The checklist summarizes information on the parasites of Latvian fish contained in the literature from the earliest known record (Trauberga, 1936) to the end of 2005. Included are 268 named species of parasites, distributed among the higher taxa as follows: Protozoa – 45, Myxozoa – 49, Digenea – 38, Monogenea – 81, Cestoda – 33, Nematoda – 31, Acanthocephala – 11, Hirudinida – 2, Mollusca – 6, Branchiura – 2 and Copepoda – 10. Also included are records of parasites not identified to species level. Parasites have been reported from 66 of the 114 species of marine and freshwater fish occurring in Latvian waters. The checklist is presented in the form of parasite-host and host-parasite lists. The parasite-host list is organized on a taxonomic basis and provides information for each parasite species on the environment (freshwater, brackish water, marine), the location (site of infection) in or on its host, the species of host(s) infected, the geographic distribution in Latvia and published sources for each host and locality record. The host-parasite list is organized according to the taxonomy of the hosts and includes, for each host, the English language, Latvian and Russian common names, the environment, status in Latvia (native or exotic) and information on the known Latvian distribution of the parasites. Additional information is given on points of systematic, possible misidentification, introductions, pathogenicity, etc. Complete references, a short supplementary literature list and parasites and host indexes are included.
Checklist of the parasites of fishes of Latvia

by
Muza Kirjušina
Division of Parasitology and Ichthyopathology
National Diagnostic Centre
Food and Veterinary Service
Riga, Latvia

and

Kārlis Vismanis
University of Latvia
Faculty of Biology
Department of Zoology and Animal Ecology
Riga, Latvia
The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.
This checklist is one of the outcomes of the Food and Agriculture Organization of the United Nations (FAO) Technical Cooperation Programme TCP/LAT/3001 – Improving Aquatic Animal Health and Quality and Safety of Aquatic Products in Latvia, implemented from 2005 to 2007, whose overall objective is to support the sustainable development of the aquaculture sector of Latvia. It addresses one of the specific objectives of the project on developing and reinforcing national policies in the area of aquatic animal health management and disease control in accordance with those of the European Union (EU).

This checklist is also part of the FAO’s continuing effort to address the need for information on the occurrence of diseases and pathogens of aquatic animals. Three previous checklists, published as FAO Fisheries Technical Papers Nos. 369, 369/1 and 369/2, have summarized the parasites of fishes of the Philippines, Bangladesh and Viet Nam. These checklists of parasite series are valuable information sources that can be used when conducting pathogen risk analysis, an essential component of National Strategies on Aquatic Animal Health Management. Preparation and implementation of such national strategies are in line with FAO’s Technical Guidelines on Health Management for the Responsible and Safe Movement of Live Aquatic Animals, the fifteenth of a series of technical guidelines that support the FAO’s Code of Conduct for Responsible Fisheries (CCRF).

Kirjušina, M.; Vismanis, K.
Checklist of the parasites of fishes of Latvia.

ABSTRACT

This checklist summarizes information on the parasites of Latvia fishes contained in the world literature dating to the end of 2005. Information is presented in the form of parasite-host and host-parasite lists and includes 305 named species of parasites, distributed among the higher taxa as follows: Protista – 42, Myxozoa – 49, Digenea – 38, Monogenoidea – 81, Cestoda – 33, Nematoda – 31, Acanthocephala – 11, Hirudinida – 2, Mollusca – 6, Branchiura – 2 and Copepoda – 10. Also included are many records of parasites not identified to species level. The Parasite-Host List is organized on a taxonomic basis and provides information for each parasite species on the environment (freshwater, brackish, marine), the location (site of infection) in or on its host(s), the species of host(s) infected, the known geographic distribution (by major waterbody) in Latvia, and the published sources for each host and locality record. The Host-Parasite List is organized according to the taxonomy of the hosts, and includes for each host, the English language, Latvian and Russian common names, environment (freshwater, brackish, marine), status in Latvia (native or exotic) and the list of parasites reported. Both lists are accompanied by remarks, as warranted, giving specific information on points of systematics, nomenclature, possible misidentifications, introductions, life cycles, etc. Citations are included for all references and parasite and host indices are included.

The parasite fauna of fishes of Latvia has received considerable attention. Nevertheless, parasites have been recorded from only about 45 percent of the more than 114 species of marine and fish occurring in the country’s waters. The common freshwater fish species (particularly those having economic importance, such as the cyprinids, percids, esocids and salmonids) have been particularly well studied, providing a good general picture of their parasite faunas and data having value for use in faunistic analyses.
ACKNOWLEDGEMENTS

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Authors’ addresses:

Muza Kirjušina
3 Lejupes str.
Rīga, LV–1076
Latvia

Kārlis Vismanis
4 Kronvalda bulv.
Rīga, LV–1586
Latvia
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# Abbreviations

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<tr>
<td>B</td>
<td>brackish</td>
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<tr>
<td>CCRF</td>
<td>Code of Conduct for Responsible Fisheries</td>
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<tr>
<td>Dist.</td>
<td>distribution</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>F</td>
<td>freshwater</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<tr>
<td>FIES</td>
<td>Fisheries and Aquaculture Information and Statistics Service</td>
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<td>FIMA</td>
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<td>M</td>
<td>Marine</td>
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<tr>
<td>LU</td>
<td>Latvian University</td>
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<td>NDC</td>
<td>National Diagnostic Centre</td>
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<td>REUD</td>
<td>Regional Office for Europe and Central Asia</td>
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<td>TCP</td>
<td>Technical Cooperation Programme</td>
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INTRODUCTION

The first major studies on the parasites of Latvian fishes were those of S.S. Shulman, who conducted pioneering research of the fauna occurring in Latvia’s freshwaters and also in the Gulf of Riga and the Baltic Sea (Shulman 1949, 1959). Shulman’s works are important because they contain not only descriptions of the parasite fauna and its species composition, but also examine many parasitological questions from an ecological perspective.


The theses of Shulman, Reisone, Vismanis and Kirjusina, as well as their published reports became the basis for the Russian version of Parasites of Freshwater and Marine Fishes of Latvia. Systematic Catalogue, which was published in 2004 (Kirjusina and Vismanis 2004). This monograph, in turn, became the basis for the present checklist, which also includes more recent publications.

The Parasite-Host List is a taxonomically arranged listing of all parasites reported from the fishes of Latvia. The higher classification used is as follows: for the Protista and myxozoa, that Lom and Dyková (1992, 2006); for the Trematoda, that of Olson et al. (2003); for the Monogenoidea, that of Boeger and Kritsky (1993); for the Cestoidea, that of Khalil, Jones and Bray (1994); for the Nematoda, that of Moravec (1994, 1998); for the Acanthocephala, that of Amin (1985); for the Crustacea; that of Martin and Davis (2001); and for the Hirudinea, that derived from the recent molecular studies of Siddal et al. (2001) and Erséus and Källersjö (2004).

1 Readers should be aware that a new hierarchical system without formal rank designations for the higher level classification of eukaryotes (with emphasis on the taxonomy of the protists) has been put forward by Adl et al. (2005).

2 Spelling of scientific names, dates of species authorships and English common names are taken from Froese and Pauly (2006).
it has been reported (unnamed localities such as fish ponds, hatcheries, tanks, etc. are not listed here except in cases where no other locality has been reported).

Records for parasites considered to be based on probable misidentifications or requiring substantiation are indicated with a “?” before the host name. Finally, where appropriate, Remarks are included to provide information on such topics as host taxonomy, distribution and introductions.

Under References are listed all the papers containing the records, as well as other works cited in the text. A short Supplementary References lists some additional articles dealing with Latvian fisheries parasitology but not containing any original reports. A Parasite Index and a Host Index complete the volume.

As at least 114 species of fish occur in the waters of Latvia (Froese and Pauly 2006). The majority of these are freshwater, anadromous or euryhaline species (71 species), while only 43 marine fishes occur in the Latvian waters of the Baltic Sea (including the Gulf of Riga).

An important feature of the eastern Baltic Sea, including the Gulf of Riga, is its very low salinity, which allows many species of freshwater fishes to be found there. The Baltic Sea's salinity is much lower than that of ocean water (which averages 3.5 per cent). It varies from 0.1 percent in the north to 0.6–0.8 percent in the center. Below a depth of 40–70 m, it can be as much as 1.5-2.0 percent. The flow of freshwater into the sea from rivers and the flow of seawater from the south builds up a gradient of salinity in the Baltic Sea, the salinity steadily decreasing towards the north and east. The chemical composition of water, especially its salinity, and the migratory nature of many of its fish species are some of the main factors influencing the parasite fauna of fish in the Baltic Sea. That’s why in the coastal zone, where water is less salty, freshwater parasites are more common (e.g. Diplostomum spp., Pomphorhynchus laevis and also protistans). In the central and southern parts of the Baltic Sea the salinity level is higher and there euryhaline and stenohaline species prevail. Stenohaline marine species (e.g. Anisakis) are also brought in to Baltic waters from the North Sea during fish migration.

The fish parasite literature for Latvia contains records for slightly more than 50 fish species, with the parasite faunas of many common freshwater species (particularly those having economic importance, such as the cyprinids, percids, esocids and salmonids) being particularly well studied. A good general picture of the parasite fauna of these fishes is thus available and these data have value for use in faunistic analyses. To date, a total of 305 named species of parasites (42 Protista, 49 Myxozoa, 38 Digenea, 81 Monogenoidea, 33 Cestoda, 31 Nematoda, 11 Acanthocephala, 2 Hirudinida, 6 Mollusca, 2 Branchiura, 10 Copepoda) have been reported from Latvian fishes.
Figure 1. Map of Latvia showing the location of waterbodies mentioned in the text.
PARASITE-HOST LIST
KINGDOM PROTOISTA

SUBKINGDOM PROTOZOA

PHYLUM MASTIGOPHORA

CLASS KINETOPLASTIDEA

ORDER KINETOPLASTIDA

SUBORDER TRYPANOSOMATINA

FAMILY TRYPANOSomatidae

Trypanosoma carassii
Mitrophanow, 1883
Syn.: Trypanosoma danilewskyi Laveran and Mesnil, 1904
Includes: T. gracilis of Kirjusina and Vismanis, 2004
Location: blood
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Records: Vismanis & Peslak 1963; Vismanis 1964; Kirjusina & Vismanis 2004
Remarks: This trypanosome is a pathogen of juvenile common carp. The leeches Piscicola geometra and Hemiclepsis marginata are reported to be vectors (see Lom and Dyková 1992).

Trypanosoma granulosum
Laveran and Mesnil, 1909
Location: blood
Host: Anguilla anguilla
Dist.: Lake Usmas; Venta River; Gulf of Riga
Records: Kirjusina & Vismanis 2000 (Lake Usmas, Venta River, Gulf of Riga), 2004 (Lake Usmas)
Remarks: The leeches Piscicola geometra and Hemiclepsis marginata are reported to be vectors of this flagellate (see Lom and Dyková 1992).

FAMILY BODONIDAE

Ichthyobodo necator
(F,B,M)
(Henneguy, 1884) Pinto, 1928
Syn.: Costia necatrix Henneguy, 1884
Location: gills, skin
Hosts: Blicca bjoerkna
Carassius carassius
Dist.: Lake Râznas, Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004
Remarks: A dangerous ectoparasite for practically all fish, Ichthyobodo causes mortalities mainly of young fish and those with lowered resistance (see Lom and Dyková 1992).

CLASS DIPLOMONADEA

ORDER DIPLOMONADIDA

FAMILY HEXAMITIDAE

Hexamita salmonis (Moore, 1923) (F,B)
Wenyon, 1926
Syn.: Hexamita truttae (Schmidt, 1920)
Octomitus truttae Schmidt, 1920
Location: gall bladder, intestine
Hosts: Lota lota (1,4)
Oncorhynchus mykiss (2,3,4)
Salmo salar (2,4)
Dist.: Lake Râznas, Kegums Water Reservoir, Daugava River
Remarks: The pathogenicity of this flagellate is not clear. In mass infections of salmonid fry it probably can cause mortality (see Bauer 1984). Vismanis, Kuznetsova and Rakitsky (1983) recorded mortalities in one-year-old rainbow trout and Atlantic salmon harboring mixed infections of H. salmonis and Chloromyxum truttae.

PHYLUM APICOMPLEXA

CLASS SPOROZOA

SUBCLASS COCCIDIA

ORDER EIMERIIDAE

3 Eurokaryote systematics are presently undergoing significant change based on incorporation of molecular and ultrastructural research. Readers are referred to the recent higher level classification of Adl et al. (2005), which proposes a hierarchical system without the use of formal rank designations.
FAMILY EIMERIIDAE

Eimeria sardinae (Thélohan, 1890) (B,M)
Reichenow, 1921
Location: testes
Host: Clupea harengus membras
Dist.: Gulf of Riga, Baltic Sea
Records: Shulman 1949 (Gulf of Riga, Baltic Sea); Vismanis, Eglite & Volkova 1981 (Gulf of Riga), 1982 (Gulf of Riga); Vismanis, Volkova & Eglite 1984 (Gulf of Riga); Vismanis 1987 (Gulf of Riga); Kirjusina & Vismanis 2004 (Gulf of Riga, Baltic Sea)
Remarks: Heavy infections are reported to cause parasitic castration of male herring (see Lom and Dyková 1992).

Eimeria sp. (F)
Location: not given
Hosts: Carassius carassius, Cyprinus carpio carpio, Leucaspius delineatus
Dist.: Latvia (ponds)
Records: Grapmane 1957, 1962

Goussia carpelli (Léger and Stankovich, 1921)
Dyková and Lom, 1983
Syn.: Eimeria carpelli
Léger and Stankovich, 1921
E. cyprini Plehn, 1924.
Location: intestinal wall
Hosts: Cyprinus carpio carpio (1,3,4), C. carpio haematopterus (2,4)
Dist.: Latvia (ponds)
Remarks: Goussia carpelli, an agent of coccidian enteritis, is a common pathogen in the intestine of Cyprinus carpio in Europe (see Lom and Dyková 1992). Mass infection causes an increase of mortality of one-year-old carp at the end of wintering (see Bauer 1984).

Goussia gadi (Fiebiger, 1913)
Dyková and Lom, 1981
Syn.: Eimeria gadi Fiebiger, 1913
Location: swimbladder wall
Host: Gadus morhua callarias
Dist.: Baltic Sea
Records: Shulman 1949; Kirjusina & Vismanis 2004

Goussia subepithelialis (Moroff and Fiebiger, 1905)
Dyková and Lom, 1983
Syn.: Eimeria subepithelialis
Moroff and Fiebiger, 1905
Location: subepithelial connective tissue of intestine
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Records: Vismanis 1972; Kirjusina & Vismanis 2004
Remarks: Goussia subepithelialis is a common agent of nodular coccidiosis of the intestine of common carp in Europe (see Lom and Dyková 1992).

PHYLUM MICROSPORA
CLASS MICROSPOREA
ORDER MICROSPORIDIA
SUBORDER PANSPOROBLASTINA
FAMILY GLUGEIDAE

Glugea anomala (Moniez, 1887) (B,M)
Gurley, 1893
Location: hypodermic and intermuscular connective tissue
Host: Gasterosteus aculeatus
Dist.: Daugava River
Records: Kirjusina & Vismanis 2004
Remarks: This parasite forms large xenomas in the host’s connective tissue. Rarely, it causes deformities of the internal organs, resulting in mechanical pressure on tissues and organs (see Bauer 1984).

Glugea stephani (Hagenmüller, 1899) (M)
Woodcock, 1904
Location: intestinal wall
Hosts: Platichthys flesus trachurus (1,2,3), Psetta maxima (1,3)
Dist.: Baltic Sea
Remarks: Heavily infected intestines may become completely occluded, resulting in host death (see Lom and Dyková 1992).

Loma branchialis (Nemeczek, 1911) (M)
Morrison and Sprague, 1981
Syn.: Nosema branchialis
Nemeczek, 1911
Location: gills
Host: Gadus morhua callarias
Dist.: Baltic Sea
Records: Shulman 1949; Kirjusina & Vismanis 2004

Pleistophora acerinae (F)
Vaney and Conte, 1901
Location: wall of intestine and stomach, mesenteries
Host: Gymnocephalus cernuus
Dist.: Lakes Kāla, Rāznas, Rušons
Records: Shulman 1949 (Lakes Rāznas, Rušons); Reinsone 1955a (Lake Kāla); Kirjusina & Vismanis 2004 (Lakes Kāla, Rāznas, Rušons)

Pleistophora mirandellae (F)
Vaney and Conte, 1901
Syn.: Pleistophora elegans Auerbach, 1910
Location: ovary
Host: Rutilus rutilus
Dist.: Lake Viragnas
Records: Kirjusina & Vismanis 2001; Kirjusina & Vismanis 2004
Remarks: Reduction of fecundity in infected fish is likely (see Lom and Dyková 1992).

Microsporidia of Uncertain Position

Microsporidium cotti (M)
(Chaton and Courier, 1923)
Canning and Lom, 1986
Syn.: Nosema cotti Chatton and Courier, 1923
Location: liver, spleen
Host: Taurolus bubalis
Dist.: Gulf of Riga
Records: Shulman 1949; Kirjusina & Vismanis 2004
Remarks: Microsporidium is a collective group for “identifiable” species of uncertain generic assignment (see Lom and Dyková 1992).

PHYLUM CILIOPHORA
CLASS KINETOPHRAGMINOPHOREA
SUBCLASS GYMNOSTOMATA
ORDER PLEUROSTOMATA
FAMILY AMPHILEPTIDAE

Pleistophorus sp. (F)
Syn.: Hemiophrys sp.
Location: gills
Hosts: Aspius aspius, Blicca bjoerkna, Leuciscus idus, L. leuciscus
Dist.: Kegums Water Reservoir; Daugava, Rītupe Rivers
Records: Shulman 1949; Kirjusina & Vismanis 2004

SUBCLASS HYPOSTOMATA
ORDER CYRTOPHORIDA
FAMILY CHILODONELLIDAE

Chilodonella piscicola (F)
(Zacharias, 1894) Jankovsky, 1980
Syn.: Chilodonella cyprini (Moroff, 1902)
Location: gills, skin
Hosts: Carassius auratus auratus (2,4,8), C. carassius (2,4,8), Ctenopharyngodon idella (7), Cyprinus carpio carpio (1,2,3,4,5,6,8), C. carpio haematopterus (3,5), Gasterosteus aculeatus (2,9), Leucaspius delineatus (2,4,8), Onchorhynchus mykiss (8), P. fluviatilis (9), Pungitius pungitius (2,4,8)
Dist.: Lake Juglas; Daugava River
Remarks: One of the most dangerous diseases, chilodonellosis may cause heavy losses in fish culture (see Lom and Dyková 1992).

SUBCLASS SUCTORIA
ORDER SUCTORIDA
**FAMILY TRICHOHYRIDAE**

*Capriniana piscium* (Bütschli, 1889) (F)

Jankovsky, 1973

Syn.: *Trichophrya piscium*

Bütschli, 1889

Location: gills, skin

Host: *Oncorhynchus mykiss*

Dist.: Lake Dzirnezers

Record: Vismanis, Kuznetsova & Rakitsky 1983; Kirjusina & Vismanis 2004

Remarks: Although generally considered an ectocommensal, mass infections can cause disease (see Bauer 1984).

**CLASS OLIGOHYMENOPHOREA**

**SUBCLASS HYMENOSTOMATA**

**ORDER HYMENOSTOMATIDA**

**SUBORDER OPHRYOGLENINA**

**FAMILY ICHTHYOPHTHIRIIDAE**

*Ichthyophthirius multifiliis* (F)

Fouquet, 1876

Location: gills, under skin epithelium


Dist.: Lakes Burtnieku, Cirma, Juglas, Lielauces, Sīvers, Slokas; Daugava, Ogre Rivers


Remarks: This ciliate, a dangerous ectoparasite in fish culture, is the agent of ichthyophthiriosis or “white spot disease” (see Lom and Dyková 1992). The disease can cause high morbidity and mortality rates and great economic losses in intensive aquaculture. Reinsone (1958) noted mass mortality of common carp spawners and yearlings in ponds, Vismanis (1972) noted disease and mortality of carp spawners in ponds, while Vismanis, Volkova and Tarkach (1971) recorded cases of disease in cultured eels. Small fishes such as *Leucaspius delineatus*, *Gasterosteus aculeatus* and *Pungitius pungitius* can act as reservoirs of infection in farm ponds.

**SUBCLASS PETRITRICHIA**

**ORDER PETRICHIDA**

**SUBORDER SESSILINA**

**FAMILY EPISTYLIDIDAE**

*Apiosoma campanulatum* (F)

(Timofeev in Shulman, 1962) Lom, 1966

Includes: *Apiosoma campanulatum* (Timofeev, 1962) typica

*A. campanulatum var. esoci*

Scheubel, 1973

Location: gills, skin

Hosts: *Esox lucius* (1,2), *Leuciscus cephalus* (2)

Dist.: Lake Sildu, Ogre River

Records: 1. Vismanis et al. 1989 (Lake Sildu); 2. Kirjusina & Vismanis 2004 (Lake Sildu, Ogre River)

Remarks: The designation *Apiosoma campanulatum* (Timofeev, 1962) typica” was used by N.N. Banina (see Bauer 1984) to distinguish the typical form of this species from the form from *Esox lucius*, which was considered a distinct variety, “esoci”. Subsequent authors have treated “typica” as a
subspecific epithet. The relationship of these two forms requires clarification.

Apisomata matthesi Scheubel, 1973  (F)
Location: fins
Host: Leuciscus cephalus
Dist.: Ogre River
Record: Kirjusina & Vismanis 2004

Apisomata nasale  (F)
(Timofeev in Shulman, 1962)
Lom, 1966
Location: nasal cavity
Host: Leuciscus cephalus
Dist.: Ogre River
Records: Kirjusina & Vismanis 2004

Apisomata piscicolum Blanchard, 1885  (F)
Location: skin
Hosts: Cyprinus carpio carpio (1)
Gasterosteus aculeatus (3)
Oncorhynchus mykiss (2)
Salmo salar (3)
Dist.: Daugava River

Apisomata poteriforme  (F)
(Timofeev in Shulman, 1962) Lom 1966
Location: skin
Host: Leuciscus cephalus
Dist.: Ogre River
Record: Kirjusina & Vismanis 2004

Apisomata sp.  (F)
Location: skin
Hosts: Alburnoides bipunctatus (5)
Carassius auratus auratus (1,2)
C. carassius (1,2,5)
Coregonus peled (2,5)
Cyprinus carpio carpio (1,2,3,4,5)
C. carpio haemapterus (3)
Gobio gobio gobio (5)
Leucaspis delineatus (1,2,5)
Pungitius pungitius (1,2,5)
Tinca tinca (2)
Dist.: Ogre River

Epistylis ivoiffi Fauré-Fremiet, 1943  (F)
Location: gills, skin
Host: Cyprinus carpio carpio
Dist.: Latvia
Records: Vismanis, Ivanova & Soldatkina 1975 (ponds)

ORDER MOBILINA
FAMILY TRICHOIDINIDAE

Trichodina acuta Lom, 1961  (F)
Syn.: Trichodina domerguei f. acuta Lom, 1961
Location: skin
Hosts: Cyprinus carpio carpio (2,4)
Oncorhynchus mykiss (3)
fish (1)
Dist.: Latvia (ponds)

Trichodina cottidarum Dogiel, 1948  (M,B)
Location: gills
Hosts: Cottus poecilopus (2)
Gadus morhua callarias (1,3)
Taurulus bubalis (1,3)
Triglopsis quadricornis (1,3)
Dist.: Daugava River, Gulf of Riga
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga); 2. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 3. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)

Trichodina domerguei  (Wallengren, 1897) Haider, 1964  (F)
Includes: Trichodina domerguei domerguei (Wallengren, 1897)
Syn.: T. domerguei f. latispina Dogiel, 1940
Location: gills
Hosts: Abramis brama (1,2,9)
Alburnus alburnus (1,3,9)
Carassius auratus auratus (3)
C. carassius (2)
Coregonus albula (1,9)
Cottus poecilopus (7)
Cyprinus carpio carpio (3,4,5,9)
C. carpio haemapterus (4)
Esox lucius (1,9)
Gasterosteus aculeatus (1,9)
Gobio gobio gobio (1,9)  
Lota lota (1,9)  
Phoxinus phoxinus (8)  
Pungitius pungitius (3,9)  
Rutilus rutilus (1,9)  
Sander lucioperca (1,9)  
Scardinius erythrophthalmus (1,9)  
Tinca tinca (1,2,9)  
**Fish (6)**  
**Dist.: Lakes Rāznas, Sildu, Sīvers; Kegums Water Reservoir; Daugava River; Gulf of Riga**  
**Remarks:** As this ciliate is specific to sticklebacks (Gasterosteidae) (see Lom and Shtein 1966), records from hosts other than Gasterosteus aculeatus and Pungitius pungitius are likely to involve misidentifications.

Trichodina esocis Lom, 1960 (F)  
**Syn.:** Trichodina domerguei f. esocis Lom, 1960  
**Location:** gills  
**Host:** Esox lucius  
**Dist.:** Lake Sildu  
**Records:** Vismanis et al. 1989; Kirjusina & Vismanis 2004

Trichodina fultoni Davis, 1947 (F)  
**Syn.:** Trichodina domerguei f. magna Lom, 1961  
**Location:** gills  
**Host:** Tinca tinca  
**Dist.:** Lake Sildu  
**Records:** Vismanis et al. 1989; Kirjusina & Vismanis 2004

Trichodina gas terostei (F,B,M)  
Shtein, 1967  
**Location:** gills  
**Host:** Gasterosteus aculeatus  
**Dist.:** Daugava River  
**Records:** Kirjusina & Vismanis 2002, 2004

Trichodina jadranica Raabe, 1958 (F,B,M)  
**Location:** gills  
**Host:** Platichthys flesus trachurus  
**Dist.:** Gulf of Riga, Baltic Sea  
**Records:** Shtein & Vismanis 1982 (Gulf of Riga); Vismanis, Volkova & Eglite 1984 (Gulf of Riga); Vismanis 1987 (Gulf of Riga); Vismanis & Kondratovičs 1994 (Baltic Sea), 1995 (Baltic Sea); Kirjusina & Vismanis 2004 (Gulf of Riga)  
**Remarks:** This ciliate has been reported to be a pathogen in eel culture (see Lom and Dyková 1992).

Trichodina modesta Lom, 1970 (F)  
**Location:** gills  
**Host:** Cottus poecilopus  
**Dist.:** Gulf of Riga  
**Records:** Vismanis et al. 1989; Kirjusina & Vismanis 2004

Trichodina murmanica Polyanski, 1955 (M)  
**Location:** gills  
**Host:** Gadus morhua callarias  
**Dist.:** Gulf of Riga  
**Records:** Vismanis, Volkova & Eglite 1986, 1987; Kirjusina & Vismanis 2004

Trichodina mutabilis (F)  
Kazubski and Migala, 1968  
**Location:** gills, skin  
**Hosts:** Cyprinus carpio carpio (2.3)  
**fish (1)**  
**Dist.:** Latvia (ponds)  
**Remarks:** Vismanis, Ivanova and Soldatkina (1975) noted that this trichodinid caused disease in common carp fry during June–August.

Trichodina nigra Lom, 1961 (F)  
**Location:** gills, skin  
**Hosts:** Abramis brama (5)  
Alburnoides bipunctatus (5)  
Alburnus alburnus (5)  
Carassius auratus auratus (2)  
Cyprinus carpio carpio (2,5)  
Leuciscus cephalus (5)  
L. leuciscus (5)  
Oncorhynchus mykiss (4,5)  
Rutilus rutilus (3,5)  
Salmo salar (5)  
**fish (1)**

Trichodina nigra Lom, 1961 (F)  
**Location:** gills, skin  
**Hosts:** Abramis brama (5)  
Alburnoides bipunctatus (5)  
Alburnus alburnus (5)  
Carassius auratus auratus (2)  
Cyprinus carpio carpio (2,5)  
Leuciscus cephalus (5)  
L. leuciscus (5)  
Oncorhynchus mykiss (4,5)  
Rutilus rutilus (3,5)  
Salmo salar (5)  
**fish (1)**
Trichodina pediculus (F)  
(O.F. Müller, 1786) Ehrenberg, 1838  
Location: gills, skin  
Hosts: Carassius auratus auratus (2)  
Cyprinus carpio carpio (2)  
fish (1)  
Dist.: Latvia (ponds)  
Remarks: Lom and Dyková (1992) note that this species is almost strictly host specific to Carassius auratus auratus and C. carassius.

Trichodina raabei Lom, 1962 (B,M)  
Location: gills  
Host: Platichthys flesus trachurus  
Dist.: Gulf of Riga, Baltic Sea  
Records: Kirjusina & Vismanis 2002, 2004

Trichodina reticulata (F)  
Hirschmann and Partsch, 1955  
Syn.: Trichodina megamicronucleata auctorum  
T. domerguei megamicronucleata auctorum  
Location: gills, skin  
Hosts: Abramis brama (3,4,9)  
Alburnus alburnus (3,9)  
Blicca bjoerkna (1,9)  
Carassius auratus auratus (5,8,9)  
C. carassius (2,5,9)  
Coregonus peled (5,9)  
Cyprinus carpio carpio (2,5,9)  
Leucaspis delineatus (5,9)  
Perca fluviatilis (6)  
Pungitius pungitius (5,9)  
Rutilus rutilus (6)  
Sander lucioperca (6)  
Tinca tinca (3,4,5,9)  
fish (7)  
Dist.: Lakes Alūksnes, Burtnieku, Rāznas, Sivers, Slokas; Kegums Water Reservoir, Daugava River  

Trichodina sp. (F,B,M)  
Includes: Trichodina domerguei f. meridionalis Dogiel, 1940  
T. borealis of Shulman, 1949  
Location: gills, skin  
Hosts: Alburnus alburnus (6,7)  
Cobitis taenia (1,7)  
Ctenopharyngodon idella (2)  
Gadus morhua callarias (4,5,6,7)  
Platichthys flesus trachurus (1,7)  
Psetta maxima (1,7)  
Silurus glanis (1,7)
**Vimba vimba** (3)
Dist.: Daugava, Ličupe, Salaca Rivers; Gulf of Riga, Baltic Sea


Lom and Laird (1969) considered *Trichodina domerguei* f. *meridionalis* Dogiel, 1940 to be a mixture of undetermined species and a nomen dubium.

**Trichodinella epizootica** (Raabe, 1950) (F)
Šránek-Hušek, 1953
Syn.: *Trichodina domerguei* f. *percarum* Dogiel, 1940
*T. carassii* Dogiel, 1940
*Trichodinella percarum* (Dogiel, 1940)
Includes: *Tripartiella carassii* of Vismanis, 1964

Location: gills, skin

Hosts: *Alburnoides bipunctatus* (6)
*Carassius carassius* (1)
*Cyprinus carpio carpio* (2)
*Esox lucius* (6)
*Gymnocephalus cernuus* (5,6)
*Oncorhynchus mykiss* (4)
*Perca fluviatilis* (1,6)
*Tinca tinca* (3,6)

Dist.: Lakes Garmuižas, Sildu; Daugava, Ogre Rivers


Remarks: In stressed fish this ciliate proliferates massively and becomes highly pathogenic (see Lom and Dyková 1992).

**Trichodinella subtilis** Lom, 1959 (F)
Location: gills
Host: *Cyprinus carpio carpio*

Dist.: Latvia (ponds)
Records: Vismanis, Ivanova, & Soldatkina 1975; Kirjusina & Vismanis 200

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**PHYLUM CHOANOZOA**

**CLASS ICHYOSPOREA**

**ORDER DERMCYSTIDIDA**

**FAMILY ?**

**Dermocystidium percae** (F)
Reichenbach-Klinke, 1950
Location: gill covers
Host: *Perca fluviatilis*
Dist.: Lake Usmas, Daugava River
Record: Kirjusina & Vismanis 2004
Remarks: The ultrastructure and taxonomic position of this species have recently been reviewed by Pekkarinen et al. (2003).

**Dermocystidium sp.** (B?)
Location: gills
Host: *Zoarces viviparus*
Dist.: Daugava River, Gulf of Riga
Records: Shulman 1949 (Daugava River, Gulf of Riga); Vismanis, Volkova & Eglite 1984 (Gulf of Riga); Vismanis 1987 (Gulf of Riga); Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)

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**KINGDOM METAZOA**

**PHYLUM MYXOZOA**

**CLASS MYXOSPOREA**

**ORDER BIVALVULIDA**

**SUBORDER VARIISPORINA**

**FAMILY MYXIDIIDAE**

**Myxidium giardi** Cépède, 1906 (F)
Location: gills, kidney
Host: *Anguilla anguilla*
Dist.: Lakes Liepājas, Rāznas, Usmas; Kegums Water Reservoir; Gulf of Riga
Records: Shulman 1949 (Lake Rāznas, Kegums Water Reservoir, Gulf of Riga);

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4 The status of knowledge on the taxonomy and life cycles of the Myxozoa has been recently reviewed by Lom and Dyková (2006).
Reinsone 1955a (Lake Liepājas), 1959 (Lake Liepājas); Kirjusina & Vismanis 2004 (Lakes Liepājas, Usmas; Kegums Water Reservoir; Gulf of Riga)

Remarks: Eels become infected after their “glass eel” stage, in inland waters. Tubular and glomerular changes in the kidney are among the most serious pathological changes; elvers with tubular damage may develop dropsy and suffer mass mortalities. Skin lesions may render fish unmarketable (see Lom and Dyková 1992).

**Myxidium lieberkuehni** (F)

Bütschli, 1882

Location: urinary bladder

Host: *Esox lucius*

Dist.: Lakes Burtnieku, Cirma, Durbes, Kāla, Lielaucies, Liepājas, Rāznas, Rušons, Sīvers, Usmas; Kegums Water Reservoir; Daugava River

Records: Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River); Reinsone 1955a (Lakes Burtnieku, Cirma, Durbes, Kāla, Lielaucies, Liepājas, Sīvers), 1955b (Lake Sīvers), 1959 (Lakes Lielaucies, Liepājas, Sīvers); Vismanis 1961 (Lake Burtnieku); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Cirma, Durbes, Juglas, Kāla, Lielaucies, Liepājas, Rāznas, Rušons, Sīvers; Kegums Water Reservoir; Daugava River)

**Myxidium macrocapsulare** (B)

Auerbach, 1910

Location: gall bladder [*?*], urinary bladder

Host: *Zoarces viviparus*

Dist.: Gulf of Riga

Record: Vismanis, Volkova & Eglite 1984

Remarks: This species is a common parasite of the kidney and urinary bladder of cyprinid fishes (see Shulman 1966). Its finding in a marine host requires verification.

