authors
Capillaria blomei Travassos, 1915 - distinct, Wakelin, 1967
Capillaria gallinae (Goeze, 1782) Skrjabin, 1920
Capillaria caudinflata var. baltica Otte, 1828
Capillaria bursata Freitas & Almeida, 1934 - distinct, Wakelin, 1965
Aonchotheca bursata (Freitas & Almeida, 1934) López-Neyra, 1947
Capillaria columbae var. sturni Cannon, 1939
Capillaria ovopunctatum (Linstow, 1873) of Boyd, 1951, e.p. (?)
Capillaria exilis (Dujardin) of Boyd, 1951, e.p. (?)

LIFE CYCLE: Eggs passed in feces of host, embryonated in soil in
 11-14 days, viable several months; eggs hatch after ingestion by
 earthworm, larvae infective for final host in 9-22 days; mature in
 final host 21-25 days after ingestion; survive less than 10 months
 in final host. (Allen & Wehr, 1942; Bejšovec, 1962; Gagarin, 1952,
 1956; Morehouse, 1944; Wehr & Allen, 1945; Shlikas, 1965b)

INTERMEDIATE HOSTS: Allolobophora caliginosa, Dendrobaena octaedra
 [exper.], Eisenia foetida, Lumbricus terrestris [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), [Anser anser - Lapage, 1961, erro-
 neous]

Anatini - Anas platyrhynchos (dom.)

Cairinini - Cairina moschata (dom.)

Falconiformes - Accipiter nisus, Buteo buteo

Galliformes - Alectoris graeca, Alectoris rufa, Chrysolophus pictus,
Colinus virginianus, Coturnix coturnix, Gallus gallus (dom.),
Lagopus lagopus, Lagopus mutus, Lagopus scoticus, Lyrurus tetrix,
Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris,
Ferdix perdix, Phasianus colchicus, Tetrao urogallus, Tetrastes
bonasia

Gruiformes - Tetrax tetrax

Columbiformes - Columba livia (dom.), Columba palumbus, Streptopelia decaocto

Strigiformes - Bubo bubo

Piciformes - Dryocopus martius

Passeriformes - Emberiza schoeniclus, Erithacus rubecula, Garrulus glandarius, Lanius collurio, Fasser domesticus, Sitta europaea, Sturnus vulgaris, Turdus iliacus, Turdus merula, Turdus migratorius, Turdus philomelos, Turdus pilaris, Turdus viscivorus

HABITAT: Small intestine.

DISTRIBUTION: Cosmopolitan. Europe, Asia, N. America, S. America.

Capillaria contorta

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 37 times in wild, 36 times in domestic waterfowl; restricted to non-anserine waterfowl in N. America. Occasionally cause of disease and mortality in waterfowl, frequently in chickens; pathological conditions described by Cram, 1930a, 1936; Gagarin, 1952, 1956; Railliet & Lucet, 1889.

DESCRIPTION: Cram, 1936; Madsen, 1945; Mettrick, 1959a; Czapliński, 1962b. Copy: Kasimov, 1956; Skrjabin, Shikhobalova, & Orlov, 1957; Kurashvili, 1957; Gvozdev, 1958; Shevtsov & Zaskind, 1960.

SYNONYMY: Madsen, 1952.

Trichosoma contortum Creplin, 1839

Thominx contorta (Creplin, 1839) Travassos, 1915

Capillaria contorta (Creplin, 1839) Travassos, 1915

Eucoleus contortus (Creplin, 1839) López-Neyra, 1947

Trichosoma dispar Dujardin, 1845

Trichosoma triloba Linstow, 1875

Trichosoma longicolle Rud. of Stossich, 1890, e.p.; of Trav., 1915, e.p.

Trichosoma obtusiusculum Rud. of Jägerskiöld, 1901

Capillaria perforans Kotlan & Orosz, 1931

Eucoleus perforans (Kotlan & Orosz, 1931) López-Neyra, 1947

Thominx perforans (Kotlan & Orosz, 1931) Skrjabin & Shikhobalova, 1954

Capillaria lophortygis Baylis, 1934 - distinct, Mettrick, 1959a

Eucoleus lophortygis (Baylis, 1934) López-Neyra, 1947

Capillaria vanelli Yamaguti, 1935, not C. vanelli (Rud., 1819)

Capillaria triloba (Linstow) of Baylis, 1939

Eucoleus raillieti López-Neyra, 1947

Thominx raillieti (López-Neyra, 1947) Skrjabin & Shikhobalova, 1954

Capillaria raillieti (López-Neyra, 1947) Yamaguti, 1961

LIFE CYCLE: Eggs passed in feces of host, embryonated in soil in 24-30 days, remain viable at least 15 months. Eggs hatch after ingestion by final hosts or by earthworms, develop to infective larvae

in earthworm; mature in final host 29 days after ingestion of eggs or of larvae in earthworm. Seasonal relationships described by Buša (1964e). (Cram, 1936; Hobmaier, 1932; Wehr, 1952)

INTERMEDIATE HOSTS: None, or Eisenia foetida

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas cyanoptera, Anas discors, Anas falcata, Anas formosa, Anas penelope, Anas poecilorhynchos, Anas querquedula, Anas rubripes, Anas strepera

Somateriini - Somateria mollissima [?, reported in ceca and rectum!]

Aythiini - Aythya affinis, Aythya americana, Aythya ferina, Aythya fuligula, Aythya nyroca, Aythya vallisneria, Netta rufina

Cairini - Aix galericulata

Mergini - Bucephala albeola, Bucephala clangula

Oxyurini - Oxyura jamaicensis

Falconiformes - Accipiter gentilis, Accipiter nisus, Buteo buteo, Buteo rufinus, Falco peregrinus, Falco subbuteo

Galliformes - Bonasa umbellus, Chrysolophus pictus, Colinus virginianus, Crossoptilon manchuricum, Gallus gallus (dom.), Lophortyx californica, Lyrurus tetrix, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris, Oreortyx picta, Pedioecetes phasianellus, Ferdix perdix, Phasianus colchicus, Syrmaticus reevesi, Tetrao urogallus, Tetraogallus himalayensis, Tympanuchus cupido

Gruiformes - Fulica atra, Grus grus

Charadriiformes - Capella gallinago, Cephus grylle, Charadrius hiaticula, Erolia alpina, Eudromias morinellus, Gelochelidon nilotica, Larus argentatus, Larus canus, Larus fuscus, Larus marinus, Larus ridibundus, Philomachus pugnax, Plautus alle, Recurvirostra avo-setta, Sterna hirundo, Thalasseus maximus, Vanellus vanellus

Passeriformes - Alauda arvensis, Corvus brachyrhynchos, Corvus corone, Corvus corone cornix, Corvus frugilegus, Corvus monedula, Cyanocitta cristata, Erithecus rubecula, Garrulus glandarius, Oenanthe oenanthe, Oriolus oriolus, Petronia petronia, Phoenicurus ochruros, Fica pica, Sturnus vulgaris, Turdus pilaris

HABITAT: Esophagus - in mucosa or submucosa.

DISTRIBUTION: Cosmopolitan.

Capillaria ellisi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swan.

DESCRIPTION: Johnston & Mawson, 1945. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Capillaria ellisi Johnston & Mawson, 1945

Thominx ellisi (Johnston & Mawson, 1945) Skrjabin & Shikhobalova, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Not given, probably lower digestive tract.

DISTRIBUTION: Australia.

Capillaria exilis

STATUS AS WATERFOWL PARASITE: Accidental, normally in passerine birds; reported once in captive duck.

DESCRIPTION: López-Neyra, 1947; Boyd, 1951; Mettrick, 1959; Wakelin, 1966. Copy: Kasimov, 1956; Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Trichosoma exile Dujardin, 1845, e.p.

Capillaria (Capillaria) exile (Dujardin, 1845) Travassos, 1915, e.p.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix sponsa

Galliformes - Phasianus colchicus

Columbiformes - Columba palumbus

Passeriformes - Corvus frugilegus, Passer domesticus, Ploceus spilonota, Sialia sialis, Sturnus vulgaris, Turdus merula, Turdus migratorius, Turdus philomelos, Turdus ruficollis, Turdus torquata, Turdus viscivorus

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kirgizia), N. America (USA).

Capillaria gigantotecta

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Doubtful. Synonym of C. obsignata - Gagarin, 1959.

DESCRIPTION: Liubimova, 1947. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Capillaria gigantotecta Liubimova, 1947

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus cygnus

HABITAT: Small intestine.

DISTRIBUTION: Europe (USSR - Moscow Zoological Park).

Capillaria longifila

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in Passeriformes; reported once in captive duck.

DESCRIPTION: Wakelin, 1967. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Calodium longifilum Dujardin, 1845

Trichosoma longifilum (Dujardin, 1845) Diesing, 1851

Capillaria longifila (Dujardin, 1845) Travassos, 1915

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix sponsa

Galliformes - Coturnix coturnix

Coraciiformes - Lophoceros erythrorhynchus

Passeriformes - Farioaria cucullata, Ploceus spilonota, Prunella modularis, Pyrrhocorax graculus

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (England - Zoological Garden, France).

Capillaria mergi

STATUS AS WATERFOWL PARASITE: Probably frequent, although reported only 8 times in wild ducks; typically in Mergus spp.

DESCRIPTION: Madsen, 1945; Czapliński, 1962b; Daifa, 1966. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY: Madsen, 1945.

Trichosoma brevicolle Rud. of Mehlis, 1831, & of Eberth, 1863

Capillaria anatis (Schrank) of Travassos, 1915, e.p., et al.

Capillaria mergi Madsen, 1945

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima

Aythiini - Aythya vallisneria

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Mergus albellus, Mergus merganser, Mergus serrator

HABITAT: Ceca, rectum, rarely small intestine.

DISTRIBUTION: Europe (Denmark, Poland), Asia (Yakutia, Primorsk, Kamchatka), N. America (USA).

Capillaria nyrocinarum

STATUS AS WATERFOWL PARASITE: Probably frequent; reported 7 times in wild waterfowl; typically in marine diving ducks in Denmark, in Aythiini in North America.

DESCRIPTION: Madsen, 1945; Mettrick, 1959a. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Capillaria nyrocinarum Madsen, 1945

Thominx nyrocinarum (Madsen, 1945) Skrjabin & Shikhobalov, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya fuligula, Aythya marila, Aythya vallisneria

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,

Melanitta fusca deglandi, Melanitta nigra

Charadriiformes - Capella gallinago, Capella stenura

HABITAT: Ceca, rectum, frequently small intestine.

DISTRIBUTION: Europe (Denmark, England), Asia (E. Siberia, Yakutia, Khabarovsk, Primorsk, Chukotka), N. America (USA, Canada).

Capillaria obsignata

STATUS AS WATERFOWL PARASITE: Common, typically in gallinaceous birds; reported 4 times in wild, 38 times in domestic, and 4 times in captive waterfowl. Cause of extensive pathology and mortality in chickens.

DESCRIPTION: Madsen, 1945; Mettrick, 1959a; Czapliński, 1962b (as C. anseris); Wakelin, 1963, 1965a. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY: Madsen, 1945, 1951.

Capillaria tenuissimum Diesing of Eberth, 1863

Capillaria dujardini Travassos, 1915, not Trav., 1914; of Madsen, 1945; et al.

Capillaria anatis (Schrank) of Travassos, 1951, e.p.; & Gorshkov, 1937

Capillaria columbae (Rudolphi) of Graybill, 1924; Stossich, 1895, e.p.; et al.

Capillaria obsignata Madsen, 1945

Capillaria droumondi Travassos, 1915 - [Gagarin, 1950; Wakelin, 1963]

Filaria anseris Nitzsch in Rudolphi, 1808

Capillaria anseris Madsen, 1945 - [Gagarin, 1950; Wakelin, 1963]

Capillaria gigantotecta Liubimova, 1947 - [Gagarin, 1950]

LIFE CYCLE: Eggs passed in feces of host, embryonated in soil in 13 days at 20 C., 65-72 hours at 35 C., hatch after ingestion by final host; larvae enter mucosa of duodenum, complete development; mature in 18 days after ingestion of eggs; survive in final host up to 12 months. Seasonal relationships described by Buša, 1964f. (Gagarin, 1952a; Shlikas, 1965a; Wakelin, 1965b; Wehr, in Biester & Schwarte, 1959)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Branta sandvicensis (?), Cygnus atratus, Cygnus melanocoryphus

Tadornini - Chloephaga poliocephala

Anatini - Anas capensis, Anas georgica

Aythiini - Aythya ferina

Fodicipediformes - Fodiceps cristatus

Galliformes - Afropavo congensis, Gallus gallus (dom.), Meleagris gallopavo (dom.), Numida meleagris, Perdix perdix, Phasianus colchicus

Columbiformes - Columba livia, Columba livia (dom.), Columba oenas, Columba palumbus, Streptopelia turtur

Passeriformes - Carduelis chloris, Sturnus vulgaris, Turdus migratorius

HABITAT: Small intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kazakhstan, Sakhalin, Chukotka), Africa (Egypt), N. America (USA), S. America (Brazil).

Capillaria pudendotecta

STATUS AS WATERFOWL PARASITE: Rare: reported once in captive swan.

STATUS AS SPECIES: Description poor; probably synonym of C. phasianina - Gagarin, 1959.

DESCRIPTION: Liubimova, 1947. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Capillaria pudendotecta Liubimova, 1947

Capillaria pudendotecta Liubimova of Skrjabin, et al., 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

HABITAT: Ceca.

DISTRIBUTION: Asia (Kirgizia and W. Siberia - source of birds examined in Moscow Zoological Park).

Capillaria skrjabini

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in captive and 4 times in wild waterfowl.

DESCRIPTION: Liubimova, 1947; Daifa, 1966. Copy: Skrjabin, Shikhobalova, & Orlov, 1957.

SYNONYMY:

Thominx skrjabini Liubimova, 1947

Capillaria skrjabini (Liubimova, 1947) Yamaguti, 1961, not C. skrjabini Ehrlich, 1947

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor, [Anser anser (dom.) - Lapage, 1961, erroneous citation]

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas falcata, Anas penelope

Aythiini - Aythya marila

HABITAT: Ceca.

DISTRIBUTION: Asia (Kirgizia - Original source of bird examined in Moscow Zoological Park, Turkmenistan, Yakutia, Amur, Chukotka).

Capillaria spinulosa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild waterfowl; typically in fresh-water diving ducks in Denmark.

DESCRIPTION: Madsen, 1945; Mettrick, 1959a. Copy: Skrjabin, Shikhalova, & Orlov, 1957.

SYNONYMY: Madsen, 1945.

Trichosoma spinulosa Linstow, 1890

Capillaria spinulosa (Linstow, 1890) Travassos, 1915

Echinocoleus spinulosa (Linstow, 1890) López-Neyra, 1946

Thominx spinulosum (Linstow, 1890) Skrjabin, et al., 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas clypeata, Anas penelope, Anas querquedula

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Bucephala clangula, Melanitta nigra

Gruiformes - Fulica atra

HABITAT: Ceca, rarely small intestine.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Turkmenistan, Uzbekistan, Kamchatka).

Eustrongylides mergorum

STATUS AS WATERFOWL PARASITE: Frequent; reported 12 times in wild and 4 times in domestic waterfowl. Cause of extensive pathologic changes, described by Cram, 1930a; Shillinger, 1936; and Wehrmann, 1909; mortality reported by Shillinger, 1936.

DESCRIPTION: Copy: Cram, 1927a; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Strongylus mergorum Rudolphi, 1809

Eustrongylides mergorum (Rudolphi, 1809) Cram, 1927

Spiroptera inflata Mehlis in Creplin, 1846, nomen nudum

Tropidocerca inflata (Mehlis, 1846) Diesing, 1861

Tropisurus inflatus (Mehlis, 1846) Neumann, 1892

Tetrameres inflata (Mehlis, 1846) Travassos, 1914

Microtetrameres inflata (Mehlis, 1846) Travassos, 1915

Strongylus papillosus Rudolphi, 1809, e.p.

Strongylus elegans Olfers, 1816

Hystrichis elegans (Olfers, 1816) Railliet, 1903, e.p.

Eustrongylides elegans (Olfers, 1816) Jägerskiöld, 1909 - Listed as separate species by Sprehn, 1932; Yamaguti, 1961

Strongylus tubifex Rudolphi, 1819 e.p.

Tropidocerca paradoxa Diesing, 1851, e.p.

Tropidocerca paradoxa Linstow, 1877, not T. paradoxa Diesing, 1835

LIFE CYCLE: Larvae in fresh-water fish; mature in final host 18-20 days after ingestion. (Dubinin, 1940)

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca

Somateriini - Somateria mollissima

Aythiini - Aythya fuligula

Mergini - Bucephala clangula, Clangula hyemalis, Mergus albellus, Mergus merganser, Mergus serrator

Gaviiformes - Gavia arctica, Gavia stellata

Podicipediformes - Podiceps cristatus, Podiceps ruficollis

Pelecaniformes - Pelecanus crispus, Pelecanus oncorhynchus, Phalacrocorax carbo

Ciconiiformes - Ardea cinerea, Ardea purpurea, Casmerodius albus,

Ciconia nigra, Egretta garzetta, Nycticorax nycticorax

Charadriiformes - Alca torda, Numenius torquatus, Pluvialis apricaria,

Scolopax sp., Uria aalge, Uria lomvia

HABITAT: Tubercles in wall of esophagus and proventriculus.

DISTRIBUTION: Europe, Asia (Primorsk, Kamchatka, Japan), N. America (Canada).

Eustrongylides papillosus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic waterfowl. Last record 1802.

DESCRIPTION: Copy: Cram, 1927a; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Strongylus papillosus Rudolphi, 1802, e.p.

Eustrongylus papillosus (Rudolphi, 1802) Diesing, 1851, e.p.

Hystrichis papillosus (Rudolphi, 1802) Molin, 1861, e.p.

Eustrongylides papillosus (Rudolphi, 1802) Jägerskiöld, 1909

LIFE CYCLE: Unknown; probably similar to that of E. tubifex.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

Passeriformes - Nucifraga caryocatactes

HABITAT: Tubercles in wall of esophagus and proventriculus.

DISTRIBUTION: Europe.

Eustrongylides tricolor

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

STATUS AS SPECIES: Probably synonym of E. mergorum - Yamaguti, 1935.

DESCRIPTION: Sugimoto, 1931, 1932a.

SYNONYMY:

Eustrongylides tricolor Sugimoto, 1931

LIFE CYCLE: Unknown; probably similar to that of E. tubifex.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Tubercles in wall of esophagus and proventriculus.

DISTRIBUTION: Asia (Taiwan).

Eustrongylides tubifex

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild and twice in domestic waterfowl.

DESCRIPTION: Kontrimavichus & Bakhmeteva, 1960. Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Strongylus tubifex Nitzsch in Rudolphi, 1819, e.p.

Eustrongylus tubifex (Nitzsch, 1819) Diesing, 1851, e.p.

Hystrichis tubifex (Nitzsch, 1819) Molin, 1861, e.p.

Eustrongylides tubifex (Nitzsch, 1819) Jägerskiöld, 1909

Hystrichis elegans (Olfers, 1916) Railliet, 1895, e.p.

LIFE CYCLE: Larvae in fresh-water fish. (Grimm, 1876; Schuurmans Stekhoven, 1935)

INTERMEDIATE HOSTS: Barbus fluviatilis, Esox lucius, Gobius caspius, Gobius fluviatilis, Gobius kessleri, Gobius melanostomus, Leuciscus rutilus caspicus, Lota vulgaris, Perca fluviatilis, Serranus scriba, Symbranchus laticaudatus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Mergini - Mergus merganser - [reported only by Yamaguti, 1961; original citation not found]

Gaviiformes - Gavia arctica, Gavia stellata

Pelecaniformes - Pelecanus crispus, Pelecanus oncorotalus

HABITAT: Small intestine.

DISTRIBUTION: Europe.

Eustrongylides wenrichi

STATUS AS WATERFOWL PARASITE: Rare; probably accidental; reported once in captive geese; normal host unknown.

DESCRIPTION: Canavan, 1929, 1931.

SYNONYMY:

Eustrongylides wenrichi Canavan, 1929

LIFE CYCLE: Larvae in fresh-water fish and amphibia. (Canavan, 1929)

INTERMEDIATE HOSTS: OSTEICHTHYES - Enneacanthus gloriosus, Esox americanus, Pomoxis sparoides, Salvelinus fontinalis

AMPHIBIA - Amphiuma means, Rana catesbiana

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

HABITAT: Proventriculus, air sacs.

DISTRIBUTION: N. America (USA - Philadelphia Zoological Garden).

Hystrichis coronatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks. Last record in 1909.

DESCRIPTION: Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Hystrichis sp. Molin, 1860

Hystrichis mergi-merganseris Diesing, 1861

Hystrichis coronatus Molin, 1861

LIFE CYCLE: Unknown; probably similar to that of H. tricolor.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

HABITAT: Proventriculus - glands

DISTRIBUTION: Europe (Italy).

Hystrichis cygni

STATUS AS WATERFOWL PARASITE: Infrequent; reported perhaps twice in wild swans and 3 times in domestic swans; last record 1909.

DESCRIPTION: Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Echinocephalus cygni Molin, 1858

Hystrichis cygni (Molin, 1858) Diesing, 1861

Hystrichis pachicephalus Molin, 1861

Hystrichis pachycephalus Molin of Neumann, 1892

LIFE CYCLE: Unknown; probably similar to that of H. tricolor.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anserini - Cygnus olor

HABITAT: Vesicles between coats of proventriculus.

DISTRIBUTION: Europe (Italy).

Hystrichis neglectus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks. Last record in 1926.

STATUS AS SPECIES: Doubtful. Larval form of H. tricolor - Karmanova, 1960b.

DESCRIPTION: Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Strongylus papillosus Rudolphi, 1802, e.p.

Eustrongylus papillosus (Rudolphi, 1802) Diesing, 1851, e.p.

Hystrichis papillosus (Rudolphi, 1802) Molin, 1861, e.p.

Hystrichis neglectus Jägerskiöld, 1909

LIFE CYCLE: Unknown; probably similar to that of H. tricolor.

FINAL HOSTS: AVES
Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca, Anas querquedula
Charadriiformes - Numenius arquatus

HABITAT: Esophagus.

DISTRIBUTION: Europe (Italy, Austria).

Hystrichis orispinus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild swan.

STATUS AS SPECIES: Doubtful. Larval form of H. tricolor - Karmanova, 1960b.

DESCRIPTION: Copy: Cram, 1927a.

SYNONYMY:

Hystrichis orispinus Molin, 1858

LIFE CYCLE: Unknown; probably similar to that of H. tricolor.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

Ciconiiformes - Flegadis falcinellus

HABITAT: Glandular cysts in proventriculus.

DISTRIBUTION: Europe (Italy).

Hystrichis tricolor

STATUS AS WATERFOWL PARASITE: Common in Europe, one of the characteristic helminths of waterfowl; reported 10 times in wild, 26 times in domestic, and once in captive waterfowl. Cause of extensive damage and loss; pathology described by Cram, 1930a; Gumen'shchikova, 1963; Gupalenko, Stetsenko, & Taran, 1958; and Hartwich, 1953. Mortality reported by Golubev, 1959; Gupalenko, Stetsenko, & Taran, 1958; Savchuk & Gubskii, 1958.

DESCRIPTION: Bezubik, 1957a; Shevtsov & Zaskind, 1960; Czaplifski, 1962b. Copy: Cram, 1927a; Kurashvili, 1957.

SYNONYMY: Cram, 1927a.

Hystrichis tricolor Dujardin, 1845

Spiroptera tricolor (Dujardin, 1845) Diesing, 1851

Strongylus anatis Rudolphi, 1819 - [Sprehn, 1932]

Strongylus tubifex Nitzsch in Rudolphi, 1819, e.p.

Eustrongylus tubifex (Nitzsch, 1819) Diesing, 1851, e.p.

Hystrichis tubifex (Nitzsch, 1819) Molin, 1861, e.p.

Spiroptera tadornae Bellingham, 1844

Hystrichis orispinus Molin, 1858 - [Karmanova, 1960a]

Hystrichis wedli Linstow, 1879 emend. Jägerskiöld, 1909 - [Karmanova, 1960a]

Hystrichis neglectus Jägerskiöld, 1909 - [Karmanova, 1960a]

Hystrichis varispinosus Jägerskiöld, 1909 - [Karmanova, 1960a]

LIFE CYCLE: Eggs passed in feces of host, embryonated in soil in 31-62 days, hatch after ingestion by terrestrial earthworms; larvae enter supraneural blood vessel in worm. After ingestion by final host, larvae enter intestinal wall, [make way to proventriculus?], mature in 28-30 days; mature worms survive 30-45 days in final host. (Gumen'shchikova, 1961; Gupalenko, Stetsenko, & Taran, 1958; Karmanova, 1956, 1959a, 1959b, 1960b; Kosinova, 1965; Osipov, 1959; Savchuk & Gubskii, 1957a, 1957b, 1958)

INTERMEDIATE HOSTS: Allolobophora dubiosa pontica, Criodrilus lacuum, Eiseniella tetraedra, Eophila leoni

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.) [exper.]

Tadornini - Alopochen aegyptiacus, Lophonetta specularioides,
Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas angustirostris, Anas cyanoptera, Anas leucophrys, Anas luzonica, Anas poecilorhyncha, Anas querquedula, Anas sibilatrix,
Anas versicolor

Ciconiiformes - Plegadis falcinellus

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra

Charadriiformes - Capella media, Numenius arquata

HABITAT: Tubercles in wall of proventriculus; sometimes in esophagus, air sacs, liver.

DISTRIBUTION: Europe, Asia (Kazakhstan).

Hystrichis varispinosus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild and once in domestic waterfowl.

STATUS AS SPECIES: Larval form of H. tricolor - Karmanova, 1960b. Maintained as distinct species by Shevtsov & Zaskind, 1960.

DESCRIPTION: Shevtsov & Zaskind, 1960. Copy: Cram, 1927a.

SYNONYMY:

Hystrichis varispinosus Jägerskiöld, 1909

LIFE CYCLE: Larvae reported in amphibian (auxiliary host?) (Volgar-Pastukhova, 1959).

INTERMEDIATE HOSTS: Rana ridibunda

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas querquedula

Mergini - Bucephala clangula, Mergus serrator

HABITAT: Proventriculus.

DISTRIBUTION: Europe (USSR).

Strongyloides avium

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in gallinaceous birds; reported once in domestic duck. Pathology of infection in chicken described by Cram, 1929a.

DESCRIPTION: Cram, 1929a. Copy: Kasimov, 1956.

SYNONYMY:

Strongyloides avium Cram, 1929

LIFE CYCLE: Eggs passed in feces, hatch in 18 hours at 10-14 C. into rhabditiform larvae; mature into free-living male and female generation in soil. Filariform larvae infective to final host produced in 48 hours by free-living generation; larvae mature into parthenogenetic females in final host 5 days after ingestion. (Cram, 1929a)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Bonasa umbellus [exper.], Colinus virginianus [exper.],

Gallus gallus (dom.), Meleagris gallopavo, Meleagris gallopavo (dom.)

Gruiformes - Fulica americana

Passeriformes - Junco hyemalis

HABITAT: Ceca, small intestine.

DISTRIBUTION: Asia (India, Indonesia, Taiwan), N. America (USA, Puerto Rico, Cuba, Panama).

Strongyloides minimus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Travassos, 1930.

SYNONYMY:

Strongyloides minimus Travassos, 1930

LIFE CYCLE: Unknown; probably similar to that of S. avium.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas bahamensis

HABITAT: Small intestine, ceca, large intestine.

DISTRIBUTION: S. America (Brazil).

Syngamus skrjabinomorpha

STATUS AS WATERFOWL PARASITE: Rare; reported twice in domestic goose. Ryzhikov (1949b) suggests that all Syngamus infections in geese are this species.

DESCRIPTION: Ryzhikov, 1949a, 1949b. Copy: Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY:

Syngamus skrjabinomorpha Ryzhikov, 1949

Syngamus (Syngamus) skrjabinomorpha Ryzhikov, 1949 of Ryzhikov, 1949b

LIFE CYCLE: Eggs passed in feces, infective in 8-20 days, hatch after ingestion by final host. In final host larvae reach liver in 2 hours, lungs on second day, mature in lung in 5-6 days; present in trachea in 10-12 days; eggs produced in final host for 2-3.5 months (Shikhobalova & Ryzhikov, 1956). Reported to hybridize with S. trachea under experimental conditions.

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Gallus gallus (dom.), Numida meleagris (dom.) [exper.]

HABITAT: Trachea, rarely bronchi.

DISTRIBUTION: Europe (Georgia, Lithuania).

Syngamus trachea

STATUS AS WATERFOWL PARASITE: Frequent; reported 11 times in domestic and once in captive waterfowl; typically in Galliformes and Passeriformes. Ryzhikov (1949b) suggests all records of Syngamus in waterfowl are S. skrjabinomorpha. There may be strains adapted to various types of birds, as cross infections are sometimes difficult to carry out. Serious cause of loss in young gallinaceous birds; occasionally cause of death in ducks. Pathology described by Cram, 1930a; Railliet, 1898b; mortality reported by Hamerton, 1946.

