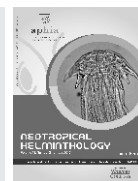




Neotropical Helminthology



REVIEW ARTICLE/ ARTÍCULO DE REVISIÓN

SYNOPSIS OF THE SPECIES OF MYXOZOA GRASSÉ, 1970 (CNIDARIA: MYXOSPOREA) IN THE AMERICAS

SINOPSES DAS ESPÉCIES DE MYXOZOA GRASSÉ, 1970 (CNIDARIA: MYXOSPOREA) NAS AMÉRICAS

SINOPSIS DE LAS ESPECIES DE MYXOZOA GRASSÉ, 1970 (CNIDARIA: MYXOSPOREA) EN LAS AMÉRICAS

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ABSTRACT

A synopsis of records of the valid species of myxozoans (Myxozoa: Myxosporidia) described in the Americas is provided based on a comprehensive survey of the literature since 1893, when the first myxozoan species was reported, until December 2016. This is a synopsis of 495 species, distributed in 36 genera, 15 families, and associated with 286 species of hosts. In terms of numbers of host-parasite associations, fish were the most representative group (97% of the total number of host-parasite associations), whereas records from birds represented 0.2%, crustaceans 0.2%, helminths 0.2%, reptiles 0.8% and 1.6% from amphibians. The number of descriptions of myxozoans was higher in the Nearctic Region relative to the Neotropical Region. The synopsis includes a parasite-host list with data on host habitat, site of infection, distribution area of parasites, size and format of the cyst, spore measurements and specimens in collections, and a host-parasite list.

Key words: Myxozoans – Nearctic Region – Neotropical Region – Taxonomy

RESUMEN

Una sinopsis de los registros de las especies válidas de mixozoários (Myxozoa: Myxosporaea) descritas en las Américas se proporciona con base en un levantamiento bibliográfico desde 1893, cuando la primera especie de mixosporídeo fue descrita, hasta diciembre de 2016. Esta es una sinopsis de 495 especies, Distribuidas en 36 géneros, 15 familias y asociadas a 286 especies de hospedadores. En términos de número de asociaciones hospedador-parasito, los peces fueron el grupo más representativo (97% del número total de asociaciones hospedador-parasito, mientras que los registros en las aves representaron el 0,2%, los crustáceos 0,2%, helmintos 0,2, 0,8% reptiles y 1,6% fueron en los anfibios. El número de descripciones de mixozoarios fue mayor en la Región Neártica en relación a la Región Neotropical. La sinopsis incluye una lista parásito-hospedador con datos sobre el hábitat del hospedador, el sitio de infección, la localidad, el tamaño y el formato del quiste, las medidas de las esporas y los especímenes en las colecciones y una lista de los parásitos.

Palabras clave: Mixozoários – Región Neártica – Región Neotropical – Taxonomía

RESUMO

Uma sinopse dos registros das espécies válidas de mixozoários (Myxozoa: Myxosporaea) descritas nas Américas é fornecida com base em um levantamento bibliográfico desde 1893, quando a primeira espécie de mixosporídeo foi descrita, até dezembro de 2016. Esta é uma sinopse de 495 espécies, distribuídas em 36 gêneros, 15 famílias e associadas a 286 espécies de hospedeiros. Em termos de número de associações hospedeiro-parasito, os peixes foram o grupo mais representativo (97% do número total de associações hospedeiro-parasito, enquanto os registros de anfibios aves representaram 0,2%, crustáceos 0,2%, helmintos 0,2% 0,8% de répteis e 1,6% foram de anfibios. O número de descrições de mixozoários foi maior na região Neártica em relação à Região Neotropical. A sinopse inclui uma lista parasito-hospedeiro com dados sobre o habitat do hospedeiro, sítio de infecção, localidade, tamanho e formato do cisto, medidas dos esporos e espécimes em coleções e uma lista de parasitos-hospedeiros.

Palavra-chave: Mixozoários - Região Neártica - Região Neotropical - Taxonomia

INTRODUCTION

The subphylum Myxozoa Grassé, 1970 harbors a diverse group of metazoan parasites characterized by multicellular spores, with distinct polar capsules and an extrudable polar filament used in the invasion of the host (Canning & Okamura, 2004; Kent *et al.*, 2001; Lom & Dyková, 2006). Myxosporian species-level classification is based on spore and polar capsule dimensions and other fine details of myxospore structure (Lom & Arthur, 1989), such as the number of turns of the polar filament, the presence of ridges, and striations on the spore valves, presence or absence of a mucous envelope, and the numbers of sporoplasms and their nuclei.

Jurine (1825) was the first to report a myxosporian species, but it was many years later when myxosporian taxonomy was founded by Bütschli (1881), who published more extensive studies to describe plasmodial stages as multinucleated pansporoblasts, the development of spores, the discharge of polar filaments and the role of spores in transmission. Based on these characteristics, the phylum Myxosporidia was included within the Sporozoa. This protozoan categorization remained for many decades, but the multicellular nature of spores led to proposals that myxozoans should be established as Metazoa (Siddall *et al.*, 1995). More recently, some researchers had suggested a cnidarian affinity of myxozoans and proposed they be considered a subphylum within Cnidaria (Feng *et al.*, 2014; Chang *et al.*, 2015; Fook & Siddall, 2015).