**Myxidium pfeifferi** Auerbach, 1908

Location: gall bladder, kidney [*?*]

Hosts: *Carassius carassius* (3,5,6,7), *Cyprinus carpio carpio* (2,6,7), *Rutilus rutilus* (1,3,4,5,8,9), *Scardinius erythrophthalmus* (3,4,5), *Tinca tinca* (3,5,6,7)

Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Lielaucies, Liepājas, Rāznas, Rušons, Sīvers; Kegums Water Reservoir; Daugava River; Gulf of Riga


**Myxidium rhodei** Léger, 1905

Location: kidney

Hosts: *Blicca bjoerkna* (2), *Leuciscus leuciscus* (2), *Rutilus rutilus* (1,2)

Dist.: Lakes Sildu, Slokas, Usmas; Ogre River

Records: 1. Vismanis et al. 1989 (Lake Sildu); 2. Kirjusina & Vismanis 2004 (Lakes Slokas, Usmas; Ogre River)

Remarks: Lom and Dyková (1992) note that plasmodia that develop in the kidney interstitium provoke an inflammatory granulomatous reaction and are eliminated before spores can reach maturity.

**Zschokkella nova** Klokacheva, 1914

Location: gall bladder

Hosts: *Abramis brama* (1,5), *Alburnus alburnus* (1,5), *Blicca bjoerkna* (1,5), *Carassius carassius* (1,2,4,5), *Gobio gobio gobio* (1,5), *Rutilus rutilus* (1,5), *Scardinius erythrophthalmus* (2,3,4,5), *Tinca tinca* (1,5), *Vimba vimba* (1,5)

Dist.: Lakes Lielaucies, Rāznas, Rušons, Sīvers, Slokas; Kegums Water Reservoir; Daugava River; Gulf of Riga

Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lakes Lielaucies, Sīvers), 3. 1955b (Lake Sīvers), 4. 1959 (Lakes Lielaucies, Sīvers); 5. Kirjusina & Vismanis 2004 (Lakes Lielaucies, Sīvers; Kegums Water Reservoir; Daugava River; Gulf of Riga)

**FAMILY SPHAEROSPORIDAE**
**Hoferellus cyprini** (Doflein, 1898) (F)

- **Mercier, 1908**
- **Location:** ureters
- **Host:** *Cyprinus carpio carpio*
- **Dist.:** Latvia (ponds)
- **Records:** Akhmerov & Grapmane 1954; Graiman 1962; Kirjusina & Vismanis 2004
- **Remarks:** This parasite is mildly pathogenic (see Lom and Dyková 1992).

**Myxobilatus gasterostei** (Paris, 1912) (B)

- **Davis, 1944**
- **Syn.:** *Henneguya gasterostei* Parisi, 1912
- **Location:** urinary bladder
- **Host:** *Gasterosteus aculeatus*
- **Dist.:** Gulf of Riga
- **Records:** Shulman 1949; Kirjusina & Vismanis 2004

**Myxobilatus platessae** (B,M)

- **(Bazikalova, 1932) Shulman and Shulman-Albova, 1953**
- **Syn.:** *Henneguya platessae* Bazikalova, 1932
- **Location:** urinary bladder
- **Host:** *Platichthys flesus trachurus*
- **Dist.:** Gulf of Riga, Baltic Sea
- **Records:** Shulman 1949 (Gulf of Riga); Vismanis & Konratovičs 1994 (Baltic Sea), 1995 (Baltic Sea); Kirjusina & Vismanis 2004 (Gulf of Riga)

**Sphaerospora elegans** Thélohan, 1895 (B)

- **Location:** kidney
- **Host:** *Gasterosteus aculeatus*
- **Dist.:** Daugava River, Gulf of Riga
- **Records:** Shulman 1949; Kirjusina & Vismanis 2004

**FAMILY CHLOROMYXIDAE**

**Caudomyxum nanum** Bauer, 1948 (F)

- **Location:** kidney
- **Host:** *Lota lota*
- **Dist.:** Kegums Water Reservoir
- **Records:** Shulman 1949; Kirjusina & Vismanis 2004

**Chloromyxum cristatum** Léger, 1906 (F)

- **Syn.:** *Chloromyxum cyprini* Fujita, 1927
- **Location:** gall bladder
- **Hosts:** *Cyprinus carpio carpio* (1,4)
  *Cluphasphyngodon idella* (2)

**Chloromyxum dubium** Auerbach, 1908 (F)

- **Location:** gall bladder
- **Host:** *Lota lota*
- **Dist.:** Lake Rāznas, Kegums Water Reservoir
- **Records:** Shulman 1949; Kirjusina & Vismanis 2004

**Chloromyxum esocinum** Dogiel, 1934 (F)

- **Location:** gall bladder
- **Host:** *Esox lucius*
- **Dist.:** Lake Liepājas, Kegums Water Reservoir, Daugava River
- **Records:** Shulman 1949 (Kegums Water Reservoir, Daugava River); Reinsone 1955a (Lake Liepājas), 1959 (Lake Liepājas); Kirjusina & Vismanis 2004 (Lake Liepājas, Kegums Water Reservoir, Daugava River)

**Chloromyxum fluviatile** Thélohan, 1892 (F)

- **Location:** gall bladder
- **Hosts:** *Blicca bjoerkna* (1,4)
  *Carassius carassius* (1,4)
  *Rutilus rutilus* (2,3,4)
- **Dist.:** Lakes Liepājas, Rāznas
- **Records:** 1. Shulman 1949 (Lake Rāznas); 2. Reinsone 1955a (Lake Liepājas), 3. 1959 (Lake Liepājas); 4. Kirjusina & Vismanis 2004 (Lakes Liepājas, Rāznas)

**Chloromyxum koi** Fujita, 1913 (F)

- **Location:** gall bladder
- **Host:** *Cyprinus carpio carpio*
- **Dist.:** Latvia (ponds)
- **Records:** Grapmane 1957, 1962; Kirjusina & Vismanis 2004

**Chloromyxum mucronatum** Gurley, 1893 (F)

- **Location:** urinary bladder
- **Host:** *Lota lota*
- **Dist.:** Lake Rāznas, Kegums Water Reservoir
Chloromyxum truttae Léger, 1906 (F)
Location: gall bladder
Hosts: Oncorhynchus mykiss (2,3) Salmo salar (1,2,3)
Dist.: Latvia (hatchery)
Remarks: Vismanis et al. (1978) and Vismanis, Kuznetsova and Rakitsky (1983) recorded mass mortality of Salmo salar fry caused by C. truttae. Lom and Dyková (1992) also noted that disease may persist for several months with a fatal outcome.

SUBORDER PLATYSPORINA
FAMILY MYXOBOLIDAE

Henneguya creplini (Gurley, 1894) (F)
Labbé, 1899
Location: gills
Host: Gymnocephalus cernuus
Dist.: Daugava River
Records: Vismanis & Popov 1990; Kirjusina & Vismanis 2004

Henneguya lobosa (Cohn, 1895) (F)
Labbé, 1899
Location: gills
Host: Esox lucius
Dist.: Lakes Burtnieku, Indra, Juglas, Rāznas, Sildu, Usmas; Kegums Water Reservoir
Records: Shulman 1949 (Lake Rāznas, Kegums Water Reservoir); Vismanis 1961 (Lake Burtnieku); Vismanis & Vismanis 2004 (Lakes Indra, Juglas, Rāznas, Sildu, Usmas; Kegums Water Reservoir)

Henneguya oviperda (Cohn, 1895) (F)
Labbé, 1899
Location: ovaries, intestinal wall (?)
Host: Esox lucius
Dist.: Lakes Burtnieku, Durbes, Rāznas, Sildu, Usmas
Records: Shulman 1949 (Lake Rāznas); Reinsone 1955a (Lake Durbes); Vismanis 1961 (Lake Burtnieku); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Durbes, Rāznas, Sildu, Usmas)
Remarks: Infection may result in atrophy of large numbers of oocytes and in local circulatory disorders (see Lom and Dyková 1992). Pike from ponds showed heavy infection with approximately 30–40 per cent of the ovary volume being comprised of the parasite’s pseudocysts.

Henneguya psorospermica (F)
Thélohan, 1892
Location: gills
Hosts: Esox lucius (1,2,3,4,5,6,7) Perca fluviatilis (1,2,3,4,5,6,7)
Dist.: Lakes Burtnieku, Durbes, Juglas, Kāla, Liepājas, Rāznas, Sildu, Sīvers, Usmas; Kegums Water Reservoir; Gulf of Riga
Remarks: Intralamellar plasmodia cause deformations of lamellae, which may fuse together, reducing the respiratory surface. Infected fish may die rapidly from oxygen deficiency (see Lom and Dyková 1992).

Henneguya schizura (Gurley, 1893) (F)
Labbé, 1899
Location: vitreous humour of eye
Host: Esox lucius
Dist.: Kegums Water Reservoir
Records: Shulman 1949; Kirjusina & Vismanis 2004

Henneguya zschokkei (Gurley, 1894) (F)
Doflein, 1901
Location: musculature, gills (?)
Hosts: Coregonus albula (1,2,3) C. lavaretus (1) Esox lucius (4)
Dist.: Lakes Cirma, Sildu, Sīvers

Myxobolus anurum Cohn, 1895 (F)
Syn.: Myxosoma anurus (Cohn,1895)
Vimba vimba
Tinca tinca
Scardinius erythrophthalmus
Rutilus rutilus
Leuciscus cephalus
Carassius carassius
Leucaspius delineatus
Myxobolus bramae

Hosts: Abramis brama (1,2,3,4,5,6)
Alburnus alburnus (1,2,6)
Blicca bjoerkna (1,2,4,5,6)
Carassius carassius (1,7)
Leucaspis delineatus (5)
Leuciscus cephalus (5)
Rutilus rutilus (1,2,3,4,6,7)
Scardinius erythrophthalmus (1,2,4,6)
Tinca tinca (1,6)

Vimba vimba

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sildu, Sivers, Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers

Remarks: This species is common in cyprinids and may be pathogenic (see Lom and Dyková 1992).

Myxobolus cycloides Gurley, 1893

Gobio gobio gobio (1,6)
Lota lota (5)
Rutilus rutilus (2,3,4,6)
Scardinius erythrophthalmus (2,3,4,6)

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sildu, Sivers, Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers

Remarks: In heavy infections, the mass of parasites may form a hump anterior to the dorsal fin (see Lom and Dyková 1992).

Myxobolus pseudodispar

Gobio gobio (5)
Lota lota (5)
Rutilus rutilus (2,3,4,6)
Scardinius erythrophthalmus (2,3,4,6)

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sildu, Sivers, Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers

Remarks: This species is common in cyprinids and may be pathogenic (see Lom and Dyková 1992).
Kirjusina & Vismanis 2004 (Lakes Burtnieku, Juglas, Lielauces, Rīcu, Sivers; Kegums Water Reservoir, ponds)

Myxobolus dispar Thélohan, 1895 (F)
Syn.: Dispaspora dispar (Thélohan, 1895)
Includes: Myxobolus diversicapsularis of Kirjusina & Vismanis, 2004
Location: gills, musculature, peritoneal epithelium, urinary bladder, wall of gall bladder
Hosts: Aspius aspius (1,11)
Carassius carassius (1,2,3,5,6,8,10,11)
Cyprinus carpio carpio (2,4,5,7,8,9,10,11)
Gobio gobio gobio (1,11)
Leuciscus cephatus (1,11)
L. leuciscus (1,11)
Rutilus rutilus (1,3,4,6,11)
Scardinius erythrophthalmus (2,3,8)
Tinca tinca (1,8)
Dist.: Lakes Cirma, Lielauces, Liepājas, Rāznas, Rušons, Sīvers; Kegums Water Reservoir; Daugava, Salaca Rivers; Gulf of Riga
Remarks: Shulman (1949) recorded many anomalous four-capsuled spores.
This species is common in cyprinids and may be pathogenic (see Lom and Dyková 1992).

Myxobolus ellipsoides Thélohan, 1892 (F)
Location: cornea, gills, gill archs, internal organs, mesenteries, swimbladder, urinary bladder
Hosts: Abramis brama (6,8)
Alburnus alburnus (1,2,8)
Blicca bjoerkna (1,2,6,8)
Carassius carassius (1,4,8)
Cyprinus carpio carpio (4,5,8)
Leucaspius delineatus (4,6)
Dist.: Lakes, Burtnieku, Cirma, Durbes, Rāznas, Sīvers, Usmas; Kegums Water Reservoir; Daugava, Salaca Rivers
Records: 1. Shulman 1949 (Lake Rāznas, Kegums Water Reservoir, Daugava River); Kirjusina & Vismanis 2004 (Lakes, Burtnieku, Cirma, Durbes, Rāznas, Sīvers; Kegums Water Reservoir; Daugava, Salaca Rivers, ponds)
Remarks: This parasite’s normal and abnormal forms were described by Shulman (1949).
In heavy infections, damage to the gill tissue impairs respiration (see Lom and Dyková 1992).

Myxobolus exiguus Thélohan, 1895 (F)
Location: gills, kidney
Hosts: Abramis brama
Aspius aspius
Blicca bjoerkna
Leuciscus idus
Rutilus rutilus
Dist.: Lakes Rāznas, Sildu, Usmas
Records: Shulman 1949; Kirjusina & Vismanis 2003, 2004 (Lakes Rāznas, Sildu, Usmas)

Myxobolus gigas Auerbach, 1906 (F)
Location: gills
Host: Abramis brama
Dist.: Lakes Rāznas, Sildu, Usmas
Records: Kirjushina & Vismanis 2003, 2004 (Lakes Rāznas, Sildu, Usmas)

Myxobolus lomi Donets and Kulakovskaya in Shulman, 1962 (F)
Location: gills
Host: Phoxinus phoxinus
Dist.: Lake Sildu
Records: Vismanis et al. 1989; Kirjusina & Vismanis 2004

Myxobolus macrocapsularis (F)
Reuss, 1906
Location: gills
Hosts: *Abramis brama* (1,2,3,4)
*Blicca bjoerkna* (1,2,4)
*Rutilus rutilus* (1,4)
Dist.: Lakes Burtnieku, Cīrma, Kāla, Rāznavas, Rušons; Kegums Water Reservoir
Remarks: Populations from the same and different hosts show differences in spore size and shape, indicating great variability but also the possibility that *M. muelleri* comprises several closely related species (see Lom and Dyková 1992).

Myxobolus magnus Awerinzew, 1913 (F)
Location: vitreous humor of eye
Host: *Gymnocephalus cernuus*
Dist.: Kegums Water Reservoir, Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

Myxobolus minutus Nemeczek, 1911 (F)
Location: gill filaments
Hosts: *Leuciscus cephalus* (1,3)
*L. leuciscus* (1,3)
*Perca fluviatilis* (2,3)
Dist.: Lakes Burtnieku, Slokas, Usmas; Daugava, Ogre, Rītupe Rivers
Records: 1. Shulman 1949 (Daugava, Rītupe Rivers); 2. Vismanis 1961 (Lake Burtnieku); 3. Kirjusina & Vismanis 2004 (Lakes Slokas, Usmas; Ogre, Rītupe Rivers)

Myxobolus muelleri Bütschli, 1882 (F)
Location: gills, gill covers, kidney musculature, wall of gall bladder
Hosts: *Abramis brama* (2,3,4,7)
*Aspius aspius* (1,7)
*Blicca bjoerkna* (7)
*Carassius carassius* (6,7)
*Gobio gobio* (7)
*Leuciscus cephalus* (1,7)
*L. idus* (1,7)
*L. leuciscus* (1,7)
*Lota lota* (1,2,4,7)
*Rutilus rutilus* (2,3,4,5,6,7)
*Scardinius erythrophthalmus* (7)
*Tinca tinca* (6,7)
*Vimba vimba* (7)
Dist.: Lakes Alūksnes, Burtnieku, Cīrma, Durbes, Juglas, Rāznavas, Sildu, Silvers, Slokas, Usmans; Kegums Water Reservoir; Daugava, Ogre, Rītupe, Salaca Rivers

Myxobolus oviformis Thélohan, 1882 (F)
Location: gills, intestine, kidney, mesenteries
Hosts: *Abramis brama* (1,3)
*Alburnus alburnus* (1,2,3)
*Aspius aspius* (1,3)
*Blicca bjoerkna* (1,3)
*Gobio gobio* (1,3)
*Vimba vimba* (1,3)
Dist.: Lakes Alūksnes, Rāznavas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga
Records: 1. Shulman 1949 (Lakes Rāznavas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lake Alūksnes); 3. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Rāznavas, Rušons; Kegums Water Reservoir; Daugava River;
Gulf of Riga)

**Myxobolus permagnus** Wegener, 1910  (F)
Syn.: *Myxobolus physophilus*  
Reuss, 1906  
Location: walls of gall bladder  
and swimbladder  
Hosts: *Gobio gobio*  
*Scardinius erythrophthalmus*  
Dist.: Lakes Burtnieku, Rāznas; Kegums Water Reservoir  

**Myxobolus rotundus** Nemeczek, 1911  (F)
Location: gills  
Host: *Gobio gobio*  
Dist.: Lake Rāznas  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Myxobolus rutili**  
Donets and Tozyjakova, 1984  (F)
Location: fins, gills  
Host: *Rutilus rutilus*  
Dist.: Lake Slokas  
Record: Kirjusina & Vismanis 2004

**Myxobolus sandrae** Reuss, 1906  (F)
Syn.: *Myxobolus luciopercae*  
Dogiel, 1933  
Location: gill archs and filaments  
Host: *Sander lucioperca*  
Dist.: Lake Juglas, Daugava River  
Records: Shulman 1949 (Daugava River); Kirjusina & Vismanis 2004 (Lake Juglas, Daugava River)  
Remarks: Infections in the spinal cord of European perch (*Perca fluviatilis*) can result in severe deformations of the vertebral column (see Lom and Dyková 2006).

**Myxobolus thelohanellus**  
Shulman and Vikhrova, 1952  (F)
Location: gill covers  
Host: *Carassius carassius*  
Dist.: Lake Rāznas  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Thelohanellus fuhrmanni**  
(Auerbach, 1909) Kudo, 1933
Location: gills  
Host: *Rutilus rutilus*  
Dist.: Lake Rāznas  
Records: Reinsone 1955a; Kirjusina & Vismanis 2004

**Thelohanellus oculileucisci**  
(Trojan, 1909) Kudo, 1933
Location: vitreous humour of eye  
Hosts: *Abramis brama*  
*Rutilus rutilus*  
Dist.: Lake Sīvers, Daugava River  
Records: 1. Shulman 1949 (Daugava River); 2. Reinsone 1955a (Lake Sīvers), 3. (Lake Sīvers); 4. Kirjusina & Vismanis 2004 (Lake Sīvers, Daugava River)

**Thelohanellus pyriformis**  
(Thélohan, 1892) Kudo, 1933
Location: gills, kidney  
Hosts: *Tinca tinca*  
Dist.: Lakes Cirma, Lielauces, Rāznas, Sīvers; Daugava River  
Records: Shulman 1949 (Lake Rāznas, Daugava River); Reinsone 1955a (Lakes Cirma, Lielauces, Sīvers), 1955b (Lake Sīvers), 1959 (Lakes Lielauces, Sīvers); Grapmane 1957 (ponds), 1962 (ponds); Kirjusina & Vismanis 2004 (Lakes Cirma, Lielauces, Rāznas, Sīvers; Daugava River, ponds)  
Remarks: Mass infection causes “lump disease” of cyprinids and coregonids (see Bauer 1984).

**PHYLUM PLATYHELMINTHES**

**CLASS TREMATODA**

**SUBCLASS DIGENAEA**

**ORDER DIPLOSTOMIDIDA**

**SUPERORDER DIPLOSTOMOMATA**

**SUPERFAMILY DIPLOSTOMOIDEA**
FAMILY CYATHOCOTYLIDAE

*Paracoenogonimus ovatus*  
Katsurada, 1914 metacercaria  
Syn.: *Diplostomulum hughesi*  
Markевич, 1934  
*Neodiplostomum hughesi*  
(Markevich, 1934)  
Location: gills, intestine, kidney, liver, musculature, vitreous humor of eye  
Hosts: *Abramis brama* (1,2,3), *Alburnus alburnus* (1,3), *Aspius aspius* (1,3), *Blicca bjoerkna* (1,2,3), *C. carassius* (1,3), *Esox lucius* (1,3), *Gobio gobio* (1,3), *Gymnocephalus cernuus* (1,3), *Leuciscus cephalus* (1,3), *L. idus* (1,3), *L. leuciscus* (1,3), *Perca fluviatilis* (3), *Rutilus rutilus* (1,2,3), *Sander luciperca* (1,3), *Scardinius erythrophthalmus* (1,2,3), *Tinca tinca* (1,3), *Vimba vimba* (1,3)  
Dist.: Lakes Černavu, Dārza, Juglas, Lielauces, Liepājas, Riču, Rušons, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ličupe, Lielupe Rivers; Gulf of Riga  
Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava, Ličupe Rivers; Gulf of Riga); 2. Reinsone 1959 (Lakes Lieluces, Liepājas, Sivers); 3. Kirjusina & Vismanis 2004 (Lakes Ķemavu, Dārza, Riču; Daugava River)

Remarks: Adults of members of this genus are found in the intestines of piscivorous birds.

*Diplostomum petromyzotifluviatilis*  
Diesing, 1860 metacercaria  
Location: brain  
Host: *Lampetra fluviatilis*  
Dist.: Daugava River, Gulf of Riga  
Records: Shulman 1949 (Daugava River); Vismanis, Eglite & Volkova 1981 (Gulf of Riga); Vismanis, Volkova & Eglite 1984 (Gulf of Riga); Kirjusina & Vismanis 2004 (rivers entering Gulf of Riga); Kirjusina 2005 (Daugava River)

*Diplostomum pungitii* Shigin, 1965  
metacercaria  
Location: lens, vitreous humor of eye  
Host: *Gasterosteus aculeatus*  
Dist.: Daugava River  
Record: Kirjusina & Vismanis 2004

*Diplostomum spathaceum*  
(Rudolphi, 1819) Olsson, 1876  
metacercaria  
Location: lens, vitreous humor of eye  
Hosts: *Abramis brama* (1,2,3,4,6,21), *Alburnus alburnus* (1,2,3,4,6,21), *Alosa fallax fallax* (1,21), *Aspius aspius* (1,21), *Belone belone* (1,21), *Blicca bjoerkna* (1,2,4,6,21), *Carassius carassius* (1,3,5,21), *Clupea harengus membras* (1,13,15,21), *Cyprinus carpio carpio* (5,7,10,21), *Cyprinus carpio haematopterus* (9), *Gadus morhua callarias* (1,8,14,15,16,21), *Gasterosteus aculeatus* (1,21), *Gobio gobio* (1,21), *Gymnocephalus cernuus* (1,2,3,4,6,21), *Lampetra fluviatilis* (1,13,15,21,21), *Leucaspius delineatus* (5,6,21), *Leuciscus cephalus* (1,6,21)

FAMILY DIPLOSTOMIDAE

*Diplostomum commutatum*  
(Diesing, 1850) Dubois, 1937  
metacercaria  
Syn.: *Diplostomum rutili*  
Razmashkin, 1969  
Location: lens, vitreous humor of eye  
Hosts: *Esox lucius* (2), *Rutilus rutilus* (1,2)  
Dist.: Lakes Sildu, Slokas, Usmas; Daugava River  
Records: 1. Vismanis et al. 1989 (Lake Sildu); 2. Kirjusina & Vismanis 2004 (Lakes Sildu, Slokas, Usmas; Daugava River)
Remarks: A number of diplostomid species are probably included under this taxon (see Bauer 1987).

Diplostomum sp. metacercaria

Includes: Diplostomum sp.

metacercaria auctorum

Location: lens, vitreous humor of eye

Hosts: Abramis brama (6)

Alburnus alburnus (6)

Anguilla anguilla (6)

Blicca bjoerkna (6)

Carassius carassius (6)

Coregonus peled (2)

Clupea harengus membras (1)

Ctenopharyngodon idella (2)

Cyprinus carpio carpio (2)

Esox lucius (6)

Gadus morhua callarias (5,6)

Gymnocephalus cernuus (2,6)

Lampetra fluviatilis (1)

Oncorhynchus mykiss (4)

Osmerus eperlanus (1)

Perca fluviatilis (6)

Platichthys flesus (5)

P. flesus trachurus (1,3)

Rutilus rutilus (6)

Sander lucioperca (6)

Scardinius erythrophthalmus (6)

Tinca tinca (6)

Vimba vimba (6)

Zoarces viviparus (1,3)

Dist.: Lakes Černavu, Dārza, Juglas, Rīču, Slokas, Usmas, Žuguru; Daugava, Ogre, Salaca Rivers; Gulf of Riga; Baltic Sea


Remarks: The genus Diplostomum Brandes, 1892 contains diplostomid larvae of similar morphology that cannot, because of their immaturity, be assigned to adult genera (see Niewiadomska 2002).

Larval eye flukes cause diplostomosis (parasitic cataract) in fish, which may result in blindness and death. Vismanis (1972), for example, noted mass mortality of Gymnocephalus cernuus and Coregonus peled due to these parasites. Vismanis (1978) recorded mass mortality of fry of rainbow trout (Oncorhynchus mykiss) due to cercarial diplostomosis.

Hysteromorpha triloba

(F)

(Rudolphi, 1819) Lutz, 1931 metacercaria

Syn.: Neascus musculicola

(Waldenburg, 1860)
Location: musculature
Hosts: *Abramis brama* (1,2,3,4)
  *Blicca bjoerkna* (1,4)
  *Rutilus rutilus* (1,2,3,4)
  *Sander lucioperca* (4)
  *Scardinius erythrophthalmus* (1,2,4)
  *Tinca tinca* (1,4)
Dist.: Lakes Burtnieku, Černavu, Cirma, Juglas, Lielauces, Liepājas, Rīču, Šivers, Usmas

*Neodiplostomulum* sp. metacercaria (F)
Includes: *Neodiplostomum* sp. metacercaria auctorum
Location: vitreous humor of eye
Hosts: *Gymnocephalus cernuus* *Lota lota* *Perca fluviatilis* Dist.: Lake Rāznas, Kegums Water Reservoir
Records: Shulman 1949; Kirjusina & Vismanis 2004
Remarks: As *Neodiplostomum* type metacercariae cannot be assigned to adult genera with confidence (see Niewiadomska 2002), these records are referred to the larval genus *Neodiplostomulum*.

*Ornithodiplostomum scardinii* (Shulman, 1952) Sudarikov and Kurotshkin, 1968 metacercaria
Syn.: *Neascus* sp. of Shulman, 1949
Location: brain
Hosts: *Abramis brama* (3)
  *Rutilus rutilus* (3)
  *Scardinius erythrophthalmus* (1,2,3)
Dist.: Lakes Dārza, Rāznas, Rušons, Šivers, Slokas, Usmas; Daugava River

*Posthodiplostomum brevicaudatum* (Nordmann, 1832) Wisniewski, 1958 metacercaria
Syn.: *Neascus brevicaudatus* (Nordmann, 1832)
Location: brain, eyes
Hosts: *Carassius carassius* (6)
  *Esox lucius* (9)
  *Gasterosteus aculeatus* (1,9)
  *Gymnocephalus cernuus* (9)
  *Perca fluviatilis* (1,2,3,4,9)
  *Platichthys flesus trachurus* (1,5,7,8,9)
  *Rutilus rutilus* (1,9)
  *Scardinius erythrophthalmus* (1,9)
  *Tinca tinca* (9)
  *Zoarces viviparus* (5)
Dist.: Lakes Alūksnes, Burtnieku, Juglas, Kāla, Liepājas, Rāznas, Riču, Rušons, Šildu, Šivers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga; Baltic Sea

*Posthodiplostomum cuticola* (F)
Syn.: *Neascus cuticola* Nordmann, 1832
Location: skin
Hosts: *Abramis brama* (1,2,8)
  *Alburnus alburnus* (1,8)
  *Blicca bjoerkna* (1,2,8)
  *Carassius carassius* (2,4,8)
  *Cyprinus carpio carpio* (4,6,7,8)
  *C. carpio haematopterus* (5)
  *Gymnocephalus cernuus* (1,8)
  *Leuciscus cephalus* (8)
  *L. idus* (1,8)
  *Perca fluviatilis* (8)
  *Rutilus rutilus* (1,2,8)
  *Scardinius erythrophthalmus* (1,2,3,8)
  *Vimba vimba* (8)
Dist.: Lakes Cirma, Dārza, Durbes, Juglas, Rāznas, Riču, Rušons, Šivers, Slokas, Usmas, Usmas,
Žuguru; Kegums Water Reservoir; Daugava, Lielupe, Ogre, Salaca Rivers


Remarks: This larval digenean is the agent of posthodiplostomosis (“blackspot” disease) in fry. The disease causes backbone deformation, tissue destruction, retarded growth and frequent mortality (see Bauer 1987).

_Tylodelphys clavata_ (F)
(Nordmann, 1832) Diesing, 1850
metacercaria

Syn.: *Diplostomum clavatum*
Nordmann, 1832

Location: vitreous humor of eye

Hosts: *Abramis brama* (1,2,3,5,6,10)
*Aspius aspius* (1,10)
*Blicca bjoerkna* (1,2,5,6,10)
*Carassius carassius* (5,10)
*Cobitis taenia* (1,10)
*Coregonus albula* (2,10)
*C. lavaretus* (2,10)
*Cyprinus carpio carpio* (4,7,8,10)
*Esso lucus* (1,2,3,5,6,10)
*Gobio gobio gobio* (10)
*Gymnocephalus cernuus* (1,2,3,5,6,10)
*Leucaspis delineatus* (5,6,10)
*Leuciscus cephalus* (5,6,10)
*L. idus* (10)
*L. leuciscus* (10)
*Lota lota* (1,2,3,5,10)
*Perca fluviatilis* (1,2,3,5,6,10,11)
*Rutilus rutilus* (1,2,3,5,6,9,10)
*Sander lucioperca* (1,10)
*Scardinius erythrophthalmus* (1,2,3,5,10)
*Tinca tinca* (2,5,10)
*Vimba vimba* (1,10)

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Cirma, Dārza, Durbes, Indra, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Riču, Sīvers, Slokas, Rušons, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Līčupe, Ogre, Salaca Rivers; Gulf of Riga


**FAMILY STRIGEIDAE**

_Ichthyocotylurus erraticus_ (F)
(Rudolphi, 1809) Odening, 1969
metacercaria

Syn.: *Tetracotyle coregoni* Dogiel and Akhmerov, 1941
*T. intermedia* Hughes, 1928

Location: heart, kidney, mesenteries

Hosts: *Coregonus albula* (1,2,3,4,5)
*C. lavaretus* (2)

Dist.: Lakes Alūksnes, Cirma, Rāznas, Sīvers; Daugava River


_Ichthyocotylurus pileatus_ (F)
(Rudolphi, 1802) Odening, 1969
metacercaria

Location: mesenteries

Hosts: *Gobio gobio gobio* (2)
*Gymnocephalus cernuus* (2)
*Perca fluviatilis* (2)
*Rutilus rutilus* (1,2)
*Sander lucioperca* (2)

Dist.: Lakes Sildu, Usmas; Ogre River

Ichthyocotylurus platycephalus (Creplin, 1825) Odening, 1969
metacercaria
Syn.: Tetracotyle ovata
von Linstow, 1877
T. variegata (Creplin, 1825)
Cotylurus pileatus auctorum
Location: brain, gills, heart, internal organs, mesenteries
Hosts: Abramis brama (1,3,8,11)
Alburnus alburnus (3,11)
Blicca bjoerkna (7,11)
Carassius auratus auratus (7,11)
C. carassius (1,2,3,5,6,7,11)
Cyprinus carpio carpio (2,5,7,9,11)
C. carpio haematopterus (2)
Esox lucius (3,5,6,11)
Gobio gobio gobio (1,11)
Gymnocephalus cernuus (1,3,4,6,8,11)
Leucaspius delineatus (7,8,11)
Leuciscus cephalus (1,11)
L. idus (1,10,11)
Perca fluviatilis (1,3,4,8,11)
Pungitius pungitius (7,11)
Rutilus rutilus (1,3,6,11)
Sander lucioperca (1,8,11)
Vimba vimba (10)
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga
Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lakes Alūksnes, Burtnieku, Cirma, Durbes, Kāla, Sivers), 3. 1955b (Lake Sildu); 4. 1959 (Lake Sildu); 5. Vismanis & Vismanis 2004 (Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)
Remarks: Vismanis (1961) recorded mortality of Gymnocephalus cernuus caused by this species.

Ichthyocotylurus variegatus (Creplin, 1825) metacercaria
Syn.: Tetracotyle percaefluviatilis
von Linstow, 1856
Location: mesenteries
Hosts: Abramis brama (1,7)
Blicca bjoerkna (7)
Gymnocephalus cernuus (2,5,7)
Perca fluviatilis (1,2,3,4,5,6,7)
Rutilus rutilus (1,7)
Sander lucioperca (1,7)
Vimba vimba (7)
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga

SUPERFAMILY SCHISTOSOMATOIDEA
FAMILY SANGUINICOLIDAE
Sanguinicola inermis Plehn, 1905
Location: circulatory system
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Remarks: This blood fluke causes sanguinicolosis and mass mortality in carp fingerlings (see Bauer 1987).

ORDER PLAGIORCHIIDA
SUBORDER HEMIURATA
SUPERFAMILY AZYGIOIDEA

FAMILY AZYGIIDAE

Azygia lucii (O.F. Müller, 1776) (F)
Lühe, 1909
Location: esophagus, intestine, stomach
Hosts: Esox lucius (1,2,3,4,5,6,7)
Perca fluviatilis (1,2,3,4,7)
Sander lucioperca (1,7)
Dist.: Lakes Burtnieku, Cirma, Indra, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Daugava, Ogre Rivers; Gulf of Riga
Remarks: The northern pike (Esox lucius) is the primary definitive host for this digenean (see Bauer 1987).

SUPERFAMILY HEMIUROIDEA

FAMILY HEMIURIDAE

Brachyphallus crenatus (B,M)
(Rudolphi, 1802) Odhner, 1905
Location: intestine
Hosts: Clupea harengus membras (2,3,4)
Salmo salar (1,4)
Dist.: Daugava River, Gulf of Riga
Records: 1. Shulman 1949 (Daugava River); 2. Vismanis, Eglite & Volkova 1981 (Gulf of Riga); 3. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 4. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)
Remarks: Adults occur in the intestine of predatory fish, while metacercariae are found in the musculature and gills of cyprinids and other prey species (see Bauer 1987).

SUBORDER BUCEPHALATA

SUPERFAMILY BUCEPHALOIDEA

FAMILY BUCEPHALIDAE

SUBFAMILY BUCEPHALINAE

Bucephalus polymorphus Baer, 1827 (F)
al and metacercaria
Location: gills, intestine, musculature
Hosts: Abramis brama (1,2,3,4,6,10)
Alburnus alburnus (1,10)
Blicca bjoerkna (1,2,6,10)
Carassius carassius (1,5,10)
Cyprinus carpio carpio (5,7,10)
Esox lucius (1,2,3,4,6,10)
Gobio gobio gobio (1,10)
Gymnocephalus cernuus (1,10)
L. leuciscus (1,10)
Leuciscus cephalus (1,10)
Pelecus cultratus (1,10)
Perca fluviatilis (1,2,6,9,10)
Phoxinus phoxinus (9,10)
Rutilus rutilus (1,2,6,9,10)
Sander lucioperca (1,10)
Scardinius erythrophthalmus (1,10)
Silurus glanis (1,10)
Vimba vimba (1,8,10)

Dist.: Lakes Burtnieku, Durbes, Juglas, Rāznas, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Rītupe, Salaca Rivers; Gulf of Riga
Remarks: Adults occur in the intestine of predatory fish, while metacercariae are found in the musculature and gills of cyprinids and other prey species (see Bauer 1987).