DESCRIPTION: Ryzhikov, 1949b; Madsen, 1950a; Gvozdev, 1958; Baruš,

1964b. Copy: Chapin, 1925; Cram, 1927a; Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY: Madsen, 1950a, 1952.

Fasciola trachea Montagu, 1811

Syngamus trachealis Siebold, 1836

Strongylus trachealis (Siebold, 1836) Nathusius, 1837

Sclerostoma tracheale (Siebold, 1836) Diesing, 1851

Syngamus trachea (Montagu, 1811) Chapin, 1925

Syngamus (Syngamus) trachea (Montagu, 1811) of Ryzhikov, 1949b

Distoma lineare Rudolphi, 1819

Strongylus pictus Creplin, 1849

Sclerostoma syngamus Diesing, 1851

Syngamus primitivus Molin, 1860

Strongylus primitivus (Molin, 1860) Hutyra & Marek, 1910

Syngamus pugionatus Schlotthauber, 1860, nomen nudum

Syngamus mucronatus Schlotthauber, 1860

Syngamus sclerostomum Molin, 1861

Syngamus bifurcatus Theobald, 1896

Syngamus parvus Chapin, 1925 - [Madsen, 1952; Mettrick, 1960]; maintained as separate species by Ryzhikov, 1949b.

Syngamus gracilis Chapin, 1925 - [Madsen, 1952; Mettrick, 1960; Ryzhikov, 1949b]

Syngamus merulae Baylis, 1926 - [May be a synonym, Mettrick, 1960]; maintained as separate species by Ryzhikov, 1949b.

Syngamus tenuispiculum Manter & Pinto, 1928 - [Goble & Kutz, 1945]

Syngamus skrjabini El'perin, 1938 - [Madsen, 1952; Mettrick, 1960]; maintained as separate species by Ryzhikov, 1949b.

Syngamus hexadontus Chin, 1950 (?)

LIFE CYCLE: Direct or indirect. Eggs passed in feces, develop to infective stage in 7-14 days, remain viable about one year. Eggs hatch in soil or after ingestion by intermediate or final host, both eggs and larvae infective. Infection in final host most common and effective with earthworms as intermediate hosts; insects, centipedes, and mollusks also reported. Larvae survive in earthworms at least 4.5 years; mature in final host 14-25 days after ingestion. Reported to hybridize with S. skrjabinomorpha in experimental mixed infection. (Baruž, 1964c; Clapham, 1934, 1939a, 1939b; Morgan & Clapham, 1934; Ortlepp, 1923; Ripple, 1941; Ryzhikov, 1950; Taylor, 1935, 1938a; Waite, 1920)

INTERMEDIATE HOSTS: Allooborhora caliginosa, Eisenia foetida, Agriolimax agrestis, Cepea hortensis, Helix aspersa, Hericella heripensis, Lymnaea stagnalis [exper.], Scolopendra sp., Sminthurus viridis, Musca domestica, Lucilia sericata, Tinula sp., Supella sunellectianum [exper.], Periplaneta americana [exper.], Lymnaea neregra, Lymnaea truncatula, Bithynia tentaculata, Planorbium corneum, Anisus spirorbis, Valvata piscinalis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Tadorna tadornoides

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Pelecaniformes - Pelecanus oncorhynchus, Phalacrocorax auritus (?)

Ciconiiformes - Ciconia ciconia (?), Ciconia nigra (?)

Falconiformes - Falco tinnunculus

Galliformes - Alectoris graeca, Alectoris rufa, Bonasa umbellus,
Chrysolophus pictus, Colinus virginianus, Coturnix coturnix, Gallus gallus,
Gallus gallus (dom.), Lagopus scoticus, Lophortyx californica,
Lyrurus tetrix, Meleagris gallopavo, Meleagris gallopavo (dom.),
Numida meleagris (dom.), Pavo cristatus, Perdix perdix,
Phasianus colchicus, Syrnaticus reevesii, Tetrao urogallus,
Tetraogallus caucasicus

Gruiformes - Otis tarda (?)

Charadriiformes - Erolia maritima (?), Larus argentatus, Larus canus,
Numenius arquatus, Rostratula benghalensis, Tringa nebularia,
Vanellus vanellus

Columbiformes - Columba livia (dom.)

Psittaciformes - Nymphicus hollandicus [exper.]

Strigiformes - Athene noctua (?)

Apodiformes - Apus apus

Piciformes - Picus canus, Picus viridis

Passeriformes - Acanthis cannabina, Corvus brachyrhynchos, Corvus corone,
Corvus corone cornix, Corvus frugilegus, Corvus monedula,
Cyanocitta cristata, Delichon urbica, Donacola pectoralis, Euplectes melanogaster,
Garrulus glandarius, Heteropsar albicapillus, Junco hyemalis,
Melanocorypha calandra, Molothrus brevisrostris, Nucifraga caryocatactes,
Padda oryzivora [exper.], Parus major [exper.], Passer domesticus,
Passer montanus, Poebhila cincta, Pica pica, Pyrrhocorax graculus,
Quiscalus quiscula, Richmondia cardinalis, Seiurus noveboracensis,
Serinus canarius [exper.], Sturnella magna, Sturnus roseus,
Sturnus vulgaris, Turdus philomelos, Turdus merula (?),
Turdus migratorius, Turdus iliacus, Turdus pilaris (?),
Turdus torquatus, Zonotrichia leucophrys, Zosterops lateralis

HABITAT: Trachea, bronchi.

DISTRIBUTION: Cosmopolitan.

Cyathostoma brantae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in captive waterfowl; reported cause of pathology and mortality (Cram, 1928).

STATUS AS SPECIES: Suggested to be host-specific race of C. variegatum by Vogel, 1928.

DESCRIPTION: Cram, 1928. Copy: Ryzhikov, 1949b.

SYNONYMY:

Cyathostoma brantae Cram, 1928

Syngamus brantae (Cram, 1928) Yamaguti, 1961

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser caerulescens, Branta canadensis

Cairinini - Aix galericulata

HABITAT: Trachea.

DISTRIBUTION: Europe (Netherlands - Zoological Garden), N. America (USA).

Cyathostoma bronchialis

STATUS AS WATERFOWL PARASITE: Frequent, characteristic helminth of domestic geese; reported twice in wild waterfowl, twice in captive birds, and 17 times in domestic waterfowl. Cause of considerable disease and mortality; pathology described by Baidalin & Popova, 1962; Cram, 1930a; Christensen, 1932; Griffiths, Leary, and Fenstermacher, 1954; Zavadil, 1958. Mortality reported by Christensen, 1932; Griffiths, Leary, & Fenstermacher, 1954; and Vorobev, 1957, 1958, 1961.

STATUS AS SPECIES: Suggested to be host-specific race of C. variegatum by Vogel, 1928.

DESCRIPTION: Chapin, 1925; Kreis, 1953. Copy: Cram, 1927a; Ryzhikov, 1949b; Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Syngamus bronchialis Muehlig, 1884

Cyathostoma bronchialis (Muehlig, 1884) Chapin, 1925

LIFE CYCLE: See Skrjabin, Shikhobalova, Petrov, & Levashov, 1963.

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser caerulescens, Anser fabalis,
Branta canadensis, Cygnus sp.

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Casuariiformes - Dromaius novaehollandiae

HABITAT: Larynx, trachea, bronchi, sometimes air sacs.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Japan), N. America (USA).

Cyathostoma coscorobae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in captive waterfowl.

DESCRIPTION: Chapin, 1925. Copy: Cram, 1927a; Ryzhikov, 1949b.

SYNONYMY:

Cyathostoma coscorobae Chapin, 1925

Syngamus coscorobae (Chapin, 1925) Yorke & Maplestone, 1926

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Coscoroba coscoroba

Cairinini - Plectropterus gambensis

HABITAT: Trachea, bronchi.

DISTRIBUTION: S. America, N. America (USA - Philadelphia Zoological Park).

Cyathostoma sarcidiornis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in captive waterfowl.

DESCRIPTION: Kreis, 1953.

SYNONYMY:

Cyathostoma sarcidiornis Kreis, 1953

Syngamus sarcidiornis (Kreis, 1953) Yamaguti, 1961

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Sarkidiornis melanotos

HABITAT: Trachea.

DISTRIBUTION: Tropic regions? (birds examined in Berlin Zoological Garden).

Cyathostoma tadornae

STATUS AS WATERFOWL PARASITE: Rare; reported 2 or 3 times in wild ducks. Latest possible record 1926.

STATUS AS SPECIES: Description seems inadequate for identification.

DESCRIPTION: Copy: Chapin, 1925; Cram, 1927a; Ryzhikov, 1949b.

SYNONYMY: Cram, 1927a.

Cyathostoma tadornae Chatin, 1874

Sclerostoma tadornae (Chatin, 1874) Linstow, 1878

Syngamus tadornae (Chatin, 1874) Railliet, 1898

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna tadorna

HABITAT: Trachea.

DISTRIBUTION: Europe (USSR).

Cyathostoma variegatum

STATUS AS WATERFOWL PARASITE: Accidental, normally in Gruiformes; reported once or twice in captive duck.

DESCRIPTION: Vogel, 1928. Copy: Cram, 1927a; Ryzhikov, 1949b.

SYNONYMY: Cram, 1927a.

Strongylus trachealis of Nathusius, 1837

Strongylus variegatus Creplin, 1849

Syngamus variegatus (Creplin, 1849) Railliet, 1898

Cyathostoma variegatum (Creplin, 1849) Chapin, 1925

Cyathostoma bronchialis (Muehlig, 1884) Chapin, 1925 - [Vogel, 1928]

Cyathostoma brantae Cram, 1928 - [Vogel, 1928]

LIFE CYCLE: Eggs passed in feces, larvae develop in 6-14 days; eggs probably hatch after ingestion by terrestrial earthworm. (Vogel, 1928)

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata? - [listed as "Moischella kairina - Brazilian duck"]

Ciconiiformes - Ciconia nigra

Gruiformes - Balearica pavonina, Grus grus, Grus japonicus

HABITAT: Trachea.

DISTRIBUTION: Europe.

Amidostomum acutum

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 46 times in wild, 25 times in domestic, and twice in captive waterfowl. Pathology of infection (as A. boschadis) described by Dotsenko, 1954; Zajíček, 1960; and Dubey & Pande, 1965 (as A. skrjabini).

STATUS AS SPECIES: Original description misinterpreted by authors; species reestablished by Czapliński, 1962a.

DESCRIPTION: Boulenger, 1926 (as A. skrjabini); Sugimoto, 1928d, 1930a (as A. anatinum); Maplestone, 1930 (as A. fuligulae); Baylis, 1932a (as skrjabini); Petrov & Fedushin, 1949 (as A. boschadis); Ginetsinskaja, 1949a (as boschadis); Gushanskaja, 1951 (as boschadis); Shevtsov, 1952 (as boschadis); Ryzhikov, 1956b (as chevreuxi, later orientale); Ali, 1957 (as skrjabini); Ryzhikov & Pavlov, 1959 (as A. orientale); Czapliński, 1962a. Copy: Cram, 1927a; Travassos, 1937.

SYNONYMY: Czapliński, 1962a.

Strongylus acutus Lundahl, 1848

Amidostomum acutum (Lundahl, 1848) Seurat, 1918

Strongylus monodon Linstow, 1882

Sclerostoma monodon (Linstow, 1882) Stossich, 1889

Amidostomum monodon (Linstow, 1882) Skrjabin, 1915

Amidostomum chevreuxi Seurat, 1918

Amidostomum skrjabini Boulenger, 1926

Amidostomum anatinum Sugimoto, 1928

Amidostomum fuligulae Maplestone, 1930

Amidostomum biziurae Johnston & Mawson, 1947

Amidostomum boschadis Fedushin, 1937, nomen nudum

Amidostomum boschadis Petrov & Fedushin, 1949

Amidostomum orientale Ryzhikov & Pavlov, 1959

LIFE CYCLE: Eggs passed in feces of host, hatch in water in 2-3 days

at 23-25 C.; larvae infective to final host in 5-11 days; mature in final host 14-26 days after ingestion of larvae. (Kurochkin, 1954; Leiby, 1964a; Leiby & Olsen, 1965; Pande, Bhatia, & Dubey, 1964; Zajíček, 1964b)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser albifrons, Cygnus columbianus, Cygnus cygnus buccinator

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas angustirostris, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas cyanoptera, Anas discors, Anas falcata, Anas formosa, Anas georgica, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas sibilatrix, Anas strepera

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya affinis, Aythya americana, Aythya collaris, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Aythya vallisneria, Netta rufina

Cairinini - Aix galericulata, Aix sponsa, Nettapus coromandelianus

Mergini - Bucephala albeola, Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta nigra, Mergus albellus

Galliformes - Gallus gallus (dom.) [exper.], Tetrao urogallus, Tetrastes bonasia

Gruiformes - Fulica atra

Charadriiformes - Himantopus himantopus, Tringa glareola

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Kirgizia, Uzbekistan, India, Yakutia, Taiwan, Primorsk, Chukotka), Africa (Algeria, Egypt, W. Africa), N. America (USA), Australia.

Amidostomum anseris

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 58 times in wild. 115 times in domestic, and 8 times in captive waterfowl. Typically restricted to Anserini in North America; Czapliński states that some authors did not distinguish A. anseris from A. acutum; this probably accounts for many reports in forms other than Anserini. Host order specificity discussed by Ryšavý & Fidler, 1955; Ryšavý & Michálek, 1957; Ryšavý, Michálek, & Fidler, 1955. Cause of severe losses in young domestic geese, damage to wild birds frequent; mortality reported by Cram,

1926a, 1928; Herman & Wehr, 1954b; Jennings & Soulsby, 1956, 1957; Jerstad, 1936; Olteanu, Negru, & Coman, 1963; Severn Wildfowl Trust, 1949, 1950. Pathology or physiological effects of infection described by Bunyea & Creech, 1926; Cram, 1928, 1930a; Czapliński, et al., 1956; Georgiev, 1962; Herman & Wehr, 1954b; Herman, Steenis, & Wehr, 1955; Knudsen, 1966; Otelina, 1961; Ridala, 1958; Tsvetaeva & Vasiliev, 1963; Ulrich, 1932; Vsevolodov, 1938; Zajíček, 1960.

DESCRIPTION: Gorshkov, 1937; Czapliński, 1962a. Copy: Cram, 1927a; Travassos, 1937; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a; Czapliński, 1962a.

Ascaris mucronata Froelich, 1791, not Schrank, 1782

Strongylus mucronatus (Froelich, 1791) Railliet, 1893

Strongylus anseris Zeder, 1800, e.p.

Amidostomum anseris (Zeder, 1800) Railliet & Henry, 1909, e.p.

Strongylus nodulosus Rudolphi, 1803

Amidostomum nodulosum (Rudolphi, 1803) Seurat, 1918

Strongylus nodularis Rudolphi, 1809

Trichostrongylus nodularis (Rudolphi, 1809) Shipley, 1900

Spiroptera uncinata Eberth, 1863

Strongylus monodon Linstow, 1882 - [Yamaguti, 1961]

Sclerostomum mucronatum Stossich, 1899

Sclerostomum anseris Neumann, 1908

Amidostomum leucopareiae Solonitsyn, 1928, nomen nudum

LIFE CYCLE: Eggs passed in feces of host, hatch in fresh water in 24-72 hours; larvae infective for final host in 6 days, survive in water at least 7-10 days (93 days in summer). Survival in water and movement of larvae in soil described by Lozovskii (1949). Mature in final host 12-25 days after ingestion; survive in final host over 18 months. Seasonal relationships described by Buša (1964c) and Czapliński (1954). (Cowan, 1955; Cowan & Herman, 1955; Cram, 1931c; Geller, 1961, 1962; Kobulej, 1956, 1959; Lozovskii, 1949; Petrochenko & Kotel'nikov, 1959b; Selivanova-Iartseva, 1953, 1954; Skarbilovich, 1938; Wolter, 1935)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser brachyrhynchus, Anser caerulescens, Anser erythropus, Anser fabalis, Anser rossii, Branta canadensis, Branta leucopsis, Branta sandvicensis, Cygnus columbianus, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus olor

Tadornini - Cereopsis novae-hollandiae, Chloephaga picta, Chloephaga poliocephala, Tadorna cristata, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas discors, Anas penelope,

Anas querquedula, Anas rubripes, Anas sparsa, Anas specularis,
Anas strepera
Somateriini - Somateria mollissima, Somateria spectabilis
Aythyini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya
marila
Cairinini - Aix sponsa, Chenonetta jubata
Mergini - Bucephala clangula, Histrionicus histrionicus, Melanitta
fusca, Melanitta nigra
Oxyurini - Oxyura leucocephala
Podicipediformes - Podiceps ruficollis
Gruiformes - Fulica atra, Gallinula chloropus
Columbiformes - Columba livia (dom.), Streptopelia decaocto

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia, Africa (Algeria), N. America.

Amidostomum biziurae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Synonym of A. acutum - Czapliński, 1962a.

DESCRIPTION: Johnston & Mawson, 1947; Thomas, 1959.

SYNONYMY:

Amidostomum biziurae Johnston & Mawson, 1947

LIFE CYCLE: Unknown; probably similar to that of A. anseris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Biziura lobata

HABITAT: Gizzard - under lining.

DISTRIBUTION: Australia.

Amidostomum cygni

STATUS AS WATERFOWL PARASITE: Frequent in swans; reported 6 times in wild waterfowl and twice in captive swans.

DESCRIPTION: Wehr, 1933d; Johnston & Mawson, 1947; Freitas & Medonça. 1954 (as A. similis); Mawson, 1956c; Ryzhikov, 1959a. Copy: Travassos, 1937; Czapliński, 1962a.

SYNONYMY:

Amidostomum cygni Wehr, 1933

Amidostomum similis Freitas & Medonça, 1954 - [Czapliński, 1962a]

LIFE CYCLE: Unknown; probably similar to that of A. anseris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser caerulescens, Cygnus atratus, Cygnus columbianus,
Cygnus columbianus bewickii, Cygnus cygnus buccinator, Cygnus
olor

Somateriini - Somateria spectabilis

Gaviiformes - Gavia stellata

HABITAT: Gizzard - under lining, proventriculus, intestine.

DISTRIBUTION: Europe (Belgium - source of bird examined in Zoological Garden in Brazil), Asia (Kazakhstan, Inner Mongolia, Yakutia), N. America (USA), Australia.

Amidostomum fulicae

STATUS AS WATERFOWL PARASITE: Infrequent, normally in gruiform birds; reported 5 times in wild ducks.

DESCRIPTION: Boulenger, 1926; Pavlov, 1960; Czapliński, 1962a.

Copy: Cram, 1927a; Travassos, 1937.

SYNONYMY:

Spiroptera fulicae Rudolphi, 1819

Amidostomum fulicae (Rudolphi, 1819) Seurat, 1918

Amidostomum raillieti Skrjabin, 1915 - [Pavlov, 1960]

LIFE CYCLE: Eggs passed in feces of host, hatch in water in 43-47 hours at 18-20 C., in 36-40 hours at 24 C.; larvae infective in 9 days; mature in final host in 21-27 days after ingestion. (Baruš, 1964a; Leiby, 1964a, 1964b; Leiby & Olsen, 1965)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca, Anas poecilorhyncha,
Anas strepera

Aythiini - Aythya nyroca, Netta rufina

Gruiformes - Fulica americana, Fulica atra, Porzana porzana

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kirgizia, Kazakhstan, Inner Mongolia, Primorsk), Africa (Egypt), N. America (USA).

Amidostomum henryi

STATUS AS WATERFOWL PARASITE: Accidental, normally in charadriiform birds; reported once in wild duck.

DESCRIPTION: Skrjabin, 1915b. Copy: Cram, 1927a; Travassos, 1937; Kurashvili, 1957; Czapliński, 1962a.

SYNONYMY:

Amidostomum henryi Skrjabin, 1915

LIFE CYCLE: Unknown; probably similar to that of A. anseris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Charadriiformes - Vanellus vanellus

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Georgia), Asia (Uzbekistan, Kazakhstan).

Amidostomum monodon

STATUS AS WATERFOWL PARASITE: Frequent; reported 11 times in wild ducks.

STATUS AS SPECIES: Synonym of A. acutum - Czapliński, 1962a.

DESCRIPTION: Baylis, 1932; Sultanov, 1963; Ryzhikov, 1963b. Copy: Cram, 1927a; Travassos, 1937.

SYNONYMY: Cram, 1927a.

Strongylus monodon Linstow, 1882

Sclerostoma monodon (Linstow, 1882) Stossich, 1889

Amidostomum monodon (Linstow, 1882) Skrjabin, 1915

LIFE CYCLE: Unknown; probably similar to that of A. anseris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas crecca, Anas querquedula

Aythiini - Aythya fuligula

Somateriini - Somateria mollissima, Somateria spectabilis

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Uzbekistan, Amur, Kamchatka, Chukotka).

Amidostomum spatulatum

STATUS AS WATERFOWL PARASITE: Frequent in Anserini; reported 13 times in wild waterfowl and once in domestic goose.

DESCRIPTION: Baylis, 1932a; Ablasov, 1957; Czapliński, 1962a; Oshmarin, 1963a. Copy: Travassos, 1937.

SYNONYMY:

Amidostomum spatulatum Baylis, 1932

LIFE CYCLE: Unknown; probably similar to that of A. anseris.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser brachyrhynchus, Anser caerulescens, Anser erythropus, Anser fabalis, Anser indicus, Anser rossii, Branta canadensis, Cygnus columbianus, Cygnus cygnus, Cygnus cygnus buccinator

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (England, Poland), Asia (Uzbekistan, Kirgizia, Primorsk, Kamchatka, Chukotka), N. America (USA, Canada).

Paramidostomum skrjabini

STATUS AS WATERFOWL PARASITE: Rare, may not be normal host; reported once in captive waterfowl.

DESCRIPTION: Ryzhikov & Romanova, 1959.

SYNONYMY:

Paramidostomum skrjabini Ryzhikov & Romanova, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons, Branta ruficollis, Coscoroba coscoroba

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (USSR - Moscow Zoological Park).

Pseudamidostomum bouleengeri

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive and once in wild waterfowl.

DESCRIPTION: Maplestone, 1930. Copy: Travassos, 1937; Skrjabin, Shikhobalova, & Shul'ts, 1954.

SYNONYMY:

Pseudamidostomum bouleengeri Maplestone, 1930

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Cairinini - Nettapus coromandelianus

Ciconiiformes - Bubulcus ibis

HABITAT: Not given; probably under lining of gizzard.

DISTRIBUTION: Asia (India - Calcutta Zoo, Uzbekistan).

Epomidiostomum crami

STATUS AS WATERFOWL PARASITE: Common in Anserini in N. America; reported 5 times in wild waterfowl.

DESCRIPTION: Wetzel, 1931b; Sultanov, 1963. Copy: Travassos, 1937; Skrjabin, Shikhobalova, & Schul'ts, 1954.

SYNONYMY:

Epomidiostomum crami Wetzel, 1931

LIFE CYCLE: Unknown; probably similar to that of E. uncinatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser albifrons, Anser caerulescens, Anser fabalis, Anser rossii, Branta canadensis, Cygnus columbianus

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas acuta, Anas penelope

Aythini - Netta rufina

HABITAT: Gizzard - under lining.

DISTRIBUTION: Asia (Uzbekistan, Inner Mongolia), N. America (USA).

Epomidiostomum orispinum

STATUS AS WATERFOWL PARASITE: Common; reported 20 times in wild waterfowl and 3 times in domestic waterfowl.

DESCRIPTION: Seurat, 1918b; Czapliński, 1962b. Cram, 1927a; Travassos, 1937; Skrjabin, Shikhobalova, & Shul'ts, 1954; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Strongylus anseris Zeder, 1800, e.p.

Strongylus orispinus Molin, 1861

Epomidiostomum orispinum (Molin, 1861) Seurat, 1918

Epomidiostomum skrjabini Petrov, 1926 - [Dubinina, 1948; Czapliński, 1962b]

LIFE CYCLE: Unknown; probably similar to that of E. uncinatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser erythropus, Anser fabalis, Branta leucopsis

Anatini - Anas platyrhynchos, Anas crecca, Anas penelope

Somateriini - Somateria mollissima

Aythiini - Aythya fuligula

Mergini - Bucephala clangula, Melanitta fusca, Melanitta nigra

Gruiformes - Fulica atra

HABITAT: Esophagus and stomach - under mucosa.

DISTRIBUTION: Europe, Asia (Amur, Chukotka), Africa (Algeria).

Epomidiostomum petalum

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck, and twice in domestic ducks.

DESCRIPTION: Yen & Wu, 1959.

SYNONYMY:

Epomidiostomum petalum Yen & Wu, 1959

LIFE CYCLE: Unknown; probably similar to that of E. uncinatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas poecilorhyncha

HABITAT: Gizzard - probably under lining.

DISTRIBUTION: Asia (China, Inner Mongolia).

Epomidiostomum querquedulae

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild waterfowl, and once in captive waterfowl.

STATUS AS SPECIES: Doubtful.

DESCRIPTION: Boulenger, 1926; Sultanov, 1963. Copy: Cram, 1927a; Travassos, 1937; Skrjabin, Shikhobalova, & Shul'ts, 1954.

SYNONYMY:

Epomidiostomum querquetulae Boulenger, 1926

Epomidiostomum querquedulae Boulenger, 1926, emend. Wetzel, 1931

LIFE CYCLE: Unknown; probably similar to that of E. uncinatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor

Anatini - Anas acuta, Anas crecca

HABITAT: Gizzard - under lining.

DISTRIBUTION: Asia (Uzbekistan), Africa (Egypt).

Epomidiostomum uncinatum

STATUS AS WATERFOWL PARASITE: Very common. characteristic helminth of waterfowl; reported 51 times in wild, 19 times in domestic, and twice in captive waterfowl. Rarely found in Anserini in N. America. Reported once as cause of pathological condition (Beaudette, 1939).

STATUS AS SPECIES: Strongylus uncinatus Lund. regarded as species inquirenda by Skrjabin, Shikhobalova, & Shul'ts, 1954: E. anatinum Skrj. used as first available name. This substitution regarded as unnecessary by Czapliński (1962b).

DESCRIPTION: Skrjabin, 1916b (as E. anatinum); Wetzel, 1931; Macko, 1961a; Czapliński, 1962b. Copy: Cram, 1927a; Travassos, 1937; Skr-

jabin, Shikhobalova, & Schul'ts, 1954; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Strongylus uncinatus Lundahl, 1848

Epomidiostomum uncinatum (Lundahl, 1848) Seurat, 1918

Epomidiostomum anatinum Skrjabin, 1916

LIFE CYCLE: Eggs passed in feces of host, hatch in 3 days at 23-25 C.; larvae in water infective in 4-11 days, viable up to 20 days; mature in final host in 16-24 days after ingestion of larvae. (Kurochkin, 1954; Leiby & Olsen, 1965)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser fabalis, Branta canadensis, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus olor

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas angustirostris, Anas clypeata, Anas crecca, Anas cyanoptera, Anas discors, Anas falcata, Anas formosa, Anas gibberifrons, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas rubripes, Anas strepera

Aythiini - Aythya americana, Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Aythya vallisneria, Netta rufina

Cairinini - Aix galericulata, Sarkidiornis melanotos

Mergini - Clangula hyemalis, Melanitta fusca deglandi, Melanitta nigra

Oxyurini - Oxyura jamaicensis, Oxyura leucocephala

Galliformes - Gallus gallus (dom.) [exper.]

Columbiformes - Columba livia (dom.) [exper.]

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Yakutia, Primorsk, Chukotka), Africa (Algeria), N. America (USA).

Epomidiostomum vogelsangi

STATUS AS WATERFOWL PARASITE: Rare; reported twice in captive waterfowl.

DESCRIPTION: Travassos, 1937. Copy: Skrjabin, Shikhobalova, & Shul'ts, 1954.

SYNONYMY:

Epomidiostomum orispinum (Molin) of Khalil & Vogelsang, 1932

Epomidiostomum vogelsangi Travassos, 1937

LIFE CYCLE: Unknown; probably similar to that of E. uncinatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus melanocoryphus

HABITAT: Not given, probably under lining of gizzard.

DISTRIBUTION: S. America (Argentina - Source of birds examined in zoological gardens, Germany).

Trichostrongylus medius

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic waterfowl; originally described from gallinaceous bird.

DESCRIPTION: Oligier, 1957. Copy: Skrjabin, Shikhobalova, & Shul'ts, 1954; Kasimov, 1956.

SYNONYMY:

Trichostrongylus medius Oligier, 1952, nomen nudum

Trichostrongylus medius Oligier in Skrjabin, Shikhobalova, & Shul'ts, 1954

LIFE CYCLE: Unknown; probably similar to that of T. tenuis.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Lyrurus tetrrix

HABITAT: Ceca, small intestine.

DISTRIBUTION: Europe (Russia), Asia (Azerbaijan).

Trichostrongylus tenuis

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of Anserini; reported 16 times in wild, 54 times in domestic, and twice in captive waterfowl. Cause of clinical symptoms when present in large numbers; pathology described by Cram & Cuvillier, 1934.