The diversity of known myxozoans has grown greatly since Bütschli's early work. With about 2200 species reported by Lom & Dyková (2006), they represent around 18 % of cnidarian species diversity (Okamura *et al.*, 2015). These numbers have grown since 2006, with Morris (2010) estimating 2310 species, but only a few lists of myxozoans is available (Eiras, 2002; Eiras *et al.*, 2005; Eiras 2006; Zhang *et al.*, 2013; Eiras *et al.*, 2014; Whipps & Zhao, 2015). Currently recognized are 64 genera within 17 families (Okamura *et al.*, 2015). It is increasingly apparent that myxozoans are widespread, diverse and important components of ecosystems.

Myxosporeans infect a wide range of hosts (Lom & Dyková, 1992, Kent *et al.*, 2001; Lom & Dyková, 2006), and where life cycles are known, they appear to cycle between vertebrate and invertebrate hosts. Their development occurs in two steps to produce myxospores in the vertebrate (fish, frog, reptile, birds, etc.) which infect invertebrates (oligochaetes, polychaetes) and

develop actinospores which then infect a vertebrate (Kent *et al.*, 2001; Canning & Okamura, 2004; Bartholomew *et al.*, 2008). Parasites of this subphylum have become increasingly important as new species are continually emerging as significant threats to the development of especially fish.

It was our goal to provide a synopsis of Myxozoa species described from the Americas based on original descriptions, and in addition to the morphological characteristics of the species, provide specimens in parasitological collections, molecular data and explicit linkage of host and geographic records to specific sources. We acknowledge that some species that occur in the Americas were not originally described there. Our intention was to focus on species with descriptions originating in the Americas, but there are a few of these introduced or widespread species that bear mentioning (Table 1). The hope is that this list will provide a robust foundation for future investigation of the systematic and evolution of Subphylum Myxozoa in Americas.

Table 1. Species reported in the Americas that were originally described from other continents.

Species	Type locality	Notes
<i>Enteromyxum leei</i> Karlsbakk <i>et al.</i> , 2002	Mediterranean	Was considered to pose a high risk for culture of sharpnose bream. Common goldfish (<i>Carassius auratus</i> , (Linnaeus, 1758)) are cultured and transported widely as an ornamental species in the U.S. A survey of goldfish from national U.S pet store chain were infected of <i>Enteromyxum leei</i> (Hallett <i>et al.</i> , 2006).
<i>Kudoa thyrsites</i> (Gilchrist, 1924)	South Africa	Marine parasite of fishes associated with post-mortem tissue degradation. Widespread, with an antitropical and discontinuous distribution, occurring on the west coasts of North America, South America, Europe, Africa, and waters around Australia and Japan (Moran <i>et al.</i> , 1999)

Species	Type locality	Notes
<i>Myxidium lieberkuehni</i> Bütschli, 1882	Europe	Was introduced with its host <i>Esox lucius</i> Linnaeus, 1758 from Eurasian to the USA and Canada. Has caused infections in the urinary bladder and kidney (Kudo, 1919; Jayasri & Hoffman, 1982).
<i>Myxobolus arcticus</i> Pugachev & Khokhlov, 1979	Eurasian	Was introduced with its host <i>Catostomus catostomus</i> (Forster, 1773) and <i>Oncorhynchus</i> spp. from Siberia to Alaska, Canada and USA. The parasite was found in the brain and caused disturbances in the neural system.
<i>Myxobolus cerebralis</i> (Höfer, 1903)	Europe	The causative agent of whirling disease in salmonid fishes. The parasite is of European origin, but has been introduced to at least 26 countries by human activities (Hoffman, 1970; Bartholomew & Reno, 2002). Was introduced in U.S and first reported in Pennsylvania in 1956 (Hedrick <i>et al.</i> , 1998).
<i>Myxobolus koi</i> Kudo, 1919	Asia	Was introduced with its host <i>Cyprinus carpio</i> Linnaeus, 1758 from Asia to the UK and the USA, and has caused mortalities of koi in ornamental ponds (Camus & Griffin, 2010).
<i>Sphaerospora sevastopoli</i> Naidenova, 1970	Eurasian	This species was first reported in <i>Neogobius fluviatilis</i> (Pallas, 1814) from Azov Sea and Black Sea (Naidenova, 1970). It was introduced along with non-native gobies from the Black Sea in North America and caused damage in the gallbladder of fish (Whipps & Zhao, 2015)

MATERIAL AND METHODS

Papers on descriptions of type species of Myxozoa described from North and South America were gathered based on extensive search of peer-reviewed literary records published until December 2016; abstracts of meetings and theses were not considered. Parasites introduced to the Americas, or later reported in the Americas, were not accounted for here but we provide a list of the most important of these (Table 1). The bibliographic research of data on myxozoans was supplemented by information from *Biological Abstracts*, *Fisheries Abstracts*, *GenBank database*, *Google Scholar*, *ScienceDirect*, *Web of Knowledge* and *Zoological Records*. All fish host species names have been updated to reflect current accepted names based on *Fishbase* (Froese & Pauly, 2016) and the *World Register of Marine Species* (WoRMS Editorial Board, 2016), amphibian host were based on *Amphibian Species of the World* (Frost, 2016), bird host according *Avibase* (Lepage & Warnier, 2014) and reptile host according to *The Reptile Database* (Uetz & Jirí, 2016).