Rhipidocotyle campanula (Dujardin, 1845) (F)
al and metacercaria
Location: eyes, gills, intestine
Hosts: Abramis brama (2)
Alburnus alburnus (2)
Alburnoides bipunctatus (2)
Blicca bjoerkna (2)
Cyprinus carpio (2)
Esox lucius (1,2)
Gymnocephalus cernuus (2)
L. leuciscus (2)
Perca fluviatilis (1,2)
Phoxinus phoxinus (1,2)
Rutilus rutilus (1,2)

Dist.: Lakes Burtnieku, Cirma, Indra, Juglas, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Daugava, Ogre Rivers; Gulf of Riga
Remarks: The northern pike (Esox lucius) is the primary definitive host for this digenean (see Bauer 1987).
Sander lucioperca (2)
Dist.: Lakes Juglas, Sildu, Slokas, Usmas, Žuguru; Daugava, Ogre, Salaca Rivers
Records: 1. Vismanis et al. 1989 (Lake Sildu); 2. Kirjusina & Vismanis 2004 (Lakes Juglas, Sildu, Slokas, Usmas, Žuguru; Daugava, Ogre, Salaca Rivers)
Remarks: Adults occur in the intestine of predatory fish, while metacercariae are found mainly in the musculature, gills and eyes of cyprinids (see Bauer 1987).

SUBORDER OPISTHORCHIATA
SUPERFAMILY OPISTHORCHIOIDEA
FAMILY HETEROPHYIDAE

Cryptocotyle concava (Creplin, 1825) (M)
Fischoeder, 1903 metacercaria
Location: gills
Host: Platichthys flesus trachurus
Dist.: Baltic Sea
Records: Vismanis & Kondratovičs 1994, 1995

Cryptocotyle sp. metacercaria (M)
Location: gills
Host: Platichthys flesus trachurus
Dist.: Gulf of Riga
Record: Vismanis, Volkova & Eglite 1984

SUBORDER MONORCHIATA
SUPERFAMILY MONORCHIOIDEA
FAMILY LISSORCHIIDAE

Asymphylodora imitans (F)
(Muehling, 1898) Looss, 1988
Location: intestine
Hosts: Abramis brama (1,2,3,5)
Blicca bjoerkna (1,2,4,5)
Rutilus rutilus (2,3,5)
Dist.: Lakes Burtnieku, Sivers, Usmas; Daugava River

Asymphylodora tincae (Modeer, 1790) (F)
Lühe, 1909
Location: intestine
Host: Tinca tinca
Dist.: Lakes Burtnieku, Cirma, Därza, Durbes, Lieuelaues, Liepājas Rāznas, Sildu, Sivers, Slokas; Daugava River
Records: Shulman 1949 (Lake Rāznas, Daugava River); Reinsone 1955a (Lakes Burtnieku, Cirma, Durbes, Lieuelaues, Liepājas, Sivers), 1955b (Lake Sivers), 1959 (Lakes Lieuelaues, Liepājas, Sivers); Grapmane 1957 (ponds); Vismanis 1961 (Lake Burtnieku); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Cirma, Därza, Durbes, Lieuelaues, Liepājas Rāznas, Sildu, Sivers, Slokas; Daugava River)

Asymphylodora sp. (F)
Location: intestine
Host: Scardinius erythrophthalmus
Dist.: Lake Sivers
Record: Rinsone 1955b

Parasymphylodora markewitschi (F)
(Kulakovskaya, 1947)
Syn.: Asymphylodora markewitschi Kulakovskaya, 1947
Location: intestine
Host: Scardinius erythrophthalmus
Dist.: Lakes Liepājas, Rāznas, Rušons; Daugava River
Records: Shulman 1949 (Lakes Rāznas, Rušons; Daugava River); Reinsone 1955a (Lake Liepājas), 1959 (Lake Liepājas); Kirjusina & Vismanis 2004 (Lakes Liepājas, Rāznas, Rušons; Daugava River)

Palaeorchis incognitus Szidat, 1943 (F)
Location: intestine
Host: Rutilus rutilus
Dist.: Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

Palaeorchis unicus Szidat, 1943 (F)
Location: intestine
Host: Blicca bjoerkna
Dist.: Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

SUBORDER XIPHIDIATA
SUPERFAMILY ALLOCREADIIOIDEA

FAMILY ALLOCREADIIDAE

Allocreadium isoporum (Looss, 1894) (F)
Odhner, 1901
Location: intestine
Hosts: Abramis brama (4)
Alburnus alburnus (1,2,4)
Blicca bjoerka (1,2,3,4)
Carassius carassius (1,2,3,4)
Esox lucius (4)
Gobio gobio gobio (1,4)
Leuciscus cephalus (1,4)
L. idus (1,4)
L. leuciscus (4)
Rutilus rutilus (1,2,3,4)
Scardinius erythrophthalmus (1,2,3,4)
Tinca tinca (4)
Dist.: Lakes Alūksnes, Dārza, Durbes, Juglas, Lielauces, Liepājas, Rāznas, Riču, Šildu, Šildu, Sivers, Slokas, Usmas; Daugava, Ogre, Salaca Rivers; Gulf of Riga


Bunodera luciopercae (F)
(O.F. Müller, 1776) Lühe, 1909
Location: intestine
Hosts: Esox lucius (2,4)
Gymnocephalus cernuus (2,7)
Perca fluviatilis (1,2,3,4,5,6,7)
Sander lucioperca (1,7)
Dist.: Lakes Burtnieku, Cirma, Durbes, Juglas, Lielauces, Liepājas, Rāznas, Riču, Šildu, Šildu, Sivers, Slokas, Usmas; Daugava, Ogre, Salaca Rivers; Gulf of Riga

Records: 1. Shulman 1949 (Lake Rāznas, Daugava River, Gulf of Riga)

Crepidostomum farionis (F)
(O.F. Müller, 1780) Lühe, 1909
Location: intestine
Host: Coregonus lavaretus
Dist.: Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

FAMILY OPECOELIDAE

Nicolla skrjabini (Ivanitsky, 1928) (F)
Syn.: Coitocaecum skrjabini
Ivanitsky, 1928
Location: intestine
Hosts: Gymnocephalus cernuus (1,3)
Platichthys flesus trachurus (1,2,3)
Silurus glanis (1,3)
Dist.: Kegums Water Reservoir, Daugava River, Baltic Sea

Sphaerostomum bramae (F)
(O.F. Müller, 1776) Lühe, 1909
Location: intestine
Hosts: Abramis brama (2,3,5)
Alburnus alburnus (1,2)
Anguilla anguilla (1,2,3,5)
Blicca bjoerka (1,2,3,5)
Esox lucius (4)
Leucaspis dlineatus (4)
Leuciscus cephalus (5)
L. idus (5)
Rutilus rutilus (2,3,5)
Vimba vimba (1,5)
Dist.: Lakes Burtnieku, Cirma, Durbes, Juglas, Liepājas, Rāznas, Rīču, Šildu, Sivers, Slokas, Usmas; Daugava, Ogre, Salaca Rivers; Gulf of Riga
Daugava River, Gulf of Riga); 2. Reinsone 1955a (Lakes Burtnieku, Kāla, Liepājas, Sivers), 3. 1959 (Lakes Liepājas, Sivers); 4. Vismanis 1961 (Lake Burtnieku); 5. Kirjusina & Vismanis 2004 (Lakes Burtnieku, Juglas, Kāla, Liepājas, Rāznas, Sivers, Usmas, Žuguru; Daugava, Ogre Rivers; Gulf of Riga)

**Plagioporus angusticolle**  
(Hausmann, 1896) Dobrovolny, 1939  
Syn.: *Allocreadium angusticolle*  
Hausmann, 1896  
Location: intestine  
Hosts: *Alburnoides bipunctatus* (2)  
*Cottus gobio* (1,2)  
*Leuciscus idus* (1,2)  
Dist.: Daugava, Ogre Rivers  
Records: 1. Shulman 1949 (Daugava River); 2. Kirjusina & Vismanis 2004 (Daugava, Ogre Rivers)

**Phyllodistomum angulatum**  
von Linstow, 1907  
Location: urinary bladder  
Hosts: *Perca fluviatilis*  
*Sander lucioperca*  
Dist.: Daugava River, Gulf of Riga  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Phyllodistomum elongatum**  
Nybelin, 1926  
Location: ureters, urinary bladder  
Hosts: *Abramis brama* (1,3)  
*Aspius aspius* (1,3)  
*Blicca bjoerkna* (1,3)  
*Leuciscus leuciscus* (1,2)  
*Rutilus rutilus* (1,2)  
*Tinca tinca* (1,2)  
*Vimba vimba* (1,2)  
Dist.: Lakes Dārza, Riču, Rušons, Sildu, Slokas; Kegums Water Reservoir; Daugava River  

**Phyllodistomum folium**  
(Offers, 1916)  
Braun, 1899  
Location: ureters, urinary bladder  
Hosts: *Abramis brama* (1,7)  
*Alburnus alburnus* (1,7)  
*Carassius carassius* (1,7)  
*Esoc lucius* (1,2,3,4,5,6,7)  
*Gasterosteus aculeatus* (7)  
*Gymnocephalus cernuus* (7)  
Dist.: Lakes Burtnieku, Cirma, Durbes, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sivers, Usmas, Žuguru; Kegums Water Reservoir; Daugava River  

**Phyllodistomum megalorchis**  
Nybelin, 1926  
Location: urinary bladder  
Hosts: *Gymnocephalus cernuus*  
*Lota lota*  
Dist.: Lake Rāznas  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Phyllodistomum pseudofolium**  
Nybelin, 1926  
Location: ureters, urinary bladder  
Hosts: *Gymnocephalus cernuus*  
*Perca fluviatilis* (2,4,5)  
Dist.: Lakes Cirma, Liepājas, Rāznas, Sivers; Kegums Water Reservoir  

**Phyllodistomum simile**  
Nybelin, 1926  
Location: urinary bladder  
Host: *Cottus gobio*  
Dist.: Daugava River

**Phyllodistomum folium** (F)  
Braun, 1899  
Location: ureters, urinary bladder  
Hosts: *Abramis brama* (1,7)  
*Alburnus alburnus* (1,7)  
*Carassius carassius* (1,7)  
*Esoc lucius* (1,2,3,4,5,6,7)  
*Gasterosteus aculeatus* (7)  
*Gymnocephalus cernuus* (7)  
Dist.: Lakes Burtnieku, Cirma, Durbes, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Sivers, Usmas, Žuguru; Kegums Water Reservoir; Daugava River  

**Phyllodistomum elongatum**  
Nybelin, 1926  
Location: ureters, urinary bladder  
Hosts: *Gymnocephalus cernuus*  
*Lota lota*  
Dist.: Lake Rāznas  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Phyllodistomum pseudofolium**  
Nybelin, 1926  
Location: ureters, urinary bladder  
Hosts: *Gymnocephalus cernuus*  
*Perca fluviatilis* (1,2,3,4,5)  
Dist.: Lakes Cirma, Liepājas, Rāznas, Sivers; Kegums Water Reservoir  
Records: 1. Shulman 1949 (Lake Rāznas, Kegums Water Reservoir); 2. Reinsone 1955a (Lakes Cirma, Liepājas, Sivers, Rušons, Sildu, Sivers, Usmas, Žuguru; Kegums Water Reservoir; Daugava River)  

**Phyllodistomum simile**  
Nybelin, 1926  
Location: urinary bladder  
Host: *Cottus gobio*  
Dist.: Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

CLASS MONOGENOIDEA

SUBCLASS POLYONCHOINEA

ORDER GYRODACTYLIDEA

FAMILY GYRODACTYLIDAE

**Gyrodactylus aeglefini** (M)
Bychowsky and Polyansky, 1953
Location: gills
Host: *Gadus morhua callarias*
Dist.: Gulf of Riga, Baltic Sea

**Gyrodactylus cernuae** (F,B)
Malmberg, 1957
Location: gills
Host: *Gymnocephalus cernuus*
Dist.: Lake Juglas
Record: Kirjusina & Vismanis 2004

**Gyrodactylus elegans** Nordmann, 1832 (F)
Location: gills, skin
Hosts: *Alburnus alburnus* (2)
*Leucaspis delineatus* (1)
*Tinca tinca* (1)
Dist.: Latvia (ponds)
Remarks: Reports of *G. elegans* prior to 1964 should be treated with caution. Malmberg (1964) reported that the normal host is *Abramis brama*. Bauer (1985) noted that records from fishes other than *A. brama, A. sapa* or *Cyprinus carpio carpio* mostly do not involve either *G. katharineri* or *G. elegans*.

**Gyrodactylus errabundus**
Malmberg, 1970
Location: skin
Host: *Zoarces viviparus*
Dist.: Gulf of Riga
Records: Vismanis, Volkova & Eglite 1984; Vismanis 1986

**Gyrodactylus flexibiliradix** (B,M)
Malmberg, 1970

**Gyrodactylus gasterostei** Enges, 1980 (F)
Location: gills
Host: *Rutilus rutilus*
Dist.: Lake Garmuižas
Records: Kirjusina & Vismanis 2001, 2004

**Gyrodactylus gobiensis** Gläser, 1974 (F)
Location: gills
Host: *Gobio gobi gobio*
Dist.: Ogre River
Records: Kirjusina & Vismanis 2001, 2004

**Gyrodactylus gobiia** Shulman, 1954 (F)
Location: fins, gills
Host: *Gobio gobi gobio*
Dist.: Lake Rāznas
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Gyrodactylus katharineri**
Malmberg, 1964
Location: gills, skin
Hosts: *Carassius auratus auratus* (1,2)
*C. carassius* (1)
*Carassius auratus auratus* (1,2,3,4,5,6)
Dist.: Latvia (ponds)
Remarks: This pathogenic species causes outbreaks of disease in fingerling and yearling carp in ponds during the winter-spring period. Apparently the main hosts for *G. katharineri* are only *Cyprinus carpio carpio* and *Carassius carassius*. Other fishes probably are accidentally or temporarily infected. Previously, this species was confused with *G. elegans* von Nordman, 1832 (see Bauer 1985).

**Gyrodactylus longoacuminatus** (F)
Žitňan, 1964
Includes: *Gyrodactylus longoacuminatus f. typica*
**Gyrodactylus markakulensis** (F)
Gvosdev, 1950
Location: gills
Host: *Carassius auratus auratus*
Dist.: Salaca River
Records: Kirjusina & Vismanis 2001, 2004

**Gyrodactylus medius** Kathariner, 1893 (F)
Location: gills
Hosts: *Carassius auratus auratus* (2,6,7)
*Cyprinus carpio carpio* (2,3,5)
*C. carpio haematopterus* (4)
*Gasterosteus aculeatus* (2)
*Leucaspius delineatus* (2)
*Tinca tinca* (2,7)
Dist.: Latvia (ponds)
Remarks: According to Bauer (1985), this species is specific to *Cyprinus carpio carpio*. Records from other fish species may involve misidentifications or temporary infections.

**Gyrodactylus perlucidus** (B,M)
Bychowsky and Polyansky, 1953
Location: gills
Host: *Zoarces viviparus*
Dist.: Gulf of Riga

**Gyrodactylus pharyngicus** (M)
Malmberg, 1964
Location: gills
Host: *Gadus morhua callarias*
Dist.: Gulf of Riga
Records: Vismanis, Eglite & Volkova 1986; Kirjusina & Vismanis 2004

**Gyrodactylus prostae** Ergens, 1963 (F)
Location: gills
Host: *Leuciscus idus*
Dist.: Salaca River
Records: Kirjusina & Vismanis 2001, 2004

**ORDER DACTYLOGYRIDEA**

**SUBORDER DACTYLOGYRINEA**

**FAMILY DACTYLOGYRIDAE**

**Ancyrocephalus cruciatus** (Wedl, 1857) Lühe, 1909 (F)
Location: gills
Host: *Misgurnus fossilis*
Dist.: Lake Višķu
Records: Kirjusina & Vismanis 2001, 2004

**Ancyrocephalus paradoxus** Creplin, 1839 (F)
Location: gills
Host: *Sander lucioperca*
**Ancyrocephalus percae** Ergens, 1966  
(F)  
Includes: *Ancyrocephalus paradoxus auctorius*  
Location: gills  
Host: *Perca fluviatilis*  
Dist.: Lakes Burtnieku, Ražnas, Sildu, Sīvers, Usmas; Kegums Water Reservoir; Daugava River  
Records: Shulman 1949 (Lake Rāznas, Kegums Water Reservoir, Daugava River); Reinsone 1955a (Lakes Burtnieku, Sīvers), 1959 (Lake Sīvers); Vismanis 1961 (Lake Burtnieku); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Rāznas, Sildu, Sīvers, Usmas, Vilgāles; Kegums Water Reservoir; Daugava, Ogre Rivers)

**Dactylogyrus achmerowi** Gusev, 1955  
(F)  
Location: gills  
Hosts: *Cyprinus carpio carpio* (2,4,5,6)  
*C. c. haematopterus* (1,3,4)  
Dist.: Latvia (ponds)  
Remarks: This species is thought to have been carried to European carp farms with *Cyprinus carpio haematopterus* and distributed to natural waters (see Bauer 1985).

**Dactylogyrus alatus**  
von Linstow, 1878  
(F)  
Includes: *D. actylogyrus alatus f. typica*  
Location: gills  
Host: *Alburnus alburnus*  
Dist.: Lakes Ražņas, Slokas; Salaca River  
Records: Shulman 1949 (Lake Ražņas); Vismanis & Popov 1990 (Salaca River); Kirjusina & Vismanis 2004 (Lakes Ražņas, Slokas; Salaca River)

**Dactylogyrus amphibothrium**  
Wagener, 1857  
(F)  
Location: gills  
Host: *Gymnocephalus cernuus*  
Dist.: Lakes Burtnieku, Cirma, Durbes, Juglas, Ražņas, Rušons, Sīvers, Usmas, Vilgāles; Kegums Water Reservoir; Daugava, Ogre Rivers  
Records: Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River); Reinsone 1955a (Lakes Burtnieku, Cirma, Durbes, Sīvers), 1959 (Lake Sīvers); Vismanis 1961 (Lake Burtnieku); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Cirma, Durbes, Juglas, Ražņas, Rušons, Sīvers, Usmas, Vilgāles; Kegums Water Reservoir; Daugava, Ogre Rivers)

**Dactylogyrus anchoratus**  
(Dujardin, 1845) Wagener, 1857  
(F)  
Location: gills  
Hosts: *Carassius auratus auratus* (5,12)  
*C. carassius* (1,2,3,4,5,7,11,12)  
*C. carpio carpio* (2,5,6,8,9,10,12)  
*C. c. haematopterus* (9)  
Dist.: Lakes Lielauces, Liepājas, Rāznas, Sildu, Sīvers, Usmas; Daugava, Lielupe Rivers  
Remarks: This species is pathogenic to yearling common carp and can cause mortality (see Bauer 1985).

**Dactylogyrus auriculatus**  
(Nordmann, 1832) Diesing, 1850  
(F)  
Location: gills  
Host: *Abramis brama*  
Dist.: Lakes Burtnieku, Duņas, Slokas, Usmas, Viragnas; Daugava, Lielupe, Salaca Rivers; Gulf of Riga  
Records: Vismanis 1961 (Lake Burtnieku); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Duņas, Slokas, Usmas, Viragnas; Daugava, Lielupe, Salaca Rivers; Gulf of Riga)

**Dactylogyrus baueri** Gusev, 1955  
(F)  
Location: gills  
Host: *Carassius carassius*  
Dist.: Lakes Juglas, Slokas, Sunišū, Viragnas  
Records: Vismanis & Popov 1993 (Lake
Viragnas); Kirjusina & Vismanis 2004 (Lakes Juglās, Slokas, Sunišu, Viragnas)

**Dactylogyrus caballeroi** Prost, 1960  (F)  
Location: gills  
Host: *Rutilus rutilus*  
Dist.: Lakes Sildu, Slokas, Usmas; Daugava River  
Records: Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Sildu, Slokas, Usmas; Daugava River)  

**Dactylogyrus cordus** Nybelin, 1937  (F)  
Location: gills  
Hosts: *Leuciscus cephalus* (1,2)  
*L. leuciscus* (2)  
Dist.: Lake Burtnieku, Ogre River  
Records: 1. Vismanis 1961 (Lake Burtnieku); 2. Kirjusina & Vismanis 2004 (Lake Burtnieku, Ogre River)  

**Dactylogyrus cornoides** Gläser and Gusev, 1967  (F)  
Location: gills  
Host: *Vimba vimba*  
Dist.: Gauja, Salaca Rivers  
Records: Vismanis & Popov 1990 (Gauja River); Kirjusina & Vismanis 2004 (Gauja, Salaca Rivers)  

**Dactylogyrus cryptomeres** von Linstow, 1878  (F)  
Location: gills  
Hosts: *Abramis brama* (4)  
*Blicca bjoerkna* (1,2,4)  
*Vimba vimba* (1,3,4)  
Dist.: Lakes Burtnieku, Dzirnezers, Rāznas, Rušons, Usmas; Kegums Water Reservoir; Daugava, Lielupe, Salaca Rivers; Gulf of Riga  
Remarks: This species is a parasite of the roach (*Rutilus rutilus*). Reports from other fish species may involve temporary infections or misidentifications (see Bauer 1985).  

**Dactylogyrus cornu** Kulwiec, 1927  (F)  
Location: gills  
Hosts: *Carassius carassius* (1,2)  
*Rutilus rutilus* (2)  
Dist.: Lakes Sildu, Rāznas; Daugava River  
Records: 1. Shulman 1949 (Lake Rāznas, Daugava River); 2. Kirjusina & Vismanis 2004 (Lakes Sildu, Rāznas; Daugava River)  

**Dactylogyrus crucifer** Wagener, 1857  (F)  
Location: gills  
Hosts: *Rutilus rutilus* (1,2,3,4,5,6)  
*Scardinius erythrophthalmus* (2,6)  
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Duņas, Durbes, Dzirnezers, Juglas, Liealuces, Rāznas, Rušons, Sildu, Sīvers, Slokas, Usmas, Virgāles, Viragnas; Kegums Water Reservoir; Daugava, Lielupe, Ogre, Salaca Rivers  

**Dactylogyrus crassus** Kulwiec, 1927  (F)  
Location: gills  
Hosts: *Carassius carassius* (1,2)  
*Rutilus rutilus* (2)  
Dist.: Lakes Sildu, Rāznas; Daugava River  
Records: 1. Shulman 1949 (Lake Rāznas, Daugava River); 2. Kirjusina & Vismanis 2004 (Lakes Sildu, Rāznas; Daugava River)  

**Dactylogyrus difformis** Wagener, 1857  (F)  
Location: gills  
Hosts: *Rutilus rutilus* (1,2,3,4,5,6)  
*Scardinius erythrophthalmus* (2,6)  
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Duņas, Durbes, Dzirnezers, Juglas, Liealuces, Rāznas, Rušons, Sildu, Sīvers, Slokas, Usmas, Virgāles, Viragnas; Kegums Water Reservoir; Daugava, Lielupe, Ogre, Salaca Rivers  

**Dactylogyrus cryptomeres** Bychowsky, 1934  (F)  
Includes: *D. cryptomeres f. typica*  
Location: gills  
Host: *Gobio gobio gobio*  
Dist.: Ogre River  
Record: Kirjusina & Vismanis 2004  

**Dactylogyrus difformis** Wagener, 1857  (F)  
Location: gills  
Hosts: *Blicca bjoerkna* (2,4)  
*Scardinius erythrophthalmus* (1,2,3,4,5)  
Dist.: Lakes Burtnieku, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava River  
Dactylogyrus difformoides (F) Gläser and Gusev, 1967
Location: gills
Hosts: *Rutilus rutilus* (1)
*Scardinius erythrophthalmus* (1,2)
 afternoon: Lakes Kanjiereis, Slokas, Usmas; Daugava River
Remarks: This species is a parasite of *Scardinius erythrophthalmus*. Reports from other fish species may involve temporary infections or misidentifications (see Bauer 1985).

Dactylogyrus distinguendus (F) Nybelin, 1937
Location: gills
Hosts: *Abramis brama* (1,2)
*Blicca bjoerkna* (2)
*Vimba vimba* (1,2)
Dist.: Lakes Dzirnezers, Peldēka, Slokas; Daugava, Lielupe, Salaca Rivers
Records: 1. Vismanis & Popov 1990 (Daugava, Lielupe, Salaca Rivers); 2. Kirjusina & Vismanis 2004 (Lakes Dzirnezers, Peldēka, Slokas; Daugava, Lielupe, Salaca Rivers)

Dactylogyrus dulkeiti (F) Bychowsky, 1936
Location: gills
Host: *Carassius carassius*
Dist.: Lakes Laidzes, Slokas, Sunīšu
Records: Kirjusina & Vismanis 2001 (Lakes Laidzes, Sunīšu), 2004 (Lakes Laidzes, Slokas, Sunīšu)

Dactylogyrus extensus (F) Mueller and Van Cleave, 1932
Syn.: *Dactylogyrus solidus* Akhmerov, 1948
Location: gills
Hosts: *Cyprinus carpio carpio* (1,2,3,4,5,6,7,8,9,10)
*C. carpio haematopterus* (1,4,5)
Dist.: Lake Sildu
Remarks: This species undergoes intensive reproduction at water temperatures of 10 – 15 °C (occasionally at 5–10 °C). Thus, cases of disease are seen in carp at the end of winter. It is more pathogenic to carp of age 1 and 1+.

Dactylogyrus falcaetus (Wedl, 1857) (F) Diesing, 1858
Location: gills
Host: *Abramis brama*
Dist.: Lakes Burtnieku, Rušons, Usmas, Viragnas; Kegums Water Reservoir; Daugava, Lielupe, Salaca Rivers
Records: Shulman 1949 (Lake Rušons, Kegums Water Reservoir, Daugava River); Vismanis & Popov 1990 (Lake Rušons, Kegums Water Reservoir, Daugava River); Vismanis 1961 (Lake Burtnieku); Kirjusina & Vismanis 2004 (Lakes Burtnieku, Rušons, Usmas, Viragnas; Kegums Water Reservoir, Daugava, Lielupe, Salaca Rivers)

Dactylogyrus fallax Wagener, 1857 (F) Location: gills
Hosts: *Alburnus alburnus* (3)
*Blicca bjoerkna* (1,3)
*Leuciscus cephalus* (3)
*L. idus* (3)
*Rutilus rutilus* (2,3)
*Scardinius erythrophthalmus* (3)
*Vimba vimba* (3)
Dist.: Lakes Burtnieku, Sildu, Slokas, Usmas; Daugava, Lielupe, Salaca Rivers

Dactylogyrus folkmanovae (F) Ergens, 1956
Location: gills
Host: *Leuciscus cephalus*
Dist.: Ogre River
Records: Kirjusina & Vismanis 2001, 2004
Remarks: This species has been considered a synonym of *D. nanus* Dogiel and Bychowsky, 1934 (see Gibson, Timofeeva & Gerasev 1996).

Dactylogyrus formosus Kulwiec, 1927 (F) Location: gills
Host: *Carassius carassius*
Dist.: Lakes Rāznas, Sunīšu, Vīragnas, Višķu; Daugava River

Records: Shulman 1949 (Lake Rāznas, Daugava River); Kirjusina & Vismanis 2004 (Lakes Rāznas, Sunīšu, Vīragnas, Višķu; Daugava River)

Dactylogyrus fraternus Wegener, 1910 (F)
Location: gills
Hosts: Alburnus alburnus (1,2,4)
Leucaspius delineatus (3)
Dist.: Lakes Alūksnes, Burtnieku, Dzirnezers, Rāznas, Rušons; Kegums Water Reservoir; Daugava, Lielupe, Ogres Rivers; Gulf of Riga
Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lake Alūksnes, Burtnieku); 3. Vismanis 1961 (Lake Burtnieku); 4. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Burtnieku, Dzirnezers, Rāznas, Rušons; Kegums Water Reservoir; Daugava, Lielupe, Ogres Rivers; Gulf of Riga)

Dactylogyrus gobii Gvozdev, 1950 (F)
Location: gills
Host: Gobio gobio gobio
Dist.: Ogres River
Records: Kirjusina & Vismanis 2001, 2004

Dactylogyrus hemiamphibothrium (F)
Ergens, 1956
Location: gills
Host: Gymnocephalus cernuus
Dist.: Lakes Juglas, Usmas; Daugava, Ogres Rivers
Records: Vismanis & Popov 1990 (Lake Juglas, Daugava River); Kirjusina & Vismanis 2004 (Lakes Juglas, Usmas; Daugava, Ogres Rivers)

Dactylogyrus inexpectatus (F)
Izyumova in Gusev, 1955
Location: gills
Hosts: Carassius auratus auratus (1)
C. carassius (1,2)
Dist.: Lakes Duņas, Sildu; Salaca River
Records: 1. Vismanis & Popov 1990 (Lakes Duņas, Sildu); 2. Kirjusina & Vismanis 2004 (Lakes Duņas, Sildu; Salaca River)

Dactylogyrus intermedius (F)
Wegener, 1910
Location: gills
Host: Carassius carassius
Dist.: Lakes Duņas, Rāznas, Slokas, Vīragnas, Višķu; Daugava River
Records: Shulman 1949 (Lake Rāznas, Daugava River); Kirjusina & Vismanis 2004 (Lakes Duņas, Rāznas, Slokas, Vīragnas, Višķu; Daugava River)

Dactylogyrus izjumovae Gusev, 1966 (F)
Location: gills
Hosts: Rutillus rutillus (1)
Scardinius erythrophthalmus (1,2)
Dist.: Lakes Kanjiерis, Slokas
Records: 1. Vismanis & Popov 1993 (Lake Kanjiерis); 2. Kirjusina 2004 (Lake Slokas)

Dactylogyrus macracanthus (F)
Wegener, 1910
Location: gills
Host: Tinca tinca
Dist.: Lakes Lielauces, Rāznas, Sildu, Sīvers; Daugava River
Records: Shulman 1949 (Lake Rāznas, Daugava River); Akhmerov & Grapmane 1954 (ponds); Reinsone 1955a (Lakes Lielauces, Sīvers), 1955b (Lake Sīvers), 1959 (Lakes Lielauces, Sīvers); Grapmane 1957 (ponds); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Lielauces, Rāznas, Sildu, Sīvers; Daugava River, ponds)

Dactylogyrus micracanthus (F)
Nybelin, 1937
Location: gills
Hosts: Alburnus alburnus (2)
Rutilus rutillus (1,2)
Dist.: Lakes Duņas, Slokas; Daugava River
Records: 1. Vismanis & Popov 1990 (Lake Duņas, Daugava River); 2. Kirjusina & Vismanis 2004 (Lakes Duņas, Slokas; Daugava River)

Dactylogyrus minor Wagener, 1857 (F)
Location: gills
Host: Alburnus alburnus
Dist.: Lakes Rāznas, Rušons, Slokas; Kegums Water Reservoir; Daugava, Lielupe, Ogres Rivers; Gulf of Riga
Records: Shulman 1949 (Lakes Rāznas, Rušons, Slokas; Kegums Water Reservoir; Daugava River; Gulf of Riga); Kirjusina & Vismanis 2004 (Lakes Rāznas, Rušons, Slokas; Kegums Water Reservoir; Daugava, Lielupe, Ogres Rivers; Gulf of Riga)
Dactylogyrus minutus Kulwiec, 1927 (F)
Location: gills
Host: *Cyprinus carpio carpio*
Dist.: Latvia (ponds)
Records: Akhmerov & Grapmane 1954; Grapmane 1957; Akhmerov 1961; Kirjusina & Vismanis 2004

Dactylogyrus nanoides Gusev, 1966 (F)
Location: gills
Host: *Leuciscus cephalus*
Dist.: Ogre River
Records: Kirjusina & Vismanis 2001; 2004

Dactylogyrus nanus (F)
Dogiel and Bychowsky, 1934
Location: gills
Hosts: *Gymnocephalus cernuus* (2)
*Rutilus rutilus* (1,3,4)
Dist.: Lakes Dzirnezers, Juglas, Rāznas, Rušons, Sildu, Soklas, Usmas; Daugava River

Dactylogyrus parvus Wegener, 1910 (F)
Location: gills
Host: *Alburnus alburnus*
Dist.: Lakes Dzirnezers, Rāznas, Rušons, Soklas; Kegums Water Reservoir; Daugava, Lielupe, Ogre Rivers; Gulf of Riga
Records: Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); Kirjusina & Vismanis 2004 (Lakes Dzirnezers, Rāznas, Rušons, Soklas; Kegums Water Reservoir; Daugava, Lielupe, Ogre Rivers; Gulf of Riga)

Dactylogyrus ramulosus (F)
Malevitskaya, 1941
Location: gills
Hosts: *Leuciscus idus* (3)
*Rutilus rutilus* (1,2,3)
Dist.: Lake Sivers, Salaca River

Dactylogyrus rutili Gläser, 1965 (F)
Location: gills
Host: *Rutilus rutilus*
Dist.: Lake Sildu

Records: Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Okras, Sildu, Soklas, Usmas)

Dactylogyrus similis Wegener, 1910 (F)
Location: gills
Hosts: *Alburnus alburnus* (1,6)
*Blicca bjoerkna* (1,6)
*Leucaspis delineatus* (4)
*Leuciscus idus* (4,6)
*Rutilus rutilus* (1,2,3,4,5,6)
*Scardinius erythrophthalmus* (2,6)
Dist.: Lakes Burtnieku, Cirma, Dzirzezers, Sildu, Sivers, Soklas, Usmas; Ogre, Daugava Rivers

Dactylogyrus sphyrna (F)
von Linstow, 1878
Location: gills
Hosts: *Abramis brama* (2,3,6)
*Blicca bjoerkna* (1,2,3,6)
*Rutilus rutilus* (2,3,5,6)
*Vimba vimba* (1,4,6)
Dist.: Lakes Alūksnes, Durbes, Dzirzezers, Juglas, Lielauces, Rāznas, Rušons, Sildu, Sivers, Soklas, Usmas, Vīlgāles; Kegums Water Reservoir; Daugava, Gauja, Ogre, Salaca Rivers; Gulf of Riga

Dactylogyrus suecicus Nybelin, 1937 (F)
Location: gills
Host: *Rutilus rutilus*
Dist.: Lakes Okras, Sildu, Soklas, Usmas

Records: Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Okras, Sildu, Soklas, Usmas)
Records: Vismanis et al. 1989; Kirjusina & Vismanis 2004

Dactylogyrus tincae Gusev, 1965 (F)
Location: gills
Host: Tinca tinca
Dist.: Lakes Sildu, Slokas, Usmas, Zvejnieku
Records: Vismanis et al. 1989 (Lakes Sildu, Zvejnieku); Kirjusina & Vismanis 2004 (Lakes Sildu, Slokas, Usmas, Zvejnieku)

Dactylogyrus tuba von Linstow, 1878 (F)
Location: gills
Hosts: Aspius aspius (1)
Leuciscus idus (1,2)
L. leuciscus (2)
Dist.: Lake Rušons; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers
Records: 1. Shulman 1949 (Lake Rušons, Kegums Water Reservoir, Daugava River); 2. Kirjusina & Vismanis 2004 (Lake Rušons; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers)

Dactylogyrus vastator Nybelin, 1924 (F)
Location: gills
Hosts: Carassius carassius (1,2,3,5,6,11)
Cyprinus carpio carpio (2,4,6,7,8,9,10,11,12)
C. carpio haematopterus (2,7,8)
Dist.: Lakes Cirma, Lielauces, Rāznas, Sīvers, Slokas; Daugava River
Remarks: This species is dangerous for carp fry, especially when water temperatures range from 20–25 °C. During spring and summer it caused mass mortalities in ponds (Vismanis 1972). Akhmerov (1961) noted D. vastator on carp of all ages.