DESCRIPTION: Cram, 1927a; Cram & Wehr, 1934; Czapliński, 1962b.
Copy: Travassos, 1937; Skrjabin, Shikhobalova, & Shul'ts, 1954;
Kasimov, 1956; Gvozdev, 1958; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Strongylus tenuis Mehlis in Creplin, 1846

Trichostrongylus tenuis (Mehlis, 1846) Railliet & Henry, 1900

Strongylus pergracilis Cobbold, 1873

Trichostrongylus pergracilis (Cobbold, 1873) Railliet & Henry, 1909

Strongylus serratus Linstow, 1876

LIFE CYCLE: Eggs passed in feces of host, hatch in 36-48 hours in soil; larvae infective to final host in 6-7 days, migrate up plants, survive in soil at least one month; mature in final host 4-7 days after ingestion, survive up to 2 months. Larvae can mature in culture in free-living stage. (Bejšovec, 1962; Collinge, 1935, 1945; Cram & Cuvillier, 1933, 1934)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser brachyrhynchus, Anser caerulescens, Anser fabalis, Branta canadensis, Cygnus atratus, Cygnus columbianus, Cygnus cygnus

Tadornini - Chloephaga picta, Neochen jubatus

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas formosa, Anas penelope, Anas strepera

Cairinini - Cairina moschata (dom.), Chenonetta jubata

Galliformes - Alectoris graeca, Alectoris rufa, Colinus virginianus, Francolinus francolinus, Gallus gallus (dom.), Lagopus lagopus, Lagopus scoticus, Lyrurus tetrix, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris (dom.), Pavo cristatus, Perdix perdix, Phasianus colchicus

Gruiformes - Otis tarda

Passeriformes - Passer domesticus

HABITAT: Ceca, occasionally small intestine.

DISTRIBUTION: Europe, Asia, Africa (Union S. Africa), N. America.

Aelurostrongylus abstrusus

STATUS AS WATERFOWL PARASITE: Accidental; encysted larvae present only as result of experimental infection.

SYNONYMY:

Strongylus pusillus Mueller, 1890, not Rudolphi, 1803

Metastrongylus pusillus (Mueller, 1890) Sluiter & Swellengrebel, 1912

Strongylus abstrusus Railliet, 1898

Protostrongylus abstrusus (Railliet, 1898) Kamensky, 1905

Synthetocaulus abstrusus (Railliet, 1898) Railliet & Henry, 1907

Aelurostrongylus abstrusus (Railliet, 1898) Cameron, 1927

Strongylus nanus Braun & Lühe, 1909

LIFE CYCLE: Larvae passed in feces, enter terrestrial snails and slugs; larvae infective for final host in 3-4 weeks, survive in snail for months. Mature in final host 3 weeks after ingestion, produce larvae in 5 weeks. Larvae encyst in muscles when ingested by vertebrate other than final host. (Hobmaier & Hobmaier, 1935a, 1935b; Hobmaier, 1937)

INTERMEDIATE HOSTS: Agriolimax agrestis, Ariolimax columbianus, Eulota similis, Helix aspersa, Helminthoglypta arrosa, Helminthoglypta californiensis, Helminthoglypta nickleana, Subulina octona

AUXILIARY HOSTS: AMPHIBIA [exper.]

REPTILIA [exper.]

AVES - Anseriformes - Anas platyrhynchos (dom.) [exper.]; Galliformes - Gallus gallus (dom.); Passeriformes - Passer domesticus.

MAMMALIA - Rodentia

FINAL HOSTS: MAMMALIA

Carnivora - Felis catus

HABITAT: Lungs; muscles of auxiliary hosts.

DISTRIBUTION: Europe, N. America (USA).

Contracaecum anasi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Mawson, 1956a.

SYNONYMY:

Contracaecum anasi Mawson, 1956

LIFE CYCLE: Unknown; probably similar to that of C. spiculigerum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas rubripes

HABITAT: Not given; probably small intestine or stomach.

DISTRIBUTION: N. America (Canada).

Contraeaecum microcephalum

STATUS AS WATERFOWL PARASITE: Infrequent, typically in Ciconiiformes; reported 5 times in wild and twice in domestic ducks.

DESCRIPTION: Johnston & Mawson, 1941b; Yamaguti & Mitunaga, 1943b; Mozgovoï, 1953b. Copy: Cram, 1927a; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Mozgovoï, 1953b.

Ascaris microcephala Rudolphi, 1809

Contraeaecum microcephalum (Rudolphi, 1809) Baylis, 1920

Contraeaecum (Contraeaecum) microcephalum (Rudolphi, 1809) of Skrjabin, Shikhobalova, & Mozgovoï, 1951

Ascaris ardearum Rudolphi, 1809 - [Yamaguti, 1961]

Ascaris ciconiae Rudolphi, 1819 - [Sprehn, 1932; Bezubik, 1956]

Ascaris coronata Linstow, 1906

Kathleena arcuata Gedoelst, 1916

Contraeaecum quadricuspe Walton, 1923

Amplicaeum ardei Layman & Andronova, 1926

Contraeaecum squalii (Linstow, 1908) Skrjabin, 1923 - [Dubinin, 1940]

LIFE CYCLE: Larvae encysted in fresh-water fish; mature in final host 6 days after ingestion. (Dubinin, 1940; Mozgovoï, Semenova, & Shakhmatova, 1965; Yamaguti, 1961)

INTERMEDIATE HOSTS: Alburnus alburnus, Esox lucius, Misgurnus anguillicaudatus, Scardinius erythrophthalmus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca, Anas querquedula, Anas strepera, Anas superciliosa

Aythiini - Aythya nyroca

Podicipediformes - Podiceps cristatus

Pelecaniformes - Anhinga rufa, Pelecanus erythrophthalmus, Pelecanus oncorhynchus, Phalacrocorax carbo

Ciconiiformes - Ardea cinerea, Ardea herodias, Ardea purpurea, Ardeola bacchus, Ardeola grayii, Ardeola ralloides, Botaurus lentiginosus, Botaurus stellaris, Butorides striatus, Butorides virens, Casmerodius albus, Ciconia ciconia, Ciconia nigra, Egretta garzetta, Florida caerulea, Geronticus eremita, Hydranassa tricolor, Ixobrychus minutus, Nycticorax nycticorax, Platalea leucorodia, Plegadis falcinellus, Scopus umbretta

Falconiformes - Accipiter sp., Elanoides forficatus, Falco peregrinus, Milvus migrans

Charadriiformes - Actophilornis africana

Coraciiformes - Merops nubicus

HABITAT: Proventriculus, small intestine.

DISTRIBUTION: Cosmopolitan. Europe, Asia, Africa, N. America.

Contracaecum micropapillatum

STATUS AS WATERFOWL PARASITE: Rare, typically in Pelecaniformes and Ciconiiformes; reported once in wild duck and once in captive duck.

DESCRIPTION: Mozgovoï, 1953b. Copy: Cram, 1927a.

SYNONYMY:

Ascaris micropapillata Stossich, 1890

Contracaecum micropapillatum (Stossich, 1890) Baylis, 1920

Contracaecum (Contracaecum) micropapillatum (Stossich, 1890) of
Skrjabin, Shikhobalova, & Mozgovoï, 1951

LIFE CYCLE: Unknown; probably similar to that of C. spiculigerum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Mergini - Bucephala clangula

Pelecaniformes - Haliastur africanus, Pelecanus crispus, Pelecanus erythrophthalmus, Pelecanus oncorhynchus

Ciconiiformes - Ardea cinerea, Ardea purpurea, Botaurus stellaris,
Butorides striatus, Ixobrychus minutus, Nycticorax nycticorax

Charadriiformes - Stercorarius pomarinus

MAMMALIA - Carnivora - Civettictis civetta

HABITAT: Small intestine, stomach, esophagus.

DISTRIBUTION: Europe, Asia (Kazakhstan), Africa, N. America (USA).

Contracaecum spasskyi

STATUS AS WATERFOWL PARASITE: Accidental, normally in grebes; reported once in wild duck.

STATUS AS SPECIES: Synonym of C. nehli - Macko, 1961.

DESCRIPTION: Mozgovoï, 1950, 1953b.

SYNONYMY:

Contracaecum spasskyi Mozgovoï, 1950

Contracaecum (Contracaecum) spasskyi Mozgovoï, 1950 of Skrjabin,
Shikhobalova, & Mozgovoï, 1951

LIFE CYCLE: Unknown; probably similar to that of C. spiculigerum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya fuligula, [Aythya nyroca - cited by Sultanov, 1963; original source not found]
Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps grisegena, Podiceps ruficollis

HABITAT: Stomach, small intestine.

DISTRIBUTION: Asia (W. Siberia, Uzbekistan, Kazakhstan).

Contracaecum spiculigerum

STATUS AS WATERFOWL PARASITE: Frequent; reported 20 times in wild waterfowl. Occurs in any type of fish-eating bird.

DESCRIPTION: Johnston & Mawson, 1941b; Mozgovoï, 1953b. Copy: Cram, 1927a; Kurashvili, 1957.

SYNONYMY: Cram, 1927a.

Ascaris spiculigera Rudolphi, 1809

Contracaecum spiculigerum (Rudolphi, 1809) Railliet & Henry, 1912

Contracaecum (Contracaecum) spiculigerum (Rudolphi, 1809) of Skrjabin, Shikhobalova, & Mozgovoï, 1951

Ascaris variegata Rudolphi, 1819

Ascaris mergorum Rudolphi, 1819 - [Sprehn, 1932; Bezubik, 1956]

Ascaris colymborum Rudolphi, 1819 - [Sprehn, 1932; Bezubik, 1956]

Ascaris praelonga Dujardin, 1845 - [Sprehn, 1932; Bezubik, 1956]

Ascaris siluri glanidis Linstow, 1883

Contracaecum siluri glanidis (Linstow, 1883) Dogiel & Bykhovskii, 1934 - [Dubinin, 1949]

Contracaecum turkestanicum Skrjabin, 1923 - [Yamaguti, 1961]

Contracaecum umiu Yamaguti, 1941 - [Skrjabin, Shikhobalova, & Mozgovoï, 1951; Mozgovoï, 1953b]

Contracaecum himeu Yamaguti, 1941 - [Skrjabin, Shikhobalova, & Mozgovoï, 1951; Mozgovoï, 1953b]

LIFE CYCLE: Eggs passed in feces of host, hatch in fresh water or sea water in 5-7 days; larvae survive in water 8-23 days (45 days at near 0 C. in fresh water, 6 months at 7-13 C. in sea water), infect fresh-water or marine invertebrates (copepod and amphipod crustacea, insects, oligochaetes, mollusks) and small fish; second intermediate host damselfly larvae (Odonata), and presumably fish and tadpoles; mature in final host in at least 10 days after ingestion. Larvae can transfer from Odonata to fish, or from one fish to another on ingestion; infection of birds from fish assumed but not demonstrated. Mature adults reported once in marine fish (Ass). (Ass, 1961; Bangham, 1938, 1939; Bangham & Venard, 1942; Dubinin, 1949; Haderlie, 1953; Huizinga, 1966; Meyer, 1958; Mozgovoï, Shakhmatova, & Semenova, 1965; Shaw, 1947; Thomas, 1937)

FIRST INTERMEDIATE HOSTS: Cyclops, Macrocylops, Gammarus, Chironomidae, Agrion, Coenagrion, Lebistes reticulatus [exper.], Acanthocyclops vernalis [exper.], Tigriopus californicus [exper.], Fundulus heteroclitus [exper.]

SECOND INTERMEDIATE HOSTS: Agrion, Coenagrion

AUXILIARY HOSTS OR SECOND INTERMEDIATE HOSTS?: (Practically none of these verified experimentally) OSTEICHTHYES - Acerina cernua, Amia calva, Archoplites interruptus, Aspius aspius, Catostomus commersonii, Catostomus fecundus, Centropomus undecimalis, Chaenobryttus coronarius, Dormitator maculatus, Dorosoma cepedianum, Enneacanthus gloriosus, Erimyzon sucetta, Esox niger, Fundulus chrysotus, Fundulus cingulatus, Fundulus heteroclitus, Fundulus majalis, Fundulus similis, Gambusia affinis, Gila atraria, Heterandria formosa, Ictalurus catus, Ictalurus melas, Ictalurus natalis, Ictalurus nebulosus, Ictalurus punctatus, Jordanella floridae, Labidesthes sicculus, Lebistes reticulatus [exper.], Lepisosteus platyrhincus, Lepomis cyanellus, Lepomis humilis, Lepomis macrochirus, Lepomis microlophus, Micropterus salmoides, Mollienesia latipinna, Myoxocephalus octodecimspinosus, Notemigonus crysoleucas, Notothenia sp., Oncorhynchus nerka, Oncorhynchus tshawytscha, Perca flavescens, Perca fluviatilis, Pomoxis nigromaculatus, Pomoxis annularis, Pseudopleuronectes americanus, Ptychocheilus oregonensis, Rhinichthys cataractae, Rhinichthys osculus, Richardsonius balteatus, Salmo gairdneri, Salvelinus fontinalis, Schilbeodes gyrinus, Sclerotis punctatus, Siluris glanis, Tautoglabrus adspersus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus cygnus

Aythini - Aythya nyroca

Cairinini - Aix galericulata

Mergini - Bucephala clangula, Mergus albellus, Mergus merganser,
Mergus serrator

Gaviiformes - Gavia arctica, Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps dominicus, Podiceps grisegena, Podiceps ruficollis

Pelecaniformes - Anhinga anhinga, Anhinga melanogaster, Anhinga novae-hollandiae, Anhinga rufa, Fregata aquila, Haliastur africanus, Haliastur melanoleucos, Haliastur niger, Haliastur pygmaeus, Pelecanus crispus, Pelecanus erythrorhynchus, Pelecanus occidentalis, Pelecanus oncorotalus, Pelecanus rufescens, Phalacrocorax aristotelis, Phalacrocorax atriceps, Phalacrocorax auritus, Phalacrocorax capensis, Phalacrocorax capillatus, Phalacrocorax carbo, Phalacrocorax carunculatus, Phalacrocorax fuscescens, Phalacrocorax fuscicollis, Phalacrocorax magellanicus, Phalacrocorax olivaceus, Phalacrocorax pelagicus, Phalacrocorax sulcirostris, Phalacrocorax urile, Phalacrocorax varius, Phalacrocorax verrucosa, Sula bassana

Ciconiiformes - Ardea cinerea, Ardea pacifica, Botaurus lentiginosus,
Botaurus poeciloptilus, Casmerodius albus, Notophox novae-hollan-
diae, Nycticorax caledonicus, Nycticorax nycticorax

Gruiformes - Fulica leucoptera

Charadriiformes - Alca torda, Cephus grylle, Haematopus ostralegus,
Larus argentatus, Larus canus, Larus fuscus, Larus marinus, Larus
novae-hollandiae, Larus ridibundus, Rissa tridactyla, Stercorarius
parasiticus, Stercorarius pomarinus, Sterna hirundo, Uria aalge,
Uria lomvia

MAMMALIA - Rodentia - Ondatra zibethica

ACCIDENTAL HOSTS: OSTEICHTHYES - Uranoscopus sp., Belone belone,
Scorpaena parcus

HABITAT: Small intestine, stomach, rarely esophagus.

DISTRIBUTION: Cosmopolitan.

Contracaecum yamaguti

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Yamaguti, 1941b; Mawson, 1956a.

SYNONYMY:

Contracaecum sp. Yamaguti, 1941

Contracaecum yamaguti Mawson, 1956

LIFE CYCLE: Unknown; probably similar to that of C. spiculigerum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Japan), N. America (Canada).

Porrocaecum crassum

STATUS AS WATERFOWL PARASITE: Very common in Eurasia, characteris-
tic helminth of waterfowl; reported 25 times in wild, 35 times in
domestic, and once in captive waterfowl. Pathology described by
Wehrmann, 1909; Ryzhkova, 1954; incidence in relation to age of host
recorded by Shokina (1959).

DESCRIPTION: Mozgovoŭ, 1953b; Bezubik, 1957a; Hartwich, 1959; Cza-

pliński, 1962b. Copy: Cram, 1927a; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Ascaris crassa Deslongchamps, 1824

Porrocaecum crassum (Deslongchamps, 1824) Railliet & Henry, 1912

Porrocaecum (Porrocaecum) crassum (Deslongchamps, 1824) of Skrjabin, Shikhobalova, & Mozgovoi, 1951

LIFE CYCLE: Eggs passed in feces of host, embryonated in soil in 5-12 days; eggs hatch after ingestion by terrestrial earthworm or dipteran insect larvae, larvae penetrate blood vessels; after ingestion by final host, larvae enter submucosa of gizzard, pass into small intestine in 7 days, mature in 3 weeks. (Karmanova, 1960b; Kosinova, 1965; Mozgovoi, 1952a, 1952b, 1954a, 1954b; Shevtsov, 1962b)

INTERMEDIATE HOSTS: Allolobophora longa, Criodrilus lacuum, Lumbri-
cus sp., Haematopota sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas castanea, Anas clypeata, Anas crecca, Anas formosa, Anas georgica, Anas leucophrys, Anas luzonica, Anas poecilorhyncha, Anas querquedula, Anas specularis, Anas strepera, Anas versicolor

Aythiini - Aythya ferina, Aythya nyroca

Cairinini - Aix sponsa, Cairina hartlaubi, Cairina moschata (dom.)

Mergini - Bucephala clangula

Oxyurini - Oxyura leucocephala

Falconiformes - Accipiter gentilis

Galliformes - Numida meleagris

Gruiformes - Grus grus

HABITAT: Small intestine, stomach.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, India, Amur, Primorsk).

Porrocaecum depressum

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in birds of prey; reported once in wild duck.

DESCRIPTION: López-Neyra, 1946; Morgan & Schiller, 1950; Mozgovoi, 1953b; Hartwich, 1959; Sultanov, 1963. Copy: Cram, 1927a; Kasimov, 1956.

SYNONYMY: Cram, 1927a; Hartwich, 1959.

Fusaria depressa Zeder, 1800

Ascaris depressa (Zeder, 1800) Rudolphi, 1809

Porrocaecum depressum (Zeder, 1800) Baylis, 1920

Porrocaecum (Porrocaecum) depressum (Zeder, 1800) of Mozgovoï, 1953

Ascaris arcuata Linstow, 1907

LIFE CYCLE: Unknown; larvae encysted in muscles of small mammals (auxiliary hosts).

INTERMEDIATE HOSTS: Unknown.

AUXILIARY HOSTS?: Crocidura leucodon, Neomys foediens, Sorex macro-pygmaeus, Sorex minutus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix galericulata

Falconiformes - Accipiter bicolor, Accipiter gentilis, Accipiter nisus, Accipiter striatus, Aegyptius monachus, Aquila chrysaetos, Aquila clanga, Aquila heliaca, Aquila maculata, Aquila pomarina, Buteo buteo, Buteo jamaicensis, Buteo lagopus, Buteo magnirostris, Circaetus gallicus, Circus aeruginosus, Circus cyaneus, Circus macrourus, Circus pygargus, Falco cherrug, Falco columbarius, Falco naumanni, Falco peregrinus, Falco subbuteo, Falco tinnunculus, Gypaetus barbatus, Gyps fulvus, Gyps indicus, Haliaeetus albicilla, Haliaeetus leucoryphus, Heterospizias meridionalis, Hieraeetus fasciatus, Hieraeetus pennatus, Milvago chimachima, Milvus migrans, Milvus milvus, Fernis apivorus, Polyborus plan-cus, Uroaetus audax

Galliformes - Lyrurus tetrrix

Charadriiformes - Scolopax rusticola

Strigiformes - Aegolius funereus, Asio flammeus, Asio otus, Bubo bubo, Bubo virginianus, Nyctea scandiaca, Otus asio, Strix aluco, Strix uralensis, Strix varia, Surnia ulula, Tyto alba

Passeriformes - Corvus corone cornix, Sturnus vulgaris

HABITAT: Esophagus, stomach, intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kirgizia, Kazakhstan, Uzbekistan, India, Primorsk), Africa (S. Africa), N. America (Mexico, USA, Canada), S. America (Brazil, Br. Guiana), Australia.

Porrocaecum ensicaudatum

STATUS AS WATERFOWL PARASITE: Infrequent, typically in passerine birds; reported 5 times in wild ducks, once in domestic duck.

DESCRIPTION: Mozgovoï, 1953b; Mawson, 1956a; Hartwich, 1959. Copy:

Cram, 1927a; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a; López-Neyra, 1946.

Fusaria ensicaudata Zeder, 1800

Ascaris ensicaudata (Zeder, 1800) Rudolphi, 1809

Porrocaecum ensicaudatum (Zeder, 1800) Baylis, 1920

Porrocaecum (Porrocaecum) ensicaudatum (Zeder, 1800) of Skrjabin,
Shikhobalova, & Mozgovoi, 1951

Ascaris turdi iliaci Goeze, 1782

Ascaris turdi pilaris Goeze, 1782

Ascaris teres Goeze, 1782

Ascaris turdi Gmelin, 1788

Ascaris sturni Gmelin, 1788

Ascaris cornicis Gmelin, 1790

Ascaris corvi glandarii Viborg, 1795 - [Markowski, 1933]

Fusaria crenata Zeder, 1800

Fusaria lancea Zeder, 1800

Ascaris corvi frugilegi Rudolphi, 1819

Spiroptera turdi Molin, 1860

LIFE CYCLE: Eggs passed in feces, embryonate in soil, hatch after ingestion by terrestrial earthworm; larvae in blood vessels and hearts, fully developed in 12-14 days, infective in at least 6 weeks at 20-22 C.; after ingestion by final host, larvae penetrate gizzard wall in 48 hours, reach duodenal wall in 3 days through tissues, mature and emerge into lumen of duodenum in 18 days. (Levin, 1956, 1957, 1961; Osche, 1955; Ryšavý, 1959, 1961)

INTERMEDIATE HOSTS: Allolobophora caliginosa, Lumbricus terrestris,
Octolaelon lacteum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas crecca

Aythiini - Aythya ferina

Cairinini - Aix galericulata

Gruiformes - Gallinula chloropus, Crex crex

Charadriiformes - Burhinus oedicnemus, Charadrius dubius, Charadrius hiaticula, Eudromias morinellus, Himantopus himantopus, Larus sp., Philomachus pugnax, Pluvialis apricaria, Pluvialis dominica, Squatarola squatarola, Tringa ochropus, Vanellus vanellus

Passeriformes - Acrocephalus arundinaceus, Alauda sp., Anthus pratensis, Corvus brachyrhynchos, Corvus corone, Corvus corone cornix, Corvus frugilegus, Corvus monedula, Garrulus glandarius, Luscinia megarhynchos, Mimus polyglottos, Molothrus ater, Monticola saxatilis, Motacilla alba, Motacilla flava, Pica pica, Pitta angolensis, Quiscalus quiscula, Sturnus roseus, Sturnus vulgaris, Sylvia atricapilla, Turdus ericetorum, Turdus hortulorum, Turdus iliacus, Turdus merula, Turdus migratorius, Turdus pilaris, Turdus ruficollis, Turdus torquatus, Turdus viscivorus

HABITAT: Small intestine, stomach, rarely esophagus.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Kirgizia, Mongolia, Primorsk), Africa, N. America (USA, Canada).

Porrocaecum heteroura

STATUS AS WATERFOWL PARASITE: Rare, normally in shore birds; reported once in wild duck.

STATUS AS SPECIES: Unrecognizable from original description - Cram, 1927a. Type a specimen of P. semiteres - Hartwich, 1959; probably distinct - Czapliński, 1962b.

DESCRIPTION: Czapliński, 1962b; Mozgovoï, 1953b. Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Ascaris heteriira Creplin, 1829

Ascaris heteroura Mehlis, 1831

Porrocaecum heteroura (Creplin, 1829 emend. Mehlis, 1831) Baylis, 1920

Porrocaecum (Porrocaecum) heteroura (Creplin, 1829) of Skrjabin, Shikhobalova, & Mozgovoï, 1951

LIFE CYCLE: Eggs passed in feces of host, embryonate in 20 days at 12-20 C. in soil; eggs hatch after ingestion by terrestrial earthworms, larvae in blood vessels, survive for over one year; mature in final host after ingestion. (Mozgovoï & Bishaeva, 1959)

INTERMEDIATE HOSTS: ?

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Charadriiformes - Actitis hypoleucos, Burhinus oedicnemus, Charadrius dubius, Charadrius hiaticula, Charadrius mongolus, Erolia temminckii, Eudromias morinellus, Himantopus himantopus, Pluvialis apricaria, Pluvialis dominica, Squatarola squatarola, Tringa totanus, Vanellus vanellus

Passeriformes - Sturnus vulgaris, Turdus iliacus, Turdus philomelos

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Uzbekistan, Kirgizia, Primorsk, Sakhalin).

Porrocaecum semiteres

STATUS AS WATERFOWL PARASITE: Rare, normally in Passeriformes according to Mozgovoï (1953), in Charadriiformes according to Hartwich (1959); reported once in wild duck.

DESCRIPTION: Baylis, 1922; Mozgovoï, 1953b; Hartwich, 1950. Copy: Cram, 1927.

SYNONYMY:

Fusaria semiteres Zeder, 1800

Ascaris semiteres (Zeder, 1800) Rudolphi, 1802

Porrocaecum semiteres (Zeder, 1800) Baylis, 1920

Porrocaecum heteroura (Creplin, 1829) Baylis, 1920 - [Hartwich, 1959]

LIFE CYCLE: Unknown; probably similar to that of P. crassum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Charadriiformes - Pluvialis apricaria, Squatarola squatarola, Tringa totanus, Vanellus vanellus

Passeriformes - Corvus corone cornix, Lanius minor, Turdus ilacus

HABITAT: Intestine.

DISTRIBUTION: Europe, Africa (Egypt).

Heterakis altaica

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in gallinaceous birds; reported once in domestic waterfowl.

STATUS AS SPECIES: Cannot be distinguished from H. dispar - Inglis, 1958.

DESCRIPTION: Spaul, 1929; Skrjabin & Shikhobalova, 1949; Gvozdev, 1958. Copy: Kasimov, 1956; Skrjabin, Shikhobalova, & Lagodovskaiã, 1961.

SYNONYMY: Skrjabin, Shikhobalova, & Lagodovskaiã, 1961.

Heterakis altaica Spaul, 1929

Ganguleterakis altaicus (Spaul, 1929) Skrjabin & Shikhobalova, 1947

Odonterakis altaicus (Spaul, 1929) Freitas, 1956

Heterakis skarbilowitschii Kasimov, 1946

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Alectoris graeca, Perdix barbata, Tetraogallus altaicus, Tetraogallus caucasicus, Tetraogallus himalayensis, Tetraogallus tibetanus

HABITAT: Ceca, small intestine, large intestine.

DISTRIBUTION: Asia (Azerbaijan, Central Asia).

Heterakis beramporia

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported once in domestic duck.

DESCRIPTION: Schwartz, 1925; Li, 1933; Yamaguti & Mitunaga, 1943b; Skrjabin & Shikhobalova, 1949; Gupta, 1960. Copy: Cram, 1927a; Kasimov, 1956; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY: Madsen, 1950b.

Heterakis beramporia Lane, 1914

Heterakis putaustralis (Lane) of Maplestone, 1932

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum. Larvae in nodules in ceca.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus, Gallus sonneratii, Gennaesus nycthrmerus

HABITAT: Ceca.

DISTRIBUTION: Asia (China, India, Indo-China, Philippine Is.), Australia.

Heterakis chenonettae

STATUS AS WATERFOWL PARASITE: Rare or infrequent; reported 2 or 3 times in wild Australian wood duck.

STATUS AS SPECIES: Doubtful, description inadequate. Species inquirenda, probably H. dispar - Madsen, 1950b; species inquirenda - Inglis, 1958; synonym of H. dispar - Buša, 1962.

DESCRIPTION: Johnston, 1913b; Johnston & Mawson, 1941b. Copy:

Cram, 1927a; Skrjabin & Shikhobalova, 1949; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY:

Heterakis chenonettae Johnston, 1912

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Chenonetta jubata

HABITAT: Ceca.

DISTRIBUTION: Australia.

Heterakis dispar

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of Anserini; reported 17 times in wild, 79 times in domestic, and 10 times in captive waterfowl. Cause of severe disease; pathology described by Lucet, 1896; Borges Ferreira, 1957.

DESCRIPTION: Petrov, 1926; Madsen, 1950b; Czapliński, 1962b. Copy: Cram, 1927a; Skrjabin & Shikhobalova, 1949; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY: Madsen, 1950b.