The synopsis largely follows the classification and systematic arrangement proposed by Lom & Dyková (2006), with relevant modifications as follows. The placement of Sphaeromyxidae by Kristmundsson & Freeman (2013). Replacement of the preoccupied *Davisia* with *Myxodavisia* by Zhao *et al.* (2008). Re-establishment of *Cystodiscus* by Hartigan *et al.* (2012). We maintain the genus *Triangulamyxa* as proposed by Azevedo *et al.* (2005). Establishment of *Ceratonova* by Atkinson *et al.* (2014). Re-establishment of Myxobilatidae by Whipps (2011). Re-establishment of the Cocomyxida by Heiniger *et al.* (2011).

The species of Myxozoa are presented in alphabetical order followed by their hosts (specific name), habitat, site of the infection, locality, size (μm or mm) and form of the plasmodia, spore measurements and reference. It is known that fixation can alter spore dimension (Polyanskii, 1955; Parker & Warner, 1970), but the material used for measurements is not often explained. Recent papers typically use fresh material, but the reporting was so infrequent, we did not indicate

here whether fixed or fresh material was used. The marine ecoregion of the hosts have been updated based on Spalding *et al.* (2007).

The parasite species were arranged by phylum, class, order and family, and the original descriptions were obtained for all species. Subsequent sources, additional hosts and localities, and any redescriptions are mentioned in the notes on species. In addition, for the taxa deposited in the parasitological collections, type and voucher material, acronym (see abbreviations below) and accession number are provided.

ACRONYMS

Host

AMP Amphibian

B Bird

CRU Crustacea

REP Reptilia

HEL Helminth

Parasite morphological character

AL length of the caudal appendage

AW appendage width

FC form of the cyst

NC number of coils of the polar filament

PC relative size of the polar capsule (equal or different)

PCL polar capsule length

PCW polar capsule width

R ridges

SL spore length

SV spore veil

SW spore width

TL total length of the spore

TS thickness of the spore

TW total width of the spore

Environment

BW brackish water

FW freshwater

MAR marine

Museums

BMNH British Museum of Natural History, London, UK

CHIOC Helminthological Collection of the Instituto Oswaldo Cruz – FIOCRUZ, Rio de Janeiro, Brazil

CMN Canadian Museum of Nature, Invertebrate

Zoology Collection, Ottawa, Canada

CPUNC Parasitological Collection of the National University of Comahue, San Carlos de Bariloche, Argentina

HWML Harold W. Manter Laboratory Collection, University of Nebraska State Museum, Lincoln, Nebraska, USA

INPA National Institute for Amazon Research, Amazonas, Brazil

IPCAS Collection of the Institute of Parasitology, Academy of Sciences of the Czech Republic, České Budějovice, Czech Republic

LPURP Laboratory Collection of Parasitology of the University Ricardo Palma, Perú

MACN Helminthological Collection of the Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina

MNHUP Museum of Natural History of the University of Porto, Portugal

MSE Museum of Systematics and Ecology, Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, California, USA

MHN Museo de Historia Natural, Lima, Peru

MTM Hungarian Natural History Museum, Budapest, Hungary

MZUSP Zoological Museum, State University of Campinas, São Paulo, Brazil

PCMLP Parasitological Collection of the Museo de La Plata, Buenos Aires, Argentina.

PCQM Parasitology Collection at the Queensland Museum, Brisbane, Australia

USNPC United States National Parasite Collection, Beltsville, Maryland, USA. The USNPC was recently transferred to the Smithsonian's National Museum of Natural History (NMNH) in Washington, DC, USA.

VMTH Pathology Repository of the Veterinary Medicine Teaching Hospital, University of California, Davis, California, USA

ZISP Zoological Institute of Russian Academy of Science, St. Petersburg, Russia

ZUEC Collection of the Department of Parasitology, State University of Campinas, São Paulo, Brazil

ZW Museum of New Zealand, Te Papa Tongarewa, New Zealand

Marine Ecoregions

A Arctic

CTNA Cold Temperate Northwest Atlantic

CTNP Cold Temperate Northeast Pacific

EIP Eastern Indo-Pacific

JFD Juan Fernandez and Desventuradas

M Magellanic

NBS North Brazil Shelf

TEP Tropical East Pacific

TNA Tropical Northwestern Atlantic

TSA Tropical Southwestern Atlantic

WTNA Warm Temperate Northwest Atlantic

WTNP Warm Temperate Northeast Pacific

WTSA Warm Temperate Southwestern Atlantic

WTSP Warm Temperate Southeastern Pacific

Genes

18S—small subunit of the nuclear ribosomal RNA gene

28S—large subunit of the nuclear ribosomal RNA gene

ITS1—first nuclear ribosomal internal transcribed spacer

RESULTS

The compiled database from the available literature on myxozoans of the American continent comprises records on 495 valid species distributed in 15 families and 36 genera. Most of the species infect primarily fish, both freshwater and marine species in all continent; two species have been reported in Agnatha, 8 species in Chondrichthyes, and 470 in Osteichthyes. A reduced number of species were found in amphibians, birds, crustacean, helminth and reptiles (Table 2).