Dactylogyrus vistulae Prost, 1957 (F)
Location: gills
Host: Leuciscus cephalus
Dist.: Ogre, Salaca Rivers

Records: Vismanis & Popov 1993 (Salaca River); Kirjusina & Vismanis 2004 (Ogre, Salaca Rivers)

Dactylogyrus wegeneri Kulwiec, 1927 (F)
Location: gills
Host: Carassius carassius
Dist.: Lakes Lielauces, Liepājas, Rāznas, Sildu; Daugava River
Records: Shulman 1949 (Lake Rāznas, Daugava River); Reinsone 1955a (Lakes Lielauces, Liepājas), 1959 (Lakes Lielaucies, Liepājas); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lakes Lielauces, Liepājas, Rāznas, Sildu; Daugava River)

Dactylogyrus yinwenyingae Gusev in Bykhovskaya-Pavlovskaya et al. 1962 (F)
Location: nasal cavity
Hosts: Abramis brama (1,2)
Leuciscus cephalus (1)
L. idus (1)
Rutilus rutilus (1,2)
Dist.: Lake Viragnas; Būļupe, Ogre, Rivers
Records: 1. Vismanis & Popov 1993 (Salaca River); 2. Kirjusina & Vismanis 2004 (Lake Viragnas; Būļupe, Ogre, Rivers)

Dactylogyrus zandti Bychowsky, 1933 (F)
Location: gills
Host: Abramis brama
Dist.: Lakes Duņas, Usmas; Būļupe, Daugava Rivers; Gulf of Riga
Records: Vismanis & Popov 1990 (Lakes Duņas, Usmas; Gulf of Riga); Kirjusina & Vismanis 2004 (Lakes Duņas, Usmas; Būļupe, Daugava Rivers; Gulf of Riga)
**Dactylogyrus** sp.  
(F)  
Location: gills  
Hosts: *Abramis brama* (2)  
*Leuciscus idus* (2)  
*Perca fluviatilis* (1)  
Dist.: Lakes Duņas, Sīvers, Usmas  
Records: 1. Reinsone 1955b (Lake Sīvers); 2. Kirjusina & Vismanis 2004 (Lakes Duņas, Usmas)

**Pseudodactylogyrus anguillae**  
(F,B,M?)  
Ogawa and Egusa, 1976  
Location: gills  
Host: *Anguilla anguilla*  
Dist.: Lake Usmas, Venta River, Gulf of Riga  
Records: Kirjusina & Vismanis 2000 (Lake Usmas, Venta River, Gulf of Riga), 2001 (Lake Usmas, Venta River), 2004 (Lake Usmas, Venta River)

**Pseudodactylogyrus bini**  
(F,B,M?)  
(Kikuchi, 1929) Gusev, 1965  
Location: gills  
Host: *Anguilla anguilla*  
Dist.: Lake Usmas; Venta River, Gulf of Riga  
Records: Kirjusina & Vismanis 2000 (Lake Usmas, Venta River, Gulf of Riga), 2001 (Lake Usmas, Venta River), 2004 (Lake Usmas, Venta River)

**Thaparocleidus siluri**  
(Zandt, 1924)  
Lim, 1996  
Syn.: *Ancylodiscoides siluri*  
Zandt, 1924  
Location: gills  
Host: *Silurus glanis*  
Dist.: Daugava River  
Records: Shulman 1949; Kirjusina & Vismanis 2004  

**SUBORDER TETRAONCHINEA**

**FAMILY TETRAONCHIDAE**

**Tetraonchus borealis**  
(Olsson, 1893)  
Monticelli, 1905  
Includes: *T. borealis* f. typica  
Location: gills  
Host: *Thymallus thymallus*  
Dist.: Gauja River  
Records: Kirjusina & Vismanis 2001, 2004

**Tetraonchus monenteron**  
(F)

**SUBCLASS HETERONCHOINEA**

**INFRASUBCLASS OLIGONCHOINEA**

**ORDER MAZOCRAEIDEA**

**SUBORDER DISCOCOTYLINEA**

**FAMILY DIPLOZOIDAE**

**Diplozoon paradoxum**  
(von Nordmann, 1832)  
Location: gills  
Hosts: *Abramis brama* (3,6,10,11)  
*Alburnus alburnus* (2,11)  
*Anguilla anguilla* (5,11)  
*Aspius aspius* (2)  
*Blicca bjoerkna* (2,3,5,6,11)  
*Carassius carassius* (3,4,5,11)  
*Cyprinus carpio carpio* (8,11)  
*C. carpio haematopterus* (7)  
*Esox lucius* (5,11)  
*Gobio gobio* (2,11)  
*Leucaspis delineatus* (6)  
*Pelecus cultratus* (2,11)  
*Rutilus rutilus* (2,3,4,5,6,11)  
*Scardinius erythrophthalmus* (2,3,5,11)  
*Tinca tinca* (11)  
(Wagener, 1857) Diesing, 1858  
Location: gills  
Host: *Esox lucius*  
Dist.: Lakes Burtnieku, Cima, Durbes, Juglas, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River  
Records: Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River); Reinsone 1955a (Lakes Burtnieku, Cima, Durbes, Lielauces, Liepājas, Sivers), 1955b (Lake Sīvers), 1959 (Lakes Lielauces, Liepājas, Sivers); Vismanis 1961 (Lake Burtnieku); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis. 2004 (Lakes Burtnieku, Cima, Durbes, Juglas, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River)

**SUBCLASS TETRAONCHINEA**

**Tetraonchus** sp.  
(F)  
Location: gills  
Host: *Anguilla anguilla*  
Dist.: Lake Liepājas  
Records: Reinsone 1955a, 1959  
Remarks: These reports are likely to involve misidentifications.
**Vimba vimba** (2,5,9,11)

Fish (1)

Distribution: Lakes Burtnieku, Durbes, Juglas, Liepājas, Rāznas, Rušons, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga


Remarks: Reports of *Diplozoon paradoxum* made prior to 1985 should be treated with caution.

**Diplozoon sp.** (F)

Location: gills

Hosts: *Cyprinus carpio carpio* (1)

Location: *Oncorhynchus mykiss* (2)

Distribution: Lake Dzirnezers

Records: 1. Vismanis 1964 (ponds); 2. Vismanis, Kuznetsova & Rakitsky 1983 (Lake Dzirnezers)

Remarks: The occurrence of *Diplozoon* on rainbow trout requires verification.

**Eudiplozoon nipponicum** (Goto, 1891) (F)

Khotenovsky, 1985

Location: gills

Hosts: *Carassius carassius* (1,2,3)

Location: *Cyprinus carpio carpio* (1,3)

Distribution: Lake Sildu


Remarks: This species is thought to be native to the Amur region and to have been spread to many countries via the movement of common carp.

**Paradiplozoon alburni** (F)

Khotenovsky, 1982

Location: gills

Hosts: *Alburnus alburnus* (2)

Location: *Leuciscus idus* (2)

**Scardinius erythrophthalmus** (1)

*Vimba vimba* (2)

Dist.: Daugava, Salaca Rivers

Records: 1. Vismanis & Popov 1989 (Salaca River); 2. Kirjusina & Vismanis 2004 (Daugava, Salaca Rivers)

**Paradiplozoon bliccae** (F)

(Reichenbach-Klinke, 1961)

Location: gills

Hosts: *Abramis brama* (2)

Location: *Blicca bjoerkna* (2)

Location: *Vimba vimba* (1,2)

Distribution: Daugava, Gauja Rivers

Records: 1. Vismanis & Popov 1989 (Gauja River); 2. Kirjusina & Vismanis 2004 (Daugava, Gauja Rivers)

**Paradiplozoon homoion gracile** (F)

(Reichenbach-Klinke, 1961)

Khotenovsky, 1985

Location: gills

Host: *Gobio gobio gobio*

Distribution: Ogre River

Records: Kirjusina & Vismanis 2001, 2004

**Paradiplozoon homoion homoion** (F)

(Bychowsky and Nagibina, 1959)

Khotenovsky, 1985

Location: gills

Hosts: *Abramis brama* (2)

Location: *Blicca bjoerkna* (2)

Location: *Gymnocephalus cernuus* (2)

Location: *Leuciscus leuciscus* (2)

Location: *Rutilus rutilus* (1,2)

Location: *Vimba vimba* (2)

Distribution: Lakes Burtnieku, Kišezers, Sildu, Slokas, Usmas; Daugava, Ogre, Salaca Rivers


**Paradiplozoon zeller** (Gyntovt, 1967) (F)

Khotenovsky, 1985

Location: gill

Hosts: *Gobio gobio gobio* (2)

Location: *Phoxinus phoxinus* (1)

Distribution: Lake Sildu, Ogre River

Records: 1. Vismanis et al. 1989 (Lake Sildu); 2. Kirjusina & Vismanis 2004 (Lake Sildu, Ogre River)

Remarks: Data on parasite distribution was not given by individual host species and waterbody.

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5 Data on parasite distribution was not given by individual host species and waterbody.
CLASS CESTODA

SUBCLASS CESTOIDEA

SUPERORDER EUCESTODA

ORDER SPATHEBOTHRIIDEA

FAMILY ACROBOTHRIIDAE

Cyathocephalus truncatus (Pallas, 1781) (F) Kessler, 1868
Location: intestine
Hosts: Esox lucius (2)
Perca fluviatilis (2)
Salmo trutta morpha fario (1,2)
Dist.: Lakes Juglas, Lubāns; Līčupe River
Records: 1. Shulman 1949 (Liečupe River); 2. Kirjusina & Vismanis 2004 (Lakes Juglas, Lubāns; Līčupe River)
Remarks: Heavy infections of brown trout in ponds may cause mortality (see Bauer 1987).

ORDER CARYOPHYLLIDEA

FAMILY CARYOPHYLLAEIDAE

Archigetes brachyurus Mrázek, 1980 (F)
Syn.: Glaridaeis brachyurus (Mrázek, 1908)
Location: intestine
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Records: Vismanis 1964; Kirjusina & Vismanis 2004
Caryophyllaeus fimbriceps (Annenkova-Chlopina, 1919) (F)
Location: intestine
Hosts: Abramis brama (5)
Cyprinus carpio carpio (1,2,3,4,5)
C. carpio haematopterus (4)
Dist.: Daugava River
Records: 1. Grapmane 1957 (ponds); 2. Reinsone 1958 (ponds); 3. Akhmerov 1961 (ponds); 4. Vismanis & Peslak 1963 (ponds);
5. Kirjusina & Vismanis 2004 (Daugava River, ponds)
Remarks: This cestode is pathogenic to young carp; heavy infections may cause mortalities of yearling fish (see Bauer 1987).

Caryophyllaeus laticeps (Pallas, 1781) (F) Lühe, 1910
Location: intestine
Hosts: Abramis brama (1,2,3,4,8)
Blicca bjørkena (8)
Carassius carassius (1,5,8)
Cyprinus carpio carpio (5,6)
Rutilus rutilus (7,8)
Tinca tinca (5,8)
Dist.: Lakes Cirma, Dārza, Juglas, Kāla, Rušons, Sildu, Sivers, Sokas, Ūsmas, Žuguru; Daugava, Ogre, Salaca Rivers; Gulf of Riga
Records: 1. Shulman 1949 (Lake Rušons, Daugava River, Gulf of Riga); 2. Reinsone 1955a (Lakes Cirma, Kāla, Sivers, 3. 1955b (Lake Sivers); 4. 1959 (Lake Sivers); 5. Grapmane 1957 (ponds); 6. Vismanis 1964 (ponds); 7. Vismanis et al. 1989 (Lake Sildu);
8. Kirjusina & Vismanis 2004 (Lakes Cirma, Dārza, Juglas, Kāla, Rušons, Sildu, Sivers, Sokas, Ūsmas, Žuguru; Daugava, Ogre, Salaca Rivers; Gulf of Riga, ponds)

ORDER CARYOPHYLLIDEA

FAMILY CARYOPHYLLAEIDAE

Archigetes brachyurus Mrázek, 1980 (F)
Syn.: Glaridaeis brachyurus (Mrázek, 1908)
Location: intestine
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Records: Vismanis 1964; Kirjusina & Vismanis 2004

CARYOPHYLLAEIDAE

Khawia dubius (Szidat, 1937) (F)
Syn.: Bothriocephalus dubius Szidat, 1937
Location: intestine
Hosts: Aspius aspius
Gobio gobio gobio
Dist.: Lake Rāznas, Kegums Water Reservoir
Records: Shulman 1949; Kirjusina & Vismanis 2004

FAMILY LYTOCESTIDAE

Caryophyllaeides fennica (Schneider, 1902) Nybelin, 1922
Location: intestine
Hosts: Blicca bjørkena (1,2)
Gasterosteus aculeatus (2)
Leuciscus idus (1,2)
Scardinius erythrophthalmus (2)
Vimba vimba (1,2)
Dist.: Lakes Rušons, Sokas; Daugava River
Records: 1. Shulman 1949 (Lake Rušons, Daugava River); 2. Kirjusina & Vismanis 2004 (Lakes Rušons, Sokas; Daugava River)
Khawia parva (Zmeev, 1936) (F)
Kulakovskaya, 1961
Location: intestine
Host: Gasterosteus aculeatus
Dist.: Daugava River
Records: Kirjusina & Vismanis 2002, 2004

Khawia rossittensis (Szidat, 1937) (F)
Syn.: Bothrioscolex rossittensis
Szidat, 1937
Location: intestine
Host: Carassius carassius
Dist.: Lake Juglas, Daugava River
Records: Shulman 1949 (Daugava River); Kirjusina & Vismanis 2004 (Lake Juglas, Daugava River)

Khawia sinensis Hsü, 1935 (F)
Location: intestine
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Records: Vismanis 1964, 1972; Kirjusina & Vismanis 2004
Remarks: This cestode may cause mortality of young fish in ponds. According to Bauer (1987), Khawia sinensis was introduced to Europe with the translocation of carp from the Amur River.

ORDER CYCLOPHYLLIDEA
FAMILY GRYPORHYNCHIDAE

Paradilepis scolecina (Rudolphi, 1819) (F)
Hsü, 1935 metacestode
Location: kidney, intestine, intestinal wall, liver
Hosts: Abramis brama (2)
C. carassius (2)
Cyprinus carpio carpio (1,2)
Esox lucius (2)
Rutilus rutilus (2)
Tinca tinca (2)
Dist.: Ogre River
Remarks: Adults are frequent and widely distributed parasites of cormorants in Europe, Asia, Africa and Australia (see Scholz et al. 2004). Copepods (Eudiaptomus graciloides) have been shown experimentally to serve as first intermediate hosts, while a wide range of fishes (primarily cyprinids) act as second intermediate hosts, infections occurring in the mesenteries and liver.

Valipora campylancristrota (F)
(Wedl, 1855) Bauer and Bona, 1960 metacestode
Includes: Cysticercus Dilepis unilateralis auctorum
Location: bile ducts, gall bladder, intestine [?]
Hosts: Carassius carassius (2)
Cyprinus carpio carpio (1,2)
Tinca tinca (2)
Dist.: Lakes Dārza, Slokas, Usmas
Records: 1. Vismanis 1964 (ponds); 2. Kirjusina & Vismanis 2004 (Lakes Dārza, Slokas, Usmas, ponds)
Remarks: According to Scholz et al. (2004), definitive hosts for this cestode are herons (e.g. Ardea cinerea), while copepods serve as first intermediate hosts. A large number of fishes (primarily cyprinids) have been reported as second intermediate hosts, with the tench (Tinca tinca) being most commonly infected. These authors note that the gall bladder is the typical site of infection in fish, and that reports from the intestine are doubtful.

This species is of pathogenic importance, heavy infections causing valiporosis, a condition characterized by retardation of the host’s growth and weight (see Scholz et al. 2004).

6 Larval cestodes from fish belonging to this family were recently reviewed by Scholz et al. (2004).
ORDER TETRAPHYLlidea

Tetraphyllidea of Uncertain Taxonomic Position

Scolex pleuronectis O.F. Müller, 1788 (M) plerocercoid
Location: intestine
Hosts: Cottus poecilopus (1)
Platichthys flesus trachurus (1,2,3,4)
Dist.: Gulf of Riga, Baltic Sea

ORDER PSEUDOPHYLLidea

FAMILY BOTHRIOCEPHALIDAE

Bothriocephalus acheilognathi (F) Yamaguti, 1934
Syn.: Clcestobothrium opsariichthydis (Yamaguti, 1934)
Bothriocephalus gowkongensis Yeh, 1955
Location: intestine
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Remarks: Adults are common in more that 25 species of cyprinids and some predatious fishes. This tapeworm was introduced into Europe with the introduction of common carp from the Amur region and is now distributed in natural waters (see Bauer 1987). It is pathogenic to young carp, sometimes causing mortalities.

Bothriocephalus claviceps (F) (Goeze, 1782) Rudolphi, 1810
Location: intestine
Host: Anguilla anguilla
Dist.: Lakes Rāznas, Rušons, Usmas; Kegums Water Reservoir; Venta River; Gulf of Riga
Records: Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Gulf of Riga); Kirjusina and Vismanis 2000 (Lake Usmas, Venta River, Gulf of Riga), 2004 (Lakes Rāznas, Rušons, Usmas; Kegums Water Reservoir; Venta River; Gulf of Riga)

Bothriocephalus scorpii (O.F. Müller, 1776) Rudolphi, 1808
Location: intestine
Hosts: Belone acus (1)
Gadus morhua callarias (2,3,6)
Platichthys flesus trachurus (1,4,5,6)
Psetta maxima (1,6)
Sprattus sprattus balticus (1,6)
Taurulus bubalis (1,6)
Zoarces viviparus (1,6)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga); 2. Vismanis, Volkova & Eglite 1986 (Gulf of Riga); 3 Vismanis, Eglite & Volkova. 1986 (Baltic Sea); 4. Vismanis & Kondratovičs 1994 (Baltic Sea), 5. 1995 (Baltic Sea); 6. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)

Bothriocephalus sp. (M)
Location: intestine
Hosts: Platichthys flesus trachurus (2)
Zoarces viviparus
Dist.: Gulf of Riga

FAMILY DIPHYLLOBOTHRIIDAE

Diphyllobothrium dendriticum (Nitzsch, 1824) Lühe, 1910 plerocercoid
Includes: Diphyllobothrium larva C auctorum
Location: encapsulated on wall of esophagus, stomach, pyloric caeca
Host: Salmo salar
Dist.: Bullupe, Daugava, Gauja, Lielupe, Vedaugava Rivers; Gulf of Riga
Records: Shulman 1949 (Daugava River); Kirjusina & Vismanis 2004 (Bullupe, Daugava, Gauja, Lielupe, Vedaugava Rivers; Gulf of Riga)
Remarks: Definitive hosts are fish-eating birds; rarely mammals and man (proved experimentally). Optimal development occurs only in gulls (see Serdyukov 1979).

Diphyllobothrium ditremum (Creplin, 1825) Lühe, 1910 plerocercoid
Includes: Diphyllobothrium larva B auctorum
Location: encapsulated on wall of intestine and stomach
Hosts: *Coregonus albula* (1,2,3,4)  
*C. lavaretus* (1,2,4)  
*Osmerus eperlanus* (1,4)  
*O. eperlanus spirinchus* (2,3,4)  
*Salmo salar* (1,4)  
Dist.: Lakes Cirma, Rāznas, Sīvers; Daugava River; Gulf of Riga  
Records: 1. Shulman 1949 (Lake Rāznas, Daugava River, Gulf of Riga); 2. Reinsone 1955a (Lakes Cirma, Sīvers), 3. 1959 (Lake Sīvers); 4. Kirjusina & Vismanis 2004 (Lakes Cirma, Rāznas, Sīvers; Daugava River; Gulf of Riga)

**Diphyllobothrium latum** (Linnaeus, 1758) Lühe, 1910 plerocercoid  
Includes: *Diphyllobothrium larva Auctorum*  
Location: body cavity  
Hosts: *Esox lucius* (2,4)  
*Lota lota* (2,4)  
*Perca fluviatilis* (3,4)  
fish (1)  
Dist.: Lakes Burtnieku, Juglas; Daugava River  
Records: 1. Trauberga 1936 (-); 2. Shulman 1949 (Daugava River); 3. Reinsone 1955a (Lake Burtnieku); 4. Kirjusina & Vismanis 2004 (Lakes Burtnieku, Juglas; Daugava River)  
Remarks: Definitive hosts are man and other piscivorous mammals.

**Diphyllobothrium vogeli** Kuhlow, 1953 (B) plerocercoid  
Location: encapsulated in body cavity  
Host: *Gasterosteus aculeatus*  
Dist.: Daugava River  
Records: Kirjusina & Vismanis 2002, 2004

**Eubothrium crassum** (Bloch, 1779) (B,M) Nybelin, 1922  
Location: pyloric caeca, intestine  
Hosts: *Salmo salar* (1,2)  
*S. trutta* morpha fario (1,2)  
Dist.: Daugava River, Gulf of Riga  
Records: 1. Shulman 1949 (Gulf of Riga); 2. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)

**Eubothrium fragile** (Rudolphi, 1802) (B) Nybelin, 1922  
Location: intestine  
Host: *Alosa fallax fallax*  
Dist.: Gulf of Riga  
Records: Shulman 1949; Kirjusina & Vismanis 2004  

**FAMILY TRIAENOPHORIDAE**
**Eubothrium sp.** (F,B,M)

Location: intestine

Hosts: *Clupea harengus membras* (2,3,7)

*Lampris fluviatilis* (1,2,3,7,8)

*Platichthys flesus trachurus* (4,5,6,7)

Dist.: Daugava River, Gulf of Riga, Baltic Sea

Records: 1. Shulman 1949 (Daugava River); 2. Vismanis, Eglite & Volkova 1981 (Gulf of Riga); 3. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 4. Vismanis & Kondratovičs 1994 (Baltic Sea); 5. 1995 (Baltic Sea); 6. Tabolina 1994 (Gulf of Riga); 7. Kirjusina & Vismanis 2004 (rivers entering the Gulf of Riga); 8. Kirjusina 2005 (Daugava River)

Remarks: These reports involve immature stages.

**Triaenophorus nodulosus** (Pallas, 1760) (F)

Rudolphi, 1819 adult and pleroceroid

Location: intestine, encapsulated in liver

Hosts: *Anguilla anguilla* (2,8)

*Esox lucius* (1,2,3,4,5,8)

*Gasterosteus aculeatus* (1,8)

*Lota lota* (1,2,4,8)

*Osmerus eperlanus* spirinchus (2,3,4,8)

*Oncorhynchus mykiss* (6,7)

*Perca fluviatilis* (1,2,3,4,5,8)

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Indra, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, River; Gulf of Riga

Records: 1. Shulman 1949 (Lake Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lakes Alūksnes, Burtnieku, Cirma, Durbes, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, River; Gulf of Riga); 3. 1955b (Lake Sīvers); 4. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Burtnieku, Cirma, Durbes, Indra, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, River; Gulf of Riga)

Remarks: Adults are found in the intestine of the northern pike (*Esox lucius*), while plerocercoids infect the liver of many prey species. Plerocercoids are pathogenic to young fish, especially perch and trout in ponds.

**ORDER PROTEOCEPHALIDEA**

**FAMILY PROTEOCEPHALIDAE**

**Proteocephalus cernaeae** (F)

(Gmelin, 1790) La Rue, 1911

Location: intestine

Hosts: *Gasterosteus aculeatus* (3)

*Gynnocephalus cernaeus* (1,2,3)

Dist.: Lakes Cirma, Kāla, Rušons; Kegums Water Reservoir; Daugava River

Records: 1. Shulman 1949 (Lake Rušons, Kegums Water Reservoir, Daugava River); 2. Reinsone 1955a (Lakes Cirma, Kāla); 3. Kirjusina & Vismanis 2004 (Lakes Cirma, Kāla, Rušons; Kegums Water Reservoir; Daugava River)

Remarks: Scholz and Hanzelová (1998) considered this taxon as a probable synonym of *P. percae* (O.F. Müller, 1780).

**Proteocephalus esocis** (F)

(Schneider, 1905) La Rue, 1911

Location: intestine

Host: *Esox lucius*

Dist.: Lakes Juglas, Sīvers

Records: Reinsone 1955a (Lake Sīvers), 1959 (Lake Sīvers); Kirjusina & Vismanis 2004 (Lakes Juglas, Sīvers)

Remarks: Scholz and Hanzelová (1998) considered this taxon as a probable synonym of *P. percae* (O.F. Müller, 1780).

**Proteocephalus filicollis** (F)

(Rudolphi, 1802) Weinland, 1858

Location: intestine

Host: *Gasterosteus aculeatus*

Dist.: Daugava River, Gulf of Riga

Records: Shulman 1949 (Daugava River, Gulf of Riga); Reinsone 1955a (Lake Sīvers); Reinsone 1955b (Lakes Cirma, Kāla); 3. 1959 (Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Indra, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, River; Gulf of Riga)

Remarks: Scholz and Hanzelová (1998) note that reports of this species from hosts other than percids are either incorrect or the result of accidental infection.

**Proteocephalus longicollis** (F)

(Zeder, 1800) Nufer, 1905

Syn.: *Proteocephalus exigus* La Rue, 1911

*P. neglectus* La Rue, 1911

Location: intestine

Hosts: *Cobitis taenia* (1,5)

*Coregonus albula* (1,2,3,4,5)
C. lavaretus (1,5)
Osmerus eperlanus (1,5)
O. eperlanus spirinchus (2,3,4,5)
Salmo trutta morpha fario (1,5)

Dist.: Lakes Alūksnes, Rāznas, Sīvers; Daugava, Ličupe Rivers; Gulf of Riga
Records: 1. Shulman 1949 (Lakes Ličupe, Rāznas; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lakes Alūksnes, Sīvers), 3. 1955b (Lake Sīvers), 4. 1959 (Lake Sīvers); 5. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Rāznas, Sīvers; Daugava, Ličupe Rivers; Gulf of Riga)

Proteocephalus macrocephalus (F)
(Creplin, 1825) Nufer, 1905
Location: intestine
Host: Anguilla anguilla
Dist.: Lakes Liepājas, Usmas; Gulf of Riga
Records: Shulman 1949 (Gulf of Riga); Reinsone 1955a (Lake Liepājas), 1959 (Lake Liepājas); Kirjusina & Vismanis 2004 (Lakes Liepājas, Usmas; Gulf of Riga)

Proteocephalus osculatus (F)
(Goeze, 1782) Nybelin, 1942
Location: intestine
Host: Silurus glanis
Dist.: Kegums Water Reservoir, Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

Proteocephalus percae (F)
(O.F. Müller, 1780) Railliet, 1899
Location: intestine
Hosts: Esox lucius (2,3,4,6)
Perca fluviatilis (1,2,3,4,5,6)
Zoarces viviparus (1,6)
Dist.: Lakes Burtnieku, Kāla, Liepājas, Rāznas, Sīvers, Usmas; Daugava River
Remarks: The perch, Perca fluviatilis, is the principal definitive host of this cestode. Scholz and Hanzelová (1998) note that records from predacious fishes such as northern pike are due to post-cyclic infection resulting from consumption of perch.

Proteocephalus torulosus (F)
(Batsch, 1786) Nufer, 1905
Location: intestine
Hosts: Alburnus alburnus (1,2,5)
Leucaspis delineatus (3)
Leuciscus leuciscus (5)
Rutilus rutilus (1,5)
Vimba vimba (4)
Dist.: Lakes Alūksnes, Burtnieku, Rāznas Rušons; Daugava, Ogre, Salaca Rivers; Gulf of Riga
Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Daugava River); 2. Reinsone 1955a (Lakes Alūksnes, Burtnieku); 3. Vismanis 1961 (Lake Burtnieku); 4. Vismanis, Spirina & Paršuta 1971 (Gulf of Riga); 5. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Burtnieku, Rāznas Rušons; Daugava, Ogre, Salaca Rivers)
Remarks: This species is restricted to cyprinid fishes (see Scholz and Hanzelová 1998).

Eustrongyloides excisus (F)
(Jägerskiöld, 1909) larva
Location: body cavity
Hosts: Esox lucius (1,4)
Sander lucioperca
Dist.: Lakes Juglas, Slokas
Record: Kirjusina & Vismanis 2004
Remarks: Adults are parasitic in piscivorous birds (Pelecaniformes, Ciconiiformes and...
Anseriformes) in Europe, Southeast Asia, the Middle East and Australia, while aquatic oligochaetes serve as first intermediate hosts (see Anderson 2000).

_Eustrongyloides_ sp. larva (F)
Location: intestinal wall, mesenteries
Hosts: *Anguilla anguilla* (1,4)
*Gymnocephalus cernuus* (2,4)
*Perca fluviatilis* (2,3,4)
*Silurus glanis* (1,4)
Dist.: Lakes Burtnieku, Saukas; Kegums Water Reservoir; Daugava River
Records: 1. Shulman 1949 (Kegums Water Reservoir, Daugava River); 2. Reinsone 1955a (Lakes Burtnieku, Saukas); 3. Vismanis 1961 (Lake Burtnieku); 4. Kirjusina & Vismanis 2004 (Lake Burtnieku; Kegums Water Reservoir; Daugava River)

**SUPERFAMILY TRICHIUROIDEA**

**FAMILY CAPILLARIIDAE**

_Pseudocapillaria_ (Pseudocapillaria) *tomentosa* (Dujardin, 1843)
Moravec, 1987
Syn.: _Capillaria tomentosa_ Dujardin, 1843
Location: intestine
Hosts: *Abramis brama* (1,2)
*Leuciscus cephalus* (1,2)
*L. idus* (1,2)
_Vimba vimba* (1,2)
Dist.: Daugava River
Remarks: This nematode is widely distributed in palearctic Eurasia and North America, but also occurs in the Oriental Region. The frequently heavy infections of _P. tomentosa_ in pond-reared carp and other fishes of economic importance in some regions suggest that this species may be a dangerous parasite for fish in intensive pond culture, particularly in the breeding of carp fry (see Moravec 1994, 2001).

_Schulmanela petruschewskii_ (Shulman, 1948) Ivashkin, 1964
Syn.: _Hepaticola petruschewskii_ Shulman, 1948
Location: intestine, intestinal wall, liver, mesenteries
Hosts: *Cobitis taenia* (1,2)

_Cyprinus carpio carpio* (2)
_Gymnocephalus cernuus* (1,2)
_Vimba vimba* (2)
Dist.: Lake Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers
Records: 1. Shulman 1949 (Kegums Water Reservoir); 2. Kirjusina & Vismanis 2004 (Lake Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers, ponds)
Remarks: Heavy infections by this nematode have been reported to cause liver pathology in species such as grass carp and ruff, resulting in emaciation and sluggishness (see Moravec 2001).

**SUBCLASS SE</p>

**CERNENTEA**

**ORDER ASCARIDIDA**

**SUPERFAMILY ASCARIDOIDEA**

**FAMILY ANISAKIDAE**

_Anisakis simplex_ (Rudolphi, 1809) (M)
Dujardin, 1845 larva
Location: encapsulated or free in mesenteries, musculature
Hosts: *Clupea harengus membras* (4,5)
*Gadus morhua callarias* (1,2,3,5)
Dist.: Gulf of Riga, Baltic Sea
Records: 1. Vismanis, Volkova & Eglite 1984 (Gulf of Riga), 2. 1986 (Gulf of Riga), 3. 1987 (Gulf of Riga); 4. Tshervontsev, Fetter & Vismanis 1994 (Baltic Sea); 5. Kirjusina & Vismanis 2004 (Baltic Sea)
Remarks: This nematode causes anisakosis, an important disease of man in countries where marine fish are consumed raw or undercooked.

_Contracaecum microcephalum_ (Rudolphi, 1819) Baylis, 1920 larva
Location: encapsulated in mesenteries and serosa
Host: *Abramis brama*
Dist.: Lakes Asteres, Slokas
Records: Kirjusina & Vismanis 2003, 2004
Remarks: Adults occur in piscivorous birds (Ciconiiformes, Anserinae), while copepods serve as first intermediate hosts (see Anderson 2000).

_Contracaecum micropapillatum_ (Stossich, 1890) Baylis, 1920 larva
Location: body cavity
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Goezia sp.  (F,B)
Location: intestine
Host: Salmo salar
Dist.: Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

Hysterothyacidium aduncum  (M)
(Rudophi, 1802) Deardorff and Overstreet, 1981 adult and larva
Syn.: Ascaris aduncus Rudolphi, 1802
Contraecium aduncum
(Rudophi, 1802)
Thynnascaris aduncus
(Rudophi, 1802)
Location: intestine; encapsulated in liver, mesenteries
Hosts:
Alosa fallax fallax (1,12)
Anguilla anguilla (1,12)
Belone belone (1,12)
Clepea harengus membras (2,3,5,12)
Cottus poecilopus (5)
Gadus morhua callarias
(1,3,4,5,6,12)
Gasterosteus aculeatus (1,12)
Oncorhyncus mykiss (7,8)
Osmerus eperlanus (1,5,12)
Perca fluviatilis (1,12)
Platichthys flesus trachurus
(1,3,4,5,6,10,11,12)
Psetta maxima (1,12)
Salmo salar (1,12)
S. trutta (1,12)
Triglopsis quadricornis (1,12)
Zoarces viviparus (1,3,5,6,12)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Remarks: Adult nematodes are parasitic in the digestive tract of marine and anadromous fishes, which may carry them into fresh water. Larvae occur mostly encapsulated in the abdominal cavity and serosa of the internal organs of prey fishes.
Older records under such names as Contraecium aduncum should be treated with caution, as the larvae and adults of other congeneric species were apparently included under this name.