Ascaris dispar Schrank, 1790

Fusaria dispar (Schrank, 1790) Zeder, 1800

Heterakis dispar (Schrank, 1790) Dujardin, 1845

Ganguleterakis dispar (Schrank, 1790) Skrjabin & Shikhobalova, 1949

Strongylus acuticaudata Cobbold, 1861 - [Buša, 1962]

Heterakis caudata Linstow, 1906

Ganguleterakis caudata (Linstow, 1906) Skrjabin & Shikhobalova, 1949

Heterakis (Raillietakis) caudata Linstow, 1906 of Freitas, 1956

Heterakis circumvallata Linstow, 1906

Ganguleterakis circumvallata (Linstow, 1906) Skrjabin & Shikhobalova, 1949

Heterakis (Raillietakis) circumvallata Linstow, 1906 of Freitas, 1956

Heterakis chenonettae Johnston, 1912 - [Buša, 1962]

Heterakis hyperborea Swinyard, 1931

Ganguleterakis hyperboreus (Swinyard, 1931) Skrjabin & Shikhobalova, 1949

Heterakis (Raillietakis) hyperboreus Swinyard, 1931 of Freitas, 1956

Heterakis papillosa (Bloch, 1782) Cram, 1927 - Cannot be distinguished from H. dispar - Inglis, 1958

Heterakis stylosa Linstow, 1907 - Cannot be distinguished from H. dispar - Inglis, 1958

Heterakis altaica Spaul, 1929 - Cannot be distinguished from H. dispar - Inglis, 1958

Heterakis tenuicauda Linstow, 1883 - Cannot be distinguished from H. dispar - Inglis, 1958

LIFE CYCLE: Similar to that of H. gallinarum. Seasonal relationships described by Buša (1964d). (Gil'denblat, 1956, 1959)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna arborea

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser caerulescens, Anser cygnoides, Anser cygnoides (dom.), Anser erythropus, Anser fabalis, Branta canadensis, Branta leucopsis, Branta sandvicensis, Cygnus atratus, Cygnus cygnus

Tadornini - Cereopsis novae-hollandiae, Chloephaga picta, Chloephaga poliocephala, Neochen jubatus, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas flavirostris, Anas penelope, Anas strepera

Cairinini - Aix sponsa, Cairina moschata (dom.)

Galliformes - Alectoris graeca, Gennaeus nyctemerus, Meleagris gallopavo (dom.), Numida meleagris

Strigiformes - Athene noctua, Glaucidium passerinum

HABITAT: Ceca.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, Turkmenistan, Primorsk), N. America (USA).

Heterakis dispar brevispiculatis

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Petrochenko & Kotel'nikov, 1962b.

SYNONYMY:

Ganguleterakis dispar brevispiculatis Petrochenko & Kotel'nikov, 1962

Heterakis dispar brevispiculatis (Petrochenko & Kotel'nikov, 1962)

comb. nov.

LIFE CYCLE: Unknown; undoubtedly similar to that of H. dispar.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca.

DISTRIBUTION: Asia (Amur).

Heterakis gallinarum

STATUS AS WATERFOWL PARASITE: Common, typically in gallinaceous birds, especially chickens; reported 41 times in domestic, 5 times in captive, and perhaps 5 times in wild waterfowl. Occasionally cause of disease and death in waterfowl; pathology described by Cram, 1930a; Meads and Taylor, 1963; mortality reported by Borges Ferreira, 1957.

DESCRIPTION: Yamaguti & Mitunaga, 1943b; Madsen, 1950b; Czapliński, 1962b; Ryzhikov & Timofeeva, 1962a. Copy: Cram, 1927a; Skrjabin & Shikhobalova, 1949; Kasimov, 1956; Kurashvili, 1957; Gvozdev, 1958; Shevtsov & Zaskind, 1960; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY: Madsen, 1952.

Ascarides teretes Goeze, 1787

Ascaris gallinarum Schrank, 1787

Heterakis gallinarum (Schrank, 1788) Madsen, 1952

Ascaris gallinae Gmelin, 1790, e.p.

Heterakis gallinae (Gmelin, 1790) Freeborn, 1923

Ascaris papillosa Bloch, 1782, e.p.

Heterakis papillosa (Bloch, 1782) Railliet, 1985

Ascaris phasiani Gmelin, 1790 (?)

Ascaris vesicularis Froelich, 1791, e.p.

Heterakis vesicularis (Froelich, 1791) Dujardin, 1845

Fusaria reflexa Zeder, 1800

Ascaris undulosa-striata Baird, 1853

Heterakis longicaudata Linstow, 1879

Heterakis parisi Blanc, 1913

Heterakis pedioecetes Mawson, 1956 - Cannot be distinguished from H. gallinarum - Inglis, 1958

LIFE CYCLE: Eggs passed in feces of host, larvae develop in 7-12 days, eggs remain viable over 8 months in soil, hatch after ingestion by final host. Larvae reach ceca in about 24 hours, spend 2-5 days in cecal mucosa, then mature in lumen of ceca; eggs in feces of final host about 24 days after ingestion. Eggs may be ingested and infection (larvae) carried by earthworms. (Clapham, 1933; Graybill, 1921; Lund, Wehr, & Ellis, 1966)

INTERMEDIATE HOSTS: None, or: Allolobophora caliginosa, Eisenia foetida, Lumbricus terrestris

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides (dom.),

Cygnus atratus, Cygnus cygnus
 Tadornini - Cereopsis novae-hollandiae, Tadorna tadorna
 Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)
 Cairinini - Cairina moschata (dom.)
 Rheiformes - Rhea americana
 Falconiformes - Sarcorhamphus papa
 Galliformes - Acryllium vulturinum, Alectoris graeca, Alectoris lathami, Alectoris rufa, Arborophila torqueola, Bonasa umbellus, Catreus wallichii, Centrocercus urophasianus, Chrysolophus amherstiae, Chrysolophus pictus, Colinus virginiana, Coturnix coturnix, Crossoptilon mantchuricum, Dendragopus obscurus, Francolinus francolinus, Francolinus gularis, Francolinus sinensis, Gallinorerdix spadicea, Gallus gallus (dom.), Gennaeus leucomelanos, Gennaeus nycthemerus, Lagopus lagopus, Lagopus mutus, Lagopus scoticus, Lophophorus impejanus, Lophura rufa, Lyrurus tetrrix, Macrocephalon maleo, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris (dom.), Pavo cristatus, Pedioecetes phasianellus, Perdix perdix, Phasianus colchicus, Syrmaticus reevesii, Syrmaticus sommeringii, Tetrao urogallus, Tetraogallus caucasicus, Tetrastes bonasia, Tragopan satyra, Tymphanuchus cupido
 Gruiformes - Chlamydotis undulata, Gallinula chloropus, Otis tarda, Psophia crepitans, Tetrax tetrax
 Psittaciformes - Kakatoe leadbeateri
 Strigiformes - Strix aluco
 Passeriformes - Cyanocorax cayanus

HABITAT: Ceca, rarely small intestine.

DISTRIBUTION: Cosmopolitan.

Heterakis isolonche

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported once in domestic duck. Cause of pathologic conditions in Galliformes.

DESCRIPTION: Madsen, 1950b. Copy: Cram, 1927a; Kasimov, 1956; Skrjabin & Shikhobalova, 1949; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY: Madsen, 1950b.

Heterakis isolonche Linstow, 1906

Ganguleterakis isolonche (Linstow, 1906) Skrjabin & Shikhobalova, 1949

Heterakis (Raillietakis) isolonche (Linstow, 1906) of Freitas, 1956

Heterakis putaustralis Lane, 1914, not H. putaustralis Lane of Maplestone, 1932

Heterakis neoplastica Wassink, 1917

Heterakis hastata Chandler, 1926

Heterakis lanei Chandler, 1926

Heterakis variabilis Chandler, 1926

Heterakis bonasae Cram, 1927 (?)

Heterakis tragopanis Lal, 1942

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Bonasa umbellus, Chrysolophus amherstiae, Chrysolophus pictus, Colinus virginianus, Crossoptilon auritum, Crossoptilon mantchuricum, Gallus gallus (dom.), Gennaëus leucomelanos, Gennaëus nycthemerus, Ithaginis cruentus, Lophophorus impejanus, Lophura rufa, Perdix perdix, Phasianus colchicus, Polyolectron bicalcaratum, Tragopan satyra

HABITAT: Ceca.

DISTRIBUTION: Europe, Asia (Uzbekistan, India, Kazakhstan), N. America (USA, Canada), S. America, Australia.

Heterakis parva

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic goose; described from gallinaceous bird.

STATUS AS SPECIES: Appears indistinguishable from H. variabilis - Inglis, 1958.

DESCRIPTION: Maplestone, 1931. Copy: Skrjabin & Shikhobalova, 1940; Kasimov, 1956; Skrjabin, Shikhobalova, & Lagodovskaja, 1961.

SYNONYMY:

Heterakis parva Maplestone, 1931

Heterakis (Raillietakis) parva Maplestone, 1931 of Teixeira de Freitas, 1956

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Gennaëus nycthemerus

HABITAT: Ceca.

DISTRIBUTION: Asia (India, China).

Heterakis yani

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Hsü, 1960.

SYNONYMY:

Heterakis yani Hsü, 1960

LIFE CYCLE: Unknown; probably similar to that of H. gallinarum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Ceca.

DISTRIBUTION: Asia (China).

Ascaridia dissimilis

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in turkeys; reported once in domestic goose.

DESCRIPTION: Pérez Vigueras, 1931; Wehr, 1940; Horton-Smith & Long, 1957; Kerr, 1958; Vasilev, 1962a. Copy: Mozgovoï, 1953a; Kasimov, 1956.

SYNONYMY:

Ascaridia dissimilis Pérez Vigueras, 1931

LIFE CYCLE: Similar to that of A. galli; eggs embryonated in 14 days in soil at about 25 C.; hatch after ingestion by final host; eggs produced 25-30 days after ingestion by final host. (Kerr, 1957; Wehr, 1942)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Meleagris gallopavo, Meleagris gallopavo (dom.)

HABITAT: Small intestine.

DISTRIBUTION: Europe (England, Bulgaria, USSR), N. America (USA, Cuba).

Ascaridia galli

STATUS AS WATERFOWL PARASITE: Very common in domestic waterfowl; reported perhaps 13 times in wild waterfowl, twice in captive birds, 50 times in domestic waterfowl. Typically in gallinaceous birds, especially the domestic chicken; frequent cause of pathologic conditions in domestic chicken. Cited under the name Ascaridia anseris in 17 references.

DESCRIPTION: Yamaguti & Mitunaga, 1943b; Mozgovoř, 1953a; Gvozdev, 1958; Czapliński, 1962b. Copy: Cram, 1927a; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960.

SYNONYMY: Madsen, 1952.

Ascaris "teres" Goeze, 1782, e.p.

Ascaris galli Schrank, 1788

Ascaridia galli (Schrank, 1788) Freeborn, 1923

Ascaris gallopavonis Gmelin, 1780, e.p.

Fusaria inflexa Zeder, 1800

Ascaris inflexa (Zeder, 1800) Rudolphi, 1809

Ascaris (Ascaridia) inflexa (Zeder, 1800) of Dujardin, 1845

Heterakis inflexa (Zeder, 1800) Schneider, 1866

Fusaria strumosa Zeder, 1800

Ascaris perspicillum Rudolphi, 1803

Ascaris (Ascaridia) perspicillum (Rudolphi, 1803) of Dujardin, 1845

Heterakis perspicillum (Rudolphi, 1803) Railliet, 1893

Ascaridia perspicillum (Rudolphi, 1803) Railliet & Henry, 1912

Ascaris gibbosa Rudolphi, 1809

Ascaris (Ascaridia) gibbosa (Rudolphi, 1809) of Dujardin, 1845

Ascaris funiculus Deslongchamps, 1824

Heterakis lineata Schneider, 1866

Ascaridia lineata (Schneider, 1866) Railliet & Henry, 1912 - Synonymy still in doubt - Czapliński, 1962b

Heterakis compressa Schneider, 1866

Ascaridia compressa (Schneider, 1866) Railliet & Henry, 1912

Heterakis brasiliensis Magalhaes, 1892

Ascaridia brasiliensis (Magalhaes, 1892) Railliet & Henry, 1912

Heterakis styphlocerca Stossich, 1904

Ascaridia styphlocerca (Stossich, 1904) Railliet & Henry, 1914

Heterakis granulosa Linstow, 1906

Ascaridia granulosa (Linstow, 1906) Railliet & Henry, 1912

Ascaridia magalhaesi Travassos, 1913

Ascaridia hamia Lane, 1914

Ascaridia anseris Schwartz, 1925 - [Madsen, 1952; Czapliński, 1962b]. Maintained as separate species by Mozgovoř, 1953a

Ascaridia compar (Schrank, 1790) of Madsen, 1941

Ascaridia sinensis Wu & Kung, 1944

LIFE CYCLE: Eggs passed in feces, larvae develop in 10-12 days in soil, eggs hatch after ingestion by final host. Larvae free in lumen of duodenum for 9 days, penetrate mucosa (Ackert) or in mucus adherent

to mucosa (Moran & Mizelle) and develop for 8-9 days, then return to lumen. Mature about 50 days after ingestion by final host. Invertebrates used experimentally as intermediate hosts. (Ackert, 1931; Ackert & Tugwell, 1948; Bejšovec, 1962; Guberlet, 1924; Itagaki, 1927; Moran & Mizelle, 1957)

INTERMEDIATE HOSTS: None.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta

Aythiini - Aythya ferina

Cairinini - Cairina moschata (dom.)

Mergini - Melanitta nigra

Galliformes - Agriocharis ocellata, Alectoris graeca, Bonasa umbellus, Colinus virginianus [doubtful - Madsen], Coturnix coturnix, Francolinus sinensis, Gallus gallus (dom.), Ithaginis cruentus, Lyrurus tetrix, Meleagris gallopavo, Meleagris gallopavo (dom.), Numida meleagris (dom.), Pavo cristatus, Pedioecetes phasianellus, Perdix perdix, Phasianus colchicus, Tetrao urogallus [probably A. compar - Madsen], Tetraogallus himalayensis, Tetrastes bonasia, Tympanuchus cupido

Columbiformes - Columba livia (dom.), Gallicolumba luzonica, Oreopeleia montana, Streptopelia chinensis, Streptopelia decaocto

Strigiformes - Bubo bubo

Passeriformes - Emberiza citrinella, Passer domestica

HABITAT: Small intestine; rarely large intestine, stomach, esophagus.

DISTRIBUTION: Cosmopolitan.

Subulura brumpti

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported 3 times in domestic duck.

STATUS AS SPECIES: Synonym of S. differens - López-Neyra, 1945.

DESCRIPTION: Copy: Cram, 1927a; Kasimov, 1956; Gvozdev, 1958.

SYNONYMY: Cram, 1927a.

Allodapa brumpti López-Neyra, 1922

Subulura brumpti (López-Neyra, 1922) Cram, 1926

Heterakis suctorica Molin of Gendre, 1900

Allodapa suctorica (Molin, 1860) Seurat, 1914

Subulura suctorica (Molin, 1860) Railliet & Henry, 1912 - distinct, Sultanov, 1963; et al.

LIFE CYCLE: Eggs embryonated when laid, pass out in feces, hatch after ingestion by beetles, grasshoppers, and dermaptera; larvae encapsulate in body cavity of insect, infective to final host in 13-15 days. Eggs in feces of final host about 40 days after ingestion (Alicata, 1939, 1947; Cuckler & Alicata, 1944).

INTERMEDIATE HOSTS: Alphitobius diaperinus, Ammophorus insularis, Conocephalus saltator [exper.], Dermestes vulpinus, Euborellia annulipes, Gonocephalus seriatum, Oxya chinensis, Tribolium castaneum

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Ciconiiformes - Plegadis falcinellus

Galliformes - Alectoris graeca, Colinus virginianus, Coturnix coturnix, Francolinus francolinus, Gallus gallus, Gallus gallus (dom.), Meleagris gallopavo (dom.), Numida meleagris (dom.), Perdix perdix, Phasianus colchicus, Polyplectron bicaratus, Pternistes swainsonii

HABITAT: Ceca, small intestine.

DISTRIBUTION: Tropics and subtropics. Europe (Spain), Asia (Azerbaijan, India, China, Japan, Kazakhstan, Siberia), Africa (Sudan, Congo, Algeria, Dahomey), N. America (Cuba, Hawaii).

Subulura sp.

STATUS AS WATERFOWL PARASITE: Accidental probably; reported twice in wild ducks.

DESCRIPTION: Mawson, 1956a.

SYNONYMY:

Subulura sp. Travassos & Teixeira de Freitas, 1941

Subulura sp. Mawson, 1956

LIFE CYCLE: Unknown; probably similar to that of S. brumpti.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas clypeata

Cairinini - Cairina moschata

HABITAT: Not given; probably intestine or ceca.

DISTRIBUTION: S. America (Brazil), N. America (Canada).

Avioserpens bifidus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Males necessary for exact identification; only the female known.

DESCRIPTION: Olsen, 1952.

SYNONYMY:

Avioserpens bifidus Olsen, 1952

LIFE CYCLE: Unknown; probably similar to that of A. taiwana.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula - [Reported erroneously as B. islandica - Olsen, verbal communication]

HABITAT: Connective tissue beneath tongue.

DISTRIBUTION: N. America (USA).

Avioserpens taiwana

STATUS AS WATERFOWL PARASITE: Frequent in southeast Asia; reported once in wild duck and 6 times in domestic ducks. Described as cause of pathological condition and mortality by Chabaud, Campana, & Truong-Tan-Ngoc, 1950; Sugimoto, 1934b, 1934c; and Truong-Tan-Ngoc, 1937.

STATUS AS SPECIES: Males necessary for exact species identification; only the female known.

DESCRIPTION: Wehr & Chitwood, 1934 (as A. denticulophasma); Chabaud, Campana, & Truong-Tan-Ngoc, 1950. Copy: Shevtsov & Zaskind, 1960.

SYNONYMY:

Filaria taiwana Sugimoto, 1919

Oshimaia taiwana (Sugimoto, 1919) Sugimoto, 1934

Avioserpens taiwana (Sugimoto, 1919) Chitwood, 1935

Avioserpens denticulophasma Wehr & Chitwood, 1934 - [Chitwood, 1935]

LIFE CYCLE: Ulcer in skin produced by female; larvae emerge from female and pass through break in skin into water, are then ingested by copepod crustacea. Mature in final host presumably after ingestion of copepod. (Chabaud, Campana, & Truong-Tan-Ngoc, 1950; Chitwood, 1935)

INTERMEDIATE HOSTS: Cyclops spp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas platyrhynchos fulvigula

Cairinini - Cairina moschata (dom.)

Pelecaniformes - Anhinga anhinga

Ciconiiformes - "white heron" [Casmerodius albus or Leucophoyx thula
or Florida caerulea]

HABITAT: Subcutaneous tissue under tongue.

DISTRIBUTION: Asia (Taiwan, Indo-China), N. America (USA).

Oxyspirura mansoni

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, typically in gallinaceous and passerine birds; reported twice in domestic waterfowl. Serious parasite in chickens, causing much damage.

DESCRIPTION: Yamaguti & Mitunaga, 1943b. Copy: Cram, 1927a; Kasi-mov, 1956.

SYNONYMY: Cram, 1927a.

Filaria mansoni Cobbold, 1879

Spiroptera mansoni (Cobbold, 1879) Gedoelst, 1903

Oxyspirura mansoni (Cobbold, 1879) Ransom, 1904

Oxyspirura (Yorkeispirura) mansoni (Cobbold, 1879) of Skrjabin, 1931

Yorkeispirura mansoni (Cobbold, 1879) Siddiqui & Jairajpuri, 1964

Spiroptera emmerezii Emmerez & Megnin, 1901

Microfilaria seguini Mathis & Leger, 1909

Oxyspirura parvovum Sweet, 1910 - [Baylis, 1934b]

LIFE CYCLE: Eggs pass down tear ducts, are swallowed and pass out in feces, hatch after ingestion by cockroach. Larvae infective for final host in 50 days. After ingestion by final host larvae pass from crop up esophagus and through tear ducts to eye. Eggs in feces of final host in 32 days. (Alicata, 1936, 1938, 1947; Fielding, 1928; Kobayashi, 1927; Sanders, 1928)

INTERMEDIATE HOSTS: Pycnoscelus (Leucophaea) surinamensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Anatini - Anas platyrhynchos (dom.)

Cairinini - Cairina moschata (dom.)

Falconiformes - Circus cyaneus

Galliformes - Argusianus argus, Coturnix coturnix, Diardigallus diardi, Galloperdix spadicea, Gallus gallus (dom.), Meleagris gallopavo (dom.), Favo cristatus, Phasianus colchicus

Columbiformes - Columba livia, Columbia livia (dom.), Streptopelia chinensis

Passeriformes - Acridotheres tristis, Agelaius phoeniceus [exper.], Aphelocoma coerulescens [exper.], Dolichonyx oryzivorus [exper.], Lanius ludovicianus [exper.], Mimus polyglottos, Passer domesticus, Sturnella magna

HABITAT: Eye - under nictitating membrane.

DISTRIBUTION: Tropics and subtropics. Asia (China, Japan, Taiwan, Indo-China), Africa (Congo), N. America (USA), S. America (Brazil). Australia, Oceania.

Gongylonema congolense

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in gallinaceous birds; reported once in domestic duck.

DESCRIPTION: Fain, 1955a, 1955c.

SYNONYMY:

Gongylonema congolense Fain, 1955

LIFE CYCLE: Unknown; probably similar to that of G. ingluvicola, with terrestrial insects as intermediate hosts.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata (dom.)

Galliformes - Francolinus levaillanti, Gallus gallus (dom.), Numida meleagris

MAMMALIA - Tubulidentata - Orycteropus afer

HABITAT: Crop and esophagus - in mucosa.

DISTRIBUTION: Africa (Congo).

Gongylonema sp.

STATUS AS WATERFOWL PARASITE: Accidental; reported once in domestic goose.

DESCRIPTION:

SYNONYMY:

Gongylonema sp. Vasilev, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anserini - Anser anser (dom.)

HABITAT:

DISTRIBUTION: Europe (Bulgaria).

Physocephalus sexalatus

STATUS AS WATERFOWL PARASITE: Infrequent, accidental, encysted as larval stage; reported 6 times in domestic waterfowl. Incidence given by Storozheva (1957c).

DESCRIPTION: Larva - Ryzhikov & Nazarova, 1959. Copy: Kasimov, 1956.

SYNONYMY: Baylis, 1939.

Trichina affinis Diesing, 1851, e.p.

Spiroptera strongylina suis labiati Molin, 1860

Spiroptera sexalata Molin, 1860

Physocephalus sexalatus (Molin, 1860) Diesing, 1861

Filaris sexalata (Molin, 1860) Perroncito, 1891

Habronema sexalata (Molin, 1860) Cstertag, 1932

Mastophorus globocaudatus Diesing, 1853

Filaria strigis Linstow, 1877, not Gmelin, 1790

Spiroptera (Filaria) strigis (Linstow, 1877) Seurat, 1915

Filaria strongylina Linstow, 1879, not Schneider, 1866

Agemonema affine Linstow, 1909

Cephalanthus triacanthus (Diesing, 1853) Seurat, 1916 - [Skrjabin, et al, 1949]

LIFE CYCLE: Eggs passed in feces of host, hatch after ingestion by dung beetles; larvae encyst in malphigian tubules or hemocoel, infective in 36 days; mature in final host after ingestion. Larvae encapsulate in tissues when ingested by vertebrates other than ungulate mammals and a few others. (Cram, 1930; Ryzhikov & Nazarova, 1959; Stewart & Kent, 1963)

INTERMEDIATE HOSTS: Aphodius lividus, Ataenius cognatus, Canthon laevis, Canthon pilularius, Chironitis hungaricus, Copris minutus, Geotrupes douei, Geotrupes stercorarius, Gymnopleurus aciculatus, Gymnopleurus coriarius, Gymnopleurus mopsus, Gymnopleurus sinnatus, Gymnopleurus sturmi, Onitis humerosus, Onthophagus bedeli, Onthophagus hecate, Onthophagus nebulosus, Onthophagus pennsylvanicus, Passalus cornutus, Phanaeus carnifex, Phanaeus videx, Scarabaeus sacer, Scarabaeus variolosus, Trox suberosa

AUXILIARY HOSTS: OSTEICHTHYES - Carassius carassius, Misgurnus fossilis
AMPHIBIA - Bombina bombina, Rana temporaria
REPTILIA - Elaphe scalaris, Testudo horsfieldii
AVES - Anseriformes - Anas platyrhynchos (dom.), Anser anser (dom.),
"wild duck". Ciconiiformes - Ixobrychus eurythmus. Falconiformes -
Buteo jamaicensis, Circus macrourus, Falco subbuteo. Galliformes -
Coturnix coturnix, Gallus gallus (dom.), Meleagris gallopavo (dom.),
Phasianus colchicus, Tetrastes bonasia. Charadriiformes - Larus
canus, Sterna sp. Columbiformes - Columba livia (dom.). Strigi-
formes - Athene noctua, Otus asio. Coraciiformes - Merops super-
cilius, Upupa epops. Passeriformes - Fringilla coelebs, Hylo-
cichla mustelina, Lanius collurio, Lanius excubitor, Lanius ludo-
vicianus, Passer domesticus, Passer montanus, Pica pica, Sturnus
vulgaris, Turdus musicus
MAMMALIA - Chiroptera - Eptesicus fuscus, Eptesicus turcomani, Lasi-
urus cinereus, Myotis lucifugus. Insectivora - Erinaceus euro-
paeus.

FINAL HOSTS: MAMMALIA

Lagomorpha - Oryctolagus cuniculus, Lepus europaeus
Rodentia - Sigmodon hispidus
Perissodactyla - Equus asinus, Equus caballus, Phinoceros bicornis,
Tapirus terrestris
Artiodactyla - Bos taurus, Camelus dromedarius, Camelus bactrianus,
Pecari tajacu, Potamochoerus larvatus, Tayassu pecari, Sus scrofa,
Sus scrofa (dom.)
Edentata - Bradypus griseus

HABITAT: Stomach.

DISTRIBUTION: Cosmopolitan, in pigs. Europe, Asia, Africa, N. Amer-
ica, S. America, Australia.

Physocephalus sp.

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks;
genus normally parasitic in mammals.

DESCRIPTION:

SYNONYMY:

Physocephalus sp. Alekseev, 1963e

LIFE CYCLE: Unknown; probably similar to that of F. sexalatus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta sp.

HABITAT:

DISTRIBUTION: Asia (USSR - Far East).

Spirocerca sanguinolenta

STATUS AS WATERFOWL PARASITE: Accidental, encysted in larval stage; reported once in domestic waterfowl.

DESCRIPTION: Larva - Ryzhikov & Nazarova, 1959.

SYNONYMY: Baylis, 1939.

Strongylus lupi Rudolphi, 1809

Spirocerca lupi (Rudolphi, 1809) Chitwood, 1933

Spiroptera sanguinolenta Rudolphi, 1819

Filaria sanguinolenta (Rudolphi, 1819) Schneider, 1866

Spirocerca sanguinolenta (Rudolphi, 1819) Railliet & Henry, 1911

Spirura sanguinolenta (Rudolphi, 1819) Seurat, 1912

Cystofilaria balkanica Skrjabin & Shikhobalova, 1948 - [López-Neyra, 1954]

LIFE CYCLE: Eggs passed in feces of host, ingested by dung beetles; larvae encyst in beetles; after ingestion by final host larvae migrate through stomach wall to wall of esophagus and aorta. Larvae encyst in mesenteries or other tissues after ingestion by vertebrates other than large mammals. (Ono, 1933; Ryzhikov & Nazarova, 1959)

INTERMEDIATE HOSTS: Akis goryi, Canthon sp., Copris hispana, Geotrupes douei, Gymnopleurus sturmi, Scarabaeus sacer, Scarabaeus variolosus

AUXILIARY HOSTS: AMPHIBIA - Bufo mauritanicus

REPTILIA - Acanthodactylus pardalis, Agama bibroni, Cerastes ceras-tes, Cerastes vipera, Chamaeleo vulgaris, Macronotodon cucullatus, Natrix maura, Psammodromus algira, Scincus officinalis, Uromastix acanthinurus, Varanus griseus

AVES - Anseriformes - Anas platyrhynchos (dom.). Falconiformes - Accipiter nisus, Circus aeruginosus, Circus macrourus, Falco sub-buteo, Falco tinnunculus, Pernis apivorus. Galliformes - Gallus gallus (dom.). Charadriiformes - Larus canus. Strigiformes - Athene noctua. Coraciiformes - Coracias garrulus, Merops super-ciliosus, Upupa epops. Passeriformes - Corvus corax, Dicrurus macrocercus, Garrulus glandarius, Lanius excubitor, Motacilla alba, Passer domesticus, Sitta europaea, Sturnus vulgaris

MAMMALIA - Insectivora - Aethechinus algeris, Elephantulus deserti, Elephantulus rozeti, Erinaceus dealbatus. Chirontera - Pinistrel-lus kuhlii. Rodentia - Mus musculus, Rattus norvegicus. Carnivora - Mustela eversmanni

FINAL HOSTS: MAMMALIA

Primates - Macacus rhesus

Carnivora - Canis aureus, Canis familiaris, Canis lupus, Felis catus
[exper.], Felis onca, Genetta afra, Genetta bonapartei, Herpestes
ichneumon, Lynx canadensis, Vulpes vulpes

Perissodactyla - Equus asinus

Artiodactyla - Sus scrofa

HABITAT: Nodules in wall of esophagus, stomach, or aorta.

DISTRIBUTION: Tropics and subtropics. Europe, Asia (India, Indonesia, China, Japan, Primorsk), Africa, N. America (Mexico), S. America.

Cyrnea eurycerca

STATUS AS WATERFOWL PARASITE: Rare, normally in gallinaceous birds; reported once in wild ducks.

DESCRIPTION: Seurat, 1914. Copy: Cram, 1927a; Sultanov, 1963.

SYNONYMY:

Cyrnea eurycerca Seurat, 1914

Seurocyrnea eurycerca (Seurat, 1914) Strand, 1929

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas strepera

Galliformes - Alectoris barbara, Alectoris graeca, Alectoris rufa,

Coturnix coturnix, Phasianus colchicus

Coraciiformes - Coracias garrulus, Merops apiaster

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Uzbekistan, Tadzhikistan, Kazakhstan), Africa (Algeria).