In the present study, the myxozoans have been reported associated with 7 species of amphibians, 1 amphipod, 1 bird, 1 helminth, 274 fish, and 4 reptiles, identified to the species level. Among host, perciform fish have the most number of valid species described (100), even though the catfish *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) host the highest species diversity of myxozoans, with fourteen species registered. Most of the myxozoans taxa from fish in American continent belong to the Family Myxobolidae (n = 262, i.e. 52.9% of total number of myxozoans reported), followed by Myxidiidae (n = 9.8%) and Ceratomyxidae (n = 9.6%). The Families Fabesporidae, Ortholineidae and Trilosporidae represent the lowest group with just one species (both n = 0.2%). The first with the

Table 2. Number of myxozoan species and its distribution by host.

	Amphibia	Bird	Crustacean	Helminth	Fish	Reptilia
Order Bivalvulida						
Suborder Variisporina						
Family Alatosporidae						
Genus <i>Alataspora</i>	-	-	-	-	1	-
Genus <i>Pseudalatospora</i>	-	-	-	-	2	-
Genus <i>Renispora</i>	-	-	-	-	1	-
Family Ceratomyxidae						
Genus <i>Ceratomyxa</i>	-	-	-	-	43	-
Genus <i>Ceratonova</i>	-	-	-	-	2	-
Genus <i>Ellipsomyxa</i>	-	-	-	-	3	-
Family Chloromyxidae						
Genus <i>Agarella</i>	-	-	-	-	1	-
Genus <i>Chloromyxum</i>	1	-	-	-	22	-
Family Coccomyxidae						
Genus <i>Auerbachia</i>	-	-	-	-	2	-
Family Fabesporidae						
Genus <i>Fabespora</i>	-	-	-	1	-	-
Family Myxidiidae						
Genus <i>Cystodiscus</i>	5	-	-	-	-	-
Genus <i>Myxidium</i>	-	1	1	-	33	4
Genus <i>Zschokkella</i>	-	-	-	-	5	-
Family Myxobilatidae						
Genus <i>Acauda</i>	-	-	-	-	2	-
Genus <i>Myxobilatus</i>	-	-	-	-	10	-
Family Parvicapsulidae						
Genus <i>Parvicapsula</i>	-	-	-	-	4	-
Family Ortholineidae						
Genus <i>Triangulamyxa</i>	-	-	-	-	1	-

	Amphibia	Bird	Crustacean	Helminth	Fish	Reptilia
Family Sinuolineidae						
Genus <i>Bipteria</i>	-	-	-	-	1	-
Genus <i>Myxodavisia</i>	-	-	-	-	12	-
Genus <i>Myxoproteus</i>	-	-	-	-	10	-
Genus <i>Neobipteria</i>	-	-	-	-	1	-
Genus <i>Noblea</i>	-	-	-	-	1	-
Genus <i>Schulmania</i>	-	-	-	-	3	-
Genus <i>Sinuolinea</i>	-	-	-	-	6	-
Family Sphaeromyxidae						
Genus <i>Sphaeromyxa</i>	-	-	-	-	10	-
Family Sphaerosporidae						
Genus <i>Palliatius</i>	-	-	-	-	1	-
Genus <i>Sphaerospora</i>	2	-	-	-	16	-
Genus <i>Wardia</i>	-	-	-	-	2	-
Suborder Platysporina						
Family Myxobolidae						
Genus <i>Dicauda</i>	-	-	-	-	1	-
Genus <i>Henneguya</i>	-	-	-	-	83	-
Genus <i>Myxobolus</i>	-	-	-	-	166	-
Genus <i>Tetrauronema</i>	-	-	-	-	1	-
Genus <i>Thelohanellus</i>	-	-	-	-	3	-
Genus <i>Unicauda</i>	-	-	-	-	8	-
Order Multivalvulida						
Family Kudoidae						
Genus <i>Kudoa</i>	-	-	-	-	22	-
Family Trilosporidae						
Genus <i>Trilospora</i>	-	-	-	-	1	-
Total	8	1	1	1	480	4

species *Fabespora vermicola* (Overstreet, 1969) found on trematode *Crassicutis archosargi* (Plagiorchiida: Apocreadiidae) from U.S. *Triangulamyxa amazonica* (Azevedo, Corral & Matos, 2005) from Brazil and the third with

Trilospora sphaerica Aseeva & Krasim, 2005 from U.S.

Of the 480 species of myxozoan of fish, 62% (n = 298) were found in freshwater, 32.1 % (n = 160) in

marine and 4.8 % (n = 23) in brackish hosts. The Nearctic zoogeographical region presented the higher percentage of Myxozoa (74.5%), furthermore the highest diversity of described species. However, the Neotropical region (25.5%) presents the highest diversity of host species.