Raphidascaris acus (Bloch, 1779)  (F,B)
Railliet and Henry, 1915 adult and larva
Location: gonads, intestine, liver, mesenteries
Hosts:
Abramis brama (1,2,4,10)
Alburnoides bipunctatus (10)
Alburnus alburnus (1,10)
Anguilla anguilla (1,2,4,9,10)
Blicca bjoerka (1,2,4,5,10)
Carassius carassius (1,2,4,10)
Coregonus lavaretus (1)
Esox lucius (1,2,3,4,5,10)
Gasterosteus aculeatus (1,10)
Gobio gobio (1)
Gymnocephalus cernuus (1,10)
Leuciscus cephalus (1,10)
L. idas (1,10)
L. leuciscus (10)
Lota lota (1,2,4,10)
Perca fluviatilis (1,2,4,10)
Platichthys flesus trachurus
(6,7,8)
Psetta maxima (1,10)
Rutilus rutilus (1,2,3,4,5,10)
Salmo salar (1,10)
S. trutta (1,10)
Sander lucioperca (1,10)
Scardinius erythrophthalmus
(1,2,3,4,10)
Silurus glanis (1,10)
Timca tinca (110)
Triglopsis quadricornis (1,10)
Vimba vimba (1,10)
Zoarces viviparus (1,3,5,6,12)
Zoarces viviparus (1,6,10)
Dist.: Lakes Alexnus, Burtnieku, Černavu, Cirma, Indra, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sivers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Ogre, Salaca, Venta Rivers; Gulf of Riga; Baltic Sea
Records: 1. Shulman 1949 (Lakes Rāznas, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga); 2. Reinsone 1955a (Lakes Āķīnas, Burtnieku, Cirma, Kāla, Liepājas, Sivers), 3. 1955b (Lake Sīvers), 4. 1959 (Lakes Liepājas, Sivers); 5. Vismanis 1961 (Lake Burtnieku); 6. Vismanis,
Volkova & Eglite 1984 (Gulf of Riga); 7. Vismanis & Kondratovičs 1994 (Baltic Sea), 8. 1995 (Baltic Sea); 9. Kirjusina & Vismanis 2000 (Lake Usmas, Venta River, Gulf of Riga), 10. 2004 (Lakes Alūksnes, Burtnieku, Černavu, Cirna, Indra, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga; Baltic Sea)

Remarks: Definitive hosts of *R. acus* are predatory fishes (*Esox lucius, Lota lota, Salmo trutta* and others) that acquire infections by ingesting other fishes harbouring the third-stage larvae. The latter act as intermediate or paratenic hosts (see Moravec 1994).

**Raphidascaris gracillima** (F) 
(von Linstow, 1890) Skrjabin, 1923 larva
Location: liver
Hosts: *Gasterosteus aculeatus* (1,2) *Zoarces viviparus* (1,2)
Dist.: Daugava River

**FAMILY ASCARIDIDAE**

**Pseudoterranova decipiens** (M) 
(Krabbe, 1878) Gibson, 1983 larva
Syn.: *Porrocaecum decipiens* (Krabbe, 1878)
Location: liver
Hosts: *Platichthys flesus trachurus* (1,2) *Taurulus bubalis* (1,2) *Triglophis quadricornis* (1,2) *Salmo salar* (1,2)
Dist.: Daugava River, Gulf of Riga, Baltic Sea

**Pseudoterranova sp. larva** (M)
Includes: *Porrocecum* sp. auctorum
Location: body cavity
Hosts: *Platichthys flesus trachurus* (1,2) *Zoarces viviparus* (1)
Dist.: Gulf of Riga, Baltic Sea
Records: 1. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 2. Vismanis & Kondratovičs 1995 (Baltic Sea)

**SUPERFAMILY SEURATOIDEA**

**FAMILY CUCULLANIDAE**

**Cucullanus cirratus** O.F. Müller, 1777 (F) 
Location: intestine
Host: *Gadus morhua callarias*
Dist.: Gulf of Riga
Records: Vismanis, Volkova & Eglite 1986; Vismanis, Eglite & Volkova 1986

**Cucullanus heterochrous** (M) 
Rudolphi, 1802
Location: intestine
Hosts: *Leuciscus idus* (1,5) *Platichthys flesus trachurus* (1,2,3,4) *Silurus glanis* (1,5)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Records: 1. Shulman 1949 (Daugava River, Baltic Sea); 2. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 3. Vismanis & Kondratovičs 1994 (Baltic Sea), 4. 1995 (Baltic Sea); 5. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)
Remarks: This nematode is a parasite of various flatfishes of the families Pleuronectidae and Soleidae, some species of which occur mainly in river estuaries, sometimes penetrating upstream into fresh waters (see Moravec 1994).

**Cucullanus truttae** Fabricius, 1794 (F)
Syn.: *Dacnitis stelmioides* Vessichelli, 1910 *D. truttae* (Fabricius, 1794)
Location: abdominal cavity [?], intestine
Hosts: *Lampetra fluviatilis* (1,2,3,4,5) *Salmo salar* (1,4) *Salmo trutta fario* (1,4)
Dist.: Daugava, Līčupe Rivers; Gulf of Riga
Records: 1. Shulman 1949 (Daugava, Līčupe Rivers); 2. Vismanis, Eglite & Volkova 1981 (Gulf of Riga); 3. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 4. Kirjusina & Vismanis 2004 (rivers entering in Gulf of Riga); 5. Kirjusina 2005 (Daugava River)
Remarks: The principal hosts are various salmonids, but fully mature nematodes are also found in adult lamprey (Moravec 1994).

**Dichelyne** (*Cucullanellus*) *minutus* (M) 
(Rudolphi, 1819) Petter, 1974
Syn.: *Cucullanellus minutus* (Rudolphi, 1819)
Location: intestine
Hosts: *Platichthys flesus trachurus*
**Desmidocercella numidica** (F)  
(Seurat, 1920) York and Maplestone, 1926 larva  
Location: vitreous humor of eye  
Hosts: Perca fluviatilis (1)  
Scardinius erythrophthalmus (1,2)  
Dist.: Lakes Sīvers, Slokas, Usmas  
Remarks: Adults occur in the air sacs of herons (Ardeidae) in Africa, North America and the former Soviet Union (see Anderson 2000).  

**Desmidocercella sp. larva** (F)  
Location: vitreous humor of eye  
Hosts: Lota lota (1,2)  
Perca fluviatilis (1,2)  
Rutilus rutilus (1,2)  
Dist.: Lakes Juglas, Sīvers, Slokas, Žuguru; Daugava River  
Records: 1. Reinsone 1955 (Lake Sīvers); 2. Kirjushina & Vismanis 2004 (Lakes Juglas, Slokas, Žuguru; Daugava River)  

**Superfamily Dracunculoidea**  
**Family Anguillicolidae**  

**Anguillicola crassus** (F)  
Kuwahara, Niimi and Itagaki, 1974  
Location: swimbladder  
Hosts: Anguilla anguilla (1,2,3,4,5)  
Gymnocephalus cernuus (2,3,5)  
Perca fluviatilis (2,3,5)  
Dist.: Lakes Puzes, Usmas; Venta River; Gulf of Riga

Remarks: Principal definitive hosts are eels. Paratenic hosts of this parasite in Latvia are mainly ruff and rarely, perch. Mass mortality of eel in Lake Usmas was recorded by Kirjusina and Vismanis (2000).

**FAMILY PHILOMETRIDAE**

*Philometra abdominalis* Nybelin, 1928          (F)
Location: body cavity, under serosa of swimbladder wall
Host: *Rutilus rutilus*
Dist.: Lake Sildu, Lielupe River
Records: Vismanis & Popov 1990 (Lake Sildu); Kirjusina & Vismanis 2004 (Lake Sildu, Lielupe River)
Remarks: Gravid and subgravid females are found in the body cavity, while juveniles, males and unfertilized females locate under the serosa of the posterior portion of the swimbladder wall.

The life cycle has been shown to involve various copepods as intermediate hosts (see Anderson 2000).

*Philometra obturans* (Prenant, 1886)          (F,B)
Skrjabin, Shikhobalova, Sobolev, Paramonov and Sudarikov, 1954
Syn.: *Filaria obturans* Prenant, 1886
Location: gill arteries, ventral aorta
Host: *Esox lucius*
Dist.: Lakes Juglas, Kāla, Rušons, Sīvers, Slokas
Records: Shulman 1949 (Lake Rušons); Reinsone 1955a (Lake Sīvers), 1955b (Lake Sīvers), 1959 (Lake Sīvers); Kirjusina & Vismanis 2004 (Lakes Juglas, Kāla, Rušons, Sīvers, Slokas)
Remarks: Gravid and subgravid females are found in the body cavity, while juveniles, males and unfertilized females locate under the serosa of the posterior portion of the swimbladder wall.

Various copepods serve as intermediate hosts, while perch and rudd may act as paratenic hosts. (see Anderson 2000). Gravid, subgravid and young fertilized females locate in the gill arteries and ventral aorta of the northern pike; unfertilized females and males are found in the abdominal cavity and vitreous humor of the eye.

*Philometra ovata* (Zeder, 1803)          (F)
Skrjabin, 1923

Location: body cavity, under serosa of swimbladder
Hosts: *Abramis brama* (2,3)  *Gymnocephalus cernuus* (1,3)
Dist.: Lake Rušons; Daugava River
Records: 1. Shulman 1949 (Lake Rušons); 2. Vismanis & Popov 1990 (Daugava River); 3. Kirjusina & Vismanis 2004 (Lake Rušons; Daugava River)
Remarks: This philometrid is a common parasite of the body cavity of many species of cyprinids in Europe and Asia. Various species of copepod serve as intermediate hosts (see Anderson 2000). Gravid and subgravid females are found in the body cavity, while juveniles, males and unfertilized females occur under the serosa of the posterior part of the swimbladder.

*Philometroides cyprini* (Ishii, 1931)          (F)
Nakajima, 1970
Syn.: *Philometra lusii* Vismanis, 1962
*Philometra lusiana* Vismanis, 1966
Location: body cavity, serosa of swimbladder, skin under scales, scale beds
Host: *Cyprinus carpio carpio*
Dist.: Lake Sildu
Records: Vismanis 1962 (ponds), 1964 (ponds), 1967a (ponds), 1967b (ponds); 1972 (ponds); Vismanis & Peslak 1963 (ponds); Vismanis 1967 (ponds); Vismanis, Glagoleva & Kuznetsova 1981 (ponds); Vismanis et al. 1989 (Lake Sildu); Kirjusina & Vismanis 2004 (Lake Sildu, ponds)
Remarks: *Philometroides cyprini* is considered to be an introduced species that is specific to common carp (see Moravec et al. 2005). Gravid and subgravid females are spirally coiled in the skin under the scales and in the beds of the scales; young fertilized females occur in the body cavity, while juveniles, males and unfertilized females are found mainly in the serosa of the swimbladder. Various species of copepod serve as intermediate hosts (see Anderson 2000).
Vasilkov et al. (1974) reported that mortality of infected 2–3 week old carp fry reached 40–50 percent or even more. In year two and older carp, the parasite causes a considerable decrease in commercial quality (see Moravec 1994).

*Philometroides sanguinea* (F)  
(Rudolphi, 1819) Rasheed, 1963  
Location: caudal fin, swimbladder wall  
Host: *Carassius carassius*  
Dist.: Lakes Černavu, Juglas, Sildu, Slokas, Žuguru  
Records: Kirjusina & Vismanis 2003 (Lakes Černavu, Sildu), 2004 (Lakes Juglas, Slokas, Žuguru)  
Remarks: Vismanis (1968) reported mass mortality of *Carassius carassius* caused by *Philometroides sanguinea* in Altay, USSR. This nematode is apparently specific to fishes of the genus *Carassius* (see Moravec 1994). Various copepods serve as intermediate hosts.

**SUPERFAMILY HABRONEMATOIDEA**  
**FAMILY CYSTIDICOLIDAE**

*Ascarophis longispicula* Zhukov, 1960 (M)  
Location: intestine  
Host: *Gadus morhua callarias*  
Dist.: Gulf of Riga, Baltic Sea  
Records: Vismanis, Volkova & Eglite 1986 (Gulf of Riga); Vismanis, Eglite & Volkova 1986 (Baltic Sea); Kirjusina & Vismanis 2004 (Gulf of Riga)

*Ascarophis morrhuae*  
van Beneden, 1871  
Location: intestine  
Hosts: *Gadus morhua callarias* (1,2)  
*Triglopsis quadricornis* (1,2)  
Dist.: Gulf of Riga, Baltic Sea  

*Ascarophis skrjabini* (Layman, 1933) (M)  
Polyansky, 1952  
Syn.: *Cystidicola skrjabini*  
Layman, 1933  
Location: intestine  
Hosts: *Gadus morhua callarias* (1,3)  
*Zoarces viviparus* (1,2,3)  
Dist.: Daugava River, Gulf of Riga  
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga); 2. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 3. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga)

*Ascarophis* sp.  
(M)  
Location: intestine, stomach  
Hosts: *Clupea harengus membras* (1,2)  
*Gadus morhua callarias* (1,2,3,4)  
*Platichthys flesus trachurus* (2,5,6)
**Dist.: Gulf of Riga, Baltic Sea**

*Phylum Acanthocephala*

**Cystidicola farionis** Fischer, 1798
(Syn.: *Cystidicola impar* (Schneider, 1866))
Location: swimbladder
Hosts: *Clupea harengus membras* (10), *Coregonus lavaretus* (1,10), *Gadus morhua callarias* (4,5,6,7,10), *Lampetra fluviatilis* (2,3,5,7,11), *Oncorhynchus mykiss* (8,9), *Osmerus eperlanus* (1,5,7,10)

**Dist.: Daugava River, Gulf of Riga, Baltic Sea**
Remarks: The common definitive hosts of *C. farionis* are fishes of the families Salmonidae and Osmeridae. Species such as *Lampetra fluviatilis*, *Clupea harengus membras* and *Gadus morhua callarias* apparently are only facultative hosts, acquiring accidental infections by ingesting small salmonids or amphipod intermediate hosts (see Moravec 1994). Practically all *Osmerus eperlanus* are infected (Kirjusina and Vismanis 2004).

**Cystidicoloides ephemeridarum** (F)
(von Linstow, 1872) Moravec, 1981
Location: stomach
Hosts: *Thymallus thymallus* (2,3), *Zoarces viviparus* (1)
Dist.: Gauja River, Gulf of Riga
Records: 1. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 2. Kirjusina & Vismanis 2001 (Gauja River); 3. Kirjusina & Vismanis 2004 (Gauja River)
Remarks: Common definitive hosts are fishes of the family Salmonidae; *Zoarces viviparous* is accidentally infected.

**Unidentified Nematoda**

Nematoda gen. sp. larva (F,B,M)
Location: intestinal wall, liver, mesenteries, eyes

**Dist.:** Lakes Cirma, Lielauces, Liepājas, Sīvers; Kegums Water Reservoir; Daugava River; Gulf of Riga

**PHYLUM ACANTHOCEPHALA**

**CLASS PALEACANTHOCEPHALA**

**ORDER ECHINORHYNCHIDA**

**FAMILY ECHINORHYNCHIDAE**

*Acanthocephalus anguilae* (O.F. Müller, 1780) Lühe, 1911
Location: intestine
Hosts: *Abramis brama* (1,2,6,7), *Alburnus alburnus* (1), *Anguilla anguilla* (1,2,5,7), *Aspius aspius* (1,7), *Blica bjorkna* (1,2,5,6,7), *Carassius carassius* (1,2,3,5,7), *Cyprinus carpio carpio* (4,7), *Esox lucius* (1,7), *Gymnocephalus cernuus* (1,7), *Leuciscus idus* (1,6,7), *Lota lota* (1,2,3,5,7), *Pelecus cultratus* (1,7)
Rutilus rutilus (1,2,3,5,6,7)
Scardinius erythrophthalmus (2,5,7)
Silurus glanis (1,7)
Tinca tinca (1,2,3,5,7)
Vimba vimba (1,5,7)

Dist.: Lakes Burtnieku, Cirma, Juglas, Liepājas, Rāznas, Sīvers, Usmas; Kegums Water Reservoir, Gulf of Riga; Daugava River

Acanthocephalus clavula (F)
(Dujardin, 1845) Grabda-Kazubska & Chubb, 1968
Syn.: Echinorhynchus clavula Dujardin, 1845
Pseudoechinorhynchus borealis (von Linstow, 1901)

Location: intestine
Hosts: Anguilla anguilla (1,2,3)
Gasterosteus aculeatus (4)
Gymnocephalus cernuus (1)
Lota lota (1)

Dist.: Lakes Liepājas, Rāznas; Daugava River
Records: 1. Shulman 1949 (Lake Rāznas, Daugava River); 2. Reinsone 1955a (Lake Liepājas), 3. 1959 (Lake Liepājas); 4. Kirjusina & Vismanis 2004 (Lakes Liepājas, Rāznas, Sīvers, Usmas; Kegums Water Reservoir, Gulf of Riga; Daugava River, ponds)

Acanthocephalus lucii (F)
(O.F. Müller, 1776) Lühe, 1911

Location: intestine
Hosts: Abramis brama (10)
Anguilla anguilla (1,2,4,9,10)
Blicca bjöerka (1,10)
Carassius carassius (1,10)
Cyprinus carpio (6,10)
Esoc lucius (1,2,3,4,5,8,10)
Gasterosteus aculeatus (10)
Gobio gobio (1,10)
Gymnocephalus cernuus (1,2,3,4,10)
Lota lota (1,2,3,4,5,10)

Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Liepājas, Rāznas, Riču, Rušons, Sīvers, Sildu, Slokas, Usmas, Zūguru; Kegums Water Reservoir; Daugava, Salaca, Venta Rivers; Gulf of Riga

Echinorhynchus cryophilus (F)
(Sokolovskaya, 1962) Amin, 1985
Syn.: Metechinorhynchus cryophilus Sokolovskaya, 1962

Location: intestine
Host: Gasterosteus aculeatus
Dist.: Daugava River
Record: Kirjusina & Vismanis 2004

Echinorhynchus gadi (M)
(Zoega in O.F. Müller, 1776)

Location: intestine
Hosts: Abramis brama (1,11)
Alosa fallax fallax (1,11)
Clupea harengus membras (2,3,4,5,7,11)
Cottus poecilopus (5)
Gadus morhua callarias (1,3,4,5,6,7,11)
Lampetra fluviatilis (2,3,5,11,12)
Osmerus eperlanus (3)
Platichthys flesus trachurus (3,4,5,7,8,9,10,11)
Salmo salar (1,11)
Vimba vimba (1,11)
Zoarces viviparus (3,4,5,7,11)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga, Baltic Sea); 2. Vismanis, Eglite & Volkova 1981 (Gulf of Riga), 3. 1982 (Gulf of Riga), 4. 1986 (Baltic Sea); 5. Vismanis, Volkova & Eglite 1984 (Gulf of Riga); 6. 1986 (Gulf of Riga); 7. Vismanis 1987 (Gulf of Riga); 8. Tabolina 1994 (Gulf of Riga &/or Baltic Sea); 9. Vismanis & Kondratovičs 1994 (Baltic Sea), 10. 1995 (Baltic Sea); 11. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga, Baltic Sea); 12. Kirjusina 2005 (Daugava River)
Remarks: Heavy infections cause intestinal ulceration and reduce host condition (see Shulman and Shulman-Albova 1953).

Echinorhynchus salmonis (F)
O.F. Müller, 1784
Syn.: Metechinorhynchus salmonis (O.F. Müller, 1784)
Location: intestine
Hosts: Anguilla anguilla (1) Clupea harengus membras (1) Gasterosteus aculeatus (2) Salmo salar (1) S. trutta (1)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga, Baltic Sea); 2. Kirjusina & Vismanis 2004 (Daugava River, Gulf of Riga, Baltic Sea)
Remarks: Heavy infections cause disease, the parasite’s proboscis perforating the intestinal wall and fastening to the internal organs (see Bauer 1987).

ORDER POLYMORPHA
FAMILY POLYMORPHIDAE

Corynosoma semerme (Forssell, 1904) (M)
Lühe, 1911 juvenile
Location: body cavity, intestine, liver, mesenteries
Hosts: Belone belone (1,11) Clupea harengus membras (2,3,5,7,10) Gadus morhua callarias (3,4,5,6,7,10) Lampertra fluviatilis (11) Leuciscus idus (1,10) Osmerus eperlanus (1,3,5,7,10) Perca fluviatilis (10) Platichthyus flesus trachurus (1,3,5,7,8,9,10) Psetta maxima (1,10) Rutilus rutilus (1,10) Sander lucioperca (10) Scardinius erythrophthalmus (1,10) Tinca tinca (1,10) Zoarces viviparvs (1,3,5,7,10)
Dist.: Lake Usman, Daugava River, Gulf of Riga, Baltic Sea
Remarks: Heavy infections cause disease, the parasite’s proboscis perforating the intestinal wall and fastening to the internal organs (see Bauer 1987).
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga, Baltic Sea); 2. Vismanis, Eglate & Volkova 1981 (Gulf of Riga); 3. 1982 (Gulf of Riga); 4. 1986 (Baltic Sea); 5. Vismanis, Volkova & Eglate 1984 (Gulf of Riga); 6. 1986 (Gulf of Riga); 7. Vismanis 1987 (Gulf of Riga); 8. Vismanis & Kondratovičs 1994 (Baltic Sea); 9. 1995 (Baltic Sea); 10. Kirjusina & Vismanis 2004 (Gulf of Riga) 11. Kirjusina 2005 (Daugava, Gauja Rivers)

Corynosoma strumosum (M) (Rudolphi, 1802) Lühe, 1904 juvenile Location: body cavity, intestine, liver, mesenteries
Hosts: Anguilla anguilla (1,9)
Clupea harengus membras (2,3,5,7)
Gadus morhua callarias (1,3,4,5,6,7,9)
Lampea fluviatilis (10)
Osmerus eperlanus (3,7)
Platichthys flesus trachurus (3,5,7,8,9)
Sander lucioperca (1,9)
Zoarces viviparous (3,5,7)
Dist.: Daugava River, Gulf of Riga, Baltic Sea
Records: 1. Shulman 1949 (Daugava River, Gulf of Riga); 2. Reinsone 1955a (Lake Sīvers), 3. 1955b (Lake Sīvers), 4. 1959 (Lake Sīvers); 5. Kirjusina & Vismanis 2004 (Lakes Juglas, Rāznas, Sīvers, Usmas, Žuguru; Daugava River; Gulf of Riga)
Remarks: Mass infection causes intestinal damage and mortality of one-year-old carp and trout (see Bauer 1987).

Class: Oligochaeta
Order: Hirudinida
Suborder: Rhynchobdellida
Family: Glossiphoniidae
Hemiclepsis marginata (F) (O.F. Müller, 1774) Vedjovsky, 1884 Location: gills
Hosts: Carassius carassius (1,3)
Perca fluviatilis (1,3)
Rutilus rutilus (1,3)
fish (2)
Dist.: Lake Rāznas

Family: Piscicolidae
Piscicola geometra (F) (Linnaeus, 1761) Blainville, 1818
Location: gill cavity, mouth, skin
Hosts: Abramis brama (2,4,5,6,9,18)
Alburnus alburnus (2,4,18)
Blicca bjoerkna (9,18)
Carassius auratus auratus (7,18)
C. carassius (2,4,6,7,18)
Coregonus peled (7,18)
Cottus poecilopus (13)
Cyprinus carpio carpio (3,7,8,10,18)
C. carpio haematopterus (9)
Gadus morhua callarias (13,14,15,18)
Gasterosteus aculeatus (18)
Gymnocephalus cernuus (2,4,5,6,18)
Lampea fluviatilis (12,13,18)
**Leucaspius delineatus** (7,18)  
**Leuciscus cephalus** (18)  
**Perca fluviatilis** (2,4,5,6,8,9,18)  
**Pristichthys flesus trachurus** (17)  
**Pungitius pungitius** (7,18)  
**Rutilus rutilus** (2,4,5,6,8,18)  
**Scardinius erythrophthalmus** (2,4,5,6,18)  
**Tinca tinca** (4,6,7,18)  
**Zoarces viviparus** (13)  

Fish (1,11)  
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Lielauces, Rāznas, Sildu, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Lielupe Rivers; Gulf of Riga; Baltic Sea  


Remarks: *Piscicola geometra* causes disease of fish in wintering ponds. This leech is a vector of blood parasites belonging to the genera *Trypanosoma* and *Cryptobia* (Golovina et al. 2003).

**PHYLUM MOLLUSCA**  
**CLASS PELECYPODA**  
**ORDER EULAMELLIBRANCHIA**  
**FAMILY UNIONIDAE**

**Anodonta cygnea** (Linnaeus, 1758)  
_locus_ (F)  
glochidium  
Location: fins, gills  
Hosts: *Abramis brama*  
*Alburnus alburnus*  
*Anguilla anguilla*  
*Blicca bjoerkna*  
*Gobio gobio*  
*Gymnocephalus cernuus*  
*Esox lucius*  
*L. leuciscus*  
*Perca fluviatilis*  
*Rutilus rutilus*  
*Sander lucioperca*  
*Scardinius erythrophthalmus*  
*Tinca tinca*  

Dist.: Lakes Juglas, Sīvers, Usmas; Daugava, Ogre Rivers  
Record: Kirjusina & Vismanis 2004

**Anodonta sp.**  
_locus_ (F)  
Location: gills  
Host: *Anguilla anguilla*  
Dist.: Lake Usmas, Venta River, Gulf of Riga  
Record: Kirjusina & Vismanis 2000

**Pseudanodonta kletti** (Rossmaessler, 1835)  
_locus_ (F)  
glochidium  
Location: fins, gills  
Hosts: *Esox lucius* (1,2)  
*Perca fluviatilis* (1,2)  
*Phoxinus phoxinus* (1,2)  
*Rutilus rutilus* (1,2)  

Dist.: Lake Sildu  
Records: Kirjusina & Vismanis. 2003 (-), 2004

**Unio pictorum** (Linnaeus, 1758)  
_locus_ (F)  
glochidium  
Location: gills  
Hosts: *Perca fluviatilis*  
*Rutilus rutilus*  
*Salmo trutta* morpha *fario*  
Dist.: Lakes Juglas, Kišezers, Viragnas; Daugava, Gauja, Ogre, Salaca, Venta Rivers  
Record: Kirjusina & Vismanis 2004

**Unio rostratus** (Lamarck, 1799)  
_locus_ (F)  
glochidium  
Location: gills  
Host: *Vimba vimba*  
Dist.: Lielupe River  
Record: Kirjusina & Vismanis 2004  
Remarks: Heavy infestations can be pathogenic to fish (Stabnichenko and Stabinichenko 1980).

**Anodonta complanata** (F)  
Ziegler in Rossmässler, 1835 glochidium  
Location: gills  
Host: *Gasterosteus aculeatus*  
Dist.: Daugava River  
Record: Kirjusina & Vismanis 2004
Unio tumidus Philipsson, 1788  (F)
glochidium
Location: fins, gills
Host: Cyprinus carpio carpio
Dist.: Latvia (ponds)
Record: Kirjusina & Vismanis 2004

Unidentified Unionidae

Unionidae gen. sp. glochidium  (F)
Location: fins, gills, skin
Hosts: Abramis brama (2,4,6)
       Alburnus alburnus (1,2,6)
       Blicca bjoerkna (1,2,6)
       Carassius. carassius (3,6)
       Coregonus albula (2,6)
       C. lavaretus (2,6)
       Cyprinus carpio carpio (3,6)
       Esox lucius (1,2,5,6)
       Gasterosteus aculeatus (1,6)
       Gobio gobio gobio (1,6)
       Gymnocephalus cernuus (1,2,4,6)
       Lota lota (1,6)
       Perca fluviatilis (1,2,4,5,6)
       Phoxinus phoxinus (5)
       Rutilus rutilus (1,2,4,5,6)
       Scardinius erythrophthalmus (1,2,4,6)

Tinca tinca (2,3,4,6)
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Rāznas, Sildu, Sivers, Kegums Water Reservoir; Daugava River; Gulf of Riga

Argulus foliaceus (Linnaeus, 1758)  (F)
Jurine, 1806
Location: skin
Hosts: Abramis brama (4,5,10,19)
       Alburnus alburnus (19)
       Anguilla anguilla (2,4,7,19)
       Blicca bjoerkna (4,19)
       Carassius auratus auratus (8,19)
       C. carassius (2,4,7,8,19)
       Coregonus albula (4,5,6,19)
       C. lavaretus (4,19)
       C. peled (9,19)
       Ctenopharyngodon idella (14)
       Cyprinus carpio carpio (3,6,8,11,12,13,19)
       Esox lucius (2,4,5,7,10,17,19)
       Gasterosteus aculeatus (19)
       Lampeatra fluviatilis (15,16,19)
       Leucaspius delineatus (9,19)
       Oncorhynchus mykiss (18)
       Osmerus eperlanus spirinchus (4,5,7,19)
       Perca fluviatilis (4,7,10,17,19)
       Pungitius pungitius (8,19)
       Rutilus rutilus (2,4,5,7,19)
       Scardinius erythrophthalmus (2,4,5,7,19)

Tinca tinca (2,3,4,6)
Dist.: Lakes Alūksnes, Burtnieku, Cirma, Durbes, Rāznas, Sildu, Sivers, Kegums Water Reservoir; Daugava, Salaca Rivers; Gulf of Riga

Argulus coregoni Thorell, 1864  (F,B)
19. Kirjusina & Vismanis 2004 (Lakes Alūksnes, Burtnieku, Cirma, Durbes, Kāļa, Lielauces, Liepājas, Rāznas, Sildu, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Salaca Rivers; Gulf of Riga, ponds)

Remarks: This common crustacean can be a pathogen of fish in ponds and lakes, heavy infections causing mortality. It is also a vector of blood parasites and viral infections such as spring viremia of carp (SVC) (see Hoole et al. 2001, Golovina et al. 2003).

SUBCLASS COPEPODA

ORDER CYCLOPOIDA

FAMILY LERNAEIDAE

Lamproglena pulchella (F) von Nordmann, 1832
Location: gills
Hosts: Leuciscus cephalus (1,2,3) L. idus (3)
Dist.: Lake Usmas; Daugava, Salaca Rivers
Records: 1. Shulman 1949 (Daugava River); 2. Kirjusina & Vismanis 2001 (Salaca River), 3. 2004 (Lake Usmas, Daugava, Salaca Rivers)

Lernaea esocina (Burmeister, 1833) (F)
Location: skin
Host: Perca fluviatilis
Dist.: Kegums Water Reservoir
Record: Shulman 1949
Remarks: Kabata (1979) considered this species to be a synonym of Lernaea cyprinacea Linnaeus, 1758.

Lernaea cyprinacea Linnaeus, 1758 (F)
Location: skin
Hosts: Carassius carassius (3,4,5,6,7,8,9)
    fish (1,2)
Dist.: Lakes Lielauces, Rāznas; Kegums Water Reservoir; Daugava River

Remarks: Lernaea cyprinacea is an important parasite of many species of fish. The female copepod localizes on the body, causing hemorrhagic lesions in the skin and musculature and in heavy infections, host mortality.

ORDER POECILOSTOMATOIDA

FAMILY ERGASILIDAE

Ergasilus briani Markevich, 1932 (F)
Location: gills
Hosts: Abramis brama
    Carassius carassius
    Leuciscus idus
    Tinca tinca
    Vimba vimba
Dist.: Lakes Rāznas, Rušons; Daugava River
Records: Shulman 1949; Kirjusina & Vismanis 2004

Ergasilus gibbus von Nordmann, 1832 (F)
Location: gills
Host: Anguilla anguilla
Dist.: Lakes Liepājas, Rušons; Kegums Water Reservoir, Gulf of Riga
Records: Shulman 1949 (Lake Rušons, Kegums Water Reservoir, Gulf of Riga); Reinsone 1955a (Lake Liepājas), 1959 (Lake Liepājas); Kirjusina & Vismanis 2004 (Lakes Liepājas, Rušons; Kegums Water Reservoir, Gulf of Riga)

Ergasilus sieboldi von Nordmann, 1832 (F)
Location: gills
Hosts: Abramis brama (1,2,3,4,6,10)
    Alburnus alburnus (2,10)
    Anguilla anguilla (10)
    Aspius aspius (1,10)
    Blicca bjöörkna (1,2,4,6,10)
    Carassius auratus auratus (5)
    C. carassius (1,2,4,10)
    Coregonus albula (2,3,4,10)
    C. lavaretus (2)
    Esox lucius (1,2,3,4,6,10)
    Gobio gobio gobio (1,10)
    Gymnocephalus cernuus (1,2,3,4,10)
    Leucaspius delineatus (6)
    Leuciscus idus (1,10)
    Oncorhynchus mykiss (9)
    Osmerus eperlanus (1,10)
    O. eperlanus spirinchus (2,3,4,10)
    Perca fluviatilis (1,2,3,4,6,10)
**Rutilus rutilus** (1,2,3,4,6,8,10)  
**Sander lucioperca** (10)  
**Scardinius erythrophthalmus** (1,2,3,4,10)  
**Silurus glanis** (1,10)  
**Tinca tinca** (1,2,4,5,6,10)  
**Vimba vimba** (1,7,10)

Dist.: Lakes Alūksnes, Burtnieku, Černavu, Čirma, Dārza, Durbes, Indra, Jugas, Kāla, Lielauces, Rāznas, Riču, Rušons, Sildu, Sivers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Salaca Rivers; Gulf of Riga


**Salminicola extensus** (Kessler, 1868)  
Kabata, 1969  
Syn.: **Achtheres extensus** (Kessler, 1868)

Location: base of fins  
Host: **Coregonus lavaretus**

Dist.: Daugava River  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Thersitina gasterostei**  
(Pagenstecher, 1861) Norman, 1905

Location: gills  
Host: **Gasterosteus aculeatus**

Dist.: Daugava River, Gulf of Riga  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**ORDER SIPHONOSTOMATOIDA**

**FAMILY LERNAEOPODIDAE**

**Achtheres percarum**  
von Nordmann, 1832

Location: gills  
Hosts: **Perca fluviatilis** (1,2,3,4,5)  
**Sander lucioperca** (1,5)

Dist.: Lakes Juglas, Rāznas, Riču, Sivers, Usmas; Daugava River; Gulf of Riga  
Records: 1. Shulman 1949 (Lake Rāznas, Daugava River, Gulf of Riga); 2. Reinsone 1955a (Lake Šivers), 3. 1955b (Lake Šivers), 4. 1959 (Lake Šivers); 5. Kirjusina & Vismanis 2004 (Lakes Juglas, Rāznas, Riču, Sivers, Usmas; Daugava River; Gulf of Riga)

**Tracheliaastes maculatus** Kollar, 1835

Location: skin  
Host: **Abramis brama**

Dist.: Kegums Water Reservoir  
Records: Shulman 1949; Kirjusina & Vismanis 2004

**Tracheliaastes polycolpus**

Nordmann, 1832  
Location: skin  
Host: **Leuciscus idus**

Dist.: Daugava River  
Records: Shulman 1949; Kirjusina & Vismanis 2004
HOST-PARASITE LIST
CLASS CEPHALASPIDOMORPHI
ORDER PETRMYZONTIFORMES
FAMILY PETROMYZONTIDAE

*Lampetra fluviatilis* European river lamprey
(Linnaeus, 1758)
Status: native
Environment: freshwater, brackish, marine

**Digenea**
*Diplostomum spathaceum* metacercaria
(Daugava River, Gulf of Riga)
*D. petromyzofluviatilis* metacercaria
(Daugava River, Gulf of Riga)
*Diplostomulum sp.* metacercaria
(Gulf of Riga)

**Cestoda**
*Eubothrium sp.*
(Daugava River, Gulf of Riga)
*Proteocephalus sp.*
(Daugava, Ogre Rivers; Gulf of Riga)

**Nematoda**
*Cucullanus truttae*
(Daugava River, Gulf of Riga)
*Cystidicola farionis*
(Daugava River, Gulf of Riga)

**Acanthocephala**
*Corynosoma semerme* juvenile
(Daugava, Gauja Rivers)
*C. strunosum* juvenile
(Daugava River)
*Echinorhynchus gadi*
(Daugava River, Gulf of Riga)

**Hirudinida**
*Piscicola geometra* (Gulf of Riga)

**Crustacea**
*Argulus foliaceus* (Gulf of Riga)

**Remarks:** The river lamprey is anadromous species. Adults occur in the Baltic Sea and Gulf of Riga, entering rivers for spawning. It is a commercially important species with an annual catch of 70–170 tonnes (Plikšs & Aleksejevs 1998).