Hadjelia neglecta

STATUS AS WATERFOWL PARASITE: Rare: reported once in domestic duck.

DESCRIPTION: Lent & Freitas, 1930.

SYNONYMY:

Farhadjelia neglecta Lent & Teixeira de Freitas, 1939
Hadjelia neglecta (Lent & Freitas, 1939) Chabaud, 1958

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos (dom.)

HABITAT: Proventriculus - submucosa.

DISTRIBUTION: S. America (Brazil).

Histiocephalus laticaudatus

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental or erroneous; reported once or twice in domestic ducks.

DESCRIPTION: Copy: Cram, 1927a; Kasimov, 1956; Shevtsov & Zaskind, 1960.

SYNONYMY: Cram, 1927a.

Spiroptera laticaudata Rudolphi, 1819
Filaria laticaudata (Rudolphi, 1819) Schneider, 1866
Dispharagus laticaudatus (Rudolphi, 1819) Dujardin, 1845
Histiocephalus laticaudatus (Rudolphi, 1819) Diesing, 1851

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos (dom.)
Galliformes - Gallus gallus (dom.)
Gruiformes - Otis tarda, Tetrax tetrax

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (France, Georgia), Asia (Kazakhstan).

Tetrameres americana

STATUS AS WATERFOWL PARASITE: Accidental, normally in gallinaceous birds; reported once in domestic duck as result of experimental infection.

DESCRIPTION: Cram, 1927a. Copy: Kasimov, 1956; Shevtsov & Zaskind, 1960; Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres americana Cram, 1927

Tropisurus americana (Cram, 1927) Baylis, 1929

Tetrameres (Tetrameres) americana Cram, 1927 of Rasheed, 1960

Tetrameres confusa Travassos, 1917 - [Pinto & Lins de Almeida, 1935]

LIFE CYCLE: Eggs passed in feces of host, ingested by insects; larvae encyst in muscles of insects (Coleoptera, Orthoptera, Dermaptera) and terrestrial amphipod crustacea, infective to final host in 42 days or less; mature in final host 24 days after ingestion. (Ali-cata, 1938, 1947; Cram, 1929b, 1931b, 1931d, 1937)

INTERMEDIATE HOSTS: Blatella germanica [exper.], Conocephalus saltator, Melanoplus differentialis [exper.], Melanoplus femurrubrum [exper.], Scyllina cyanipes, Dendrophilus sp., Dermestes vulpinus, Epitragus diremptus, Gonocephalus seriatum, Euborellia annulipes, Orchestia platensis

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.) [exper.]

Galliformes - Bonasa umbellus, Colinus virginianus, Gallus gallus (dom.), Meleagris gallopavo (dom.)

Columbiformes - Columba livia

HABITAT: Proventriculus.

DISTRIBUTION: N. America (USA, USA - Hawaii, Puerto Rico).

Tetrameres australis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild swans.

DESCRIPTION: Johnston & Mawson, 1941a, 1952. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres australis Johnston & Mawson, 1941

Tetrameres (Tetrameres) australis Johnston & Mawson, 1941 of Rasheed, 1960

Tropisurus australis (Johnston & Mawson, 1941) Yamaguti, 1961

Tetrameres (Petrowimeres) australis Johnston & Mawson, 1941 of Skrjabin & Sobolev, 1963

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus atratus

HABITAT: Not given; probably proventriculus.

DISTRIBUTION: Australia.

Tetrameres biziurae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Johnston & Mawson, 1941a. Cony: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres biziurae Johnston & Mawson, 1941

Tetrameres (Tetrameres) biziurae Johnston & Mawson, 1941 of Rasheed, 1960

Tropisurus biziurae (Johnston & Mawson, 1941) Yamaguti, 1961

Tetrameres (Petrowimeres) biziurae Johnston & Mawson, 1941 of Skrjabin & Sobolev, 1963

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Biziura lobata

HABITAT: Not given; probably proventriculus.

DISTRIBUTION: Australia.

Tetrameres confusa

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, typically in domestic fowls; reported once in domestic goose.

DESCRIPTION: Zago & Barretto, 1962b. Cony: Cram, 1927a, Kasimov, 1956; Shevtsov & Zaskind, 1960; Skrjabin & Sobolev, 1963.

SYNONYMY: Cram, 1927a.

Tetrameres fissispina Diesing of Travassos, 1914

Tetrameres confusa Travassos, 1919

Tropisurus confusus (Travassos, 1919) Baylis, 1929

Tetrameres (Tetrameres) confusus Travassos, 1919 of Rasheed, 1960

Tetrameres travassosi Skrjabin, 1920

LIFE CYCLE: Larvae develop in orthopteran insects, infective to final host after 9-10 days, encysted in musculature. (Zago & Barretto, 1962a, 1962b)

INTERMEDIATE HOSTS: Caulopsis oberthuri [exper.], Dicronlus punctu-
latus [exper.], Eutryxalis filata [exper.], Neoconocephalus infus-
catus [exper.], Orphulella punctata [exper.], Schistocera cancellata
[exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.)

Galliformes - Gallus gallus (dom.), Meleagris gallopavo (dom.)

Columbiformes - Columba livia (dom.)

HABITAT: Proventriculus.

DISTRIBUTION: Asia (W. Siberia), S. America (Brazil).

Tetrameres cordoniferens

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Rasheed, 1960.

SYNONYMY:

Tetrameres (Petrowimeres) cordoniferens Rasheed, 1960

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna javanica

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Pakistan).

Tetrameres crami

STATUS AS WATERFOWL PARASITE: Common, characteristic helminth of waterfowl in N. America; reported 7 times in wild waterfowl and 3 times in domestic ducks. Reported as cause of pathologic condition by Swales, 1936b, 1936d.

DESCRIPTION: Swales, 1933d, 1936c. Copy: Shevtsov & Zaskind, 1960; Skrzjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres crami Swales, 1933, not T. crami Pukhov, 1939

Tetrameres (Petrowimeres) crami Swales, 1933 of Rasheed, 1960

Tropisurus crami (Swales, 1933) Yamaguti, 1961

LIFE CYCLE: Eggs passed in feces of host, hatch after ingestion by fresh-water amphipod crustacean; larvae encyst in body wall, infective in 29 days; mature in final host 33 days after ingestion. (Swales, 1936b, 1936c, 1936d)

INTERMEDIATE HOSTS: Gammarus fasciatus, Hyaella azteca

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser caerulescens, Cygnus columbianus, Cygnus cygnus buccinator

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas clypeata, Anas crecca carolinensis, Anas cyanoptera, Anas discors, Anas rubripes, Anas strepera

Aythiini - Aythya affinis, Aythya americana, Aythya collaris, Aythya marila, Aythya vallisneria

Cairinini - Aix sponsa

Mergini - Bucephala albeola, Bucephala clangula, Melanitta nigra, Mergus merganser, Mergus serrator

Oxyurini - Oxyura jamaicensis

HABITAT: Proventriculus.

DISTRIBUTION: Europe (Rumania), Asia (Chukotka), N. America (USA, Canada).

Tetrameres crami asiatica

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Skrjabin & Sobolev, 1963; Ryzhikov, 1963b.

SYNONYMY:

Tetrameres (Petrowimeres) crami asiatica Ryzhikov in Skrjabin & Sobolev, 1963

LIFE CYCLE: Unknown; probably like that of T. crami.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Kamchatka).

Tetrameres cygni

STATUS AS WATERFOWL PARASITE: Frequent in Anserini in N. America, but only reported twice in wild waterfowl.

DESCRIPTION: Ryzhikov & Kozlov, 1960.

SYNONYMY:

Tetrameres cygni Ryzhikov & Kozlov, 1960

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser caerulescens, Branta canadensis, Cygnus columbianus, Cygnus columbianus bewickii, Cygnus cygnus buccinator

ACCIDENTAL HOSTS: AVES (Do not mature)

Anseriformes - Anas platyrhynchos, Anas americana, Anas discors, Aythya affinis

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Yakutia), N. America (USA).

Tetrameres fissispina

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 59 times in wild waterfowl, 72 times in domestic, and 3 times in captive waterfowl. Frequent cause of disease; pathology described by Bhattacharjee & Doss, 1967; Cram, 1930a; Gerasimova, 1960; Lange, 1938; Pallaske, 1944; Popova, 1954; Tsvetaeva, 1960; Zajíček, 1959. Mortality reported by Bittner, 1923; Golubev, 1959; Kauker, 1943; Lange, 1938; Petrochenko, 1954; Popova, 1953; Shabaev, 1961; Willomitzer & Gilka, 1957.

DESCRIPTION: Yamaguti & Mitunaga, 1943b; Czapliński, 1962b. Copy: Cram, 1927a; Kasimov, 1956; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Skrzjabin & Sobolev, 1963.

SYNONYMY: Cram, 1927a.

Tropidocerca fissispina Diesing, 1861

Tropisurus fissispinus (Diesing, 1861) Neumann, 1888

Tetrameres fissispina (Diesing, 1861) Travassos, 1914

Tetrameres (Tetrameres) fissispina (Diesing, 1861) of Travassos, 1915

Tetrameres (Petrowimeres) fissispina (Diesing, 1861) of Chertkova, 1954

Acanthophorus tenuis Linstow, 1876

Tropidocerca tenuis (Linstow, 1876) Linstow, 1899
Acanthophorus horridus Linstow, 1876
Filaria pulicis Linstow, 1894
Spiroptera pulicis (Linstow, 1894) Linstow, 1909

LIFE CYCLE: Eggs passed in feces of host. hatch after ingestion by marine and fresh-water amphipod, isopod, cladoceran, and ostracod crustacea, insects, flatworms, and oligochaetes; larvae infective in 7-18 days; mature in final host 18 days after ingestion. Larvae survive when ingested by marine and fresh-water fish (auxiliary hosts). Seasonal relations described by Buša, 1964i. (Czapliński, 1954; Garkavi, 1949b, 1958b, 1965a; Kotel'nikov, 1962a; Kovalenko, 1960a, 1960b; Linstow, 1909; Rust, 1908; Sugimoto & Nishiyama, 1937)

INTERMEDIATE HOSTS: Gammarus lacustris, Gammarus locusta, Gammarus maeoticus, Gammarus pulex, Gammarus androsowi [exper.], Asellus aquaticus, Idotea baltica [exper.], Daphnia magna, Daphnia pulex, Heterocypris incongruens, Atractomorpha bedeli, Culicoides sp., Cloeon dipterum, Cloeon inscriptum, Cricotopus sp., Gastricnargus transversus, Heteropternis respondens, Ordella macroura, Periplaneta americana, Periplaneta australasiae, Polipedium sp., Procladius sp., Tendipes salinarum, Perichaeta candida, Pternoscirta sauteri, Eisenia foetida, planaria

AUXILIARY HOSTS: Caspialosa braschnikovi, Lucioperca lucioperca, Neogobius fluviatilis, Neogobius melanostomus, Rutilus rutilus, Scardinius erythrophthalmus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anseranatini - Anseranas semipalmatus

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser indicus, [Branta canadensis - probably erroneous], Cygnus melanocoryphus

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas angustirostris, Anas clypeata, Anas crecca, Anas falcata, Anas formosa, Anas penelope, Anas poecilorhyncha, Anas querquedula, Anas strepera, Anas superciliosa

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix galericulata, Cairina moschata (dom.)

Mergini - Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus, Mergus merganser

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps cristatus, Podiceps ruficollis

Ciconiiformes - Ardea cinerea, Casmerodius albus, Nycticorax nycticorax

Falconiformes - Falco columbarius, Falco vespertinus

Galliformes - Alectoris graeca; Coturnix coturnix, Gallus gallus (dom.), Meleagris gallopavo (dom.), Numida meleagris (dom.), Perdix perdix

Gruiformes - Fulica atra, Gallinula chloropus, Rallus aquaticus

Charadriiformes - Capella gallinago, Larus argentatus, Larus ridibundus, Scolopax rusticola

Columbiformes - Columba livia (dom.), Columba oenas, Columba palumbus

Strigiformes - Strix aluco

HABITAT: Proventriculus.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, India, Indo-china, Malaya, Japan, Primorsk, Amur, Kamchatka, Chukotka), Africa (Algeria), N. America (USA - Philadelphia Zoological Garden), S. America, Oceania.

Tetrameres galericulatus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Oshmarin, 1956. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres (Petrowimeres) galericulatus Oshmarin, 1956

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix galericulatus

HABITAT: Probably proventriculus.

DISTRIBUTION: Asia (Primorsk).

Tetrameres gigas

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in domestic waterfowl.

DESCRIPTION: Travassos, 1919. Copy: Cram, 1927a; Shevtsov & Zaskind, 1960; Skrjabin & Sobolev, 1963.

SYNONYMY: Cram, 1927a.

Tetrameres inflata of Zuern, 1882, not T. inflata (Diesing, 1861)

Travassos

Tetrameres gigas Travassos, 1919

Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres nohtedai Bhalerao & Rao, 1944

Tetrameres (Petrowimeres) nohtedai Bhalerao & Rao, 1944 of Rasheed,
1960

LIFE CYCLE: Larvae develop in orthopteran insects. (Sundaran, et al., 1963)

INTERMEDIATE HOSTS:

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

Galliformes - Gallus gallus (dom.)

HABITAT: Proventriculus.

DISTRIBUTION: Asia (India).

Tetrameres pavonis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild and once in captive ducks. Originally described from captive Pavo.

DESCRIPTION: Chertkova, 1954; Ryzhikov & Kozlov, 1959. Copy: Kasimov, 1956; Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres (Petrowimeres) pavonis Chertkova, 1954

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas penelope

Aythiini - Aythya ferina, Aythya marila, Aythya nyroca, Netta rufina

Mergini - Clangula hyemalis

Galliformes - Pavo cristatus

Charadriiformes - Larus ridibundus

HABITAT: Proventriculus.

DISTRIBUTION: Europe (USSR - Moscow Zoo), Asia (Turkmenistan, Kamchatka, Chukotka).

Tetrameres plectropteri

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Thwaite, 1926.

SYNONYMY:

Echinurioides plectropteri Thwaite, 1926

Tetrameres plectropteri (Thwaite, 1926) Wehr, 1933

Tropisurus plectropteri (Thwaite, 1926) Yamaguti, 1961

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Flectropterus [gambensis]

HABITAT: Not given; probably proventriculus.

DISTRIBUTION: Africa (Nigeria).

Tetrameres puchovi

STATUS AS WATERFOWL PARASITE: Rare, accidental or perhaps erroneous record in waterfowl; reported for Anatinae by Skrjabin, Shikhobalova, & Sobolev, 1949, original citation not found; normally in Gruiformes.

STATUS AS SPECIES: Synonym of T. globosa - Serkova, 1948.

DESCRIPTION: Pukhov, 1939. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres crami Pukhov, 1939, not T. crami Swales, 1933

Tetrameres puchovi Gushanskaja, 1949

Tetrameres (Tetrameres) puchovi Gushanskaja, 1949 of Rasheed, 1960

Tropisurus puchovi (Gushanskaja, 1949) Yamaguti, 1961

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "Anatinae" - [not listed by Skrjabin & Sobolev, 1963]

Gruiformes - Fulica atra, Porzana porzana

HABITAT: Probably proventriculus.

DISTRIBUTION: Europe (USSR).

Tetrameres ryjikovi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl.

DESCRIPTION: Khuan Shen-i, 1961c. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres ryjikovi Khuan Shen-i, 1960, nomen nudum

Tetrameres ryjikovi Khuan Shen-i, 1961

Tetrameres (Petrowimeres) ryjikovi Khuan Shen-i, 1961 of Skrjabin & Sobolev, 1963

LIFE CYCLE: Unknown; probably similar to that of T. crami.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas formosa, Anas querquedula

Aythiini - Aythya baeri, Aythya fuligula

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Amur).

Tetrameres somateriae

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Skrjabin & Sobolev, 1963; Ryzhikov, 1963c.

SYNONYMY:

Tetrameres (Petrowimeres) somateriae Ryzhikov in Skrjabin & Sobolev, 1963

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria mollissima

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Chukotka, Komandorsky Is.).

Tetrameres spinosa

STATUS AS WATERFOWL PARASITE: Common in Aythyini in North America; reported 4 times in wild and once in captive waterfowl. Pathological effects of infection in egret and stilt described by Pande, Rai, & Srivastava, 1960.

DESCRIPTION: Maplestone, 1931; Khuan Shen-i, 1962e. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Echinuria spinosa Maplestone, 1931

Tetrameres spinosa (Maplestone, 1931) Wehr, 1933

Tetrameres (Petrowimeres) spinosa Maplestone, 1931 of Rasheed, 1960

Tropisurus spinosa (Maplestone, 1931) Yamaguti, 1961

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus, Cygnus cygnus buccinator

Anatini - Anas platyrhynchos, Anas cyanoptera, Anas strepera

Aythyini - Aythya affinis, Aythya americana, Aythya collaris,

Aythya ferina, Aythya fuligula, Aythya vallisneria

Mergini - Bucephala albeola, Bucephala clangula

Oxyurini - Oxyura jamaicensis

Ciconiiformes - Egretta garzetta

Galliformes - Gallus gallus (dom.)

Charadriiformes - Himantopus himantopus

HABITAT: Proventriculus, gizzard.

DISTRIBUTION: Asia (India, Amur), N. America (USA, Canada).

Tetrameres striatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Oshmarin, 1956. Copy: Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres (Petrowimeres) striatus Oshmarin, 1956

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas falcata

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Primorsk, Amur, Kamchatka).

Tetrameres zakharowi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild waterfowl.

DESCRIPTION: Petrov, 1926; Ryzhikov, 1950a; Zaskind, 1963. Copy: Cram, 1927a; Skrjabin & Sobolev, 1963.

SYNONYMY:

Tetrameres (Tetrameres) zakharowi Petrov, 1926
Tropisurus zakharowi (Petrov, 1926) Yamaguti, 1961

LIFE CYCLE: Unknown; probably similar to that of T. fissispina.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser albifrons, Anser fabalis,
Cygnus columbianus bewickii

HABITAT: Proventriculus.

DISTRIBUTION: Europe (USSR), Asia (Kazakhstan, Yakutia, Primorsk, Chukotka).

Paracuaria somateriae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks.

DESCRIPTION: Ryzhikov, 1960; Kurochkin & Ryzhikov, 1964. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Streptocara sp. Liubimov, 1926
Streptocara sp. Kulachkova, 1958
Streptocara somateriae Ryzhikov, 1960
Paracuaria somateriae (Ryzhikov, 1960) Leonov, Tsimbaljuk, & Belogurov, 1963

LIFE CYCLE: Unknown; probably similar to that of P. tridentata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos
Somateriini - Somateria mollissima, Somateria spectabilis
Aythyini - Aythya fuligula, Aythya marila, Aythya nyroca
Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta fusca deglandi, Melanitta nigra

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Esthonia, USSR), Asia (Siberia, Yakutia, Amur, Kamchatka, Chukotka).

Paracuaria tridentata

STATUS AS WATERFOWL PARASITE: Infrequent, typically in lariform birds; reported 4 times in wild ducks.

DESCRIPTION: Maksimova, 1964. Copy: Cram, 1927a; Skrjabin, Sobolev, & Ivashkin, 1965 (as P. macdonaldi).

SYNONYMY: Cram, 1927a.

Filaria tridentata Linstow, 1877

Spiroptera tridentata (Linstow, 1877) Neumann, 1900

Streptocara tridentata (Linstow, 1877) Skrjabin, 1916

Paracuaria tridentata (Linstow, 1877) Leonov, Tsimbaliuk, & Belogurov, 1963

Paracuaria macdonaldi Rao, 1951 - [Leonov, Tsimbaliuk, & Belogurov, 1963]

Streptocara rissae Kreis, 1958 - [Skrjabin, Sobolev, & Ivashkin, 1965]

LIFE CYCLE: P. macdonaldi larvae develop in coleopteran insects. (Shmytova in Skrjabin, Sobolev, & Ivashkin, 1965)

INTERMEDIATE HOSTS: Pimelia subglobosa, Tentyria taurica

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria spectabilis

Aythyini - Aythya fuligula

Gaviiformes - Gavia arctica, Gavia stellata

Ciconiiformes - Botaurus stellaris

Charadriiformes - Chlidonias leucopterus, Hydroprogne tschegrava,

Larus argentatus, Larus canus, Larus genei, Larus ichthyaetus,

Larus marinus, Larus melanocephalus, Larus minutus, Larus ridi-

bundus, Rissa tridactyla, Sterna albifrons, Sterna hirundo, Thal-
asseus sandvicensis

HABITAT: Gizzard - under lining, esophagus, intestine.

DISTRIBUTION: Europe, Asia (Kazakhstan, Siberia, Amur), N. America (Canada).

Syncuaria ciconiae

STATUS AS WATERFOWL PARASITE: Rare, probably accidental; reported once in wild duck. Described from Ciconiiformes.

DESCRIPTION: Gil'bert, 1927; Macko, 1964. Copy: Kurashvili, 1957; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Acuria (Syncuaria) ciconiae Gil'bert, 1927

Syncuaria (Syncuaria) ciconiae (Gil'bert, 1927) Gushanskaia, 1950

Echinuria ciconiae (Gil'bert, 1927) Chitwood & Wehr, 1934

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

Podicipediformes - Podiceps ruficollis

Ciconiiformes - Ciconia ciconia, Ciconia nigra

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Czechoslovakia, USSR, Georgia).

Decorataria decorata

STATUS AS WATERFOWL PARASITE: Rare, normally in grebes; reported once in wild duck.

DESCRIPTION: Cram, 1927a; Baylis, 1937; Sobolev, 1943. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria decorata Cram, 1927

Acuria (Echinuria) decorata (Cram, 1927) Baylis, 1937

Syncuaria decorata (Cram, 1927) Sobolev, 1943

Syncuaria (Decorataria) decorata (Cram, 1927) of Sobolev, 1949

Decorataria decorata (Cram, 1927) Skrjabin, Sobolev, & Ivashkin, 1965

Acuria (Syncuaria) ciconiae Gil'bert of Solonitsyn, 1928

LIFE CYCLE: Unknown.

INTERMEDIATE HOSTS: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya fuligula

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps ruficollis

HABITAT: Proventriculus, gizzard - under lining.

DISTRIBUTION: Europe, N. America (USA).

Chevreuxia revoluta

STATUS AS WATERFOWL PARASITE: Rare. normally present in Charadriiformes; reported once in wild duck.

DESCRIPTION: Sobolev, 1943. Copy: Cram, 1927a; Skrjabin. Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Spiroptera revoluta Rudolphi, 1819

Dispharagus revolutus (Rudolphi, 1819) Molin, 1860

Chevreuxia revoluta (Rudolphi, 1819) Seurat, 1918

Chevreuxia n. sp. McDonald, 1965b

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Oxyura jamaicensis

Charadriiformes - Himantopus himantopus, Recurvirostra americana

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, N. Africa (Algeria), N. America (USA).

Dispharynx sp.

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental; reported once in wild ducks.

DESCRIPTION: Ablasov, 1957.

SYNONYMY:

Dispharynx sp. Ablasov, 1957

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Aythyini - Aythya fuligula

HABITAT: Esophagus.

DISTRIBUTION: Asia (Kirgizia).

Skrjabinoclava decorata

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild duck.

DESCRIPTION: Gushanskaia, 1951. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria decorata Solonitsyn, 1928, not Cram, 1927
Skrjabinoclava decorata (Solonitsyn, 1928) Sobolev, 1943

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Mergini - Mergus albellus
Charadriiformes - Xenus cinereus, Tringa sp.

HABITAT: Proventriculus, gizzard, esophagus.

DISTRIBUTION: Europe (USSR), Asia (Kirgizia).

Skrjabinoclava horrida

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, typically in charadriiform birds; reported twice in wild ducks.

DESCRIPTION: Sobolev, 1943; Serkova, 1948. Copy: Cram, 1927a; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Strongylus horridus Rudolphi, 1809
Spiroptera horrida (Rudolphi, 1809) Diesing, 1851
Echinuria horrida (Rudolphi, 1809) Cram, 1927
Acuaria (Echinuria) horrida (Rudolphi, 1809)
Skrjabinoclava horrida (Rudolphi, 1809) Sobolev, 1943
Spiroptera gallinulae Rudolphi, 1819
Spiroptera aculeata Creplin, 1825
Filaria aculeata (Creplin, 1825) Linstow, 1876

Dispharagus aculeatus (Creplin, 1825) Stossich, 1891
Filaria spinifera Schneider, 1866
Echinuria spinifera (Schneider, 1866) Solov'ev, 1912

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta nigra

Gruiformes - Porzana carolina

Charadriiformes - Catoptrophorus semipalmatus, Charadrius hiaticula,

Crocethia alba, Eurynorhynchus pygmaeus, Erolia alpina, Erolia maritima, Larus fuscus, Limosa lapponica, Lymnocyptes minimus,
Tringa glareola

Coraciiformes - Halcyon smyrnensis

HABITAT: Proventriculus.

DISTRIBUTION: Europe (England, Germany, Ukraine), Asia (E. Siberia, India), N. America (USA).

Echinuria borealis borealis

STATUS AS WATERFOWL PARASITE: Rare in N. America; reported once in wild ducks.

DESCRIPTION: Mawson, 1956d. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria borealis Mawson, 1956

Echinuria borealis borealis Mawson, 1956 of Skrjabin, Sobolev, & Ivashkin, 1965

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Tadornini - Tadorna ferruginea - Skrjabin, Sobolev, & Ivashkin, 1965, erroneous]

Somateriini - Somateria spectabilis,

Mergini - Clangula hyemalis

HABITAT: Not given, probably proventriculus.

DISTRIBUTION: N. America (Canada).

Echinuria borealis asiatica

STATUS AS WATERFOWL PARASITE: Infrequent in Asia; reported 4 times in wild ducks.

DESCRIPTION: Kurochkin, Ryzhikov, & Gubanov, 1961; Ryzhikov, 1963c.
Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria borealis asiatica Ryzhikov, 1963

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta nigra

HABITAT: Glandular stomach.

DISTRIBUTION: Asia (Yakutia, Chukotka, Kamchatka).

Echinuria borealis pamirica

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria borealis pamirica Ryzhikov & Borgarenko in Skrjabin, Sobolev, & Ivashkin, 1965

LIFE CYCLE: Probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna ferruginea

HABITAT: Glandular stomach.

DISTRIBUTION: Asia (Tadzhikistan).

Echinuria cygni

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

STATUS AS SPECIES: Synonym of E. uncinata - McDonald, in press.

DESCRIPTION: Morini, Colombo, & Martin, 1961.

SYNONYMY:

Echinuria cygni Morini, Colombo, & Martin, 1961

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus melanocoryphus

HABITAT: Glandular stomach.

DISTRIBUTION: S. America (Argentina - La Plata Zoological Garden).

Echinuria heterobrachiata

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck. Originally described from gulls.

DESCRIPTION: Wehr, 1937. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria heterobrachiata Wehr, 1937

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Oxyura jamaicensis

Charadriiformes - Larus californicus, Larus sp.

HABITAT: Proventriculus - glands.

DISTRIBUTION: N. America (USA).

Echinuria hypognatha

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild waterfowl and once in captive waterfowl.

DESCRIPTION: Wehr, 1937; Maksimova, 1964. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria hypognatha Wehr, 1937

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus

Tadornini - Tadorna tadorna

Somateriini - Somateria fischeri, Somateria mollissima, Somateria spectabilis

Aythiini - Aythya marila

Mergini - Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra

HABITAT: Proventriculus.

DISTRIBUTION: Asia (Kazakhstan, Yakutia, Kamchatka, Chukotka), N. America (USA).

Echinuria minor

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild waterfowl. Pathological condition described by Sandground, 1937.

DESCRIPTION: Sandground, 1937. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria minor Sandground, 1937

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Sarkidiornis melanotos

HABITAT: Proventriculus - in ulcers.

DISTRIBUTION: Africa (Congo).

Echinuria parva

STATUS AS WATERFOWL PARASITE: Rare; reported twice in captive waterfowl. Pathology and mortality reported by Cram, 1928.

DESCRIPTION: Cram, 1928. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria parva Cram, 1928

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Branta canadensis

Anatini - Anas platyrhynchos

HABITAT: Proventriculus - in ulcers.

DISTRIBUTION: Europe? (USSR), N. America (Canada).

Echinuria querquedulae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Johnston & Mawson, 1942. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Echinuria querquedulae Johnston & Mawson. 1942

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas gibberifrons

HABITAT: Not given, probably proventriculus.

DISTRIBUTION: Australia.

Echinuria skrjabiniana

STATUS AS WATERFOWL PARASITE: Rare; reported once in captive swan.

DESCRIPTION: Liubimova, 1947. Copy: Skrjabin, Sobolev, & Ivashkin. 1965.

SYNONYMY:

Echinuria skrjabiniana Liubimova, 1947

Echinuria skrjabini Liubimova, 1947, lapsus

LIFE CYCLE: Unknown; probably similar to that of E. uncinata.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anserini - Cygnus olor

HABITAT: Proventriculus.

DISTRIBUTION: Asia (W. Siberia - source of bird examined in Moscow Zoological Park).