Parasite-Host list

Phylum Cnidaria Hatschek, 1888

Unranked subphylum Myxozoa Grassé, 1970

Class Myxosporea Bütschli, 1882

Order Bivalvulida Schulman, 1959

Suborder Variisporina Lom & Noble, 1984

Family Alatospiridae Shulman, Kovaleva & Dubina, 1979

Genus *Alatospora* Shulman, Kovaleva & Dubina, 1979

Alatospora merlucii Kalavati, Longshae & Mackenzie, 1995

Host: *Merluccius australis* (Hutton, 1872) (Gadiformes: Merluccidae) – MAR

Site: Gallbladder

Locality: M, Falkland Islands, Argentina and Chile

Plasmodia: 35–42.5 length × 20–30 width μm

Spore measurements: SL 11.25–15.0 (13.51±1.28), SW 8.75–11.2 (9.89±0.81), TW 45.0–48.5 (46.61±1.80), PCL 3.5–4.5 (4.12±0.42), PCW 2.5–4.0 (3.41±0.61), PC =, NC 3–4

Specimens in Collection: NHMUK (No. 1994:3:15:1)

Note: Also found in *Merluccius hubbsi* Marini

Reference: Kalavati *et al.* (1995)

Genus *Pseudalatospora* Kovaleva & Gayevckaya, 1983

Pseudalatospora kovalevae Kalavati, Mackenzie, Collins, Hemmingsen & Brickle 2013

Host: *Macruronus magellanicus* Lönnberg, 1907 (Gadiformes: Merluccidae) – MAR

Site: Gallbladder

Locality: M (55°30'S, 71°30'W), Chile

Plasmodia: 28.4–38.4 length × 28.0–36.0 width μm

Spore measurements: SL 8.0–10.5 (9.1±0.68), SW 14.0–20.0 (15.7±1.57), TS 8.8–11.6 (9.0±1.2), PCL 2.8–3.8, PCW 3.0–4.9

Specimens in Collection: NHMUK (No. 2012.3.19.1, 2012.3.19.2, 2012.3.19.3)

GenBank: 18S (No. Jx467675)

Reference: Kalavati *et al.* (2013)

Pseudalatospora scombri Kovaleva & Gayevckaya, 1983

Host: *Scomber japonicus* Houttuyn, 1782 (Perciformes: Scombridae) – MAR

Site: Gallbladder

Locality: WTSA (15°00'S, 87°00'W), Peru

Spore measurements: SL 4.6–5.9, TS 6.6, PCL, 1.3–1.5 in diameter

Specimens in Collection: ZISP (No. 583–585)

Reference: Kovaleva & Gayevckaya (1983)

Genus *Renispora* Kalavati, Longshae & Mackenzie, 1996

Renispora simae Kalavati, Longshae & Mackenzie, 1996

Host: *Patagonotothen sima* (Richardsosn, 1845) (Perciformes: Nototheniidae) – MAR

Site: Gallbladder

Locality: M, Falkland Islands

Plasmodia: 48–68.5 μm

Spore measurements: SL 16.0–28.0 (24.4±3.1), SW 8.0–13.0 (10.8±1.7), TW 58.0–84.5 (67.3±9.0), PCL 2.5–5.0 (4.2±0.8), PCW 2.0–5.0 (3.3±0.5), PC =, NC 4–5

Specimens in Collection: NHMUK (No. 1994:11:17:1)

Reference: Kalavati *et al.* (1996)

Family Ceratomyxidae Doflein, 1898

Genus *Ceratomyxa* Thélohan, 1892

Ceratomyxa abbreviata Davis, 1917

Host: *Rhizoprionodon terraenovae* (Richardson, 1836) (Carcharhiniiformes: Carcharhiniidae) – MAR

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 27 μm; FC elongate

Spore measurements: SL 14, SW 17, PCL 4.5 in diameter, PC =

Reference: Davis (1917)

***Ceratomyxa acadensis* Mavor, 1916**

Host: *Zoarcetes americanus* (Bloch & Schneider, 1801) (Perciformes: Zoarcidae) – **MAR**

Site: Gallbladder

Locality: CTNA, Passamaquoddy Bay, New Brunswick, Canada

Spore measurements: **SL** 7–8, **SW** 40–50, **PCL** 3–4 in diameter, **PC** =

Note: Also found in the host *Urophycis chuss* Walbaum (Gadiformes: Phycidae)

Reference: Mavor (1916)

***Ceratomyxa agglomerata* Davis, 1917**

Host: *Synodus foetens* (Linnaeus, 1766) (Aulopiformes: Synodontidae) – **MAR**

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 38 length x 12 width μm ; **FC** pyriform

Spore measurements: **SL** 5, **SW** 24–28, **PCL** 3 in diameter, **PC** \neq

Reference: Davis (1917)

***Ceratomyxa amazonensis* Mathews, Naldoni, Maia & Adriano, 2016**

Host: *Symphysodon discus* Heckel, 1840 (Perciformes: Cichlidae) – **FW**

Site: Gallbladder

Locality: Negro River, Manaus, Amazonas, Brazil

Spore measurements: **SL** 7.0 ± 0.3 (6.2–7.6), **TS** 15.8 ± 0.4 (15.0–16.7), **PCL** 3.22 ± 0.34 (2.4–3.6), **PCW** 2.63 ± 0.17 (2.4–2.9), **PC** =, **NC** 3–4