*Lampetra planeri* European brook lamprey
(Bloch)
Status: native
Environment: freshwater, brackish, marine

**Nematoda**
Nematoda gen. sp. larva

CLASS ACTINOPTERYGII
ORDER ANGUILIFORMES
FAMILY ANGUILIDAE

*Anguilla anguilla* European eel
(Linnaeus, 1758)
Status: native
Environment: freshwater, brackish, marine

**Protista**
*Ichthyophthirius multifiliis* (tanks)
*Trypanosoma granulosum*
(Lakes Raznas, Usmas; Gulf of Riga)

**Myxosporea**
*Myxidium giardi*
(Lakes Liepājas, Rāznas, Usmas; Kegums Water Reservoir; Gulf of Riga)

**Digenea**
*Diplostomum sp.* metacercaria
(Lake Usmas)
*Diplostomum spathaceum*
metacercaria
(Lake Rāznas, Kegums Water Reservoir, Gulf of Riga)
*Sphaerostoma brama*
(Lakes Liepājas, Usmas, Gulf of Riga)

**Monogenoidea**
*Diplozoon paradoxum*
(Lake Liepājas)
*Pseudodactylogyrus anguillae*
(Lake Usmas, Venta River, Gulf of Riga)
*P. bini*
(Lake Usmas, Venta River, Gulf of Riga)

**Cestoda**
*Bothriocephalus claviceps*
(Lakes Rāznas, Rušons, Usmas; Kegums Water Reservoir, Venta River; Gulf of Riga)
*Proteocephalus macrocephalus*
(Lakes Liepājas, Usmas; Gulf of Riga)
*Triaenophorus nodulosus plerocercoid* (Lake Liepājas)

**Nematoda**
*Anguillicola crassus*
(Lakes Puzes, Raznas, Usmas; Venta River; Gulf of Riga)
*Camallanus lacustris*
(Lakes Rāznas, Usmas; Ventas River; Gulf of Riga)

*Eustrongyloides* sp. larva
(Kegums Water Reservoir)

*Hysterothylacium aduncum* (Gulf of Riga)

*Raphidascaris acus* (Lakes Liepājas, Usmas; Gulf of Riga)

Acanthocephala

*Acanthocephalus anguillae*
(Lakes Liepājas, Rāznas, Usmas; Kegums Water Reservoir; Gulf of Riga)

*A. clavula* (Lakes Liepājas, Rāznas)

*A. lucii* (Lakes Liepājas, Rāznas, Rušons, Usmas; Ventas River, Gulf of Riga)

*Corynosoma strumosum* juvenile
(Gulf of Riga)

*Echinorhynchus salmonis* (Gulf of Riga)

*Neoechinorhynchus rutili* (Lake Usmas, Gulf of Riga)

Pomphorhynchus laevis (Lake Usmas)

Crustacea

*Argulus foliaceus*
(Lakes Liepājas, Rāznas)

*Ergasilus gibbus* (Lakes Liepājas, Rāznas; Kegums Water Reservoir; Gulf of Riga)

*E. sieboldi* (Lake Usmas)

Mollusca

*Anodonta cygnea* glochidium
(Lake Usmas)

Remarks: This catadromous species has been stocked in at least 81 lakes from 1927 to 1989, larvae and young fish being imported from other European countries (Plikšs and Aleksejevs 1998).

ORDER CLUPEIFORMES

FAMILY CLUPEIDAE

*Alosa fallax fallax* Twaite shad
(Lapepède, 1803)

Palede

Status: native

Environment: freshwater, brackish, marine

Digenea

*Diplostomum spathaceum* metacercaria (Gulf of Riga)

Cestoda

*Eubothrium fragile*

(Nematoda)

*Hysterothylacium aduncum* (Gulf of Riga)

Acanthocephala

*Echinorhynchus gadi* (Gulf of Riga)

Remarks: The twaite shad is an anadromous species, occurring as a variety in some lakes. It is distributed along the European coast from Scandinavia to North Africa; also in the Mediterranean. Rare in the Baltic and Latvia, this species is included in the Red Data Book of Latvia under category “3” (rare) (Plikšs and Aleksejevs 1998).

*Clupea harengus membras* Baltic herring
Linnaeus, 1761

Reņģe

Status: native

Environment: marine

Protista

*Eimeria sardinae*

(Digenea)

*Brachyphallus crenatus*

(Gulf of Riga)

*Diplostomum sp. metacercaria*

(Gulf of Riga)

*Diplostomum spathaceum metacercaria*

(Ladoga River, Gulf of Riga)

Cestoda

*Eubothrium sp.* (Gulf of Riga)

(Nematoda)

*Anisakis simplex* larva

(Baltic Sea)

*A. coregoni* (Gulf of Riga)

Remarks: The Baltic herring is a subspecies of the Atlantic herring that is abundant throughout the Baltic Sea. Two ecological races are recognized, the spring spawning and the autumn spawning herring, which are divided into several open sea and gulf
populations (Plikšs and Aleksejevs 1998).

*Sprattus sprattus balticus*  
Baltic sprat  
(Schneider, 1908)  
Vanīciņa  
Status: native  
Kērīka  
Environment: marine  
Cestoda  
*Bothriocephalus scorpii*  
(Gulf of Riga)  
Remarks: One of the three subspecies of the sprat, this fish is abundant in the Baltic Sea except in brackish bays (Plikšs and Aleksejevs 1998).

**ORDER CYPRINIFORMES**

**FAMILY COBITIDAE**

*Cobitis taenia*  
Spined loach  
Linnaeus, 1758  
Акмепграузис  
Status: native  
Щиповка  
Environment: freshwater  
Protista  
*Trichodina sp.*  
(Ličupe River)  
Digenea  
*Tylocephalus clavata* metaceraria  
(Licupe River)  
Cestoda  
*Proteocephalus longicollis*  
(Licupe River)  
Nematoda  
*Shulmanella petrashevensis*  
(Kegums Water Reservoir)  
*Acanthocephala*  
*Echinorhynchus truttae*  
(Licupe River)  

*Misgurnus fossilis*  
Weatherfish  
(Linnaeus, 1758)  
Плаксте  
Status: native  
Въюн  
Environment: fresh water  
Monogenoidea  
*Ancyrocephalus cruciatus*  
(Lake Višķu)  

**FAMILY CYPRINIDAE**

*Abramis brama*  
Carp bream  
(Linnaeus, 1758)  
Плаудис (Breksis)  
Status: native  
Лец  
Environment: freshwater  
Protista  

*Ichthyophthirius multifiliis*  
(Lakes Burtnieku, Sīvers)  
*Trichodina domerguei*  
(Lake Sīvers, Kegums Water Reservoir)  
*T. nigra* (Daugava River)  
*T. reticulata* (Lake Sīvers)  

**Myxosporea**

*Ichthyobodo braiae*  
(Lakes Burtnieku, Cirma, Durbes, Juglas, Kāla, Rušons, Sīvers, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)  
*M. ellipsoides* (Kegums Water Reservoir)  
*M. exiguis* (Lake Rušons, Kegums Water Reservoir, Daugava River)  
*M. gigas* (Lake Juglas, Raznas, Sildu)  
*M. macrocapsularis* (Kegums Water Reservoir, Daugava River)  
*M. muelleri* (Lakes Juglas, Sīvers; Daugava, Salaca Rivers)  
*M. musculi* (Lake Juglas)  
*M. oviformis* (Kegums Water Reservoir)  
*Thelohanellus oculileucisci* (Daugava River)  
*Zschokkella nova* (Kegums Water Reservoir)  

**Digenea**

*Allocreadium isoporum* (Lake Dārza)  
*Asymphylodora imitans* (Lake Sīvers, Daugava River)  
*Bucephalus polymorphus* metacercaria (Lakes Burtnieku, Juglas, Sīvers, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)  
*Diplostomulum sp.* metacercaria (Lakes Dārza, Usmas, Žuguru; Daugava River)  
*Diplostomum spathaceum* metacercaria (Lakes Burtnieku, Cirma, Durbes, Juglas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Salaca Rivers; Gulf of Riga)  
*Hysteromorpha triloba* metacercaria (Lakes Burtnieku, Cirma, Sīvers, Usmas)  
*Ichthyocotylurus platycephalus* Metacercaria (Lakes Burtnieku, Cirma, Rušons;
Daugava River

*I. variegatus* metacercaria
(Daugava River)

*Ornithodiplostomum scardinii*
metacercaria (Lake Dārza)

*Paracoenogonimus ovatus*
metacercaria
(Lakes Juglas, Lielauces, Rušons; Daugava River)

*Phyllodistomum elongatum*
(Lake Rušons)

*P. folium*
(Lakes Juglas, Rušons, Žuguru)

*Posthodiplostomum cuticola*
metacercaria
(Lakes Dārza, Dukānu, Juglas, Skolas, Žuguru; Daugava River)

*Dactylogyrus auriculatus*
(Lakes Duņu, Slokas, Usmas, Viragnas; Daugava, Lielupe, Salaca Rivers)

*D. cornu* (Lake Usmas)

*D. distinguendus*
(Lake Slokas; Daugava, Gauja Rivers)

*D. falcatus*
(Lakes Rušons, Slokas, Viragnas; Kegums Water Reservoir; Daugava, Salaca Rivers)

*D. sphyrna*
(Lakes Durbes, Juglas, Sīvers, Slokas, Usmas; Daugava, Salaca Rivers; Gulf of Riga)

Monogenoidea

*Dactylogyrus* sp. (Lake Duņu)

*Diplozoon paradoxum*
(Lakes Burtnieku, Durbes, Juglas, Skolas, Usmas; Kegums Water Reservoir; Daugava Salaca Rivers)

*Paradiplodocoeca blicae*

(Daugava River)

*P. hamoion hamoion*
(Daugava River)

Cestoda

*Caryophyllaeus fimbriceps*
(Daugava River)

*C. laticeps*
(Lakes Cirma, Dārza, Juglas, Kāla, Rušons, Sīvers, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Salaca Rivers)

*Ligula intestinalis* plerocercoid
(Lakes Burtnieku, Durbes)

*Paradilepis scolecina* metacestode (-)

Nematoda

*Contracaecum microcephalum*
(Lakes Asteres, Slokas)

Nematoda gen. sp.
(Daugava River)

*Philometra ovata*
(Daugava River)

*Pseudocapillaria tomentosa*
(Daugava River)

*Raphidascaris acus*
(Lakes Cirma, Kāla, Juglas, Sīvers, Slokas, Usmas; Daugava, Salaca Rivers)

*Rhabdorchis demudata*
(Lakes Burtnieku, Sīvers; Daugava River)

Acanthocephala

*Acanthocephalus anguillae*
(Lake Burtnieku, Daugava River)

*A. lucii*
(Lakes Burtnieku, Cirma, Juglas, Usmas, Žuguru; Daugava Salaca Rivers)

*Echinorhynchus gadi* (Gulf of Riga)

*Neoechinorhynchus rutili*
(Lakes Juglas, Žuguru)

*Pomphorhynchus laevis*
(Daugava River)

Hirudinida

*Piscicola geometra*
(Lakes Burtnieku, Cirma, Kāla, Rušons, Sīvers, Usmas)

Mollusca

*Anodonta cygnea* glochidium
(Daugava River)

Unionidae gen. sp. glochidium
(Lakes Burtnieku, Durbes, Sīvers)

Crustacea

*Argulus foliaceus*
(Lakes Burtnieku, Cirma, Durbes, Kāla, Sīvers, Usmas)

*Ergasilus briani*
(Lake Rušons, Daugava River)

E sieboldi
Tracheliastes maculatus  
(Kegums Water Reservoir)

Remarks: This species is found in many Latvian rivers and lakes, and along the seacoast near river mouths (Plikšs and Aleksejevs 1998).

Alburnoides bipunctatus  
Rifle minnow  
(Bloch, 1782)  
Pavike

Status: native  
Быстрянка

Environment: freshwater

Protista

Apiosoma sp. (Ogre River)
Ichthyophthirius multifiliis  
(Ogre River)
Trichodina nigra  
(Ogre River)
Trichodinella epizootica  
(Ogre River)

Digenea

Diplostomum spathaceum  
metacercaria  
(Kegums Water Reservoir)
Plagiophorus angusticolle  
(Ogre River)
Rhipidocotyle campanula  
(Ogre River)

Nematoda

Raphidascaris acus  
(Ogre River)
Rhabdochona demudata  
(Ogre River)

Alburnus alburnus  
Bleak  
(Linnaeus, 1758)  
Vike

Status: native  
У克莱ка

Environment: freshwater

Protista

T. nigra  
(Lake Slokas)
T. reticulata  
(Lake Alūksnes)
Trichodina sp.  
(Salaca River, Gulf of Riga)

Myxosporea

Myxobolus bramae  
(Lakes Alūksnes, Burtnieku, Rāznas; Kegums Water Reservoir)
M. carassii  
(Kegums Water Reservoir)
M. ellipsoides  
(Lake Burtnieku, Kegums Water Reservoir)
M. oviformis  
(Lakes Alūksnes, Rušons; Kegums Water Reservoir)
Zschokkella nova  
(Lakes Rāznas, Rušons; Kegums Water Reservoir)

Digenea

Allocreadium isopororum  
(Lakes Alūksnes, Rāznas; Kegums Water Reservoir; Daugava River)
Bucephalus polymorphus  
(Lake Rāznas; Kegums Water Reservoir; Daugava, Salaca Rivers)
Diplostomulum sp. metacercaria  
(Salaca River)

Diplostomum spathaceum  
metacercaria  
(Lakes Burtnieku, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga)
Ichthyocotylurus platycephalus  
metacercaria  
(Lake Burtnieku)
Paracoenognomon ovatus  
metacercaria  
(Lake Rušons, Daugava River)
Phyllostomum folium  
(Lake Rāznas)
Postodiplostomum cuticola  
metacercaria  
(Lake Rušons)
Rhipidocotyle campanula  
(Lake Slokas)
Sphaerostoma bramae  
(Lakes Burtnieku, Rāznas; Ogre River)
Tylocephalys clavata metacercaria  
(Lakes Alūksnes, Burtnieku)

Monogenoidea

Dactylogyrus alatus f. typica  
(Lakes Rušons, Slokas; Salaca River)
D. fallax  
(Salaca River)
D. fratermus  
(Lakes Alūksnes, Burtnieku, Dzirnezers, Rāznas, Rušons; Kegums Water Reservoir; Daugava, Ogre Rivers; Gulf of Riga)
D. micracanthus  
(Lake Slokas)
D. minor  
(Lakes Rāznas, Rušons, Slokas; Kegums Water Reservoir; Daugava, Lielupe, Ogre Rivers; Gulf of Riga)
D. parvus  
(Lakes Dzirnezers, Rāznas, Rušons, Slokas; Kegums Water Reservoir; Daugava, Lielupe, Ogre Rivers; Gulf of Riga)
D. similis  
(Lake Burtnieku)
Diplozoon paradoxum  
(Lake Rāznas, Salaca River)

?Gyrodactylus elegans (ponds)

Paradiplozoon alburni  
(Salaca River)
Cestoda

*Proteocephalus torulosus*
(Lakes Alūksnes, Burtnieku, Rāznas, Rušons; Salaca River)

Nematoda

Nematoda gen. sp.
(Kegums Water Reservoir, Daugava River)

*Raphidascaris acus*
(Lake Rāznas; Daugava, Ogre Rivers)

*Rhabdorchia denudata*
(Kegums Water Reservoir, Daugava River)

Acanthocephala

*Acanthocephalus anguillae*
(Daugava River)

*Neoechinorhynchus rutili*
(Lake Rāznas)

Hirudinida

*Piscicola geometra*
(Lakes Alūksnes, Rāznas)

Mollusca

*Anodonta cygnea* glochidium
(Lake Slokas)

Unionidae gen. sp. glochidium
(Lakes Alūksnes, Rāznas)

Crustacea

*Argulus foliaceus* (Salaca River)

*Ergasilus sieboldi* (Lake Alūksnes)

Remarks: This species occurs in many Latvian rivers, lakes and coastal waters near river mouths. It is not found in small, closed, overgrown lakes (Plikšs and Aleksejevs 1998).

**Aspius aspius**
(Linnaeus, 1758) Salate

Syn.: *Aspius rapax* Жерех

Agassiz, 1835

Status: native

Environment: freshwater

Protista

*Amphileptus* sp.
(Kegums Water Reservoir)

Myxosporea

*Myxobolus cycloides*
(Kegums Water Reservoir)

*M. dispar*
(Kegums Water Reservoir)

*M. exigus*
(Kegums Water Reservoir)

*M. muelleri*
(Kegums Water Reservoir)

*M. nemetzki*
(Kegums Water Reservoir)

*M. oviformis*
(Kegums Water Reservoir)

**Blicca bjorkna** White bream
(Linnaeus, 1758) Плици

Status: native Густера

Environment: freshwater

Protista

*Amphileptus* sp.
(Kegums Water Reservoir)

Ichthyobodo necator
(Daugava River)

Ichthyophthirius multifiliis
(Lake Burtnieku)

Trichodina reticulata
(Lake Rāznas, Kegums Water Reservoir, Daugava River)

Myxosporea

Chloromyxum fluviatile
(Lake Rāznas)

*Myxidium rhodei* (Lake Slokas)

*Myxobolus bramae*
(Lakes Burtnieku, Juglas, Rāznas, Rušons, Sivers, Slokas, Usmas; Kegums Water Reservoir; Daugava River)

M. ellipsoides
(Lakes Burtnieku, Usmas; Daugava River)

*M. exigus*
(Kegums Water Reservoir)

*M. macrocapsularis*
(Lake Cirma, Kegums Water Reservoir)

*M. muelleri*
M. oviformis (Kegums Water Reservoir)
Zschokkella nova (Kegums Water Reservoir)

Digenea

Allocreadium isoporum (Lakes Juglas, Liepājas, Sīvers, Slokas; Daugava River)

Asymphylodora imitans (Lakes Burtnieku, Usmas; Daugava River)

Bucephalus polymorphus metacercaria (Lakes Burtnieku, Usmas; Kegums Water Reservoir; Daugava River)

Diplostomum sp. metacercaria (Lakes Juglas, Slokas)

Diplostomum spathaceum metacercaria (Lakes Alūksnes, Burtnieku, Cirma, Juglas, Liepājas, Rāznas, Rušons, Sīvers, Usmas; Kegums Water Reservoir; Daugava River)

Hysteromorpha triloba metacercaria (Lakes Cirma, Liepājas, Sīvers)

Ichthyocotylurus platycephalus metacercaria (Lakes Cirma, Julgas, Rāznas, Rušons, Usmas; Daugava River)

I. variegatus metacercaria (Daugava River)

Palaeorhachis unicus (Daugava River)

Paracoeoconus ovatus metacercaria (Lakes Alūksnes, Burtnieku, Cirma, Liepājas, Rāznas, Rušons, Sīvers, Usmas; Kegums Water Reservoir; Daugava River)

Phylydostomum elongatum (Kegums Water Reservoir)

Posthodiplostomum cuticola (Lakes Rāznas, Slokas; Daugava River)

Rhipidocotyle campanula (Lake Skolas, Daugava River)

Sphaerostomum braeae (Lakes Juglas, Rāznas, Sīvers)

Tylodelphys clavata metacercaria (Lakes Alūksnes, Burtnieku, Cirma, Juglas, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava River)

Monogeneida

Dactylogyrus cornu (Lakes Dzirnezers, Rāznas, Rušons, Usmas; Kegums Water Reservoir; Daugava, Lielupe Rivers)

D. difformis (Lakes Burtnieku, Sīvers)
D. distinguendus (Lakes Dzirnezers, Pelēca)
D. fallax (Lakes Burtnieku Slokas, Usmas)
D. similis (Lake Cirma)
D. sphynna (Lakes Alūksnes, Juglas, Rāznas, Rušons, Sīvers, Slokas; Kegums Water Reservoir; Daugava River)
D. wunderi (Lakes Burtnieku, Liepājas)

Diplozoon paradoxum (Lakes Burtnieku, Juglas, Liepājas, Rušons, Sīvers, Slokas; Kegums Water Reservoir; Daugava River)

Paradiplozoon bicae (Daugava River)

P. hamoion hamoion (Daugava River)

Cestoda

Caryophyllaeides fenica (Lake Rušons, Daugava River)

Caryophyllaeus laticeps (Lakes Slokas, Usmas)

Ligula intestinalis plerocercoid (Lakes Burtnieku, Cirma, Juglas, Slokas, Usmas)

Nematoda

Agamone sp. (Lake Cirma)

Raphidascaris acus (Lakes Burtnieku, Cirma, Juglas, Rāznas, Rušons, Sīvers, Usmas; Daugava River)

Acanthocephala

Acanthocephalus anguillae (Lakes Juglas, Rāznas, Sīvers, Usmas)

A. lucii (Lake Rāznas, Daugava River)

Neoechinorhynchus rutili (Lake Rāznas)

Hirudinida

Piscicola geometra (Lakes Burtnieku, Slokas, Usmas)

Mollusca

Anodonta cygnea glochidium (Lake Usmas)

Unionidae gen. sp. glochidium (Lakes Burtnieku, Cirma; Kegums Water Reservoir)

Crustacea

Argulus foliaceus (Lake Cirma)

Ergasilus sieboldi (Lakes Burtnieku, Cirma, Rušons, Sīvers, Usmas; Daugava River)
Carassius auratus auratus  Goldfish  
(Linnaeus, 1758)  Sudrabkarūsa  
Status: introduced  Серебряный карась  
Environment: fresh water  
Protista  
Chilodonella piscicola (ponds)  
Ichthyophthirius multifiliis (ponds)  
?Trichodina domerguei (ponds)  
T. nigra (ponds)  
T. pediculus (ponds)  
T. reticulata (ponds)  

Monogenoidea  
Dactylogyrus anchoratus (ponds)  
D. inexpectatus (Lakes Duņas, Sildu)  
Gyrodactylus katharineri (ponds)  
G. longoacuminatus (Salaca River)  
G. medius (ponds)  

Digenea  
Ichthyocotylurus plathycephalus metacercaria (ponds)  

Hirudinida  
Piscicola geometra (ponds)  
Crustacea  
Argulus foliaceus (ponds)  

Remarks: Goldfish were imported to Latvia in 1948 and have been released into at least 181 lakes and many other waterbodies. Flooding of fish farms has distributed this species to connected rivers. Populations are established in several lakes and other waterbodies (Plikšs and Aleksejevs 1998).  

Carassius carassius  Crucian carp  
(Linnaeus, 1758)  Karūsa  
Status: native  Золотой карась  
Environment: freshwater  
Protista  
Apiosoma sp. (ponds)  
Chilodonella piscicola (ponds)  
Eimeria sp. (ponds)  
Ichthyobodo necator (Lake Rāznas)  
Ichthyophthirius multifiliis (ponds)  
?Trichodina domerguei (Lake Sivers)  
T. reticulata (Lakes Rāznas, Sivers, Daugava River)  
Trichodinella epizootica (Daugava River)  

Myxosporea  
Chloromyxum fluviatile (Rāznas)  
Myxidium pfeifferi (Lake Lielauces)  
Myxobolus bramae (Daugava River)  
M. carrasii (Lakes Lielauces, Liepājas, Rāznas; Daugava River)  

M. dispar (Lakes Lielauces, Liepājas; Daugava River)  
M. ellipsoides (Lake Rāznas, Daugava River)  
M. muelleri (Lake Sildu)  
M. thelokanellus (Lake Rāznas)  
Zschokkella nova (Lakes Lielauces, Rāznas, Slokas)  

Digenea  
Allocreadium isoporum (Lakes Lielauces, Liepājas, Rāznas, Sivers, Usmas; Daugava River)  
A. transversale (Lake Liepājas)  
Bucephalus polymorphus (Lake Rāznas, Daugava River)  
Diplostomum sp. metacercaria (Lake Slokas)  

Diplostomum spathaceum metacercaria (Lake Juglas, Rāznas, Sivers, Usmas; Daugava, Salaca Rivers)  
Ichthyocotylurus platycephalus metacercaria (Lake Liepājas, Daugava River)  
Paracoenogonimus ovatus metacercaria (Lake Juglas, Rāznas, Slokas)  
Phylodistomum folium (Lake Rāznas)  
Posthodiplostomum cuticola metacercaria (Lake Cīma)  
Tylodelphys clavata metacercaria (Lake Liepājas)  

Monogenoidea  
Dactylogyrus anchoratus (Lakes Lielauces, Liepājas, Rāznas, Sivers, Usmas; Daugava River)  
D. baueri (Lakes Juglas, Slokas, Sunīšu Viragnas)  
D. crassus (Lake Rāznas, Daugava River)  
D. dulkeiti (Lakes Laidzes, Slokas, Sunīšu)  
D. formosus (Lakes Rāznas, Sunīšu, Viragnas, Višķu; Daugava River)  
D. inexpectatus (Lakes Duņas, Sildu; Salaca River)  
D. intermedius (Lakes Duņas, Rāznas, Slokas, Višķu; Daugava River)  
D. vastator (Lakes Cīma, Lielauces, Rāznas, Sivers, Slokas; Daugava River)  
D. wegeneri
(Lakes Lielaucies, Liepājas, Rāznas, Sildu; Daugava River)
*Diplozoon paradoxum* (Lake Sīvers)
*Eudiplozoon nipponicum* (Lake Sīlu)
*Gyrodactylus katharineri* (ponds)
*G. medius* (ponds)
*Cestoda*
*Caryophyllaeus laticeps* (Daugava River)
*Khavia rossitensis* (Lake Juglas, Daugava River)
*Neogryporhynchus cheilancristrotus* metacestode (Salaca River)
*Paradilepis scolecinia* metacestode (-)
*Valipora campilancristrota* metacestode (Lakes Slokas, Usmas)

*Nematoda*
*Nematoda gen. sp.* (Lake Liepājas)
*Philometroides sanguinea* (Lakes Černavu, Juglas, Sildu, Slokas, Žuguru)
*Raphidascaris acus* (Lakes Liepājas, Rāznas, Sīvers; Daugava River)

*Acanthocephala*
*Acanthocephalus anguillae* (Lakes Liepājas, Rāznas, Sīvers; Daugava River)
*A. lucii* (Daugava River)
*Neoechinorhynchus rutili* (Lake Juglas)
*Pomphorhynchus laevis* (Daugava River)

*Hirudinida*
*Hemiclepsis marginata* (Lake Rāznas)
*Piscicola geometra* (Lakes Lielaucies, Rāznas)

*Crustacea*
*Argulus foliaceus* (Lakes Liepājas, Rāznas)
*Ergasilus briani* (Daugava River)
*E. sieboldii* (Lakes Čirma, Lielaucie, Sīvers, Slokas, Usmas; Daugava River)
*Lernaea cyprinacea* (Lakes Lielaucies, Rāznas; Daugava River)

Remarks: Crucian carp is one of the most common Latvian fishes, occurring in many rivers, lakes and ponds and in coastal waters near river mouths. From 1958 to 1996 it was restocked in at least 152 lakes (Pliks and Aleksejevs 1998).

*Ctenopharyngodon idella* Grass carp

(Lakes Lielaucies, Liepājas, Rāznas, Sīdu; Daugava River)
*Chilodonella piscicola* (ponds)
*Ichthyophthirius multifiliis* (ponds)
*Trichodina* sp. (ponds)

*Protista*
*Chilodonella piscicola* (ponds)
*Ichthyophthirius multifiliis* (ponds)
*Trichodina* sp. (ponds)

*Myxosporea*
*Chloromyxum cristatum* (ponds)

*Digenea*
*Diplostomum spathaceum* metacercaria (ponds)

Remarks: This Asian species was imported to Latvia about 1960 and stocked in some lakes and ponds. No naturally breeding populations have been recorded (Pliks and Aleksejevs 1998).

*Cyprinus carpio carpio* Common carp
Linnaeus, 1758
*Karpa*
*Environment: freshwater*

*Protista*
*Apiosoma piscicolum* (ponds)
*Apiosoma* sp. (ponds)
*Chilodonella piscicola* (ponds)
*Chloromyxum cristatum* (ponds)
*Eimeria* sp. (ponds)
*Epistylis lwoffi* (ponds)
*Goussia carpelli* (ponds)
*G. subepithelialis* (ponds)
*Ichthyophthirius multifiliis* (ponds)
*Trichodina acuta* (ponds)
*T. domerguei* (ponds)
*T. mutabilis* (ponds)
*T. nigra* (ponds)
*T. pediculus* (ponds)
*T. reticulata* (ponds)
*Trichodinella epizootica* (ponds)
*T. subtilis* (ponds)
*Trypanosoma carassii* (ponds)

*Myxosporea*
*Chloromyxum cristatum* (ponds)
*C. koi* (ponds)
*Hoferellus cyprini* (ponds)
*Myxidium pfeiferi* (ponds)
*Myxobolus cyprini* (ponds)
*M. dispar* (Lake Sīvers)
*M. ellipsoides* (ponds)

*Digenea*
*Bucephalus polymorphus* (ponds)
*Diplostomum spathaceum* metacercaria (ponds)
*Ichthyocotylurus plathycephalus* metacercaria (ponds)
*Posthodiplostomum cuticola* metacercaria (ponds)
*Sanguinicola inermis* (ponds)

(*Valenciennes, 1844*)
*Baltais amūrs*
*Status: exotic*
*Белый амур*
*Environment: freshwater*
Tetracotyle sp. metacercaria (ponds)
Tylodelphys clavata metacercaria (ponds)

Monogenoidea
Dactylogyrus achmerowi (ponds)
D. anchoratus (ponds)
D. extensus (Lake Sildu)
D. minutus (ponds)
D. vastator (ponds)
Diplozoon paradoxum (ponds)
Diplozoon sp. (ponds)
Eudiplozoon nipponicum (Lake Sildu)
Gyrodactylus katarineri (ponds)
G. medius (ponds)

Cestoda
Archigetes brachyurus (ponds)
Bothriocephalus acheilognathi (ponds)
Caryophyllaeus fimbriceps (ponds)
C. laticeps (ponds)
Khavia sinensis (ponds)
Ligula intestinalis plerocercoid (ponds)
Neogryporhynchus cheilancristrotus metacestode (ponds)
Paradilepis scolecina metacestode (Ogre River)
Valipora campylancristrota metacestode (ponds)

Nematoda
Contracaecum micropapillatum (ponds)
Nematoda gen. sp. (ponds)
Philometroides cyprini (Lake Sildu)
Shulmanella petruschewskii (ponds)

Acanthocephala
Acanthocephalus anguillae (ponds)
A. lucii (ponds)

Hirudinida
Piscicola geometra (ponds)

Mollusca
Unio tumidus glochidium (ponds)

Crustacea
Argulus foliaceus (ponds)

Remarks: Common carp have been farmed in the territory of Latvia in fish ponds since the 13th Century. From 1949 to 1996, carp were restocked at least 196 lakes and other waterbodies (Plikšs and Aleksejevs 1998).

Cyprinus carpio haematopterus Amur carp
Martins, 1876 Amurskij sasans
Status: exotic
Environment: freshwater
Protista
Apiosoma sp. (ponds)
Chilodonella piscicola (ponds)
Gaussia carpelli (ponds)
Ichthyophthirius multifiliis (ponds)
?Trichodina domerguei (ponds)

Digenea
Diplostomum spathaceum metacercaria (ponds)
Ichthyocotylurus platycephalus metacercaria (ponds)
Posthodiplostomum cuticola metacercaria (ponds)
Tetracotyle sp. metacercaria (ponds)

Monogenoidea
Dactylogyrus achmerowi (ponds)
D. anchoratus (ponds)
D. extensus (Lake Sildu)
D. vastator (ponds)
Diplozoon paradoxum (ponds)
Gyrodactylus medius (ponds)

Cestoda
Caryophyllaeus fimbriceps (ponds)

Hirudinida
Piscicola geometra (ponds)

Leucaspis delineatus Belica
(Heckel, 1843) Ausleja
Status: native
Environment: freshwater
Protista
Apiosoma sp. (ponds)
Chilodonella piscicola (ponds)
Eimeria sp. (ponds)
Ichthyophthirius multifiliis (ponds)
Trichodina reticulata (ponds)

Myxosporea
Myxobolus bramae (Lake Burtnieku)
M. ellipsoides (Lake Burtnieku)

Digenea
Bucephalus polymorphus (Lake Burtnieku)
Diplostomum spathaceum metacercaria (Lake Burtnieku)
Ichthyocotylurus platycephalus metacercaria (ponds)
Sphaerostomum bramae (Lake Burtnieku)
Tylodelphys clavata metacercaria (Lake Burtnieku)

Monogenoidea
Dactylogyrus fraternus (Lake Burtnieku)
Diplozoon paradoxum (ponds)
D. similis (Lake Burtnieku)
?Gyrodactylus elegans (ponds)
G. medius (ponds)
Gyrodactylus sp. (ponds)
Cestoda

*Ligula intestinalis* plerocercoid
(Lake Burtnieku)

*Proteocephalus torulosus* plerocercoid
(Lake Burtnieku)

Nematoda

*Rhabdoco"hona denudata* plerocercoid
(Lake Burtnieku)

Hirudinida

*Piscicola geometra* (ponds)

Crustacea

*Argulus foliaceus* (ponds)

Remarks: This species occurs in many Latvian rivers and lakes, even in small, shallow, closed and overgrown lakes. It sometimes propagates spontaneously in fish ponds and is distributed along with cyprinids moved for stocking (Plikšs and Aleksejevs 1998).