Echinuria uncinata

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 45 times in wild, 48 times in domestic, and 7 times in captive waterfowl. Frequent cause of disease and death; pathology described by Cram, 1930a; Knudsen, 1966; Moynihan & Stovell, 1955; Pallaske, 1944; Popov & Mincheva, 1955; Skrjabin, Sobolev, & Ivashkin, 1965; Tsvetaeva, 1953a; Wehrmann, 1909; and Zajicek, 1959. Mortality reported by Buxton, Ford & Munro, 1952; Cornwell, 1963 (in epizootic proportions); Gibson & Barnes, 1957; Golubev, 1959; Hill, 1941; Kauker, 1941; Magnusson, 1929a, 1929b; Marotel & Pierron, 1947; Robijns, 1955; and Venn, 1953.

DESCRIPTION: Akhtar, 1936; Yamaguti, 1941b; Bezubik, 1957a; Czaplinski, 1962b; Potekhina, 1963. Copy: Cram, 1927a; Shevtsov & Zaskind, 1960; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Spiroptera uncinata Rudolphi, 1819

Filaria uncinata (Rudolphi, 1819) Schneider, 1866

Dispharagus uncinatus (Rudolphi, 1819) Railliet, 1893

Acuaria (Hamannia) uncinata (Rudolphi, 1819) Railliet, Henry, & Sisoff, 1912

Echinuria uncinata (Rudolphi, 1819) Solov'ev, 1912

Hamannia uncinata (Rudolphi, 1819) Stiles & Hassall, 1920

Echinuria jugadornata Solov'ev, 1912 - [Skrjabin, et al., 1949]

Echinuria cygni Morini, Columbo, & Martin, 1960 - [McDonald, ms.]

LIFE CYCLE: Eggs passed in feces of host, survive in water up to 45 days; hatch after ingestion by fresh-water cladoceran crustacea; larvae penetrate hemocoel, infective to final host in 6-15 days; mature in 34-51 days after ingestion by final host. (Garkavi, 1960; Hamann, 1893; Kotel'nikov, 1961b; Radin, 1959; Romanova, 1938, 1947, 1948)

INTERMEDIATE HOSTS: Ceriodaphnia sp., Daphnia magna, Daphnia pulex

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Dendrocygnini - Dendrocygna viduata

Anserini - Anser anser, Anser anser (dom.), Anser albifrons, Anser cygnoides, Branta canadensis, Branta leucopsis, Branta ruficollis, Cygnus atratus, Cygnus cygnus, Cygnus cygnus buccinator, Cygnus melanocoryphus, Cygnus olor, Cygnus olor (dom.)

Tadornini - Neochen jubatus, Lorhonetta specularioides, Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas americana, Anas capensis, Anas castanea, Anas clypeata, Anas crecca, Anas crecca carolinensis, Anas discors, Anas falcata, Anas georgica, Anas penelope, Anas querquedula, Anas rubripes, Anas sibilatrix, Anas specularis, Anas strepera, Anas undulata

Somateriini - Somateria mollissima, Somateria spectabilis

Aythiini - Aythya affinis, Aythya americana, Aythya ferina, Aythya marila, Aythya vallisneria, Netta rufina

Cairinini - Aix galericulata, Aix sponsa, Cairina hartlaubi, Cairina moschata

Mergini - Bucephala albeola, Bucephala clangula, Mergus albellus

Charadriiformes - Philomachus pugnax

HABITAT: Gizzard, proventriculus, rarely esophagus; in nodules in wall.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kazakhstan, India, Primorsk, Japan, Amur, Kamchatka, Chukotka), Africa (Algeria), N. America (USA, Canada).

Cheilospirura sp.

STATUS AS WATERFOWL PARASITE: Rare, accidental; reported once in wild duck.

SYNONYMY:

Cheilospirura sp. Kurashvili, 1957

LIFE CYCLE: Un'known.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya nyroca

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Georgia).

Cosmocephalus aduncus

STATUS AS WATERFOWL PARASITE: Accidental, typically in lariform

birds; reported once in wild duck.

DESCRIPTION: Copy: Cram, 1927a; Kurashvili, 1957; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Spiroptera adunca Creplin, 1846

Dispharagus aduncus (Creplin, 1846) Molin, 1860

Cosmocephalus aduncus (Creplin, 1846) Yorke & Maplestone, 1926

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythini - Aythya nyroca

Gaviiformes - Gavia stellata

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus

Pelecaniformes - Phalacrocorax carbo

Charadriiformes - Chlidonias hybrida, Erolia maritima, Larus argentatus, Larus canus, Larus glaucoides, Larus hyperboreus, Larus ichthyaetus, Larus marinus, Larus minutus, Larus ridibundus, Sterna hirundo, Thalasseus sandvicensis, Tringa stagnatilis

HABITAT: Esophagus.

DISTRIBUTION: Europe, Asia (Uzbekistan, W. Siberia).

Cosmocephalus obvelatus

STATUS AS WATERFOWL PARASITE: Infrequent, typically in charadriiform birds; reported 6 times in wild ducks.

DESCRIPTION: Copy: Cram, 1927a; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Spiroptera obvelata Creplin, 1825

Filaria obvelata (Creplin, 1825) Linstow, 1877

Dispharagus obvelatus (Creplin, 1825) Linstow, 1909

Cosmocephalus obvelatus (Creplin, 1825) Seurat, 1919

Histiocephalus spiralis Diesing, 1851

Cosmocephalus papillosus Molin, 1859

Dispharagus papillosus (Molin, 1859) Stossich, 1898

Cosmocephalus alatus Molin, 1860

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Athyini - Aythya fuligula
Mergini - Mergus serrator
Sphenisciformes - Eudytes pachyrhynchus
Podicipediformes - Podiceps caspicus
Procellariiformes - Puffinus kuhlii
Pelecaniformes - Halieter pygmaeus, Pelecanus sp.
Charadriiformes - Actitis hypoleucos, Actitis macularia, Alca torda,
Catoptrophorus semipalmatus, Cephus grylle, Erolia melanotos,
Gelochelidon nilotica, Heteroscelus incanus, Hydroprogne caspia,
Hydroprogne tschegrava, Larus argentatus, Larus canus, Larus
crassirostris, Larus fuscus, Larus hyperboreus, Larus marinus,
Larus ridibundus, Philomachus pugnax, Stercorarius parasiticus,
Sterna paradisaea, Thalasseus bengalensis, Thalasseus sandvicen-
sis, Tringa erythropus, Tringa glareola, Tringa totanus

HABITAT: Esophagus.

DISTRIBUTION: Europe, Asia (Azerbaijan, Kirgizia), Africa (Algeria),
N. America (USA).

Cosmocephalus obvelatus magnus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck;
originally described from gulls.

DESCRIPTION: Vasil'kova, 1926. Copy: Skrjabin, Sobolev, & Ivash-
kin, 1965.

SYNONYMY:

Cosmocephalus obvelatus magnus Vasil'kova, 1926

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas crecca

Charadriiformes - Larus argentatus, Larus canus, Larus ichthyaetus

HABITAT: Esophagus, small intestine.

DISTRIBUTION: Asia (Kazakhstan).

Streptocara californica

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild
ducks.

DESCRIPTION: Gedoelst, 1919; Gibson, 1964, 1968. Copy: Cram, 1927a; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Gibson, 1964, 1968.

Yseria californica Gedoelst, 1919

Streptocara californica (Gedoelst, 1919) [Gedoelst & Liégeois, 1922]
Yorke & Maplestone, 1926

Skrjabinobronema californicum (Gedoelst, 1919) Gushanskaja, 1950

Korjakinema gusi Oshmarin, 1950 - distinct, Skrjabin, Sobolev, &
Ivashkin, 1965

Streptocara dogieli Belopol'skaja, 1952 - distinct, Skrjabin, Sobolev, & Ivashkin, 1965

LIFE CYCLE: Unknown; probably similar to that of S. crassicauda; probably involving marine hosts. (Gibson, 1964)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria mollissima

Aythiini - Aythya marila, Aythya vallisneria

Mergini - Bucephala islandica, Clangula hyemalis, Melanitta fusca deglandi, Melanitta nigra, Melanitta perspicillata, Mergus merganser, Mergus serrator

HABITAT: Gizzard - under lining.

DISTRIBUTION: Asia (Kamchatka), N. America (USA, Canada).

Streptocara cirrohamata

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental or erroneous; reported once in wild duck.

STATUS AS SPECIES: Not in Streptocara; reports from Asia need confirmation - Gibson, 1968.

DESCRIPTION: Gibson, 1968. Copy: Cram, 1927a.

SYNONYMY: Cram, 1927a.

Filaria (Spiroptera) cirrohamata Linstow, 1888

Spiroptera cirrohamata (Linstow, 1888) Stossich, 1897

Streptocara cirrohamata (Linstow, 1888) Skrjabin, 1916

Ingliseria cirrohamata (Linstow, 1888) Gibson, 1968

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Histrionicus histrionicus

Gaviiformes - Gavia arctica

Pelecaniformes - Phalacrocorax carunculatus, Phalacrocorax verrucosus

Charadriiformes - Larus argentatus

HABITAT: Proventriculus.

DISTRIBUTION: Asia (E. Siberia, Kamchatka), antarctic.

Streptocara crassicauda

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 47 times in wild, 23 times in domestic, and once in captive waterfowl. Frequent cause of pathologic conditions, described by Cram, 1930a; Garkavi, 1949a, 1950b, 1953; Karokhin, 1935; Skrjabin, Sobolev, & Ivashkin, 1965; Tsvetaeva, 1953b. Mortality reported by Garkavi, 1950c. Garkavi (1956) regards W. Siberia as epizootic area, infection carried from there to other areas by migrating birds.

DESCRIPTION: Skrjabin, 1916c; Gibson, 1968. Copy: Cram, 1927a; Kurashvili, 1957; Shevtsov & Zaskind, 1960; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a; Gibson, 1968.

Spiroptera crassicauda Creplin, 1829

Dispharagus crassicauda (Creplin, 1829) Molin, 1860

Streptocara crassicauda (Creplin, 1829) Skrjabin, 1916

Streptocara crassicauda crassicauda (Creplin, 1829) of Gibson, 1968

Spiroptera pectinifera Neumann, 1900

Streptocara pectinifera (Neumann, 1900) Skrjabin, 1916

Streptocara crassicauda var. anseri Skrjabin, 1916

Streptocara crassicauda var. charadrii Skrjabin, 1916

Streptocara crassicauda var. skrjabini Ljubimov, 1927, lapsus

LIFE CYCLE: Larvae develop in marine and fresh-water amphipod crustacea, infective to final host in 19-25 days; mature in final host 9-10 days after ingestion. Marine and fresh-water fish may serve as auxiliary hosts. (Czapliński, 1954; Garkavi, 1949a, 1950b, 1953, 1956; Kovalenko, 1960a, 1960b, 1963; Richter, 1960a, 1960b (as S. pectinifera); Stoimenov, 1966)

INTERMEDIATE HOSTS: Gammarus lacustris, Gammarus locusta, Gammarus maeoticus, Gammarus triacanthus

AUXILIARY HOSTS: OSTEICHTHYES - Carassius carassius, Caspialosa braschnikowi, Lucioperca lucioperca, Neogobius fluviatilis, Neogobius melanostomus, Phoxinus phoxinus, Rutilus rutilus, Scardinius erythrophthalmus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser cygnoides, Branta sandvicensis,
Cygnus columbianus, Cygnus cygnus buccinator

Tadornini - Tadorna ferruginea, Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta,
Anas angustirostris, Anas clypeata, Anas crecca, Anas cyanoptera,
Anas formosa, Anas penelope, Anas querquedula, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya affinis, Aythya ferina, Aythya fuligula, Aythya
marila, Aythya nyroca, Aythya vallisneria, Netta rufina

Mergini - Bucephala clangula, Bucephala islandica, Clangula hye-
malis, Histrionicus histrionicus, Melanitta fusca, Melanitta
nigra, Melanitta perspicillata, Mergus albellus, Mergus cucul-
latus, Mergus merganser, Mergus serrator

Oxyurini - Oxyura jamaicensis

Gaviiformes - Gavia arctica, Gavia stellata

Podicipediformes - Podiceps caspicus, Podiceps cristatus

Pelecaniformes - Phalacrocorax carbo

Ciconiiformes - Botaurus stellaris

Galliformes - Gallus gallus (dom.), Numida meleagris (dom.), Pedioe-
cetes phasianellus

Gruiformes - Fulica atra

Charadriiformes - Actitis macularia, Aloa torda, Cephus columba,
Charadrius alexandrinus, Fratercula corniculata, Larus argentatus,
Larus canus, Larus ichthyaetus, Philomachus pugnax, Sterno hirundo,
Tringa nebularia, Tringa totanus, Uria aalge, Vanellus vanellus,
Xenus cinereus

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan, Kirgizia, Kazakhstan, China, Taiwan, Primorsk, Amur, Kamchatka, Chukotka), N. America (Canada, USA).

Streptocara dogieli

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Doubtful; synonym of S. californica - Gibson, 1964, 1968.

DESCRIPTION: Belopol'skaïa, 1952b. Copy: Vysotskaïa & Kulachkova, 1953; Skrzjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Streptocara dogieli Belopol'skaïa, 1952

LIFE CYCLE: Larvae perhaps in gamasid mites in nests of final hosts (Vysotskaja & Kulachkova, 1953); Gibson (1964) believes this is based on a misidentification of nematode larvae.

INTERMEDIATE HOSTS: ?Bdellonyssus bacoti, ?Litosomoides carinii

FINAL HOSTS: AVES

Anseriformes (Anatidas)

Somateriini - Somateria mollissima, Somateria spectabilis

Mergini - Melanitta nigra

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Murmansk), Asia (Kamchatka, Chukotka).

Streptocara formosensis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks, once in domestic ducks.

DESCRIPTION: Sugimoto, 1930b; Gibson, 1968.

SYNONYMY:

Streptocara formosensis Sugimoto, 1930

Streptocara somateriae Ryzhikov, 1960

Paracuaria somateriae (Ryzhikov, 1960) Leonov, Tsimbaliuk, & Belogurov,
1963 - [Gibson, 1968]

LIFE CYCLE: Unknown; probably similar to that of S. crassicauda.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.)

Somateriini - Somateria mollissima

Aythini - Aythya fuligula, Aythya marila, Aythya nyroca

Cairinini - Cairina moschata (dom.)

Mergini - Bucephala albeola, Bucephala clangula, Bucephala islandica,

Melanitta fusca, Melanitta fusca deglandi, Melanitta nigra,

Melanitta perspicillata, Mergus merganser, Mergus serrator

HABITAT: Gizzard - under lining.

DISTRIBUTION: Europe (Esthonia, Czechoslovakia, USSR), Asia (Yakutia, Siberia, Taiwan, Amur, Kamchatka, Chukotka), N. America (Canada, USA).

Streptocara incognita

STATUS AS WATERFOWL PARASITE: Infrequent; reported once in wild ducks and once in domestic geese. Pathology described by Gibson, 1968; and by Karlović, Richter, & Aleraj, 1959, as due to S. pectinifera.

DESCRIPTION: Gibson, 1968.

SYNONYMY:

Streptocara incognita Gibson, 1968

LIFE CYCLE: Unknown; probably similar to that of S. crassicauda.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser cygnoides (dom.)

Anatini - Anas platyrhynchos

Mergini - Bucephala islandica

Oxyurini - Oxyura jamaicensis

HABITAT: Proventriculus, gizzard - under lining.

DISTRIBUTION: Europe (Jugoslavia), N. America (Canada, USA).

Streptocara recta

STATUS AS WATERFOWL PARASITE: Rare, normally in grebes; reported once in wild duck.

STATUS AS SPECIES: Original form described by Linstow may not be same as form currently recognized as S. recta - Gibson, 1968.

DESCRIPTION: Johnston & Mawson, 1941; Mawson, 1955; Kontrimavichus & Bakhmet'eva, 1960; Gibson, 1968. Copy: Cram, 1927a; Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY: Cram, 1927a.

Filaria recta Linstow, 1879

Spiroptera recta (Linstow, 1879) Mueller, 1897

Streptocara recta (Linstow, 1879) Skrjabin, 1916

LIFE CYCLE: Unknown; probably similar to that of S. crassicauda.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps poliocephalus, Podiceps ruficollis

Pelecaniformes - Haliastur melanoleucos

Charadriiformes - Chlidonias hybrida

HABITAT: Gizzard.

DISTRIBUTION: Europe (Great Britain, Germany), Asia (Kirgizia, Japan, Komandorsky Is.), N. America (Canada), Australia.

Rusguniella arctica

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild waterfowl.

DESCRIPTION: Ryzhikov, 1960. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Rusguniella arctica Ryzhikov, 1960

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas falcata, Anas querquedula

Anserini - Cygnus columbianus

Somateriini - Somateria spectabilis

HABITAT: Proventriculus, lower esophagus.

DISTRIBUTION: Asia (Yakutia, Amur), N. America (USA).

Rusguniella kofoidi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Williams, 1937. Copy: Skrjabin, Sobolev, & Ivashkin, 1965.

SYNONYMY:

Rusguniella (Rusgunioides) kofoidi Williams, 1937

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythyini - Aythya affinis

HABITAT: Gizzard - under lining.

DISTRIBUTION: N. America (USA).

Schistorophus sp.

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.
Genus normally in charadriiform birds.

SYNONYMY:

Schistorophus sp. Gushanskaja, 1950

Schistorophus sp. McDonald, ms.

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "duck"

Mergini - Bucephala albeola

HABITAT: Gizzard - under lining.

DISTRIBUTION: Asia (USSR - Nakhichevan ASSR), N. America (USA).

Gnathostoma spinigerum

STATUS AS WATERFOWL PARASITE: Infrequent in Indonesia and Japan, encysted in larval stage; reported 5 times in wild and once in domestic ducks. Ducks serve to infect man.

SYNONYMY: Baylis, 1939.

Gnathostoma spinigerum Owen, 1836

Cheiracanthus robustus Diesing, 1838, nomen nudum

Cheiracanthus socialis Leidy, 1858

Gnathostoma socialis (Leidy, 1858) Stossich, 1900

Filaria radula Schneider, 1866

Cheiracanthus siamensis Levinsen, 1890

Gnathostoma paronai Porta, 1908

Gnathostoma kyushuense Miyazaki, 1950 - [Yamaguti, 1961]

LIFE CYCLE: Eggs passed in feces of host, hatch in water in 4-15 days; larvae ingested by fresh-water copepod crustacea, infective in 7 days for next host; encyst in fish or other vertebrate after ingestion; mature in final host 5.5-6 months after ingestion. Larvae may encapsulate in muscles or mesentery of snake or other vertebrate unsuitable for role of final host after ingestion of second host. (Daengsvang, Froja Thienprasitthi, & Pasoog Chomcherngpat, 1966; Ijima, 1954; Irie, 1958; Miyazaki, 1954, 1960)

FIRST INTERMEDIATE HOSTS: Eucyclops serrulatus, Mesocyclops leuckarti

SECOND INTERMEDIATE HOSTS: OSTEICHTHYES - Anabas testudineus, Anguilla japonica, Barbus phuntio, Carassius auratus, Clarias batrachas, Clarias macrocephalus, Clarias magur, Crytonerus apongon, Glossogobius giurus, Misgurnus anguillicaudatus, Mogurnda obscura, Monopterus albus, Notopterus chitala, Ompok bimaculatus, Ophicephalus argus, Ophicephalus micropeltes, Ophicephalus striatus, Ophicephalus tadianus, Parasilurus asotus, Saccobranthus fossilis, Synbranchus bengalensis, Therapon argenteus, Trichopodus pectoralis, Trichopodus trichopterus. AMPHIBIA - Rana catesbeiana, Rana limnocharis, Rana nigromaculata, Rana tigrina

AUXILIARY OR SECOND INTERMEDIATE HOSTS: OSTEICHTHYES - Periophthalmodon schlosseri [exper.], Trichopsis vittatus [exper.]

AMPHIBIA - Bufo melanostictus [exper.], Cullula pulchra [exper.], Rana erythraea [exper.]

REPTILIA - Acrochordus javanicus, Bungarus fasciatus, Calotes versicolor [exper.], Cerberus rhynchops, Dendraspis hannah, Dinodon orientale, Leiolepis belliana [exper.], Naja hannah, Naja najah, Natrix tigrina, Python reticulatus, Riopa herberti [exper.], Takydromus tachydromoides [exper.], Varanus salvator

AVES - Anseriformes - Aix galericulata, Anas crecca, Anas platyrhynchos, Anas platyrhynchos (dom.). Podicipediformes - Podiceps ruficollis. Ciconiiformes - Ardea cinerea, Bubulcus ibis, Buto-

rides striatus, Egretta garzetta, Nycticorax nycticorax. Falconiformes - Accipiter gentilis, Milvus migrans, Pandion haliaetus. Galliformes - Gallus gallus (dom.). Coraciiformes - Alcedo atthis. Passeriformes - Corvus macrorhynchos
MAMMALIA - Primates - Macaca speciosa [exper.], Tupaia glis. Rodentia - Bandicota indica, Callosciurus erythraeus [exper.], Cavia porcellus [exper.], Mesocricetus auratus [exper.], Mus musculus (lab.) [exper.], Rattus norvegicus (lab.) [exper.], Rattus rattus. Lagomorpha - Oryctolagus cuniculus [exper.]. Carnivora - Herpestes javanicus, Mustela sibirica. Artiodactyla - Sus scrofa (dom.) [exper.]

FINAL HOSTS: MAMMALIA

Marsupialia - Didelphis marsupialis

Primates - Homo sapiens

Rodentia - Rattus sp.

Carnivora - Canis familiaris, Felis catus, Felis concolor, Felis leo, Felis pardus, Felis tigris, Felis viverrima, Mustela lutreola, Mustela nivalis, Mustela putorius, Mustela vison, Vulpes vulpes [exper.]

Artiodactyla - Sus scrofa

HABITAT: Tumors in stomach wall.

DISTRIBUTION: Asia (Malaysia, Indonesia, Thailand, Burma, India, China, Japan), N. America (USA, Mexico), Australia.

Physaloptera sp.

STATUS AS WATERFOWL PARASITE: Rare, accidental; reported twice in wild ducks.

SYNONYMY:

Physaloptera sp. Gushanskaja, 1950

Physaloptera sp. Johnston & Mawson, 1941

LIFE CYCLE: Unknown; probably involves insects as intermediate hosts.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas superciliosa

Mergini - Bucephala clangula

HABITAT: Proventriculus - under mucosa.

DISTRIBUTION: Europe ? (USSR), Australia.

Desmidocercella incognita

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in cormorants; reported once in wild duck.

STATUS AS SPECIES: Synonym of D. skrjabini - Chabaud, 1957.

DESCRIPTION: Solonitsyn, 1932. Copy: Gushanskaiâ, 1954.

SYNONYMY:

Desmidocercella incognita Solonitsyn, 1932

Desmidocerca incognita (Solonitsyn, 1932) Dubinin, 1940

Desmidocercella (Skrjabinocercella) incognita Solonitsyn, 1932 of
Gushanskaiâ, 1954

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Pelecaniformes - Haliastur pygmaeus, Phalacrocorax auritus, Phalacrocorax carbo

HABITAT: Air sacs, lungs, liver.

DISTRIBUTION: Asia (Armenia, Tadzhikistan, Komandorsky Is.), N. America (Canada).

Dicheilonema rheae

STATUS AS WATERFOWL PARASITE: Accidental, normally in Rheiformes; reported once in swan.

DESCRIPTION: Skrjabin, 1917. Copy: Skrjabin & Shikhobalova, 1948.

SYNONYMY: Yorke & Maplestone, 1926.

Filaria rheae Owen, 1843

Dicheilonema rheae (Owen, 1843) Railliet, 1918

Contortospiculum rheae (Owen, 1843) Skrjabin, 1918

Filaria horrida Diesing, 1851

Dicheilonema horridum (Diesing, 1851) Diesing, 1861

Contortospiculum horridum (Diesing, 1851) Skrjabin, 1917

Dicheilonema filiforme (Kreis, 1936)-[Lent & Freitas, 1948]

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Coscoroba coscoroba

Rheiformes - Rhea americana, Pterocnemia pennata
Struthioniformes - Struthio camelus

HABITAT:

DISTRIBUTION: Europe (Zoological Gardens), S. America (Argentina, Brazil, Uruguay).

Diplotriaena microphallos

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

STATUS AS SPECIES: Probably D. bargusinica in abnormal host - López-Neyra, 1956.

DESCRIPTION: Li, 1933. Copy: Skrjabin & Shikhobalova, 1948.

SYNONYMY:

Diplotriaena microphallos Li, 1933

Diplotriaena (Stenoanisospiculum) microphallos (Li, 1933) of López-Neyra, 1956

LIFE CYCLE: Unknown; eggs probably pass through respiratory system to esophagus, pass out with feces, larvae develop in intermediate host. (Anderson, 1962)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Mesentery.

DISTRIBUTION: Asia (China).

Pelecitus helix

STATUS AS WATERFOWL PARASITE: Rare, normally in Falconiformes or Ciconiiformes; reported once in wild duck.

DESCRIPTION: Oshmarin, 1963a. Copy: Skrjabin & Shikhobalova, 1948; Kasimov, 1956.

SYNONYMY:

Nematoideum fulicae-atrae (Diesing, 1861) Linstow, 1899

Spiroptera helix Linstow, 1899

Pelecitus helix (Linstow, 1899) Skrjabin & Shikhobalova, 1948

Pelecitus fulicae-atrae (Diesing, 1851) - [Lopez-Neyra, 1956]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Aix galericulata

Ciconiiformes - Ardea cinerea, Ardea purpurea, Botaurus stellaris

Falconiformes - Circus aeruginosus, Circus melanoleucus, Pandion haliaetus, Pernis apivorus

Gruiformes - Fulica atra

HABITAT: Synovial cavity of heel-joint.

DISTRIBUTION: Europe (Germany), Asia (Kazakhstan, Uzbekistan, Primorsk).

Sarconema anseris

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild geese.

DESCRIPTION: Sultanov, 1963.

SYNONYMY:

Sarconema anseris Sultanov, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser fabalis

HABITAT: Muscle of heart.

DISTRIBUTION: Asia (Uzbekistan).

Sarconema eurycerca

STATUS AS WATERFOWL PARASITE: Common in swans and geese; reported 13 times in wild and twice in captive waterfowl. Pathology described by Kluge, 1967; reported as cause of death by Quortrup & Holt, 1940, and by Kluge, 1967.

DESCRIPTION: Wehr, 1939a; Ryzhikov, 1958. Copy: Skrjabin & Shikhobalova, 1948.

SYNONYMY:

Sarconema eurycerca Wehr, 1939

LIFE CYCLE: Unknown; larvae present as microfilariae in blood of final host.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser albifrons, Anser fabalis, Branta canadensis,
Cygnus columbianus, Cygnus columbianus bewickii, Cygnus cygnus
buccinator, Cygnus olor

HABITAT: Veins of heart muscle.

DISTRIBUTION: Europe (England), Asia (Yakutia, Chukotka), N. America (USA, Canada).

Sarconema pseudolabiata

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Belogurov, Daïfa, & Sonin, 1966.

SYNONYMY:

Filaria sp. Serkova, 1948

Ornithofilaria sp. Borgarenko, 1960

Sarconema pseudolabiata Belogurov, Daïfa & Sonin, 1966

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas penelope

Cairinini - Aix galericulata

HABITAT: Subcutaneous tissue along esophagus.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia, Tuva, Tadzhikistan, Yakutia, Khabarovsk).

Ornithofilaria fallisensis

STATUS AS WATERFOWL PARASITE: Probably frequent; reported only twice in wild ducks but similar microfilariae frequently observed in wild ducks and Branta canadensis.

STATUS AS SPECIES: Genus Ornithofilaria is synonym of Splendidofilaria - Chabaud, 1965.

DESCRIPTION: Anderson, 1954a.

SYNONYMY:

Ornithofilaria fallisensis Anderson, 1954

LIFE CYCLE: Microfilariae present in blood of final host, ingested by simuliid diptera; larvae in diptera become infective in 7-14 days. Final host infected by injection of larvae during bite of simuliid, infective microfilariae present in blood in 30-36 days. (Anderson, 1954b, 1955, 1956)

INTERMEDIATE HOSTS: Simulium croxtoni, Simulium euryadminiculum, Simulium latipes, Simulium parnassum, Simulium rugglesi, Simulium venustum [exper.]

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas acuta, Anas rubripes

HABITAT: Subdermal fascia; microfilariae in blood.

DISTRIBUTION: N. America (USA, Canada).

Microfilaria guillemeti

STATUS AS WATERFOWL PARASITE: Rare?; reported once in wild duck.

STATUS AS SPECIES: Larval stage of unknown adult.

DESCRIPTION: Pons, 1920.

SYNONYMY:

Microfilaria guillemeti Pons, 1920

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

HABITAT: Blood.

DISTRIBUTION: N. America (Canada).

Microfilaria legeri

STATUS AS WATERFOWL PARASITE: Rare?; reported once in wild duck.

STATUS AS SPECIES: Larval stage of unknown adult.

DESCRIPTION: Pons, 1920.

SYNONYMY:

Microfilaria legeri Pons, 1920

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

HABITAT: Blood.