Specimens in Collection: ZUEC (No. Myx 56)

GenBank: 18S (No. Kx236169)

Reference: Mathews et al. (2016)

***Ceratomyxa americana* Wierzbicka, 1987**

Host: *Scomber scombrus* Linnaeus, 1758 (Perciformes: Scombridae) – **MAR**

Site: gallbladder

Locality: WTNA (35°54'N, 75°20'W), Cape Hatteras, North Carolina, USA

Spore measurements: **SL** 4.8 (4.4–5.2), **SW** 9.8 (8.8–11.1), **TS** 5.2 (5–5.6), **PCL** 1.7 (1.6–1.8) in diameter

Reference: Wierzbicka (1987)

***Ceratomyxa amorpha* Davis, 1917**

Host: *Synodus foetens* (Linnaeus, 1766) (Aulopiformes: Synodontidae) – **MAR**

Site: Gallbladder

NC 5–6

Specimens in Collection: USNPC (No. 24430)

Reference: Moser (1976)

***Ceratomyxa asymmetrica* Moser & Noble, 1976**

Host: *Coryphaenoides cinereus* (Gilbert, 1896) (Gadiformes: Macrouridae) – **MAR**

Site: Gallbladder

Locality: CTNP, Alaska, USA

Plasmodia: 13 length x 13 width mm; **FC** spherical

Spore measurements: **SL** 4.0–6.0 (4.9 ± 1.6), **SW** 12.5–17 (14.1 ± 3.3), **PCL** 2–3.5 (2.9 ± 0.6) in diameter, **PC** =, **NC** 4–5

Specimens in Collection: USNPC (No. 24429)

Reference: Moser & Noble (1976)

***Ceratomyxa attenuata* Davis, 1917**

Host: *Rhizoprionodon terraenovae* (Richardson, 1836) (Carcharhiniformes: Carcharhinidae) – **MAR**

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 120 μm ; **FC** elongate to pyriform

Spore measurements: **SL** 9, **SW** 115, **PCL** 4.5 in diameter, **PC** \neq

Note: 60 μm length of polar filament

Reference: Davis (1917)

***Ceratomyxa californica* Jameson, 1929**

Host: *Eptatretus stoutii* (Lockington, 1878) (Myxiniformes: Myxinidae) – **MAR**

Site: Gallbladder

Locality: CTNP, Monterey Bay, Clifornia, USA

Plasmodia: 65–130 μm ; **FC** oval

Spore measurements: **SL** 7.5–9, **SW** 48–59, **PC** =

Reference: Jameson (1929)

***Ceratomyxa choleospora* Landsberg, 1993**

Host: *Centropomus undecimalis* (Bloch, 1792) (Perciformes: Centropomidae) – **FW**

Site: Gallbladder

Locality: Bishops Harbor (27°38'N, 82°35'W), Little Manatti River (27°43'N, 82°23'W) and Murray Creek (29°08'N, 80°53'W), Florida, USA

Spore measurements: **SL** 4.5(4–5), **SW** 18.3(15–23), **PCL** 2.0, **PCW** 2.0, **PC** =, **NC** 5–6

Specimens in Collection: USNPC (No. 82394)

Note: 35.4(18–49) μm length of polar filament

Reference: Landsberg (1993a)

***Ceratomyxa coryphaenoida* Moser & Noble,**

1976

Host: *Coryphaenoides cinereus* (Gilbert, 1896)
(Gadiformes: Macrouridae) – **MAR**
Site: Gallbladder
Locality: off Canada
Spore measurements: SL 10–16 (11.6±4.9), SW 20–28 (24±4.7), TS 11–13 (12.3±0.9), PCL 3.5–5 (4.0±1.1) in diameter, PC =, NC 6–7
Specimens in Collection: USNPC (No. 24431)
Reference: Moser & Noble (1976)

***Ceratomyxa crassa* Jameson, 1929**

Host: *Leptocottus armatus* Girard, 1854
(Scorpaeniformes: Cottidae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Spore measurements: SL 7.5–9.5, SW 27.5–32, PC ≠, =
Reference: Jameson (1929)

***Ceratomyxa elegans* Jameson, 1929**

Host: *Porichthys notatus* Girard, 1854
(Batrachoidiformes: Batrachoididae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC irregular
Spore measurements: SL 6–7.5, SW 23–29.6, PC ≠
Reference: Jameson (1929)

***Ceratomyxa fisheri* Jameson, 1929**

Host: *Hydrolagus colliei* (Lay & Bennett, 1839)
(Chimaeriformes: Chimaeridae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC oval
Spore measurements: SL 5.1–7.1, SW 9.3–13.3, PC =
Reference: Jameson (1929)

***Ceratomyxa flagellifera* Davis, 1917**

Host: *Carcharhinus* sp. – **MAR**
Site: Gallbladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 115–120 length x 40–45 width μm; FC pyriform
Spore measurements: SL 12, SW 118, PCL 6 in diameter, PC =
Reference: Davis (1917)