*Leuciscus cephalus* European chub
(Linnaeus, 1758) Sapals

Status: native Головь

Environment: freshwater

Protista

*Apiosoma campanulatum* (Ogre River)

*A. matthesi* (Ogre River)

*A. nasale* (Ogre River)

*A. poteriforme* (Ogre River)

*Trichodina nigra* (Ogre River)

Myxosporea

*Myxobolus bramae* (Lake Burtnieku)

*M. dispar* (Daugava, Lielupe, Ogre Rivers)

*M. muelleri* (Daugava, Ogre, Salaca Rivers)

Digenea

*Allocreadium isoporum* (Daugava River)

*Bucephalus polymorphus* (Daugava River)

*Diplostomum spathaceum* metacercaria
(Lake Burtnieku, Daugava, Ogre Rivers)

*Ichthyocotylurus platypetalus* metacercaria
(Daugava River)

*Paracoenogonimus ovatus* metacercaria
(Daugava, Lielupe Rivers)

*Posthodiplostomum cuticola* metacercaria
(Lielupe River)

*Sphaerostomum bramae* (Ogre River)

*Tylodelphys clavata* metacercaria
(Lake Burtnieku)

Monogenoidea

*Dactylogyrus cordus* (Lake Burtnieku)

*D. fallax* (Salaca River)

*D. folkmanovae* (Ogre River)

*D. nanoides* (Ogre River)

*D. vistulae* (Ogre, Salaca Rivers)

*D. yinwenyingae* (Salaca River)

Cestoda

*Ligula intestinalis* plerocercoid
(Lake Burtnieku, Daugava River)

Nematoda

*Rhabdoco"hona denudata* (Daugava River)

*Pseudocapillaria tomentosa* (Daugava River)

*Raphidascaris acus* (Daugava, Ogre Rivers)

Mollusca

*Anodonta cygnea* glochidium
(Ogre River)

Crustacea

*Leuciscus idus* Ide
(Linnaeus, 1758) Ālants

Syn.: *Idus idus* (Linnaeus, 1758) Язь

Status: native

Environment: freshwater

Protista

*Amphileptus* sp. (Daugava River)

Myxosporea

*Myxobolus exigus* (Daugava River)

*M. muelleri* (Daugava River)

*M. nemetzeki* (Daugava River)

Monogenoidea

*Dactylogyrus fallax* (Daugava River)

*D. ramulosus* (Salaca River)

*D. similis* (Lake Burtnieku, Daugava River)

*D. tuba* (Daugava, Rušons, Salaca Rivers)

*D. yinwenyingae* (Salaca River)

*Dactylogyrus* sp. (Lake Usmas)

*Gyrodactylus prostae* (Salaca River)

*Paradiplozoon alburni* (Daugava River)

Digenea

*Allocreadium isoporum* (Daugava River)

*Diplostomum spathaceum* metacercaria
(Lake Burtnieku, Daugava, Ogre Rivers)

*Ic"hthyocotylurus platypetalus* metacercaria
(Daugava River)

*Paracoenogonimus ovatus* metacercaria
(Daugava, Lielupe Rivers)

*Posthodiplostomum cuticola* metacercaria
(Lielupe River)

*Sphaerostomum bramae* (Ogre River)

*Ty"lodelphys clavata* metacercaria
(Lake Burtnieku)

Monogenoidea

*Dactylogyrus cordus* (Lake Burtnieku)
metacercaria (Daugava River)
Plagioporus angusticolle (Daugava River)
Posthodiplostomum cuticola (Daugava River)
Sphaerostomum bramae (Lake Usmas)
Tylodelphys clavata metacercaria (Lake Usmas)

Cestoda
Caryophyllaideas fenica (Lake Rušons)

Nematoda
Cacullanus heterochrous (Daugava River)
Pseudocapillaria tomentosa (Daugava River)
Raphidascaris acus (Daugava, Salaca Rivers)

Acanthocephala
Acanthocephalus anguillae (Lake Burtnieku, Daugava River)
Coronosoma semerme juvenile (Daugava River)
Pomphorhynchus laevis (Daugava River)

Crustacea
Ergasilus briani (Daugava River)
E. sieboldi (Daugava River)
Lamprolena pulchella (Lake Usmas)
Tracheliastes polycolpus (Daugava River)

Amphileptus sp. (Rītupe River)
Trichodina nigra (Ogre River)

Leuciscus leuciscus
Common dace (Linnaeus, 1758)
Syn.: Leuciscus vulgaris (Linnaeus, 1758)
Fleming, 1828

Status: native
Environment: freshwater
Protista

Phoxinus phoxinus
Eurasian minnow (Linnaeus, 1758)
Syn.: Leuciscus phoxinus (Linnaeus, 1758)

Status: native
Environment: freshwater
Protista

Remarks: The sabrefish is an anadromous or species. It is included in the Red Data Book of Latvia under category “3” (rare) (Pliks and Aleksejevs 1998).

Paracoenogonimus ovatus metacercaria (Rītupe River)
Phyllodistomum elongatum (Rītupe River)
Rhipidocotyle campanula (Ogre River)
Tylodelphys clavata metacercaria (Ogre River)

Monogeneidea
Dactylogyrus cordus (Ogre River)
D. tuba (Ogre River)
Paradiplozoon homoion homoion (Ogre River)

Cestoda
Proteocephalus torulosus (Ogre River)

Nematoda
Raphidascaris acus (Ogre River)

Mollusca
Anodonta cygnea glochidium (Ogre River)

Pelecus cultratus
Sabrefish (Linnaeus, 1758)

Status: native
Environment: freshwater, brackish

Digenea
Bucephalus polymorphus (Daugava River)
Diplostomum spathaceum metacercaria (Daugava River)

Monogeneidea
Diplozoon paradoxum (Daugava River)

Acanthocephala
Acanthocephalus anguillae (Daugava River)

Phoxinus phoxinus (Linnaeus, 1758)

Status: native
Environment: freshwater
Protista
metacercaria (Lake Sildu)
*Rhipidocotyle campanula* *(Lake Sildu)*
Monogeneidea
*Paradiplozoon zeller* *(Lake Sildu)*
Mollusca
*Pseudanadonta kletti* *(Lake Sildu)*
*Rutilus rutilus* (Roach) *(Linnaeus, 1758)*
Status: native
Environment: freshwater
Protista
*Ichthyophthirius multifiliis* *(Lakes Burtnieku, Cirma, Juglas, Lielauces, Slokas)*
*Pleistophora mirandellae* *(Lake Rušons)*
*T. nigra* *(Lake Sildu)*
*T. reticulata* *(Lake Burtnieku)*
Myxosporea
*Chloromyxum fluviatile* *(Lake Liepājas)*
*Myxidium pfefferi* *(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Liepājas, Rušons, Slokas, Sildu, Sivers; Kegums Water Reservoir)*
*M. rhodei* *(Lakes Sildu, Slokas, Usmas; Ogre River)*
*Myxobolus bramae* *(Lakes Alūksnes, Ķernavu, Cirma, Durbes, Juglas, Kāla, Liepājas, Rušons, Sivers; Kegums Water Reservoir; Daugava, Salaca Rivers)*
*M. cycloides* *(Lakes Liepājas, Siders)*
*M. cyprini* *(Lakes Burtnieku, Juglas, Liepājas, Rušons, Sivers; Kegums Water Reservoir)*
*M. dispar* *(Lakes Rāznas, Rušons, Sivers)*
*M. ellipsoides* *(Lakes Cirma, Durbes, Sivers; Kegums Water Reservoir; Daugava River)*
*M. exigua* *(Kegums Water Reservoir)*
*M. macrocapsularis* *(Lake Rāznas)*
*M. muelleri* *(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Sildu, Sivers, Slokas, Usmas; Daugava, Ogre, Salaca Rivers)*
Rivers)
*M. rutili* *(Lake Slokas)*
*Myxobolus* sp. *(Lakes Durbes)*
*Thelohanellus furhanni* *(Lake Durbes)*
*T. oculileucisci* *(Lake Sīvers)*
*Zschokkella nova* *(Lake Rāznas)*
Digenea
*Allocrociadum isoporinum* *(Lakes Alūksnes, Durbes, Liepājas, Siers; Daugava River)*
*A. transversale* *(Lakes Ķernavu, Sivers)*
*Asymphylodora imitans* *(Lake Sīvers, Daugava River)*
*Bucephalus polymorphus* metacercaria *(Lakes Burtnieku, Durbes, Rāznas, Slokas; Kegums Water Reservoir; Daugava, Salaca Rivers)*
*Diplostomum* sp. metacercaria *(Lakes Burtnieku, Ķernavu, Juglas, Riča, Sildu, Sivers, Slokas; Daugava, Ogre Rivers)*
*Diplostomum commutatum* metacercaria *(Lake Sildu)*
*D. spathaceum* metacercaria *(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Liepājas, Rušons, Sivers; Kegums Water Reservoir)*
*Hysteromorpha triloba* metacercaria *(Lakes Burtnieku, Ķernavu, Liepājas, Riča, Sivers)*
*Ichthyocotylurus platycophealus* metacercaria *(Lakes, Cirma, Durbes, Sivers; Kegums Water Reservoir; Daugava River)*
*I. pileatus* metacercaria *(Lake Sīvers)*
*I. variegatus* metacercaria *(Daugava River)*
*Ornithodiplostomum scardinii* metacercaria *(Daugava River)*
*Palaeorchis incognitus* *(Daugava River)*
*Paraconoengonimus ovatus* metacercaria *(Lakes Ķernavu, Rāznas, Riča, Rušons, Slokas, Usmas; Kegums Water Reservoir; Daugava River)*
*Phylodistomum elongatum* *(Lakes Riču, Rušons, Sildu; Daugava River)*
*Posthodiplostomum brevicaudatum* metacercaria
P. cuticola metacercaria
(Lakes Cirma, Durbes, Juglas, Rušons, Riču, Slokas, Usmas; Daugava, Ogre, Salaca Rivers)

Rhipidocotyle campanula
(Lakes Juglas, Sildu, Slokas, Usmas; Daugava River)

Sphaerostomum bramae
(Lakes Liepājas, Sīvers)

Tylodelphys clavata metacercaria
(Lakes Alūksnes, Burtnieku, Černavu, Cirma, Durbes, Lieļauces, Liepājas, Kāla, Rāznas, Riču, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Salaca Rivers)

Monogenoidea

Dactylogyrus caballeroi
(Lakes Sildu, Slokas, Usmas; Daugava River)

D. crassus (Lake Sildu)

D. crucifer
(Lakes Alūksnes, Burtnieku, Duņas, Durbes, Dzirnezers, Juglas, Lieļauces, Rāznas, Rušons, Sildu, Sīvers, Slokas, Usmas, Vīgales, Viragnas; Kegums Water Reservoir; Daugava, Lielupe, Ogre, Salaca Rivers)

D. difformoides (Lake Kanieris)

D. fallax
(Lakes Sildu, Slokas, Usmas; Salaca River)

D. izjumovae (Lake Kanieris)

D. micracanthus
(Lake Duņas, Daugava River)

D. nanus
(Lakes Dzirnezers, Juglas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava River)

D. ramulosus (Lake Sīvers)

D. rutili
(Lakes Okras, Sīvers, Slokas, Usmas)

D. similis
(Lakes Burtnieku, Cirma, Sīvers, Slokas, Usmas; Daugava, Ogre Rivers)

D. sphyrnya
(Lakes Juglas, Lieļauces, Sīvers, Slokas, Usmas; Daugava, Lielupe, Ogre, Salaca Rivers)

D. suecicus (Lake Sildu)

D. yinwenyingae
(Bullupe, Ogre, Salaca Rivers)

Diplozoon paradoxum
(Lakes Burtnieku, Durbes, Juglas, Liepājas, Rāznas, Sīvers, Usmas; Daugava Ogre, Salaca Rivers)

Gyrodactylus gasterostei
(Lake Garmužas)

Gyrodactylus sp.
(Kegums Water Reservoir)

Paradiplozoon homoion homoion
(Lakes Sīvers, Slokas, Usmas; Daugava, Lielupe Rivers)

Cestoda

Caryophyllaeus laticeps
(Lakes Sīvers, Slokas, Usmas; Daugava, Lielupe Rivers)

Ligula intestinalis plerocercoid
(Lakes Burtnieku, Juglas, Lieļauces, Usmas; Salaca River)

Paradilepis scolecina metacestode
(–)

Proteocephalus torulosus
(Daugava River)

Nematoda

Desmidocercella sp. (Lake Sīvers)

Nematoda gen. sp.
(Lakes Cirma, Lieļauces, Sīvers; Kegums Water Reservoir; Daugava River)

Philometra abdominalis
(Lake Sīvers, Lielupe River)

P. rischta (Lake Sīvers)

Raphidascaris acus
(Lakes Alūksnes, Burtnieku, Cirma, Liepājas, Rāznas, Rušons, Sīvers, Slokas; Daugava River)

Rhabdochona demodata
(Lakes Burtnieku, Lieļauces; Daugava River)

Acanthocephala

Acanthocephalus anguillae
(Lakes Burtnieku, Sīvers; Daugava River)

A. lucii
(Lakes Juglas, Sīvers, Slokas, Usmas; Daugava River)

Corynosoma semerme juvenile
(Daugava River)

Neoechinorhynchus rutili
(Lake Sīvers, Daugava River)

Hirudinida

Hemiclepsis marginata (Lake Razna)

Piscicola geometra
(Lakes Burtnieku, Sīvers; Kegums Water Reservoir)

Mollusca

Anodonta cygnea glochidium
(Lake Usmas; Daugava, Ogre Rivers)

Pseudanadonta kletti glochidium
(Lake Sildu)

Unio pictorum glochidium
(Lakes Juglas, Kišezers; Daugava, Ogre River)

Unio sp glochidium (Lake Sīvers)

Unionidae gen. sp. glochidium
(Lakes Alūksnes, Cirma, Rāznas, Sīvers)

Crustacea

*Argulus foliaceus*
(Lakes Alūksnes, Sīvers; Kegums Water Reservoir)

*Ergasilus sieboldi*
(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Kāla, Rušons, Sildu, Sivers, Slokas, Usmas; Daugava River)

Remarks: The roach is one of the most common fish species in Latvia. It occurs in rivers, lakes and coastal waters near river mouths (Plikšs and Aleksejevs 1998).

*Scardinius erythrophthalmus* Rudd
(Linnaeus, 1758)  
Syn.: *Leuciscus erythrophthalmus* (Linnaeus, 1758)  
Status: native
Environment: freshwater

Protista

*Ichthyophthirius multifiliis*
(Lakes Cirma, Sīvers)

*?Trichodina domerguei*
(Lake Rāznas)

Myxosporea

*Myxidium pfeifferi* (Lake Sīvers)

*Myxobolus bramae*
(Lakes Lielaucie, Rāznas, Rušons, Sīvers, Slokas Usmas; Daugava River)

*M. cycloides* (Lake Sīvers)

*M. dispar* (Lakes Cirma, Raznas)

*M. ellipsoides* (Lake Sīvers)

*M. muelleri* (Salaca River)

*M. permagnus* (Lake Burtnieku)

*M. ellipsoides* (Lake Sīvers)

*M. muelleri* (Salaca River)

*M. permagnus* (Lake Burtnieku)

Zschokkella nova (Lake Sīvers)

Digenea

*Allocreadium isoporum*
(Lakes Rāznas, Sīvers, Slokas, Usmas)

*Asymphylodora* sp. (Lake Sīvers)

*Bucephalus polymorphus*
(Daugava, Salaca Rivers)

*Diplostomum* sp. metacercaria
(Lake Sīvers)

*Diplostomum spathaceum* metacercaria
(Lakes Cirma, Durbes, Lielaucies, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava, Salaca Rivers)

*Hysteromorpha triloba* metacercaria
(Lake Sīvers)

*Ornithodiplostomum scardini* metacercaria
(Lakes Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava River)

*Paracoenogonimus ovatus* metacercaria
(Lakes Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava River)

*Parasymphylodora markewitschi*
(Lakes Liepājas, Rāznas, Rušons; Daugava River)

*Posthodiplostomum brevicaudatum* metacercaria (Lake Usmas)

*P. cuticola* metacercaria
(Lakes Cirma, Liepājas, Rāznas, Sīvers, Slokas, Usmas; Daugava River)

*Tylodelphys clavata* metacercaria
(Lakes Cirma, Durbes, Lielaucies, Liepājas, Rāznas, Sīvers, Slokas, Usmas; Daugava River)

Monogenoidea

*Dactylogyrus crucifer* (Lake Cirma)

*D. difformis*
(Lakes Lielaucies, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Daugava River)

*D. difformoides*
(Lakes Kanieris, Slokas, Usmas)

*D. fallax* (Lake Sīvers)

*D. izjumovae*
(Lakes Kanieris, Slokas)

*D. similis* (Lakes Dzirnezers, Sīvers)

*Diplozoon paradoxum*
(Lakes Durbes, Liepājas; Daugava River)

Cestoda

*Caryophyllaeides fenica*
(Lake Slokas)

Nematoda

*Desmidocercella numidica*
(Lake Slokas, Usmas)

Nematoda gen. sp.
(Daugava River)

*Raphidascaris acus*
(Lakes Cirma, Rāznas, Sīvers, Slokas, Usmas)

Acanthocephala

*Acanthocephalus anguillae*
(Lake Sīvers)

*Corynosoma semerme* juvenile
(Daugava River)

Hirudinida

*Piscicola geometra*
(Lakes Rāznas, Sīvers)

Mollusca

*Anodonta cygnea* glochidium
(Lakes Slokas, Usmas)

Unionidae gen. sp. glochidium
(Lakes Rāznas Sīvers)

Crustacea

*Argulus foliaceus*
(Lakes Liepājas, Rāznas, Sīvers)

*Ergasilus sieboldi*
(Lakes Černavu, Cirma, Durbes, Riču, Rušons, Sivers, Slokas, Usmas; Daugava River)

*Tinca tinca*  
(Tenč)  
(Linnaeus, 1758)  
*Linis*  
Status: native  
*Линь*  
Environment: fresh water  

Protista  

*Apiosoma* sp. (ponds)  
*Ichthyophthirius multifiliis*  
(Lake Sivers)  

*Diplodina domerguei*  
(Lakes Sīvers, Rāznas; Daugava River)  
*T. fultoni* (Lake Sildu)  
*T. reticulata* (Lake Sīvers)  
*Trichodinella epizootica*  
(Lake Sildu)  

Myxosporea  

*Chloromyxum cristatum*  
(Lake Sildu)  
*Myxidium pfeifferi*  
(Lake Lielauces)  
*Myxobolus bramae* (Daugava River)  
*M. cyprini* (ponds)  
*M. dispar* (ponds)  
*M. ellipsoides*  
(Lake Rāznas, Daugava River)  
*M. muelleri* (ponds)  
*Thelohanellus pyriformis*  
(Lakes Cirma, Lielauces, Rāznas, Sīvers; Daugava River)  
*Zschokkella nova* (Lake Rāznas)  

Digenea  

*Allocreadium isoporum*  
(Lakes Skolas, Usmas)  
*Asymphylodora tincae*  
(Lakes Burtnieku, Cirma, Dārza, Durbes, Liepājas, Lielauces, Rāznas, Sildu, Sivers, Slokas; Daugava, Lielupe Rivers)  
*Bucephalus polymorphus*  
(Lakes Sivers, Skolas; Daugava River)  
*Diplostomum sp. metacercaria*  
(Daugava River)  
*Diplostomum spathaceum* metacercaria  
(Lakes Liepājas, Sivers, Skolas; Daugava River)  
*Hysteromorpha triloba* metacercaria  
(Lake Cīrma)  

Ichthyocotylurus plathycephalus metacercaria (ponds)  
*Paracoenogonimus ovatus* metacercaria  

Myxozoa  

*Chloromyxum cristatum*  
(Lake Sildu)  
*Myxidium pfeifferi*  
(Lake Lielauces)  
*Myxobolus bramae* (Daugava River)  
*M. cyprini* (ponds)  
*M. dispar* (ponds)  
*M. ellipsoides*  
(Lake Rāznas, Daugava River)  
*M. muelleri* (Lakes Sildu, Slokas)  

Thelohanellus pyriformis  
(Lakes Cirma, Lielauces, Rāznas, Sīvers; Daugava River)  
*Zschokkella nova* (Lake Rāznas)  

Cestoda  

*Caryophyllaeus laticeps* (ponds)  
*Neogryporhynchus cheilancristrotus* metacestode (Daugava River)  
*Paradilepis scolicina* metacestode  
(Lake Skolas)  
*Valipora campylancristrota*  
metacestode (Lake Dārza)  

Nematoda  

Nematoda gen. sp.  
(Lakes Lielauces, Liepājas)  
*Raphidascaris acus*  
(Daugava, Lielupe Rivers)  
*Skrjabilanus tincae* (Lake Skolas)  

Acanthocephala  

*Acanthocephalus anguillae*  
(Lakes Liepājas, Rāznas, Sīvers; Daugava River)  
*A. lucii*  
(Lake Rāznas, Daugava River)  
*Corynosoma semerme* juvenile  
(Daugava River)  

Hirudinida  

*Piscicola geometra* (Lake Sīvers)  

Mollusca  

*Anodonta cygnea* glochidium  
(Lakes Skolas, Usmas)  
*Unionidae gen. sp. glochidium*  
(Lake Sīvers)  

Crustacea  

*Argulus foleaceus*  
(Lakes Rāznas, Sīvers, Skolas)  
*Ergasilus briani*  
(Lake Rāznas, Daugava River)  
*E. sieboldi*  
(Lakes Burtnieku, Cirma, Dārza, Durbes, Liepājas, Sivers, Usmas; Daugava River)  

*Phylodistomum elongatum*  
(Lakes Dārza, Rāznas, Skolas; Daugava River)  
*Posthodiplostomum brevicaudatum*  
metacestode (Daugava River)  
*Tylocephalus clavata* metacestode  
(Lakes Dārza, Lielauces, Liepājas, Siders)  

Monogenoidea  

*Dactylogyrus macracanthus*  
(Lakes Lielauces, Sīvers, Rāznas; Daugava River)  

*D. tincae*  
(Lakes Sīvers, Rāznas, Mula; Zveinieklu)  

*Diplozoon paradoxum*  
(Daugava River)  

?*Gyrodactylus elegans* (ponds)  
*G. medius* (ponds)  

*Nematoda*  

Nematoda gen. sp.  
(Lakes Lielauces, Liepājas)  

*Raphidascaris acus*  
(Daugava, Lielupe Rivers)  

*Skrjabilanus tincae* (Lake Skolas)  

Acanthocephala  

*Acanthocephalus anguillae*  
(Lakes Liepājas, Rāznas, Sīvers; Daugava River)  
*A. lucii*  
(Lake Rāznas, Daugava River)  
*Corynosoma semerme* juvenile  
(Daugava River)  

Hirudinida  

*Piscicola geometra* (Lake Sīvers)  

Mollusca  

*Anodonta cygnea* glochidium  
(Lakes Skolas, Usmas)  
*Unionidae gen. sp. glochidium*  
(Lake Sīvers)  

Crustacea  

*Argulus foleaceus*  
(Lakes Rāznas, Sīvers, Skolas)  
*Ergasilus briani*  
(Lake Rāznas, Daugava River)  
*E. sieboldi*  
(Lakes Burtnieku, Cirma, Dārza, Durbes, Liepājas, Sivers, Usmas; Daugava River)  

*Phylodistomum elongatum*  
(Lakes Dārza, Rāznas, Skolas; Daugava River)  
*Posthodiplostomum brevicaudatum*  
metacestode (Daugava River)  
*Tylocephalus clavata* metacestode  
(Lakes Dārza, Lielauces, Liepājas, Siders)  

Monogenoidea  

*Dactylogyrus macracanthus*  
(Lakes Lielauces, Sīvers, Rāznas; Daugava River)  

*D. tincae*  
(Lakes Sīvers, Rāznas, Mula; Zveinieklu)  

*Diplozoon paradoxum*  
(Daugava River)  

?*Gyrodactylus elegans* (ponds)  
*G. medius* (ponds)  

Cestoda  

*Caryophyllaeus laticeps* (ponds)  
*Neogryporhynchus cheilancristrotus* metacestode (Daugava River)  
*Paradilepis scolicina* metacestode  
(Lake Skolas)  
*Valipora campylancristrota*  
metacestode (Lake Dārza)  

Nematoda  

Nematoda gen. sp.  
(Lakes Lielauces, Liepājas)  

*Raphidascaris acus*  
(Daugava, Lielupe Rivers)  

*Skrjabilanus tincae* (Lake Skolas)  

Acanthocephala  

*Acanthocephalus anguillae*  
(Lakes Liepājas, Rāznas, Sīvers; Daugava River)  
*A. lucii*  
(Lake Rāznas, Daugava River)  
*Corynosoma semerme* juvenile  
(Daugava River)  

Hirudinida  

*Piscicola geometra* (Lake Sīvers)  

Mollusca  

*Anodonta cygnea* glochidium  
(Lakes Skolas, Usmas)  
*Unionidae gen. sp. glochidium*  
(Lake Sīvers)  

Crustacea  

*Argulus foleaceus*  
(Lakes Rāznas, Sīvers, Skolas)  
*Ergasilus briani*  
(Lake Rāznas, Daugava River)  
*E. sieboldi*  
(Lakes Burtnieku, Cirma, Dārza, Durbes, Liepājas, Sivers, Usmas; Daugava River)
Remarks: The tench is one of the most common Latvian fishes, occurring in many rivers, lakes, ponds, and coastal waters near river mouths. From 1955 to 1996, it was restocked in at least 120 lakes. It is also raised in fish farms (Plikšs and Aleksejevs 1998).

**Vimba vimba**

*(Linnaeus, 1758)*

**Status:** native

**Environment:** freshwater, brackish, marine

**Protista**

*Trichodina* sp. (Gulf of Riga)

**Myxosporea**

*M. bramae* (Daugava River, Gulf of Riga)

*M. ellipsoides* (Daugava, Salaca Rivers; Gulf of Riga)

*M. muelleri* (Daugava River)

*M. oviformis* (Daugava River, Gulf of Riga)

*Zschokkella nova* (Daugava River, Gulf of Riga)

**Digenea**

*Bucephalus polymorphus* (Daugava River, Gulf of Riga)

*Diplostomum sp. metacercaria* (Daugava River)

*Diplostomum spathaceum* metacercaria (Daugava, Salaca Rivers; Gulf of Riga)

*Ichthyocotylurus variegatus* metacercaria (Daugava River)

*I. platucephalus* (Gulf of Riga)

*Paracoenogonimus ovatus* metacercaria (Daugava, Salaca Rivers)

*Phyllodistomum elongatum* (Daugava River)

*Posthodiplostomum cuticola* metacercaria (Daugava River)

*Sphaerostoma bramae* (Daugava River)

*Tylodelphys clavata* metacercaria (Daugava, Salaca Rivers)

**Monogenoidea**

*Dactylogyrus cornoides* (Gauja, Salaca Rivers)

*D. cornu* (Daugava, Lielupe, Salaca Rivers; Gulf of Riga)

*D. distinguendus* (Daugava, Gauja Rivers)

*D. fallax* (Lielupe River)

*D. sphyrrna* (Lakes Dzirnezers, Vilgales; Daugava, Gauja Rivers; Gulf of Riga)

*Diplozoon paradoxum* (Daugava, Salaca Rivers; Gulf of Riga)

**Gyrodactylus vimbi** (Daugava River)

**Gyrodactylus sp.** (Daugava River)

**Paradiplozoon albini** (Salaca River)

*P. blicae* (Gauja River)

*P. homoion homoion* (Daugava River)

**Cestoda**

*Caryophyllaeides fenica* (Daugava River)

**Proteocephalus torulosus** (Gulf of Riga)

**Nematoda**

*Pseudocapillaria tomentosa* (Daugava River)

*Raphidascaris acus* (Daugava River, Gulf of Riga)

*Schulmanela petruschewskii* (Daugava River)

**Acanthocephala**

*Acanthocephalus anguillae* (Daugava River)

*A. lucii* (Daugava, Salaca Rivers; Gulf of Riga)

*Echinorhynchus gadi* (Daugava River)

*Pomphorhynchus laevis* (Daugava River)

**Mollusca**

*Unio rostratus* glochidium (Lielupe River)

**Crustacea**

*Ergasilus briani* (Daugava River)

*E. sieboldi* (Daugava River, Gulf of Riga)

Remarks: The vimba is anadromous species with populations in some areas. In Latvia it occurs in coastal waters, rivers discharging directly into the sea and in coastal lakes. It has been restocked since 1970 (Plikšs and Aleksejevs 1998).

**ORDER SILURIFORMES**

**FAMILY SILURIDAE**

*Silurus glanis* **Wels catfish**

*(Linnaeus, 1758)*

**Status:** native

*(Sams)*

(Lakes Dzirnezers, Vilgales; Daugava, Gauja Rivers; Gulf of Riga)
Environment: fresh water
Protista

Ichthyophthirius multifiliis
(Daugava River)

Trichodina sp.
(Ličupe River)

Digenea

Bucephalus polymorphus
(Daugava River)

Diplostomum spathaceum
metacercaria (Daugava River)

Nicolla skrjabini
(Kegums Water Reservoir, Daugava River)

Monogenoidea

Thaparocleidus siluri
(Daugava River)

Cestoda

Proteocephalus osculatus
(Kegums Water Reservoir, Daugava River)

Nematoda

Agamonema sp. larva
(Kegums Water Reservoir)

Camallanus truncatus
(Daugava River)

Eustrongylides sp. larva (Daugava River)

Cucullanus heterochrous
(Daugava River)

Raphidascaris acus
(Kegums Water Reservoir, Daugava River)

Acanthocephala

Acanthocephalus anguillae
(Kegums Water Reservoir)

A. lucii (Kegums Water Reservoir)

Crustacea

Ergasilus sieboldi (Daugava River)

Remarks: In Latvia, the wels catfish occurs mostly in basin of the Daugava River and its tributary, the Aiviekste. A few specimens have also been caught in the Gulf of Riga. It is included in the Red Data Book of Latvia under category “3” (rare) (Pliķšs and Aleksejevs 1998).

ORDER ESOCIFORMES

FAMILY ESOCIDAE

Esox lucius
Linnaeus, 1758
Northern pike

Status: native

Environment: fresh water

Protista

Apiosoma campanulatum

(Lake Sildu, Ogre River)

?Trichodina domerguei
(Lake Rāzna, Kegums Water Reservoir)

T. esocis (Lake Sildu)

Trichodinella epizootica
(Daugava River)

Myxosporea

Chloromyxum esocium
(Lake Liepājas, Kegums Water Reservoir, Daugava River)

Henneguya lobosa
(Lakes Burtnieku, Indra, Juglas, Rāznas, Slokas, Usmas; Kegums Water Reservoir)

H. ovipeda
(Lakes Burtnieku Durbes, Rāznas, Sildu, Usmas)

H. psorospermica
(Lakes Burtnieku, Sivers; Kegums Water Reservoir)

H. schizura
(Kegums Water Reservoir)

H. zschokkei (Lake Sildu)

Myxidium lieberkuehni
(Lakes Burtnieku, Cirma, Durbes, Kāļa, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Usmas; Kegums Water Reservoir; Daugava River)

Myxobolus anurum
(Lakes Burtnieku, Cirma, Durbes, Juglas, Kāļa, Liepājas, Rāznas, Rušons, Sildu, Sivers, Usmas; Kegums Water Reservoir; Daugava River)

Digenea

Allocercadum isoporum
(Lake Juglas)

Azygia lucii
(Lakes Burtnieku, Cirma, Indra, Juglas, Kāļa, Liepājas, Rāznas, Rušons, Sivers, Slokas, Usmas; Daugava River)

Bucephalus polymorphus
(Lakes Burtnieku, Rāznas, Sivers; Daugava River, Kegums Water Reservoir)

Bunodera luciopercae
(Lakes Lielauces, Liepājas)

Diplostomum sp. metacercaria
(Lakes Černavu, Juglas, Slokas)

Diplostomum commutatum
metacercaria
(Lakes Slokas, Usmas; Daugava River)

D. spathaceum metacercaria
(Lakes Burtnieku, Cirma, Durbes, Kāļa, Liepājas, Rāznas, Rušons,
Sildu, Sīvers; Kegums Water Reservoir; Daugava River

*Ichthyocotylurus platycephalus* metacercaria (Lake Sīvers)

*Paracoenogonimus ovatus* metacercaria
(Lakes Černavu, Juglas, Rāznas, Rušons, Usmas; Kegums Water Reservoir; Daugava, Lielupe, Rivers)

*Phyllodistomum folium* (Lakes Burtnieku, Cirma, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Sīvers; Kegums Water Reservoir)

*Posthodiplostomum brevicaudatum* metacercaria
(Lake Usmas, Daugava River)

*Rhipidocotyle campanula* (Lakes Sildu, Usmas; Daugava River)

*Sphaerostomum bramae* (Lake Burtnieku)

*Tylodelphys clavata* metacercaria
(Lakes Burtnieku, Cirma, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Sīvers, Slokas, Usmas; Daugava River, Kegums Water Reservoir)

**Monogenoidea**

*Diplozoon paradoxum* (Lake Liepājas)

*Gyrodactylus* sp. (Lake Slokas)

*Tetraonchus monenteron* (Lakes Burtnieku, Cirma, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sildu, Slokas, Usmas; Daugava River, Kegums Water Reservoir)

**Cestoda**

*Cystocotylus lacustris* (Lake Sīvers)

*Ligula intestinalis* plerocercoid (Lake Liepājas)

*Neogryporhynchus cheilancristotus* metacestode (Lake Engures)

*Paradilepis scolecina* metacestode

(-)

*Proteocephalus esocis* (Lakes Juglas, Sīvers)

*P. percae* (Lakes Kāla, Sīvers)

*Proteocephalus* sp.
(Lakes Indra, Juglas, Rāznas; Daugava River, rivers entering the Gulf of Riga)

*Triaenophorus nodulosus* (Lakes Burtnieku, Černavu, Cirma, Durbes, Indra, Juglas, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava River)

**Nematoda**

*Camallanus (Camallanus) lacustris* (Lakes Burtnieku, Cirma, Juglas, Rāznas, Rušons, Sildu, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava River)

*C. (Camallanus) truncatus* (Lake Slokas)

*Eustrongylides excisus* larva (Lake Slokas)

**Raphidascaris acus** (Lakes Burtnieku, Černavu, Cirma, Indra, Juglas, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums Water Reservoir; Daugava, Lielupe Rivers)

**Acanthocephala**

*Acanthocephalus anguillae* (Lake Rāzna)

*A. lucii* (Lakes Burtnieku, Cirma, Juglas, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Daugava River)

**Hirudinida**

*Piscicola geometra* (Lakes Burtnieku, Cirma, Juglas, Kāla, Lielauces, Sildu, Sīvers, Slokas, Usmas)

**Mollusca**

*Anodonta cygnea* glochidium (Lakes Juglas, Sīvers; Daugava River)

*Pseudanadonta kletti* glochidium (Lake Sīvers)

**Unionidae gen. sp.** glochidium (Lakes Burtnieku, Cirma, Kāla, Lielauces, Rušons, Sīvers, Slokas, Usmas)

**Crustacea**

*Argulus foliaceus* (Lakes Burtnieku, Cirma, Kāla, Lielauces, Liepājas, Rāznas, Rušons, Sīvers, Slokas)

*Ergasilus sieboldi* (Lakes Burtnieku, Černavu, Cirma, Durbes, Indra, Juglas, Kāla, Lielauces, Rāznas, Rušons, Sīvers, Slokas, Usmas, Žuguru; Daugava River)
### ORDER OSMERIFORMES

#### FAMILY OSMERIDAE

**Osmerus eperlanus**  
European smelt  
*(Linnaeus, 1758)*  
Status: native  
Environment: marine  

- **Digenea**
  - *Diplostomulum* sp. metacercaria  
    *(Gulf of Riga)*
  - *Diplostomum spathaceum*  
    metacercaria  
    *(Daugava River, Gulf of Riga)*
  - *Ichthyocotylurus erraticus*  
    metacercaria  
    *(Daugava River)*

- **Cestoda**
  - *Diphyllobothrium ditremum*  
    plerocercoid  
    *(Gulf of Riga)*
  - *Proteocephallus longicollis*  
    *(Daugava River, Gulf of Riga)*  
    metacercaria  
  - *Proteocephalus* sp.  
    *(Gulf of Riga)*

- **Nematoda**
  - *Cystidicola farionis*  
    *(Daugava River, Gulf of Riga)*
  - *Hysterohylacium aduncum*  
    *(Daugava River, Gulf of Riga)*
  - *Acanthocephala*  
    *(Daugava River, Gulf of Riga)*
  - *Corynosoma semerme*  
    *(Daugava River, Gulf of Riga)*
  - *C. strumosum*  
    *(Gulf of Riga)*
  - *Echinorhynchus gadi*  
    *(Gulf of Riga)*

**Remarks:** An anadromous species that is distributed in northern Europe. Two varieties occur in Latvia: the anadromous smelt – *O. eperlanus eperlanus* – in coastal waters and the Gulf of Riga, and smelt – *O. eperlanus spirinchus* – found mainly in a few lakes (Plikšs and Aleksejevs 1998).