DISTRIBUTION: N. America (Canada).

Microfilaria plectropteri

STATUS AS WATERFOWL PARASITE: Rare?; reported once in wild duck.

STATUS AS SPECIES: Larval stage of unknown adult.

DESCRIPTION: van den Berghe, 1942.

SYNONYMY:

Microfilaria plectropteri van den Berghe, 1942

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Plectropterus gambensis

HABITAT: Blood.

DISTRIBUTION: Africa (Rwanda).

ACANTHOCEPHALA

Prosthenorchis avicola

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Travassos, 1917b. Copy: Meyer, 1932; Machado Filho, 1950; Petrochenko, 1958a.

SYNONYMY:

Prosthenorchis avicola Travassos, 1917

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Amazonetta brasiliensis

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Acanthocephalus anguillae

STATUS AS WATERFOWL PARASITE: Accidental, normally in fresh-water fish; reported in wild duck by Golvan, 1961, source of citation not found.

DESCRIPTION: Copy: Meyer, 1932; Petrochenko, 1956.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus anguillae O.F. Müller, 1780

Acanthocephalus anguillae (O.F. Müller, 1780) Lühe, 1911

Echinorhynchus carpionis Gmelin, 1790 - [Yamaguti, 1963]

Echinorhynchus rutili Zeder, 1803, not Müller, 1780 - [Yamaguti, 1963]

Echinorhynchus globulosus Rudolphi, 1809

Echinorhynchus linstowi Hamann, 1891

Echinorhynchus propinquus Mühling, 1898

Echinorhynchus proteus (Westrumb) of Porta, 1905

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by fresh-water isopod crustacea; mature in fresh-water fish after ingestion of crustacean with larvae. (Nybelin, 1924)

INTERMEDIATE HOSTS: Asellus aquaticus

FINAL HOSTS: OSTEICHTHYES

Abramus ballerus, Abramis brama, Abramis sapa, Acerina cernua, Acipenser rubicundus, Acipenser ruthenus, Alburnus alburnus, Alburnus bipunctatus, Anguilla anguilla, Anguilla chrysypa, Aspius aspius,

Barbus barbus, Blicca bjoerkna, Carassius carassius, Coregonus lavaretus, Coregonus muksun, Cyprinus carpio, Esox lucius, Gobio gobio, Gobius niger, Huso huso, Idus idus, Leuciscus cephalus, Leuciscus idbarus, Leuciscus rutilus, Lota lota, Lota vulgaris, Lucioperca lucioperca, Misgurnus fossilis, Nemachilus barbatula, Parabramis pekinensis, Pelecus cultratus, Perca fluviatilis, Pleuronectes flesus, Rutilus rutilus, Salmo gairdneri, Salmo lacustris, Salmo trutta, Salvelinus fontinalis, Scardinius erythrophthalmus, Siluris glanis, Thymallus thymallus, Tinca tinca, Vimba vimba

ACCIDENTAL HOSTS:

AVES - Anseriformes - Mergus merganser - [Golvan, 1961: original citation not found]

MAMMALIA - Carnivora - Lutra lutra

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden, USSR), Asia (USSR - Far East), N. America (USA).

Acanthocephalus lucii

STATUS AS WATERFOWL PARASITE: Accidental, normally in fish; reported once in wild duck.

DESCRIPTION: Kostylev, 1916; Markowski, 1933; Czapliński, 1962b.
Copy: Meyer, 1932; Petrochenko, 1956.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus lucii O.F. Müller, 1776

Acanthocephalus lucii (O.F. Müller, 1776) Lühe, 1911

Echinorhynchus angustatus Rudolphi, 1809

LIFE CYCLE: Larvae develop in fresh-water or brackish-water isopod and amphipod crustacea; mature in fresh- or brackish-water fish.
(Meyer, 1932; Golvan, 1960)

INTERMEDIATE HOSTS: Asellus aquaticus, Gammarus locusta

FINAL HOSTS: OSTEIFHTHYES

Abramis brama, Abramis sapa, Acerina cernua, Anguilla anguilla, Aspius aspius, Barbus barbus, Barbus sp., Belone acus, Blicca bjoerkna, Coregonus albula, Coregonus lavaretus, Coregonus maraena, Coregonus oxyrhynchus, Cottus gobio, Cottus quadricornis, Cyprinus carpio, Drepanopsetta platisoides, Esox lucius, Gadus callarias, Gasterosteus aculeatus, Gobio gobio, Gobius avernensis, Gobius niger, Idus idus, Labrax lupus, Leuciscus illyricus, Leuciscus rutilus, Lota lota, Lota vulgaris, Lucioperca lucioperca, Lucioperca volgensis, Myxoccephalus scorpio, Nemachilus barbatulus, Pelecus cultratus, Perca

fluviatilis, Pleuronectes flesus, Rutilus rutilus, Salmo salar, Scardinius erythrophthalmus, Silurus glanis, Solea vulgaris, Thymallus thymallus, Tinca tinca, Vimba vimba

ACCIDENTAL HOSTS:

AVES - Anseriformes - Anas querquedula

HABITAT: Small intestine.

DISTRIBUTION: N. Europe.

Acanthocephalus ranae

STATUS AS WATERFOWL PARASITE: Accidental, normally in amphibia; reported once in wild duck.

DESCRIPTION: Bezubik, 1957a. Copy: Meyer, 1932; Petrochenko, 1956.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus ranae Schrank, 1788

Acanthocephalus ranae (Schrank, 1788) Lühe, 1911

Echinorhynchus haeruca Rudolphi, 1802

Echinorhynchus tritonis Westrumb, 1821 - [Yamaguti, 1963]

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by freshwater isopod and amphipod crustacea; mature after ingestion of crustacean by final host. (Volgar-Pastukhova, 1959)

INTERMEDIATE HOSTS: Asellus aquaticus, Gammarus pulex

FINAL HOSTS: AMPHIBIA

Bombina bombina, Bombina salsa, Bufo bufo, Bufo viridis, Cynops pyrogaster, Hyla viridis, Notophthalmus viridescens, Rana arvalis, Rana dalmatina, Rana esculenta, Rana ridibunda, Rana temporaria, Salamandra atra, Salamandra salamandra, Triturus alpestris, Triturus cristatus, Triturus helveticus, Triturus vulgaris

REPTILIA - Natrix natrix

ACCIDENTAL HOSTS:

AVES - Anseriformes - Anas platyrhynchos

HABITAT: Intestine.

DISTRIBUTION: Europe, N. America (USA).

Corynosoma anatarium

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Van Cleave, 1945. Copy: Ward, 1951; Petrochenko, 1958.

SYNONYMY:

Corynosoma anatarium Van Cleave, 1945

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae) "wild duck"

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Corynosoma constrictum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 10 times in wild waterfowl.

DESCRIPTION: Linton, 1892; Van Cleave, 1918. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Echinorhynchus striatus Linton, 1892, not E. striatus Goeze, 1782

Corynosoma constrictum Van Cleave, 1918

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca carolinensis, Anas discors.
Anas strepera

Aythini - Aythya affinis

Mergini - Bucephala albeola, Melanitta fusca deglandi, Melanitta nigra

Oxyurini - Oxyura jamaicensis

Gruiformes - Fulica americana

MAMMALIA - Carnivora - Mustela vison

HABITAT: Intestine.

DISTRIBUTION: N. America (USA, USA - Alaska).

Corynosoma enriettii

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic ducks.

DESCRIPTION: Molfi & Fernandes, 1953; Machado Filho, 1962.

SYNONYMY:

Corynosoma enriettii Molfi & Freitas Fernandes, 1953

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Cairina moschata (dom.)

HABITAT: Small intestine.

DISTRIBUTION: S. America (Brazil).

Corynosoma iheringi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Machado Filho, 1961b.

SYNONYMY:

Corynosoma peposacae (Porta, 1914) Travassos, 1926, e.p.

Corynosoma iheringi Machado Filho, 1961

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Cairinini - Amazonetta brasiliensis

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Corynosoma longilemniscatus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Machado Filho, 1961a.

SYNONYMY:

Corynosoma peposacae (Porta, 1914) Travassos, 1926, e.p.

Corynosoma longilemniscatus Machado Filho, 1961

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas bahamensis

HABITAT: Small intestine.

DISTRIBUTION: S. America (Brazil).

Corynosoma mandarinca

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Oshmarin, 1963a.

SYNONYMY:

Corynosoma mandarinca Oshmarin, 1963

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Cairinini - Aix galericulata

HABITAT: Intestine.

DISTRIBUTION: Asia (Primorsk).

Corynosoma mergi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Lundström, 1941, 1942; Belopol'skaïa, 1950a. Cony: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Corynosoma mergi Lundström, 1941

Hemiechinoma mergi (Lundström, 1941) Petrochenko & Smogorzhevskaiâ,
1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Somateriini - Somateria mollissima
Mergini - Mergus serrator
Pelecaniformes - Phalacrocorax carbo

Charadriiformes - Cephus grylle

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden), Asia (USSR - Maritime Terr.), N. America (USA - Alaska).

Corynosoma molfi-fernandesi

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Machado Filho, 1962.

SYNONYMY:

Corynosoma enriettii Molfi & Fernandes, 1953, e.p.

Corynosoma molfi-fernandesi Machado Filho, 1962

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Small intestine.

DISTRIBUTION: S. America (Brazil).

Corynosoma peposacae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Porta, 1914; Molfi & Fernandes, 1953. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Meyer, 1932.

Echinostoma peposacae Porta, 1914

Corynosoma peposacae (Porta, 1914) Travassos, 1926

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

[Anatini - Anas bahamensis - Reported specimen is C. longilemniscatus - Machado Filho, 1961a]

Aythini - Netta peposaca

[Cairinini - Amazonetta brasiliensis - Reported specimen is C. iheringi - Machado Filho, 1961b]

HABITAT: Intestine.

DISTRIBUTION: S. America (Brazil).

Corynosoma phalacrocoracis

STATUS AS WATERFOWL PARASITE: Rare, probably accidental, normally in cormorants; reported once in wild duck.

DESCRIPTION: Yamaguti, 1939. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Corynosoma phalacrocoracis Yamaguti, 1939

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria spectabilis

Gaviiformes - Gavia immer, Gavia stellata

Pelecaniformes - Phalacrocorax carbo, Phalacrocorax pelagicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Primorsk, Japan, Chukotka).

Corynosoma semerme

STATUS AS WATERFOWL PARASITE: Accidental, infrequent, normally in marine mammals; reported at least twice in ducks.

DESCRIPTION: Van Cleave, 1953. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Van Cleave, 1953; Golvan, 1960.

Echinorhynchus semermis Forssell, 1904

Corynosoma semerme (Forssell, 1904) Lühe, 1911

Echinorhynchus strumosus Rudolphi, 1802 of authors, e.p.

Echinorhynchus hystrix Bremser, 1824 of authors, e.p.

Echinorhynchus gibber Olsson, 1893, e.p.

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by marine amphipod crustacea; larvae encyst in fish after ingestion (auxiliary hosts according to Golvan, 1961). Mature in marine mammals after ingestion of fish; does not mature in birds. The many reports in fresh-water fish probably erroneous. (Golvan, 1959, 1961; Van Cleave, 1953)

INTERMEDIATE HOSTS: Pontoporeia affinis

AUXILIARY HOSTS: CYCLOSTOMATA - Lampetra fluviatilis, Lampetra japonica

OSTEICHTHYES - Acerina cernua, Anarhichas lupus, Anguilla anguilla, Elicca bjoerkna, Clupea harengus, Coregonus albula, Coregonus fera, Coregonus lavaretus, Cottus quadricornis, Cyclopterus lumpus, Eleginus navaga, Esox lucius, Gadus callarias, Gymnacanthus ventralis, Idus idus, Limanda limanda, Liopsetta glacialis, Lota lota, Lucio-perca lucioperca, Lumpenus fabricii, Myxocephalus scorpio, Onos cimbrius, Osmerus eperlanus, Perca fluviatilis, Platessa nasser, Pleuronectes flesus, Fungitius pungitius, Salvelinus alpinus, Scophthalmus maximus, Thymallus thymallus, Zoarces viviparus

FINAL HOSTS: MAMMALIA

Pinnipedia - Cystophora cristata, Callorhinus ursinus, Erignathus barbatus, Eumetopias jubata, Halichoerus grypus, Odobenus rosmarus, Otaria hookeri, Phoca hispida, Phoca vitulina, Zalophus californianus

Carnivora - Canis familiaris, Mustela erminea, Mustela putorius, Mustela vison

Cetacea - Phocaena phocaena

ACCIDENTAL HOSTS: AVES (Parasites do not mature)

Anseriformes (Anatidae) - Aythya sp., Clangula hyemalis, Mergus merganser, Mergus serrator

Gaviiformes - Gavia immer, Gavia stellata

Sphenisciformes - Spheniscus demersus

Podicipediformes - Podiceps grisegena, Podiceps ruficollis

Pelecaniformes - Phalacrocorax aristotelis, Phalacrocorax carbo, Phalacrocorax urile

[Ciconiiformes - Nyctanassa violacea - erroneous]

Charadriiformes - Cephus grylle

HABITAT: Intestine.

DISTRIBUTION: Europe (Northern seas), N. America (USA - Alaska), Australia.

Corynosoma strumosum

STATUS AS WATERFOWL PARASITE: Accidental, infrequent, normally in marine mammals; reported 7 times in wild ducks.

DESCRIPTION: Van Cleave, 1953. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Van Cleave, 1953; Golvan, 1960.
Echinorhynchus strumosus Rudolphi, 1802, e.p.

Corynosoma strumosum (Rudolphi, 1802) Lühe, 1904
Echinorhynchus ventricosus Rudolphi, 1809
Echinorhynchus gibbosus Rudolphi, 1809, e.p.
Echinorhynchus hystrix Bremser, 1824 of authors e.p.
Echinorhynchus striatus of Villot, 1876, not Goeze, 1782
Echinorhynchus carchariae Linton, 1891
Echinorhynchus incrassatus of Linton, 1891, not Molin, 1820
Echinorhynchus gibber Olsson, 1893, e.p.
Corynosoma osmeri Fujita, 1921
Corynosoma ambispinigerum Harada, 1935

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by marine amphipod crustacean probably; larvae remain in fish after ingestion (auxiliary hosts according to Golvan, 1961). Mature typically in marine mammals; do not mature in birds (except one report by Dollfus, 1964). The many reports in fresh-water fish probably erroneous. (Golvan, 1960, 1961; Van Cleave, 1953)

INTERMEDIATE HOSTS: Pontoporeia affinis (?)

AUXILIARY HOSTS: CYCLOSTOMATA - Caspiomyzon wagneri, Lampetra fluviatilis, Petromyzon sp.

OSTEICHTHYES - Abramis brama, Anguilla anguilla, Aspius aspius, Atherina pontica, Caspialosa braschnikovi, Caspialosa kessleri, Caspialosa schaposchnikovi, Caspialosa volgaensis, Chalcalburnus chalcoides, Clupea harengus, Conger conger, Coregonus fera, Coregonus lavaretus, Coregonus sardinella, Cottus aeneus, Cottus bubalis, Cottus quadricornis, Cyclopterus lumpus, Esox lucius, Gadus callarias, Gadus macrocephalus, Gasterosteus aculeatus, Huso huso, Hypomesus olidus, Idus idus, Lepidopsetta bilineata, Leptocottus armatus, Leuciscus cephalus, Limanda limanda, Liopsetta glacialis, Lobius piscatorius, Lota lota, Lucioperca lucioperca, Myxocephalus scorpio, Osmerus eberlanus, Osmerus lanceolatus, Perca fluviatilis, Platichthys stellatus, Pleuronectes flesus, Rutilus rutilus, Salmo trutta, Salvelinus alpinus, Sciaena schlegeli, Scophthalmus maximus, Siluris glanis, Syngnathus cucullentus, Trachinus draco, Umbrina roncadore, Vimba vimba, Zoarces viviparus

REPTILIA - Natrix natrix, Natrix tessellata, Vipera ursinii

FINAL HOSTS: MAMMALIA

Pinnipedia - Callorhinus ursinus, Cystophora cristata, Erignathus barbatus, Eumetopias jubata, Halichoerus grypus, Odobenus rosmarus, Phoca caspica, Phoca groenlandica, Phoca hispida, Phoca vitulina, Zalophus californianus

Carnivora - Canis familiaris, Enhydra lutris, Felis catus, Mustela putorius, Mustela vison

Cetacea - Delphinapterus leucas, Phocaena phocaena

ACCIDENTAL HOSTS: AVES (parasites do not mature)

Anseriformes - Anas clypeata, Aythya marila, Bucephala clangula, Clangula hyemalis, Mergus merganser, Mergus serrator, Polycticta

stelleri, Somateria fischeri, Somateria mollissima, Somateria spectabilis

Gaviiformes - Gavia immer, Gavia stellata

Podicipediformes - Podiceps grisegena

Pelecaniformes - Pelecanus crispus, Pelecanus oncorotalus, Phalacrocorax aristotelis, Phalacrocorax capensis, Phalacrocorax carbo [mature form reported once], Phalacrocorax olivaceus, Phalacrocorax pelagicus, Phalacrocorax urile

Ciconiiformes - Nycticorax nycticorax

Falconiformes - Haliaeetus leucocephalus

Charadriiformes - Larus argentatus, Larus fuscus, Larus hyperboreus, Larus minutus, Phalaropus lobatus, Sterna hirundo

HABITAT: Intestine.

DISTRIBUTION: Europe (Northern coasts), Asia (Japan Sea, Sakhalin, Chukotka), N. America (Pacific coast).

Corynosoma sudsuche

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Belopol'skaia, 1959a.

SYNONYMY:

Corynosoma sudsuche Belopol'skaia, 1959

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Histrionicus histrionicus

HABITAT: Small intestine.

DISTRIBUTION: Asia (Primorsk).

Fillicollis anatis

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 46 times in wild, 31 times in domestic, and 3 times in captive waterfowl. Frequent cause of disease and death; pathology described by Galli-Valerio, 1939; Harrison, 1955; Petrochenko, 1958a; Tsvetaeva, 1959; Wehrmann, 1909. Mortality reported by Vorobev & Kolotilov, 1954.

DESCRIPTION: Bezubik, 1957a. Copy: Meyer, 1932; Kasimov, 1956;

Kurashvili, 1957; Petrochenko, 1958a; Shevtsov & Zaskind, 1960.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus anatis Schrank, 1788, not Gmelin, 1790; not de Marval,
1905

Filicollis anatis (Schrank, 1788) Lühe, 1911

Polymorphus anatis (Schrank, 1788) Gower, 1930

Echinorhynchus alcae Gmelin, 1789

Echinorhynchus vesiculosus Schrank, 1790

Echinorhynchus constrictus Zeder, 1800

Echinorhynchus torquatus Froelich, 1802

Echinorhynchus filicollis Rudolphi, 1809

Echinorhynchus polymorphus Bremser, 1820, e.p., not Greeff, 1864

Echinorhynchus stellaris Molin, 1858

Echinorhynchus laevis Linstow, 1905

LIFE CYCLE: Eggs passed in feces of host, infective for 20-30 days, can survive over winter in mud, hatch after ingestion by fresh-water isopod crustacea; larvae infective for final host in 25-60 days (25 days at 24-26 C., 40 days at 17 C.); mature in 20-30 days after ingestion by final host. Larvae survive in marine fish (auxiliary hosts) after ingestion of infected isopod; decapod crustacean reported as intermediate host, listed as auxiliary host by Golvan, 1961. (Kotel'nikov, 1954b, 1959a; Petrochenko, 1958a; Soliman, 1955; Styczynska, 1956b, 1958b; Szidat, 1931b)

INTERMEDIATE HOSTS: Asellus aquaticus

AUXILIARY HOSTS: OSTEICHTHYES - Anguilla anguilla

? CRUSTACEA - Astacus astacus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Cygnus cygnus, Cygnus olor, Cygnus olor (dom.)

Tadornini - Tadorna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas clypeata, Anas crecca, Anas falcata, Anas penelope, Anas querquedula

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya nyroca, Netta rufina

Cairinini - Aix sponsa, Cairina moschata (dom.)

Mergini - Bucephala clangula, Clangula hyemalis, Histrionicus histrionicus, Melanitta fusca, Melanitta nigra, Mergus merganser, Mergus serrator

Podicipediformes - Podiceps auritus, Podiceps caspicus, Podiceps cristatus, Podiceps ruficollis

Ciconiiformes - Nycticorax nycticorax

Galliformes - Lyrurus tetrix, Tetrao urogallus

Gruiformes - Fulica atra, Fulica cristata, Gallinula chloropus, For-

zana porzana
Charadriiformes - Limnodromus griseus, Philomachus pugnax [exper.,
did not mature], Sterna albifrons, Tringa glareola [exper., did
not mature]

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Tadzhikistan, Kazakhstan, Tamyr, Amur,
Primorsk, Chukotka).

Hexaglandula paucihamatus

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental, originally
described from a gull; reported once in wild duck.

DESCRIPTION: Heinze, 1936. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus paucihamatus Heinze, 1936

Polymorphus (Hexaglandula) paucihamatus Heinze, 1936 of Petrochenko,
1950

Hexaglandula paucihamatus (Heinze, 1936) Petrochenko, 1956

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

Charadriiformes - Larus glaucoides

HABITAT: Probably small intestine.

DISTRIBUTION: Europe (USSR - Kaliningrad).

Polymorphus actuganensis

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Petrochenko, 1949c. Copy: Petrochenko, 1958a.

SYNONYMY:

Polymorphus actuganensis Petrochenko, 1949

Polymorphus (Polymorphus) actuganensis Petrochenko, 1949 of Petro-
chenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos, Anas crecca

HABITAT: Small intestine.

DISTRIBUTION: Asia (Kazakhstan, Sakhalin).

Polymorphus acutis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 9 times in wild ducks.

DESCRIPTION: Van Cleave & Starrett, 1940; Kontrimavichus & Bakhmet'eva, 1960. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus acutis Van Cleave & Starrett, 1940
Polymorphus (Polymorphus) acutis Van Cleave & Starrett, 1940 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES
Anseriformes (Anatidae)
Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas crecca, Anas strepera
Aythyini - Aythya ferina, Aythya fuligula
Mergini - Bucephala albeola, Bucephala clangula
Oxyurini - Oxyura leucocephala
Podicipediformes - Podiceps grisegena
Gruiformes - Fulica americana
Charadriiformes - Larus argentatus, Limosa limosa

HABITAT: Intestine.

DISTRIBUTION: Europe (Georgia), Asia (W. Siberia, Amur, Primorsk), N. America (USA).

Polymorphus altmani

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks. Reported as cause of mortality in epizootic by Perry, 1942.

DESCRIPTION: Perry, 1942. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Filicollis altmani Perry, 1942

Polymorphus altmani (Perry, 1942) Van Cleave, 1947

Polymorphus (Falsifilicollis) altmani (Perry, 1942) of Webster, 1948

Parafilicollis altmani (Perry, 1942) Petrochenko, 1958

Polymorphus (Profilicollis) altmani (Perry, 1942) of Golvan, 1960

Falsifilicollis altmani (Perry, 1942) Yamaguti, 1963

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Melanitta fusca deglandi, Melanitta perspicillata

HABITAT: Small and large intestine.

DISTRIBUTION: N. America (USA).

Polymorphus arcticus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Van Cleave, 1920a. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Filicollis arcticus Van Cleave, 1920

Profilicollis arcticus (Van Cleave, 1920) Meyer, 1931

Polymorphus arcticus (Van Cleave, 1920) Van Cleave, 1937

Polymorphus (Polymorphus) arcticus (Van Cleave, 1920) of Petrochenko, 1950

Polymorphus (Profilicollis) arcticus (Van Cleave, 1920) of Golvan, 1960

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR - Novaya Zemlaya), N. America (Canada, USA - Alaska).

Polymorphus biziurae

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Johnston & Edmonds, 1948.

SYNONYMY:

Polymorphus biziurae Johnston & Edmonds, 1948

LIFE CYCLE: Larvae found in decapod crustacean (Johnston & Edmonds, 1948), regarded as auxiliary host by Golvan, 1961.

INTERMEDIATE HOSTS: Cherax destructor

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Oxyurini - Biziura lobata

ACCIDENTAL HOSTS: AVES (Immature forms only)

Pelecaniformes - Haliator melanoleucos

Ciconiiformes - Platalea flavipes

HABITAT: Intestine.

DISTRIBUTION: Australia.

Polymorphus botulus

STATUS AS WATERFOWL PARASITE: Frequent; reported 18 times in wild ducks. Pathological conditions from infection described by Rayski & Garden, 1961; Swennen & van den Broek, 1960; mortality in epizootics reported by Clark, O'Meara, & Van Weelden, 1958; Lampio, 1946; Swennen & van den Broek, 1960.

DESCRIPTION: Van Cleave, 1916. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Echinorhynchus polymorphus Westr. of Linstow, 1901 - [Kostylev, 1926]

Filicollis botulus Van Cleave, 1916

Profilicollis botulus (Van Cleave, 1916) Meyer, 1931

Polymorphus botulus (Van Cleave, 1916) Van Cleave, 1937

Polymorphus (Polymorphus) botulus (Van Cleave, 1916) of Petrochenko,
1950

Polymorphus (Profilicollis) botulus (Van Cleave, 1916) of Golvan,
1960

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by marine decapod crustacea; marine amphipod crustacean reported but could not be duplicated experimentally. Mature in final host after ingestion. (Belopol'skaia, 1952b; Rayski & Garden, 1961; Uspenskaiâ, 1960)

INTERMEDIATE HOSTS: Carcinus moenas, Hyas araneus, Pagurus nubescens,
Gammarus locusta (?)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Somateriini - Somateria mollissima, Somateria spectabilis

Gruiformes - Fulica atra

HABITAT: Intestine.

DISTRIBUTION: Europe (Northern Europe), N. America (USA).

Polymorphus contortus

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

STATUS AS SPECIES: Generic designation uncertain, described from juveniles in Lanius - Golvan, 1960. Cannot be distinguished by published description from P. minutus.

DESCRIPTION: Bezubik, 1957c; Bykhovskaja, 1948. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus contortus Bremser in Westrumb, 1821

Polymorphus contortus (Bremser, 1821) Travassos, 1926

Polymorphus (Polymorphus) contortus (Bremser, 1821) of Petrochenko,
1950

Echinorhynchus collurionis Rudolphi, 1810

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta, Anas clypeata, Anas quercuedula, Anas strepera

Ciconiiformes - Botaurus stellaris

Passeriformes - Lanius collurio

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), Asia (W. Siberia).

Polymorphus corynoides

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild duck.

DESCRIPTION: Skrjabin, 1913d. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Polymorphus corynoides Skrjabin, 1913

Polymorphus (Polymorphus) corynoides Skrjabin, 1913 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

HABITAT: Intestine.

DISTRIBUTION: Europe (USSR), Asia (Kazakhstan).

Polymorphus cucullatus

STATUS AS WATERFOWL PARASITE: Rare; reported twice in wild ducks.

DESCRIPTION: Van Cleave & Starrett, 1940. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus cucullatus Van Cleave & Starrett, 1940

Polymorphus (Polymorphus) cucullatus Van Cleave & Starrett, 1940 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus cucullatus

HABITAT: Intestine.

DISTRIBUTION: N. America (USA).

Polymorphus diploinflatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild ducks and once in domestic duck.

DESCRIPTION: Lundström, 1942; Khokhlova, 1966a. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus diploinflatus Lundström, 1942

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas crecca

Aythiini - Aythya fuligula, Aythya marila

Mergini - Clangula hyemalis, Melanitta fusca deglandi, Melanitta nigra

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden), Asia (Azerbaijan, Tamy, Chukotka).

Polymorphus formosus

STATUS AS WATERFOWL PARASITE: Rare; reported once in domestic duck.

DESCRIPTION: Schmidt & Kuntz, 1967.

SYNONYMY:

Polymorphus (Profilicollis) formosus Schmidt & Kuntz, 1967

LIFE CYCLE: Larval stages develop in fresh-water decapod crustacean; mature in final host after ingestion. (Schmidt & Kuntz, 1967)

INTERMEDIATE HOSTS: Macrobrachium sp.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.)

HABITAT: Intestine.

DISTRIBUTION: Asia (Taiwan).

Polymorphus kostylewi

STATUS AS WATERFOWL PARASITE: Infrequent; reported twice in wild ducks and once in domestic duck.

DESCRIPTION: Petrochenko, 1949c. Copy: Petrochenko, 1958a.

SYNONYMY:

Polymorphus kostylewi Petrochenko, 1949
Polymorphus (Polymorphus) kostylewi Petrochenko, 1949 of Petrochenko,
1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos (dom.), Anas crecca

Mergini - Melanitta fusca

HABITAT: Small intestine.

DISTRIBUTION: Asia (Azerbaijan, Kazakhstan, Sakhalin).

Polymorphus magnus

STATUS AS WATERFOWL PARASITE: Very common in Europe and Asia, characteristic helminth of waterfowl; reported 28 times in wild and 20 times in domestic waterfowl. Frequent cause of disease and death; pathology described by Logachev & Bruskin, 1959; Gerasimova, 1960; Okorokov, 1954; Petrochenko, 1950c, 1958a. Petrochenko (1958a) implies that losses reported due to P. minutus are actually usually due to this species.