***Ceratomyxa flexa* Evdokimova, 1977**

Host: *Paralichthys patagonicus* Jordan, 1889

(Pleuronectiformes: Paralichthyidae) – **MAR**

Site: Gallbladder
Locality: M, Patagonian, Argentina
Plasmodia: 16 length x 9.1 width mm; FC elongated
Spore measurements: SL 6–11.9, TS 25.2–27, PCL 2.8–4 in diameter, PC ≠
Specimens in Collection: ZISP (No. 1430)
Reference: Evdokimova (1977)

***Ceratomyxa galeata* Jameson, 1929**

Host: *Eptatretus stoutii* (Lockington, 1878)
(Myxiniformes: Myxinidae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC round to oval
Spore measurements: SL 6.6–8.7, SW 11.6–14.7, PC =
Reference: Jameson (1929)

***Ceratomyxa gracilis* Jameson, 1929**

Host: *Gibbonsia elegans* (Cooper, 1864)
(Perciformes: Clinidae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Spore measurements: SL 4–5.6, SW 11–14, PC =
Reference: Jameson (1929)

***Ceratomyxa hopkinsi* Jameson, 1929**

Host: *Parophrys vetulus* Girard, 1854
(Pleuronectiformes: Pleuronectidae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC round to oval
Spore measurements: SL 5.9–7.5, SW 28.7–39, PC =
Note: Also found in *Microstomus pacificus* Lockington (Pleuronectiformes: Pleuronectidae)
Reference: Jameson (1929)

***Ceratomyxa inconstans* Jameson, 1929**

Host: *Scomber japonicus* Houttuyn, 1782
(Perciformes: Scombridae) – **MAR**
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC irregular
Spore measurements: SL 5.4–7.6, SW 11.2–13.3, PC =
Reference: Jameson (1929)

***Ceratomyxa jamesoni* Kudo, 1933**

[Syn. *Ceratomyxa taenia* Jameson 1931]

Host: *Triakis semifasciatum* Girard, 1855 (Carcharhiniformes: Triakidae) – **MAR**

Site: Gallbladder

Locality: CTNP, Monterey Bay, California, USA

Plasmodia: 80 length x 200 width μm

Spore measurements: **SL** 7.5–9.5, **SW** 95–117, **PC** \neq

Reference: Kudo (1933)

***Ceratomyxa limensis* Verano, Llican & Terán, 1998**

Host: *Merluccius gayi peruanus* Ginsburg, 1954 (Gadiformes: Merlucciidae) – **MAR**

Site: Gallbladder

Locality: Lima, Peru

Spore measurements: **SL** 12.5 (8–15), **SW** 61 (36–86), **PCL** 3.2 (3–6), **PCW** 3.1 (3–3.3),

Specimens in Collection: MHN (N° 0001)

Reference: Verano *et al.* (1998)

***Ceratomyxa lobata* Evdokimova, 1977]**

Host: *Odontesthes incisa* (Jenyns, 1841) (Atheriniformes: Atherinopsidae) – **MAR**

Site: Urinary bladder

Locality: M, Patagonian, Argentina

Plasmodia: 58.8–19.6 μm ; **FC** elongated

Spore measurements: **SL** 6.3–7, **TS** 14–14.7, **PCL** 3.5 in diameter

Specimens in Collection: ZISP (No. 1431)

Note: Gaevskaya *et al.* (1982) reassigned this species to *Parvocapsula* indicating that it expressed features of this genus. However, no further specific details were given, and consulting Evdokimova (1977), the parasite described is not consistent with *Parvocapsula*. Most notably, the polar capsules are not small, not pyriform, nor do they discharge to the side. As such, we maintain the original *Ceratomyxa* designation of Evdokimova (1977), with the acknowledgement that further investigation may place this species within *Leptotheca*.

Reference: Evdokimova (1977)

***Ceratomyxa lovei* Gunter and Adlard, 2010**

[Syn. *Leptotheca sebastica* Moser, Love & Jensen, 1976]

Host: *Sebastes serranoides* (Eigenmann & Eigenmann, 1890) (Scorpaeniformes: Sebastidae) – **MAR**

Site: Gallbladder

Locality: CTNP, California, USA

Spore measurements: **SL** 8.0 (7.5–8.5), **SW** 13.8 (13.0–15.0), **PCL** 3.5 (3.0–4.0) in diameter, **PC** =, **NC** 7–8

Specimens in Collection: USNPC (No. 24447)

Note: The name *Ceratomyxa lovei*, was proposed to replace *L. sebastica* by Gunter and Adlard (2010) following the transfer of this species from *Leptotheca* to *Ceratomyxa*. The name “*C. sebastica*” (Moser, Love & Jensen, 1976) would have been a secondary homonym if it were used.