**Osmerus eperlanus spirinchus**  
European smelt  
*(Pallas, 1814)*  
Includes:  
- *O. eperlanus eperlanus*  
  morpha *spirinchus*
Status: native  
Environment: freshwater  

- **Digenea**
  - *Diplostomum spathaceum*  
    metacercaria  
    *(Lake Sīvers)*
  - *Diphyllobothrium ditremum*  
    plerocercoid  
    *(Lake Sīvers)*
  - *Diphyllobothrium* sp.  
    plerocercoid  
    *(Lake Sīvers)*

**Remarks:** This subspecies is considered a synonym of *E. eperlanus* by Froese and Pauly (2006).  

### ORDER SALMONIFORMES

#### FAMILY SALMONIDAE

**Coregonus albula**  
Vendace  
*(Linnaeus, 1758)*  
Status: native  
Environment: freshwater  

- **Protista**
  - *Trichodina domerguei*  
    *(Lake Rāznas)*

- **Myxosporea**
  - *Henneguya zschokkei*  
    *(Lake Sīvers)*

- **Digenea**
  - *Diplostomum spathaceum*  
    metacercaria  
    *(Lakes Alūksnes, Sīvers)*
  - *Ichthyocotylurus erraticus*  
    metacercaria  
    *(Lakes Alūksnes, Rāznas, Sīvers)*
  - *Tylodelphus clavata*  
    metacercaria  
    *(Lakes Alūksnes)*

- **Cestoda**
  - *Diphyllobothrium ditremum*  
    plerocercoid  
    *(Lakes Rāznas, Sīvers)*
  - *Diphyllobothrium* sp.  
    plerocercoid  
    *(Lake Sīvers)*
  - *Proteocephalus longicollis*  
    *(Lakes Alūksnes, Rāznas, Sīvers)*

**Remarks:** This coregonid has been the subject of a restocking program since 1900. From 1939 to 1981, it was stocked into at least in 46 lakes, as well as some artificial reservoirs. It is included in the Red Data Book of Latvia under category “3” (rare) (Plikšs and Aleksejevs 1998).
Coregonus lavaretus  Common whitefish  (Linnaeus, 1758)  Сиг
Status: native?  Сига
Environment: freshwater, brackish
Myxosporea
  Henneguya zschokkei (Lake Cirma)
Digenea
  Crepidostomum farionis  (Daugava River)
  Diplostomum spathaceum  metacercaria
    (Daugava River, Gulf of Riga)
  Ichthyocotylurus erraticus  metacercaria
    (Lake Cirma)
  Tylodelphys clavata  metacercaria
    (Lake Cirma)
Cestoda
  Diphyllobothrium ditremum  plerocercoid
    (Lake Cirma, Daugava River)
  Proteocephalus longicollis
    (Daugava River, Gulf of Riga)
Nematoda
  Cystidicola farionis  (Daugava River)
  Raphidascaris acus  (Gulf of Riga)
Mollusca
  Unionidae gen. sp. glochidium
    (Lake Cirma)
Crustacea
  Achtheres foleaceus  (Lake Cirma)
  Ergasilus sieboldi  (Lake Cirma)
Remarks: Several forms of this species – anadromous, and sea spawning – occur in Latvia. The sea spawning and anadromous whitefish are distributed along the sea coast and in the Gulf of Riga. The form (C. lavaretus marranoides) occurs mainly in the lakes of eastern Latvia. Coregonus lavaretus ludoga has been stocked since 1888; the anadromous whitefish from 1893 to 1961. This species is included in the Red Data Book of Latvia under category “2” (vulnerable) (Plikšs and Aleksejevs 1998).

Coregonus peled  Peled  (Gmelin, 1783)  Пригил
Status: exotic  Пелидь
Environment: freshwater
Protista
  Apiosoma piscicolum  (ponds)
  Trichodina reticulata  (ponds)
Digenea
  Diplostomulum sp.  metacercaria  (ponds)
  Diplostomum spathaceum  metacercaria  (ponds)
Monogenoidea
  ?Diplozoon sp.  (Lake Dzirnezers (cages))
  Gyrodactylus truttae  (ponds)
Cestoda
  Triaenophorus nodulosus  plerocercoid  (ponds)
Nematoda
  Cystidicola farionis  (ponds)
  Hysterothylacium aduncum  (ponds)
Remarks: An anadromous or species, rainbow trout are native to western North America. The first attempted introduction into Latvia was in 1899. They are currently raised in fish farms; no feral populations have become established in Latvia and the Baltic Sea catchment area (Plikšs and Aleksejevs 1998).
Environment: marine
Protista
  *Apiosoma piscicolum* (tanks)
  *Hexamita salmonis* (hatchery)
  *Trichodina nigra* (hatchery)

Myxosporea
  *Chloromyxum truttae* (hatchery)

Digenea
  *Brachyphallus crenatus* (Daugava River)

Cestoda
  *Diphyllobothrium dendriticum* (Rivers Bulļupe, Daugava, Gauja, Lielupe, Vegaudava; Gulf of Riga)
  *D. ditremum plerocercoid* (Daugava River)
  *Eubothrium crassum* (Daugava River, Gulf of Riga)

Nematoda
  *Cucullus truttae* (Daugava River)
  *Goezia* sp. (Daugava River)
  *Hysterothylacium aduncum* (Daugava River)
  *Pseudoterranova decipiens* larva (Daugava River)
  *Raphidascaris acus* (Daugava River)

Acanthocephala
  *Echinorhynchus gadi* (Daugava River)
  *E. salmonis* (Daugava River)

Remarks: An anadromous species, the Baltic salmon is considered a geographically isolated population, as no migrations out of the sea are observed (Plikšs and Aleksejevs 1998).

**Salmo trutta morpha fario** Brown trout
Linnaeus, 1758
Status: native
Environment: freshwater
Digenea
  *Diplostomum spathaceum* metacercaria (River Liečupe)

Cestoda
  *Cyathocephalus truncatus* (Liečupe River)
  *Eubothrium crassum* (Daugava River)
  *Proteocephalus longicollis* (Liečupe River)

Nematoda
  *Cucullanus truttae* (Liečupe River)

Acanthocephala
  *Echinorhynchus truttae* (Liečupe River)

Mollusca
  *Unio pictorum* glochidium (rivers)

Remarks: The brown trout was restocked from 1898 to 1941, and imported from Czechoslovakia between 1958 and 1960 for stocking in lakes for recreational fishing (Plikšs and Aleksejevs 1998). This form is considered a synonym of *S. trutta trutta* by Froese and Pauly (2006).

**Thymallus thymallus** Grayling
(Linnaeus, 1758)
Status: native
Environment: freshwater
Monogenoidea
  *Tetraonchus borealis* (Gauja river basin)

Nematoda
  *Cystidicoloidea ephemeridarum* (Gauja River)

Remarks: In Latvia, grayling are found in the Gauja and Venta Rivers and their tributaries. The species is included in the Red Data Book of Latvia under category “3” (rare) (Plikšs and Aleksejevs 1998).

**ORDER GADIFORMES**

**FAMILY GADIDAE**

**Gadus morhua callarias** Baltic cod
(Linnaeus, 1758)
Status: native
Environment: marine
Protista
  *Goussia gadi* (Baltic Sea)
Loma branchialis (Baltic Sea)
Trichodina cottidaram
(Gulf of Riga)
T. murmanica (Gulf of Riga)
Trichodina sp.
(Gulf of Riga, Baltic Sea)

Digenea
Diplostomulum sp. metacercaria
(Baltic Sea)
Diplostomum spathaceum metacercaria
(Daugava River, Gulf of Riga, Baltic Sea)

Monogenoidea
Gyrodactylus aeglefini
(Gulf of Riga, Baltic Sea)
G. pharyngicus (Gulf of Riga)

Cestoda
Bothriocephalus scorpii
(Gulf of Riga, Baltic Sea)

Nematoda
Anisakis simplex larva
(Gulf of Riga)
Ascarophis longispicula
(Gulf of Riga, Baltic Sea)
A. morhuae
(Gulf of Riga, Baltic Sea)
A. skrijabini (Gulf of Riga)
Ascarophis sp.
(Gulf of Riga, Baltic Sea)
Cucullanus cirratus (Gulf of Riga)
Cystidicola farionis
(Gulf of Riga, Baltic Sea)
Hysterobothrium aduncum
(Daugava River, Gulf of Riga)

Acanthocephala
Corynosoma semerme juvenile
(Gulf of Riga, Baltic Sea)
C. strumosum juvenile
(Gulf of Riga, Baltic Sea)
Echinorhynchus gadi
(Daugava River, Gulf of Riga, Baltic Sea)

Pomphorhynchus laevis
(Gulf of Riga, Baltic Sea)

Hirudinida
Piscicola geometra
(Gulf of Riga, Baltic Sea)

Remarks: The Baltic cod is a marine demersal species. One of five subspecies of the Atlantic cod, its is adapted to the brackish waters of the Baltic Sea and is common throughout the Baltic, its distribution fluctuating along with the stock’s abundance (Plikšš & Aleksejevs 1998). The subspecies is considered a junior synonym of G. morhua by Froese and Pauly (2006).

Lota lota (Linnaeus, 1758)
(Burbot)

Environment: freshwater

Protista
Hexamita salmonis
(Lake Rāznas, Daugava River)

Myxosporea
Caudomyxum nanum
(Kegums Water Reservoir)
Chloromyxum dubium
(Lake Rāznas, Kegums Water Reservoir)
C. mucronatum
(Lake Rāznas, Kegums Water Reservoir)
Myxobolus cycloides
(Lake Burtnieku)
M. muelleri
(Lakes Rāznas, Sīvers; Daugava River)

Digenea
Diplostomum spathaceum metacercaria
(Lakes Rāznas, Sīvers; Daugava River)
Neodiplostomulum sp. metacercaria
(Lake Rāznas)
Phyllobothrium megalorchis
(Lake Rāznas)
Tylodelphys clavata metacercaria
(Lakes Rāznas, Sīvers)

Cestoda
Diphyllobothrium latum plerocercoid (Daugava River)

Nematoda
desmidocercella sp. (Lake Sīvers)
Camallanus lacustris
(Lakes Rāznas, Sīvers)
Camallanus sp. (Lake Sīvers)
Raphidascaris acus
(Lakes Rāznas, Sīvers; Daugava River)

Acanthocephala
Acanthocephalus anguillae
(Lakes Rāznas, Sīvers; Daugava River)

A. clavula
(Lakes Rāznas, Sīvers; Daugava River)
A. lucii
Neoechinorhynchus rutili (Daugava River)

Remarks: In Latvia the burbot occurs in many rivers and lakes, and in coastal waters near river mouths. It is not found in small, closed, overgrown lakes (Pliks and Aleksejevs 1998).

ORDER GASTEROSTEIFORMES

FAMILY GASTEROSTEIDAE

Gasterosteus aculeatus Three-spined stickleback (Linnaeus, 1758)
Status: native Trīšadatu stagars
Environment: freshwater, brackish, marine

Protista
Apiosoma piscicolum (Daugava River)
Chilodonella piscicola (Daugava River)
Glugea anomala (Daugava River)
Ichthyophthirius multifiliis (Daugava River)
Trichodina domerguei (Daugava River, Gulf of Riga)
T. teneidens (Daugava River)

Myxosporea
Myxobilatus gasterostei (Gulf of Riga)
Sphaerospora elegans (Daugava River, Gulf of Riga)

Digenea
Diplostomum pungeti metacercaria (Daugava River)
D. spathaceum metacercaria (Daugava River, Gulf of Riga)
Phyllobothrium folium (Daugava River)
Posthodiplostomum breviscudatum metacercaria (Gulf of Riga)

Monogenoidea
Gyroactylus mediuss (ponds)
G. rarus (Daugava River, Gulf of Riga)

Cestoda
Caryophyllaeides fenica (Daugava River)
Diphyllolothrium vogeli plerocercoid (Daugava River)

Crustacea
Argulus foliaceus (Daugava River)
Thersetina gasterostei (Daugava River, Gulf of Riga)
Pungitius pungitius Nine-spine stickleback (Linnaeus, 1758)
Status: native Deviņadatu stagars
Environment: freshwater, brackish, marine

Protista
Apiosoma sp. (ponds)
Chilodonella piscicola (ponds)
Ichthyophthirius multifiliis (ponds)
Trichodina domerguei (ponds)
T. reticulata (ponds)

DIGENEAN
Ichthyocotylurus platycophasus metacercaria (ponds)

Monogenoidea
Gyroactylus sp. (ponds)
Hirudinida
Piscicola geometra (ponds)
Crustacea  
*Argulus foliaceus* (ponds)  
Remarks: In Latvia the nine-spine stickleback occurs in coastal waters and rivers, artificial reservoirs and coastal lakes that are connected to the sea. It sometimes propagates in fish farms and is thus released along with cyprinids stocked in waterbodies not connected to the sea (Plikšs and Aleksejevs 1998).

**ORDER BELONIFORMES**

**FAMILY BELONIDAE**

*Belone belone*  
Garpike  
(Linnaeus, 1761)  
Veizīvs  
Status: native  
Сарган  
Environment: marine  

Digenea  
*Diplostomum spathaceum* metacercaria (Gulf of Riga)

Cestoda  
*Bothriocephalus scorpii* (Gulf of Riga)

Nematoda  
*Hysterohylactum aduncum* (Gulf of Riga)

Remarks: This species occurs in the Baltic Sea as far as the middle of the Gulf of Bothnia, and also in the gulfs of Riga and Finland (Plikšs & Aleksejevs 1998).

**ORDER SCORPAENIFORMES**

**FAMILY COTTIDAE**

*Cottus gobio*  
Bullhead  
Linnaeus, 1758  
Platgalve  
Status: native  
Подкаменщик  
Environment: freshwater  

Digenea  
*Diplostomum spathaceum* metacercaria (Daugava River)

Cestoda  
*Prototreme cotti* (Daugava River)

Nematoda  
*Pseudoterranova decipiens* larva (Daugava River)

Remarks: This marine demersal species occurs in the Baltic Sea as far as the Gulf of Bothnia and middle of the Gulf of Finland. It is very rare in the coastal areas of Latvia, and is included in the Red Data Book of Latvia under category “3” (rare) (Plikšs & Aleksejevs 1998).
Digenea

'Diplostomum spathaceum'
metacercaria (Gulf of Riga)

Nematoda

'Ascarphis morhuae' (Gulf of Riga)

'Hysterothylacium aduncum'
(Gulf of Riga)

'Pseudoterranova decipiens' larva
(Gulf of Riga)

'Raphidascaris acus' (Gulf of Riga)

ORDER PERCIFORMES

FAMILY GOBIIDAE

Gobio gobio gobio Gudgeon
(Linnaeus, 1758) Grundulis
Status: native Пескарь

Environment: freshwater

Protista

'Apiosoma' sp. (Ogre River)

'?Trichodina domerguei'
(Lake Rāznas)

Myxosporea

'Myxobolus cycloides' (Rāznas)

'M. dispar' (Lake Rāznas)

'M. muelleri' (Ogre River)

'M. oviformis'
(Lake Rāznas; Kegums Water Reservoir)

'M. permagnus'
(Lake Rāznas, Kegums Water Reservoir)

'M. rotundus' (Lake Rāznas)

'Zschokkella nova' (Lake Rāznas)

Digenea

'Allocreaduim isoporum'
(Daugava River)

'Bucephalus polymorphus'
(Kegums Water Reservoir, Daugava River)

'Diplostomum spathaceum'
metacercaria

(Lake Rāznas, Kegums Water Reservoir, Daugava, Ogre Rivers)

'Ichthyocotylurus pileatus'
metacercaria (Lake Rāznas)

'I. platyccephalus' metacercaria
(Daugava River)

'Paracoenogonimus ovatus'
metacercaria (Lake Rāznas)

'Tylodelphys clavata' metacercaria
(Ogre River)

Monogenoidea

'Dactylogyurus cryptomerus'
(Ogre River)

'D. gobii' (Ogre River)

Diplozoon paradoxum
(Lake Rāznas, Kegums Water Reservoir)

'Gyrodactylus gobii' (Lake Rāznas)

'G. gobiensis' (Ogre River)

'G. markakulensis' (Lake Rāznas)

'Paradiplozoon homoioen gracile'
(Ogre River)

'P. zeller' (Ogre River)

Cestoda

'Khawia dubius' (Lake Rāznas)

Nematoda

'Contracaecum sp.' (Ogre River)

'Raphidascaris acus' (Lake Rāznas)

Acanthocephala

'Ichthyocotylurus pileatus' metacercaria

Myxosporea

'Henneguya creplini'
(Daugava River)

'Myxobolus anurum'
(Daughter, Daugava Rivers)

'M. magnus'
(Kegums Water Reservoir, Daugava River)

'Diplostomum spathaceum'
metacercaria

(Lake Rāznas, Kegums Water Reservoir, Daugava, Ogre Rivers)

'Bucephalus polymorphus'
(Kegums Water Reservoir, Daugava River)

'Bunodera luciopercae'
(Lakes Cirma, Juglas, Usmas)

'Diplostomulum sp. metacercaria'
Diplostomum spathaceum
metacercaria
(Lakes Burtnieku, Cirma, Durbes, Juglas, Kāļa, Rāznas, Rušons; Sīvers; Kegums Water Reservoir; Daugava, Ogre Rivers)
Ichthyocotylurus pileatus
metacercaria
(Lake Usmas, Ogre River)
I. platyccephalus metacercaria
(Lakes Burtnieku, Cirma, Durbes, Kāļa, Rāznas, Rušons, Sīvers; Kegums Water Reservoir; Daugava River)
I. variegatus
(Lakes Burtnieku, Juglas, Usmas; Daugava River)
Neodiplostomulum sp. metacercaria
(Kegums Water Reservoir)
Paracoenogonimus ovatus
metacercaria
(Kegums Water Reservoir, Daugava River)
Phyllodistomum folium
(Lake Usmas)

Cestoda

Proteocephalus cernuae
(Lakes Cirma, Kāļa, Rušons; Kegums Water Reservoir; Daugava River; Gulf of Riga)
Triaenophorus nodulosus
plerocercoid
(Lakes Burtnieku, Rāznas, Sīvers, Usmas)

Nematoda
Anguillicola crassus larva
(Lake Puzes, Usmas; Venta River; coastal waters)
Camallanus lacustris
(Lakes Burtnieku, Cirma, Juglas, Rāznas, Sīvers)
Eustrongylides sp. larva
(Lakes Burtnieku, Saukas)
Philometra ovata (Lake Rušons)
Raphidascaris acus
(Lake Rāznas, Daugava River)
Schulmanella petrushevskii
(Lake Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers)

Acanthocephala
Acanthocephalus anguillae
(Kegums Water Reservoir)
A. clavula (Daugava River)
A. lucii
(Lakes Burtnieku, Cirma, Rāznas, Sīvers, Usmas; Daugava River)

Hirudinida
Piscicola geometra
(Lakes Cirma, Rāznas Sīvers)

Mollusca
Anodonta cygnea glochidium
(Lakes Juglas, Usmas; Daugava, Ogre Rivers)
Unionidae gen. sp. glochidium
(Lakes Cirma, Durbes, Rāznas, Sīvers; Kegums Water Reservoir)

Crustacea
Ergasilus sieboldi
(Lakes Cirma, Kāļa, Juglas, Rāznas, Rušons, Sīvers, Usmas; Daugava River; Gulf of Riga)

Perca fluviatilis
European perch
Linnaeus, 1758
Asaris
Status: native
Окунь
Environment: fresh water
Protista
Chilodonella piscicola (Lake Juglas)
Dermocystidium percae
(Lake Usmas, Daugava River)
Trichodina reticulata
(Lake Burtnieku)
T. urinaria
(Lakes Alūksnes, Cirma, Durbes, Juglas, Lielaucies, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers)

Trichodinella epizootica
(Daugava River)

Myxosporea

Henneguya psorospermica
(Lakes Burtnieku, Juglas, Kāla, Liepājas, Rāznas, Sīvers Usmas; Kegums Water Reservoir; Lielupe River; Gulf of Riga)

Henneguya sp. (Lake Sīvers)

Myxobolus carassii
(Daugava River)

M. ellipsoides
(Lake Usmas, Daugava River)

M. minutus
(Lakes Slokas, Usmas)

M. musculi
(Lakes Juglas, Usmas)

Digenea

Azygia lucii
(Lakes Juglas, Rušons, Sīvers, Slokas, Usmas; Daugava, Ogre Rivers; Gulf of Riga)

Bucephalus polymorphus metacercaria
(Lakes Burtnieku, Rāznas, Sīvers, Usmas; Daugava, Salaca Rivers)

Bunodera luciopercae
(Lakes Burtnieku, Durbes, Juglas, Lielauces, Liepājas, Rāznas, Riču, Sildu, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga)

Diplostomulum sp. metacercaria
(Lakes Juglas, Riču, Žuguru; Daugava, Salaca Rivers)

Diplostomum spathaceum metacercaria
(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Kāla, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga)

Ichthyocotylurus pileatus metacercaria
(Lake Usmas)

I. platycephalus metacercaria
(Lakes Burtnieku, Sīvers; Kegums Water Reservoir; Daugava River)

I. variegatus metacercaria
(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)

Neodiplostomulum sp. metacercaria
(Kegums Water Reservoir)

Phyllodistomum angulatum
(Gulf of Riga)

P. pseudofoliolum (Lake Liepājas)

Paracoenogonimus ovatus metacercaria
(Lakes Juglas, Usmas)

Posthodiplostomum brevicaudatum metacercaria
(Lakes Alūksnes, Burtnieku, Juglas, Kāla, Liepājas, Sīvers, Sildu, Slokas, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga)

P. cuticola metacercaria
(Lakes Juglas, Usmas; Daugava River)

Rhipidocotyle campanula
(Lake Sīvers)

Tylocephalus clavata metacercaria
(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava, Ogre, Salaca Rivers; Gulf of Riga)

Monogenoidea

Ancyrocephalus percae
(Lakes Burtnieku, Rāznas, Sīvers, Usmas; Kegums Water Reservoir; Daugava, Ogre Rivers)

Dactylogyrus sp. (Lake Sīvers)

Cestoda

Cyathocephalus truncatus
(Lake Juglas)

Diphyllobothrium latum plerocercoid (Lake Burtnieku)

Ligula intestinalis plerocercoid
(Lake Lielaucies)

Proteocephalus percae
(Lakes Burtnieku, Kāla, Liepājas, Rāznas, Sīvers, Usmas; Kegums Water Reservoir; Daugava, Ogre River)

Triaenophorus nodulosus plerocercoid
(Lakes Alūksnes, Burtnieku, Cirma, Juglas, Kāla, Liepājas, Rāznas, Rušons, Sīvers, Slokas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)

Nematoda

Anguillicola crassus larva
(Lakes Puzes, Usmas; Venta River; coastal waters)

Camallanus lacustris
(Lakes Alūksnes, Burtnieku, Cirma, Durbes, Juglas, Kāla, Liepājas, Rāznas, Riču, Rušons, Sīvers, Slokas, Usmas, Žuguru; Kegums
Remarks: The perch is one of the most common species in Latvian coastal and inner waters. From 1969 to 1988, it was restocked in at least 55 lakes (Plikšs and Aleksejevs 1998).

**Sander lucioperca** (Linnaeus, 1758)  
Zander  
Syn.: **Stizostedion lucioperca**  
Zandarts (Linnaeus, 1758)  
Судак

**Environment:** freshwater

**Protista**

???

**Heads:**

**Trichodina domerguei**  
(Kegums Water Reservoir, Daugava River, Gulf of Riga)

**T. reticulata**  
(Lake Burtnieku)

**Myxospora**

**Myxobolus sandrae**  
(Lake Juglas, Daugava River)

**Digenea**

**Azygia lucii** (Daugava River)

**Bucephalus polymorphus**  
(Lakes Juglas, Usmas; Kegums Water Reservoir, Daugava River)

**Bunodera luciopercae**  
(Daugava River)

**Diplostomulum sp. metacercaria**  
(Daugava River)

**Diplostomum spathaceum**  
(Lake Juglas, Daugava River, Gulf of Riga)

**Hysteromorpha triloba**  
(Lake Juglas)

**Ichthyocotylurus pileatus**  
metacercaria (Lake Usmas)

**I. platyccephalus**  
metacercaria (Lake Burtnieku, Kegums Water Reservoir, Daugava River, Golf of Riga)

**I. variegatus**  
metacercaria (Lake Juglas, Daugava River)

**Paracoenogonimus ovatus**  
metacercaria (Lake Juglas, Kegums Water Reservoir, Daugava River)

**Phyllostomum angulatum**  
(Daugava River)

**Rhipidocotyle campanula**  
(Lakes Juglas, Usmas; Daugava River)

**Tylodelphys clavata**  
metacercaria
(Kegums Water Reservoir, Daugava River)

Nematoda

*Camallanus lacustris*
(Lake Burtnieku, Daugava River)
*C. truncatus*
(Kegums Water Reservoir, Daugava River, Gulf of Riga)
*Contraaeum* sp. (Daugava River)
*Eustrongylides excisus* larva
(Lake Juglas)
*Raphidascaris acus*
(Lakes Juglas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)
*Rhabdochona denudata* (Daugava River)

Acanthocephala

*Acanthocephalus lucii* (Lake Juglas)
*Corynosoma semerme* juvenile
(Daugava River)
*C. strumosum* juvenile
(Daugava River)

Mollusca

*Anodonta cygnea* glochidium
(Lake Juglas)

Crustacea

*Achtheres percarum*
(Lakes Juglas, Usmas; Kegums Water Reservoir; Daugava River; Gulf of Riga)
*Ergasilus sieboldi* (Daugava River)

Remarks: In Latvia, the pike-perch occurs in a few lakes and artificial reservoirs where populations have established after restocking. (Plikšs and Aleksejevs 1998).

**FAMILY ZOARCIDAE**

Zoarces viviparous  
(Viviparous blenny)  
(Linnaeus, 1758)  
Lucits
Status: native  Бельдюга
Environment: marine
Protista
*Dermocystidium* sp.
(Daugava River, Gulf of Riga)

Myxosporea
*
?Myxidium macrocapsulare*  
(Gulf of Riga)

Digenea

*Diplostomum* sp. metacercaria  
(Gulf of Riga)
*Diplostomum spathaceum*  
metacercaria  
(Daugava River, Gulf of Riga)
*Posthodiplostomum breviceudatum*  
metacercaria (Gulf of Riga)

Monogenoidea

*Gyrodactylus erraburdus*  
(Gulf of Riga)
*G. perlucidus* (Gulf of Riga)

Cestoda

*Bothriocephalus scorpii*  
(Daugava River, Gulf of Riga)
*?Caryophyllaeus* sp. (Gulf of Riga)
*Proteocephalus percae*  
(Daugava River, Gulf of Riga)

Nematoda

*Ascarophis skrjabini*  
(Daugava River, Gulf of Riga)
*Cystidicoloides ephemeridarum*  
(Gulf of Riga)
*Hysterohylactium aduncum*  
(Daugava River, Gulf of Riga)
*Pseudoterranova* sp.larva  
(Gulf of Riga)
*Raphidascaris acus*  
(Daugava River, Gulf of Riga)
*R. gracillima*  
(Daugava River, Gulf of Riga)

Acanthocephala

*Corynosoma semerme* juvenile
(Daugava River, Gulf of Riga)
*C. strumosum* juvenile
(Daugava River, Gulf of Riga)

Hirudinida

*Piscicola geometra*  
(Gulf of Riga)

Remarks: This marine demersal species occurs in the seas of North Europe, all along the Baltic coast. It is a commercially important fish in the Gulf of Riga (Plikšs and Aleksejevs 1998).

**ORDER PLEURONECTIFORMES**

**FAMILY PLEURONECTIDAE**

*Platichthys flesus trachurus*  
(Flounder)  
(Duncker, 1892)  
Plekste
Status: native  Речная камбала
Environment: marine
Protista
*Glugea stephani* (Baltic Sea)
*Trichodina jadranica*  
(Gulf of Riga, Baltic Sea)
*T. raabei* (Gulf of Riga, Baltic Sea)
*Trichodina* sp.  
(Daugava River, Gulf of Riga)

Myxosporea
**Myxobilatus platessae**  
(Gulf of Riga, Baltic Sea)

**Digenea**

- **Cryptocotyle concava** metacercaria  
  (Baltic Sea)
- **Cryptocotyle** sp. metacercaria  
  (Gulf of Riga)
- **Diplostomium** sp. metacercaria  
  (Gulf of Riga, Baltic Sea)
- **Diplostomum spathaceum** metacercaria  
  (Daugava River, Gulf of Riga, Baltic Sea)
- **Nicolla skrjabini** (Daugava River)
- **Posthodiplostomum brevicaudatum** metacercaria  
  (Daugava River, Gulf of Riga, Baltic Sea)

**Monogenoidea**

- **Gyrodactylus flexibiliradix**  
  (Gulf of Riga, Baltic Sea)

**Cestoda**

- **Bothriocephalus scorpii**  
  (Daugava River, Baltic Sea)
- **Bothriocephalus** sp. (Gulf of Riga)
- **Eubothrium** sp. (Baltic Sea)
- **Scolex pluronectis** pleocercoid  
  (Gulf of Riga, Baltic Sea)

**Nematoda**

- **Camallanus truncatus**  
  (Gulf of Riga)
- **Dichelyne minutus**  
  (Gulf of Riga, Baltic Sea)
- **Hysterothylacium aduncum**  
  (Daugava River, Gulf of Riga, Baltic Sea)
- **Raphidascaris acus**  
  (Baltic Sea)
- **Corynosoma semerme** juvenile  
  (Baltic Sea)
- **Diplozoon paradoxum** (-)
- **Diphyllobothrium latum** plerocercoid (-)

**Remarks:** This Baltic subspecies of the European flounder is abundant throughout the Baltic, the northern part of Gulf of Bothnia and the eastern part of the Gulf of Finland. It occurs only rarely in the southern part of the Gulf of Riga. Two ecological races are recognized, the deep-spawning flounder and the bank-spawning flounder; only only the deep-spawning flounder is found in Latvian waters (Plikšs and Aleksejevs 1998).

It is listed as a junior synonym of *P. flesus* (Linnaeus, 1758) by Froese and Pauly (2006).

**FAMILY SCOPHTHALMIDAE**

**Psetta maxima**  
(Turbot)  
*(Linnaeus, 1758)*  
(Akmenplekste)

**Status:** native  
**Environment:** marine

**Protista**

- **Glugea stephani** (Baltic Sea)
- **Trichodina** sp.  
  (Daugava River, Gulf of Riga)

**Digenea**

- **Diplostomum spathaceum** metacercaria (Gulf of Riga)

**Cestoda**

- **Bothriocephalus scorpii**  
  (Baltic Sea)
- **Camallanus truncatus**  
  (Gulf of Riga)
- **Dichelyne minutus**  
  (Baltic Sea)
- **Hysterothylacium aduncum**  
  (Baltic Sea)
- **Raphidascaris acus** (Baltic Sea)

**Acanthocephala**

- **Corynosoma semerme** juvenile  
  (Baltic Sea)

**Remarks:** The turbot is a marine demersal species that occurs along the European coast. It is common in Baltic waters near the Latvian coast and in the Gulf of Riga (Plikšs and Aleksejevs 1998).

**Unidentified Fish**

“fish”

**Status:** unknown  
**Environment:** freshwater

**Protista**

- **Trichodina acuta** (-)
- **T. domerguei** (-)
- **T. mutabilis** (-)
- **T. nigra** (-)
- **T. pediculus** (-)
- **T. reticulata** (-)

**Monogenoidea**

- **Diplozoon paradoxum** (-)

**Cestoda**

- **Diphyllobothrium latum**  
  pleocercoid
*Ligula intestinalis*
plerocercoid (-)

Hirudinida
*Hemiclipsis marginata* (-)
*Piscicola geometra* (-)

Branchiura
*Argulus folaceus* (-)

Copepoda
*Lernaea cyprinacea* (-)
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The checklist summarizes information on the parasites of Latvian fish contained in the literature from the earliest known record (Trauberga, 1936) to the end of 2005. Included are 368 named species of parasite, distributed among the higher taxa as follows: Protista – 45, Myxozoa – 49, Digenea – 35, Monogenea – 81, Cestoda – 33, Nematoda – 31, Acanthocephala – 11, Hemichordata – 3, Hoxidea – 6, Branchiura – 2 and Copepoda – 11. Also included are records of parasites not identified to species level. Parasites have been reported from 66 of the 114 species of marine and freshwater fish occurring in Latvian waters. The checklist is presented in the form of parasite-host and host-parasite lists. The parasite-host list is organized on a taxonomic basis and provides information for each parasite species on the environment (freshwater, brackish water, marine), the location (site of infection) in or on its host(s), the species of host(s) infected, the geographic distribution in Latvia and published sources for each host and locality record. The host-parasite list is organized according to the taxonomy of the hosts and includes, for each host, the English language, Latvian and Russian common names, the environment, status in Latvia (native or exotic) and information on the known Latvian distribution of the parasites. Additional information is given on points of systematic, possible misidentification, introductions, pathogenicity, etc. Complete references, a short supplementary literature list and parasites and host indexes are included.

Checklist of the parasites of fishes of Latvia