STATUS AS SPECIES: Regarded as form of P. minutus by Bykhovskaja-Pavlovskaja, 1948; Bezubik, 1957a.

DESCRIPTION: Skrjabin, 1913d; Petrochenko, 1950b; Khokhlova, 1966b. Copy: Meyer, 1932; Kurashvili, 1957; Petrochenko, 1950a; Shevtsov & Zaskind, 1960.

SYNONYMY:

Polymorphus magnus Skrjabin, 1913

Polymorphus (Polymorphus) magnus Skrjabin, 1913 of Petrochenko, 1950

LIFE CYCLE: Eggs passed in feces of host, hatch after ingestion by marine and fresh-water amphipod crustacea; larvae infective for final host in 54-60 days at 18-25 C. Mature in 27-30 days after ingestion by final host, infection may not last more than 4-6 months. Incidence highest in cool areas. (Buša, 1964a; Czapliński, 1954; Golvan, 1961; Kotelnikov, 1962b; Kovalenko, 1960a, 1960b; Lavrent'ev, 1957; Okorokov, 1963a; Osipov, 1959; Petrochenko, 1949b, 1950a, 1950e, 1953, 1958a)

INTERMEDIATE HOSTS: Gammarus lacustris, Gammarus locusta, Gammarus maeoticus

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser fabalis, Anser indicus, Cygnus columbianus bewickii, Cygnus cygnus, Cygnus olor

Tadornini - Tadorna ferruginea

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas acuta, Anas angustirostris, Anas clypeata, Anas crecca, Anas formosa, Anas penelope, Anas poecilorhyncha, Anas querouedula, Anas strepera

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Netta rufina

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca deglandi, Melanitta nigra, Mergus albellus

Oxyurini - Oxyura leucocerhala

Gaviiformes - Gavia arctica, Gavia stellata

Falconiformes - Aquila nipalensis, Aquila rapax

Galliformes - Meleagris gallopavo (dom.)

Gruiformes - Fulica atra, Rallus aquaticus

Charadriiformes - Charadrius hiaticula, Chlidonias leucopterus, Erolia alpina, Fratercula corniculata, Larus ichthyaetus, Larus ridibundus, Limosa lapponica, Limosa limosa, Phalaropus lobatus, Philomachus pugnax, Rissa tridactyla, Sterna paradisaea, Vanellus vanellus

Passeriformes - Emberiza schoeniclus

MAMMALIA - Rodentia - Ondatra zibethica

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Uzbekistan, Kirgizia, Armenia, Kazakhstan, Mongolia, Yakutia, Primorsk, Amur, Sakhalin).

Polymorphus major

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Lundström, 1942. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus major Lundström, 1942

Parafilicollis major (Lundström, 1942) Petrochenko, 1958

Profilicollis major (Lundström, 1942) Rayski, 1959

Falsifilicollis major (Lundström, 1942) Yamaguti, 1963

Polymorphus (Profilicollis) major (Lundström, 1942) of Schmidt & Kuntz, 1967

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala clangula

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden).

Polymorphus marilis

STATUS AS WATERFOWL PARASITE: Infrequent; reported 6 times in wild ducks.

DESCRIPTION: Van Cleave, 1939. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus marilis Van Cleave, 1939

Polymorphus (Polymorphus) marilis Van Cleave, 1939 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Tadornini - Tadorna cristata, Tadorna ferruginea

Anatini - Anas platyrhynchos

Aythiini - Aythya marila, [Aythya affinis - reported by Yamaguti, 1963; original citation not found]

Mergini - Bucephala albeola, Bucephala clangula, [Melanitta sp. - reported by Yamaguti, 1963; original citation not found]

Pelecaniformes - Phalacrocorax sp.

Gruiformes - Fulica atra

Charadriiformes - Micropalama himantopus - [Doubtful record]

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan, Tadzhikistan), N. America (USA, USA - Alaska).

Polymorphus mathevossianae

STATUS AS WATERFOWL PARASITE: Infrequent; reported 4 times in wild waterfowl.

DESCRIPTION: Petrochenko, 1949c. Copy: Petrochenko, 1958a.

SYNONYMY:

Polymorphus mathevossianae Petrochenko, 1949

Polymorphus (Polymorphus) mathevossianae Petrochenko, 1949 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser

Anatini - Anas platyrhynchos, Anas strepera

Mergini - Bucephala clangula, Melanitta fusca

HABITAT: Small intestine.

DISTRIBUTION: Asia (Azerbaijan, W. Siberia, Kazakhstan, Amur).

Polymorphus meyeri

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Lundström, 1942. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus meyeri Lundström, 1942

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythiini - Aythya fuligula

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden).

Polymorphus miniatus

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Linstow, 1896a. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Echinorhynchus miniatus Linstow, 1896

Polymorphus miniatus (Linstow, 1896) Travassos, 1926

Polymorphus (Polymorphus) miniatus Linstow, 1896 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas sp.

HABITAT: Intestine.

DISTRIBUTION: S. America (Straits of Magellan).

Polymorphus minutus

STATUS AS WATERFOWL PARASITE: Very common, characteristic helminth of waterfowl; reported 88 times in wild, 29 times in domestic, and once in captive waterfowl. Frequently reported as cause of disease and death (usually due to P. magnus, however - Petrochenko, 1958a); pathology described by Okorokov, 1954; Pflugfelder, 1956; Wehrmann, 1909; mortality reported by Christiansen, 1948; Hynes & Nicholas, 1963; Petrochenko, 1949; Thom & Garden, 1955; Wickware, 1922.

DESCRIPTION: Van Cleave & Starrett, 1940; Bykhovskaiā-Pavlovskaiā, 1948; Petrochenko, 1950b; Bezubik, 1957a, 1957b; Czapliński, 1962b. Copy: Meyer, 1932; Kurashvili, 1957; Petrochenko, 1958a; Shevtsov & Zaskind, 1960.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus minutus Goeze, 1782

Polymorphus minutus (Goeze, 1782) Lühe, 1911

Polymorphus (Polymorphus) minutus (Goeze, 1782) of Petrochenko, 1950

Echinorhynchus boschadis Schrank, 1788, not Gmelin, 1790

Polymorphus boschadis (Schrank, 1788) Railliet, 1919

Filicollis boschadis (Schrank, 1788) Skrjabin & Shul'ts, 1934

Echinorhynchus anatis Gmelin, 1790, not Schrank, 1788

Echinorhynchus collaris Schrank, 1792

Echinorhynchus anatis Froelich, 1802, e.p.

Echinorhynchus versicolor Rudolphi, 1819, e.p.

Echinorhynchus polymorphus Bremser in Jassoy, 1820, e.p.

Echinorhynchus miliaris Zenker, 1832

Echinorhynchus anatis de Marval, 1905

LIFE CYCLE: Eggs embryonated in female, passed in feces of host, hatch after ingestion by fresh-water and marine amphipod crustacea; larvae infective to final host in 56-70 days; mature in final host 32 days after ingestion. Survive in marine fish (auxiliary hosts) after ingestion of infected amphipod; reported in decapod crustacea, probably as auxiliary hosts. (Crompton & Whitfield, 1968; Florescu, 1937; Golvan, 1961; Hynes, 1955; Hynes & Nicholas, 1957, 1958; Kotelnikov, 1962b; Lukacsovics, 1959; Luther, 1906; Nicholas & Hynes, 1957, 1958; Noll, 1950; Petrochenko, 1958a; Pflugfelder, 1956; Ritchie, 1915; Romanovskii, 1964; Scheer, 1934)

INTERMEDIATE HOSTS: Carinogammarus roeselii, Gammarus duebeni, Gammarus kischineffiensis, Gammarus lacustris, Gammarus locusta, Gammarus

pulex fossarum, Gammarus triacanthus

AUXILIARY HOSTS: CRUSTACEA - Astacus astacus, Orconectes limosus
OSTEICHTHYES - Anguilla anguilla, Atherina herosetus, Cyclopterus
lumpus, Gobius jazo, Phoxinus phoxinus, Pleuronectes flesus, Pleuro-
nectes passer, Pungitius pungitius, Scardinius erythrophthalmus,
Trachinus draco, Trachinus vipera

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser, Anser anser (dom.), Anser cygnoides, Anser
cygnoides (dom.), Branta bernicle, Branta bernicla nigricans,
Cygnus cygnus, Cygnus olor, Cygnus olor (dom.)

Tadornini - Alopochen aegyptiaca, Lophonetta specularioides, Tad-
orna tadorna

Anatini - Anas platyrhynchos, Anas platyrhynchos (dom.), Anas
acuta, Anas castanea, Anas clypeata, Anas crecca, Anas pene-
lope, Anas querquedula, Anas strepera

Somateriini - Somateria mollissima

Aythiini - Aythya ferina, Aythya fuligula, Aythya marila, Aythya
nyroca, Netta rufina

Cairinini - Aix sponsa

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta fusca deglandi, Melanitta nigra, Mergus albellus,
Mergus merganser, Mergus serrator

Oxyurini - Oxyura leucocephala

Podicipediformes - Podiceps dominicus, Podiceps ruficollis

Procellariiformes - Fulmarus glacialis

Galliformes - Gallus gallus (dom.)

Gruiformes - Fulica atra, Fulica cristata, Gallinula chloropus, Ral-
lus aquaticus

Charadriiformes - Cephus grylle, Charadrius dubius, Chlidonias leu-
coptera, Chlidonias nigra, Erolia minuta, Erolia temminckii, Glar-
eola nordmanni, Haematopus ostralegus, Larus ichthyæetus, Larus
marinus, Larus minutus, Larus ridibundus, Limosa limosa, Lobipes
lobatus, Numenius arquata, Philomachus pugnax, Plautus alle, Re-
curvirostra avosetta, Squatarola squatarola, Sterna hirundo, Tringa
glareola, Tringa hypoleucos, Tringa nebularia, Tringa ochropus,
Tringa stagnatilis, Tringa totanus, Vanellus vanellus, Xenus ciner-
eus

Passeriformes - Corvus frugilegus, Ficedula hypoleuca, Motacilla
alba, Sturnus vulgaris, Troglodytes troglodytes, Turdus ericetorum,
Turdus iliacus, Turdus merula, Turdus pilaris, Turdus viscivorus

MAMMALIA - Rodentia - Ondatra zibethica

Insectivora - Neomys foediens

HABITAT: Small intestine, large intestine.

DISTRIBUTION: Europe, Asia (Azerbaijan, W. Siberia, Uzbekistan,
Kazakhstan, Kirgizia, Tamy, India, Mongolia, Taiwan, Primorsk, Amur,
Chukotka), N. America (USA, Canada, USA - Alaska).

Polymorphus obtusus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks. Pathological conditions described by Friebe, 1952.

DESCRIPTION: Van Cleave, 1918; Ward, 1943. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Polymorphus obtusus Van Cleave, 1918

Polymorphus (Polymorphus) obtusus Van Cleave, 1918 of Petrochenko, 1950

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Mergini - Mergus merganser

Oxyurini - Oxyura jamaicensis

Pelecaniformes - Anhinga anhinga

Ciconiiformes - Ardea herodias

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA).

Polymorphus phippsi

STATUS AS WATERFOWL PARASITE: Infrequent; reported 8 times in wild ducks.

STATUS AS SPECIES: Probably P. minutus - Van Cleave & Rausch, 1951.

DESCRIPTION: Kostylev, 1922; Kontrimavichus & Bakhmet'eva, 1960.
Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Sipunculus lendix Phipps, 1774 - Unrecognizable - Van Cleave & Rausch, 1951

Echinorhynchus lendix (Phipps, 1774) Lühe, 1911

Polymorphus phippsi Kostylev, 1922

Polymorphus (Polymorphus) phippsi Kostylev, 1922 of Petrochenko, 1950

Echinorhynchus borealis Gmelin, 1791

Echinorhynchus anatis mollissimae Rudolphi, 1800

LIFE CYCLE: Eggs passed in feces, hatch after ingestion by marine amphipod crustacea, larvae develop; mature in final host after ingestion. (Uspenskaja, 1960)

INTERMEDIATE HOSTS: Gammarus locusta

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Polysticta stelleri, Somateria fischeri, Somateria mollissima, Somateria spectabilis

Mergini - Clangula hyemalis

Gaviiformes - Gavia arctica, Gavia stellata

Charadriiformes - Erolia alpina, Fratercula corniculata, Rissa tridactyla, Sterna paradisaea

HABITAT: Intestine.

DISTRIBUTION: Europe (Murman Coast), Asia (Chukotka, Bering Straits).

Polymorphus striatus

STATUS AS WATERFOWL PARASITE: Infrequent; reported 5 times in wild waterfowl.

DESCRIPTION: Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus striatus Goeze, 1782

Polymorphus striatus (Goeze, 1782) Lühe, 1911

Polymorphus (Polymorphus) striatus Goeze, 1782 of Petrochenko, 1950

Echinorhynchus ardeae Gmelin, 1789

Echinorhynchus mutabilis Rudolphi, 1819

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus olor, Cygnus olor (dom.)

Aythiini - Aythya ferina, Aythya fuligula

Mergini - Mergus serrator

Ciconiiformes - Ardea cinerea, Botaurus stellaris, Casmerodius albus,

Ixobrychus minutus, Nycticorax nycticorax

Falconiformes - Haliaeetus albicilla

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden, Germany, USSR).

Polymorphus strumosoides

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild duck.

DESCRIPTION: Lundström, 1942; Kokhlova, 1966b. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus strumosoides Lundström, 1942

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Aythiini - Aythya fuligula, Aythya marila

Mergini - Bucephala clangula, Clangula hyemalis, Melanitta fusca,
Melanitta nigra, Mergus albellus

HABITAT: Intestine.

DISTRIBUTION: Europe (Sweden), Asia (Tamy, Chukotka).

Polymorphus swartzi

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild ducks.

DESCRIPTION: Schmidt, 1965a.

SYNONYMY:

Polymorphus swartzi Schmidt, 1965

LIFE CYCLE: Unknown; probably similar to that of P. minutus.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Bucephala islandica

HABITAT: Small intestine.

DISTRIBUTION: N. America (USA - Alaska).

Polymorphus trochus

STATUS AS WATERFOWL PARASITE: Infrequent, normally in Fulica; reported 3 times in wild waterfowl.

DESCRIPTION: Van Cleave, 1945; Khokhlova, 1966b. Copy: Ward, 1951; Petrochenko, 1958a.

SYNONYMY:

Polymorphus trochus Van Cleave, 1945

Polymorphus (Polymorphus) trochus Van Cleave, 1945 of Petrochenko,
1950

LIFE CYCLE: Larvae develop in amphipod crustacea (Khokhlova, 1966b).

INTERMEDIATE HOSTS: Euligammarus viridis, Gammarus locusta, Gmalinoides fasciata

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Cygnus columbianus bewickii

Anatini - Anas platyrhynchos, Anas acuta, Anas crecca, Anas penelope

Mergini - Clangula hyemalis, Melanitta fusca, Melanitta nigra

Gruiformes - Fulica americana

Charadriiformes - Erolia temminckii, Larus canus, Phalaropus lobatus,
Philomachus pugnax

HABITAT: Intestine.

DISTRIBUTION: Asia (Tamyra, Chukotka), N. America (USA).

Prosthorhynchus gracilis

STATUS AS WATERFOWL PARASITE: Rare, perhaps accidental; reported once in wild ducks.

DESCRIPTION: Petrochenko, 1958a, 1959.

SYNONYMY:

Prosthorhynchus gracilis Petrochenko, 1958

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos

Aythiini - Aythya sp.

Mergini - Bucephala clangula

Gruiformes - Gallinula chloropus

Charadriiformes - Philomachus pugnax, Tringa ochropus, Vanellus vanellus

Coraciiformes - Coracias garrula

Passeriformes - Sturnus caucasicus, Sturnus vulgaris

HABITAT: Intestine.

DISTRIBUTION: Asia (Azerbaijan, Armenia).

Prosthorhynchus pupa

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

STATUS AS SPECIES: Probably identical with Fillicollis arctica - Kostylev, 1922; description inadequate for generic assignment - Van Cleave & Rausch, 1951; Yamaguti, 1963.

DESCRIPTION: Linstow, 1905a. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY:

Echinorhynchus pupa Linstow, 1905

Polymorphus pupa (Linstow, 1905) Kostylev, 1922

Prosthorhynchus pupa (Linstow, 1905) Meyer, 1931

Filicollis pupa (Linstow, 1905) Golvan, 1961, lansus?

LIFE CYCLE: Unknown.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Somateriini - Somateria mollissima, Somateria spectabilis

Ciconiiformes - Ixobrychus minutus

HABITAT: Intestine.

DISTRIBUTION: Asia (Tamyra, Yakutia, Chukotka).

Arhythmorhynchus frassoni

STATUS AS WATERFOWL PARASITE: Rare, typically in charadriiform birds; reported once in wild duck.

DESCRIPTION: Golvan, 1956, 1965. Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Golvan, 1956, 1960.

Echinorhynchus frassonii Molin, 1858

Arhythmorhynchus frassoni (Molin, 1858) Lühe, 1911

Echinorhynchus macrourus Bremser, 1821 - [Petrochenko, 1958]

Arhythmorhynchus macrourus (Bremser, 1821) Travassos, 1926

Echinorhynchus globicollis Creplin, 1829

Echinorhynchus roseus Molin, 1858

Arhythmorhynchus roseus (Molin, 1858) Porta, 1905

Echinorhynchus rubicundus Molin, 1859

LIFE CYCLE: Larvae in decapod crustacea: survive when ingested by fish. (Golvan, 1956, 1961)

INTERMEDIATE HOSTS: Palaemon squilla

AUXILIARY HOSTS: Cantharus vulgaris, Labrax trimaculatus, Leuciscus sp., Platessa passer

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus serrator

Ciconiiformes - Ardea purpurea, Ciconia ciconia

Charadriiformes - Larus marinus, Numenius arquatus, Numenius madagascariensis, Numenius phaeopus, Numenius tenuirostris, Xenus cinereus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (Primorsk, Sakhalin, Kurile Is.), Madagascar, Australia.

Arhythmorhynchus longicollis

STATUS AS WATERFOWL PARASITE: Rare; reported once in wild duck.

DESCRIPTION: Golvan, 1956; Belopol'skaja, 1959c.

SYNONYMY: Golvan, 1956, 1960.

Echinorhynchus ardeae purpureae Rudolphi, 1819

Echinorhynchus longicollis Villot, 1875

Arhythmorhynchus longicollis (Villot, 1875) Travassos, 1926

Echinorhynchus macrourus Bremser in Westrumb, 1821

Echinorhynchus invaginabilis Linstow, 1902

Arhythmorhynchus invaginabilis (Linstow, 1902 - de Marval, 1905)

Lühe, 1912

Arhythmorhynchus anser Florescu, 1941

LIFE CYCLE: Unknown; probably similar to that of A. frassoni.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Mergini - Mergus merganser

Charadriiformes - Arenaria interpres, Erolia maritima, Larus argentatus, Larus canus, Larus ridibundus

ACCIDENTAL HOSTS: AVES

Ciconiiformes - Ardea purpurea, Ciconia ciconia

Charadriiformes - ?Numenius arquatus

HABITAT: Intestine.

DISTRIBUTION: Europe (France, England, Spitzbergen, Murman Coast).

Centrorhynchus aluconis

STATUS AS WATERFOWL PARASITE: Accidental. normally in birds of prey: reported twice in wild ducks.

DESCRIPTION: Dollfus, 1961: Bykhovskaja-Favlovskaja, 1948 (fig.).
Copy: Meyer, 1932; Petrochenko, 1958a.

SYNONYMY: Meyer, 1932; Golvan, 1960.

Echinorhynchus aluconis O.F. Müller, 1780

Chentrosoma aluconis (O.F. Müller, 1780) Porta, 1909

Centrosoma aluconis (Müller) of Lühe, 1912

Centrorhynchus aluconis (O.F. Müller, 1780) Lühe, 1911

Echinorhynchus mergi Bloch, 1782

Echinorhynchus otidis Schrank, 1788

Centrorhynchus globocaudatus Zeder, 1800 - distinct, Ward, 1964

Echinorhynchus tuba Rudolphi, 1802, e.p.

Echinorhynchus bacillaris Zeder, 1803, e.p.

Echinorhynchus inaequalis Rudolphi, 1808

Echinorhynchus soricis Rudolphi, 1819

Echinorhynchus appendiculatus Westrumb, 1821

Echinorhynchus polyacanthoides Creplin, 1825

Echinorhynchus mirabilis Polonio, 1859

Echinorhynchus contortus Molin, 1861

Echinorhynchus croaticus Stossich, 1899

Echinorhynchus tenuicaudatus Marotel, 1899

Centrorhynchus scanensis Lundström, 1942

Centrorhynchus olssoni Lundström, 1942

LIFE CYCLE: Larvae develop in amphibia; snakes serve as auxiliary hosts.

INTERMEDIATE HOSTS: Bufo melanostictus, Hyla viridis, Rana esculenta, Rana tigrina

AUXILIARY HOSTS: REPTILIA - Balanophis ceylonensis, Chalcides chalcides, Coluber gemonensis, Elaphe longissimus, Elaphe scalaris, Lacerta muralis, Natrix natrix, Vipera aspis, Vipera berus
MAMMALIA - Insectivora - Crocidura russula, Sorex araneus

FINAL HOSTS: AVES

Anseriformes (Anatidae) - "wild duck"

Mergini - Mergus albellus

Falconiformes - Accipiter gentilis, Accipiter haplochrous, Accipiter nisus, Aquila chrysaetos, Aquila pomarina, Aquila rapax, Buteo buteo, Buteo ferox, Buteo lagopus, Buteo rufinus, Circus aeruginosus, Circus cyaneus, Circus macrourus, Circus pygargus, Falco naumanni, Falco tinnunculus, Haliaeetus albicilla, Milvus migrans, Milvus milvus

Charadriiformes - Himantopus himantopus

Strigiformes - Aegolius funereus, Asio flammeus, Asio otus, Athene

noctua, Bubo bubo, Glaucidium passerinum, Otus scops, Strix aluco,
Strix uralensis, Surnia ulula, Tyto alba
Passeriformes - Coracina caledonica lifuensis

ACCIDENTAL HOSTS: MAMMALIA
Carnivora - Felis catus

HABITAT: Intestine.

DISTRIBUTION: Europe, Asia (W. Siberia, Kazakhstan, Burma).

HIRUDINEA

Theromyzon maculosum

STATUS AS WATERFOWL PARASITE: Infrequent; reported 3 times in wild ducks.

DESCRIPTION: Copy: Autrum, 1936.

SYNONYMY: Autrum, 1936.

Clepsine maculosa Rathke, 1862
Glossiphonia maculosa (Rathke, 1862) Vaillant, 1890
Protocleipsis maculosa (Rathke, 1862) Livanow, 1902
Theromyzon maculosum (Rathke, 1862) Autrum, 1936
Hemicleipsis tessellata (Muller) of Blanchard, 1899

LIFE CYCLE: Unknown; probably similar to that of T. tessulatum.

HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos
Charadriiformes - Sterna hirundo

HABITAT: Nasal passages.

DISTRIBUTION: Europe (USSR).

Theromyzon occidentale

STATUS AS WATERFOWL PARASITE: Perhaps frequent, although reported only 4 times in wild ducks. Mortality reported by Sooter, 1937.

STATUS AS SPECIES: Given as synonym of T. meyeri by Moore, 1964.

DESCRIPTION: Copy: Autrum, 1936.

SYNONYMY: Autrum, 1936.

Clepsine occidentalis Verrill, 1874
Glossiphonia occidentalis (Verrill, 1874) Vaillant, 1890
Hemicleipsis occidentale (Verrill, 1874) Moore, 1912
Protocleipsis occidentalis (Verrill, 1874) Moore, 1918
Theromyzon occidentale (Verrill, 1874) Bere, 1929
Protocleipsis meyeri Livanow, 1902
Theromyzon meyeri (Livanow, 1902) Moore, 1964

LIFE CYCLE: Unknown; probably similar to that of T. tessulatum.

HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas discors
Aythyini - Aythya americana

Podicipediformes - Podilymbus podiceps

Gruiformes - Fulica americana

HABITAT: Nasal passages.

DISTRIBUTION: N. America (USA).

Theromyzon rude

STATUS AS WATERFOWL PARASITE: Perhaps common in N. America, although reported only 3 times in wild ducks. Mortality reported by Meyer & Moore, 1954; Moore & Meyer, 1951.

DESCRIPTION: Moore & Meyer, 1951; Meyer & Moore, 1954.

SYNONYMY:

Glossiphonia rudis Baird, 1869

Theromyzon rude (Baird, 1869) Moore & Meyer, 1951

LIFE CYCLE: Unknown; probably similar to that of T. tessulatum.

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anatini - Anas platyrhynchos, Anas acuta

Aythini - Aythya affinis

Oxyurini - Oxyura jamaicensis

Podicipediformes - Podiceps auritus, Podiceps grisegena, Podiceps nigricollis, Podilymbus podiceps

HABITAT: Nasal passages.

DISTRIBUTION: N. America (USA, Canada).

Theromyzon sexoculatum

STATUS AS WATERFOWL PARASITE: Rare (?); reported once in wild ducks.

DESCRIPTION: Copy: Autrum, 1936.

SYNONYMY: Autrum, 1936.

Clepsine tessulata (Müller) of Malm, 1863

Glossiphonia tessellata (Müller) of Blanchard, 1892

Protoclepsine sexoculata Moore, 1898

Theromyzon sexoculatum (Moore, 1898) Moore, 1924

Protoclepsis meyeri Livanow, 1902

Glossiphonia moorei Pinto, 1923

LIFE CYCLE: Unknown; probably similar to that of T. tessulatum.

FINAL HOSTS: AVES
Anseriformes (Anatidae) - "wild duck"

HABITAT: Probably nasal passages.

DISTRIBUTION: Europe (Sweden, Germany), Asia (Bering Is., Assam),
N. America.

Theromyzon tessulatum

STATUS AS WATERFOWL PARASITE: Common, characteristic helminth of waterfowl; reported 10 times in wild, once in captive, and 13 times in domestic waterfowl. Pathology described by Christianson, 1938, 1939; Roberts, 1955. Reported as cause of death by Korovaev, 1957a; Mann, 1951; Rollinson, Soliman, & Mann, 1950; Sage, 1958: Severn Wildfowl Trust, 1950; and Weltner, 1887. Apparently much more common in England than formerly - Warwick & Mann, 1960; Mann, 1951.

DESCRIPTION: Copy: Autrum, 1936.

SYNONYMY: Autrum, 1936.

Hirudo tessulata O.F. Müller, 1774

Erpobdella tessulata (O.F. Müller, 1774) Fleming, 1822

Nephelia tessellata (O.F. Müller, 1774) Savigny, 1822

Ichthyobdella tessulata (O.F. Müller, 1774) Blainville, 1828

Erpobdella vulgaris var. tessellata (O.F. Müller, 1774) Blainville,
1828

Clepsine tessulata (O.F. Müller, 1774) Fr. Muller, 1844, not Malm,
1863

Glossiphonia tessulata (O.F. Müller, 1774) Moquin-Tandon, 1846

Hemiclepsis tessulata (O.F. Müller, 1774) Vejdowsky, 1884

Protoclepsis tessulata (O.F. Müller, 1774) Livanow, 1902

Theromyzon tessulata (O.F. Müller, 1774) Autrum, 1936

Clepsine sanguinea Filippi, 1837 (?)

Glossiphonia sanguinea (Filippi, 1837) Moquin-Tandon, 1846

Glossiphonia eachana Thompson, 1846

Haemocharis eachana (Thompson, 1846) Thompson, 1856

Hirudo vitrina Dalyell, 1853

Glossiphonia vitrina (Dalyell, 1853)

Theromyzon pallens Philippi, 1867

Protoclepsis granata (Megnin) Endrigkeit, 1940

LIFE CYCLE: Eggs enclosed in cocoon attached to submerged rock or plant, covered by body of adult; eggs hatch in about 10 days, young attached to adult for 2-4 months. Young require blood meal for development, perhaps require total of three meals to reach maturity,

leave host between meals; may survive at least nine months without feeding. (Herter, 1929c; Herter, Schleip. & Autrum, 1939; Hotz, 1938a; Mann, 1951, 1962; Rollinson, Soliman, & Mann, 1950; Sage, 1958)

FINAL HOSTS: AVES

Anseriformes (Anatidae)

Anserini - Anser anser (dom.), Anser cygnoides (dom.), Cygnus atratus, Cygnus olor

Tadornini - Tachyeres sp.

Anatini - Anas platyrhynchos, Anas crecca, Anas penelope

Aythini - Aythya fuligula

Cairinini - Cairina moschata (dom.)

Mergini - Clangula hyemalis

Fodicipediformes - Fodiceps cristatus

Ciconiiformes - Botaurus stellaris

Gruiformes - Fulica atra, Gallinula chloropus

Charadriiformes - Larus argentatus, Larus canus, Numenius arquata

MAMMALIA - Rodentia - Myocastor coypus

HABITAT: Nasal passages, conjunctival sac, pharynx, bronchi.

DISTRIBUTION: Europe, Asia (Iran, Altai, Tibet, Japan), Africa (Ethiopia), N. America (USA, Canada, USA - Alaska). S. America (Peru, Chile, Paraguay, Argentina).

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