Reference: Gunter & Adlard (2010)

***Ceratomyxa lunata* Davis, 1917**

Host: *Galeocerdo cuvier* (Péron & Lesueur, 1822) (Carcharhiniformes: Carcharhinidae) – **MAR**

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: **FC** pyriform

Spore measurements: **SL** 7–9, **SW** 15–38, **PCL** 3–4 in diameter, **PC** =

Note: 37 μm length of polar filament

Reference: Davis (1917)

***Ceratomyxa meglitschi* Kovaleva & Gayevckaya, 1983**

Host: *Trachurus murphyi* Nichols, 1920 (Perciformes: Carangidae) – **MAR**

Site: Gallbladder

Locality: JFD (36°23'S, 85°W), Chile

Plasmodia: 8 mm in diameter; **FC** round

Spore measurements: **SL** 4.6–5.3, **SW** 9.3–10.6, **PCL** 1.5 in diameter

Specimens in Collection: ZISP (No. 575–576)

Reference: Kovaleva & Gayevckaya (1983)

***Ceratomyxa mesospora* Davis, 1917**

Host: *Sphyrna zygaena* (Linnaeus, 1758) (Carcharhiniformes: Sphyrnidae) – **MAR**

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 70–85 length x 20–25 width μm ; **FC** pyriform

Spore measurements: **SL** 8, **SW** 50–65, **PCL** 4.5 in diameter

Note: Also found in *Sphyrna tiburo* (Linnaeus); 90 μm length of polar filament

Reference: Davis (1917)

***Ceratomyxa microlepis* Azevedo, Rocha, Casal, Carmona, Matos, Al-Quraishy & Matos, 2013**

Host: *Hemiodus microlepis* Kner, 1858 (Characiformes: Hemiodontidae) – **FW**

Site: Gallbladder

Locality: Trombetas River (01°45'S, 55°51'W), Oriximiná, Pará, Brazil

Spore measurements: SL 5.2±0.4, TS 35.5±0.9, PCL 2.2±0.3 in diameter, PC =, NC 5–6

Specimens in Collection: INPA (No. 012/12)

Note: In one shell valve, the lateral projection was 18.1±0.5 µm thick, while in the other shell valve, the lateral projection was 17.5±0.5 µm thick

Reference: Azevedo *et al.* (2013)

***Ceratomyxa navicularia* Davis, 1917**

Host: *Paralichthys dentatus* (Linnaeus, 1766) (Pleuronectiformes: Paralichthyidae) – MAR

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 17 µm; FC round

Spore measurements: SL 5–7.5, SW 14–22, PCL 2 in diameter

Reference: Davis (1917)

***Ceratomyxa noblei* Gunter & Adlard, 2010**

[Syn. *Leptotheca elegans* Noble, 1938]

Host: *Gibbonsia elegans* (Cooper, 1864) (Perciformes: Clinidae) – MAR

Site: Gallbladder

Locality: tide pools, Santa Bárbara, USA

Plasmodia: 20–26 µm in diameter; FC round

Spore measurements: SL 9, SW 17, PCL 3, PCW 2.2, PC ≠

Note: The name *Ceratomyxa noblei*, was proposed to replace *Leptotheca elegans* by Gunter & Adlard (2010) following the transfer of this species from *Leptotheca* and *Ceratomyxa*. The name “*C. elegans*” would have been a secondary homonym if it were used.

Reference: Gunter & Adlard (2010)

***Ceratomyxa obesa* Jameson, 1929**

Host: *Clinocottus analis* (Girard, 1858) (Scorpaeniformes: Cottidae) – MAR

Site: Gallbladder

Locality: CTNP, Monterey Bay, California, USA

Plasmodia: FC broadly pear shape

Spore measurements: SL 4.5–5.9, SW 12.4–14.8, PC =

Reference: Jameson (1929)

***Ceratomyxa opisthicornata* Gunter & Adlard, 2010**

[Syn. *Leptotheca opisthicornata* Evdokimova, 1977]

Host: *Odontesthes incisa* (Jenyns, 1841) (Atheriniformes: Atherinopsidae) – MAR

Site: Gallbladder

Locality: M, Patagonian, Argentina

Plasmodia: 58–61 length x 45.4 width µm; FC elongate

Spore measurements: SL 6.4–8, TS 9.6–14.4, PCL 3.2 in diameter

Specimens in Collection: ZISP (No. 1432)

Reference: Gunter & Adlard (2010)

***Ceratomyxa ovalis* Gunter & Adlard, 2010**

[Syn. *Leptotheca ovale* Kovaleva & Gayevckaya, 1983]

Host: *Trachurus murphyi* Nichols, 1920 (Perciformes: Carangidae) – MAR

Site: Gallbladder

Locality: JFD (36°23'S, 85°W), Chile

Spore measurements: SL 6.0–6.6 SW 9.9–10.6, TS 6, PCL 2–2.6 in diameter

Specimens in Collection: ZISP (No. 581–582)

Reference: Gunter & Adlard (2010)

***Ceratomyxa pacifica* Kovaleva & Gayevckaya, 1983**

Host: *Sardinops sagax* (Jenyns, 1842) (Clupeiformes: Clupeidae) – MAR

Site: Gallbladder

Locality: WTSP (17°34'S, 80°00'W), Peru

Plasmodia: 15.5 length x 15.5 width µm; FC round

Spore measurements: SL 6.6–7.8, SW 5.1–5.3, TS 10.6–14.0, PCL 2.7, PCW 3.3, PC =, NC 6

Specimens in Collection: ZISP (No. 577–578)

Reference: Kovaleva & Gayevckaya (1983)

***Ceratomyxa recurvata* Davis, 1917**

Host: *Sphyrna zygaena* (Linnaeus, 1758) (Carcharhiniformes: Sphyrnidae) – MAR

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 130 length x 175 width µm; FC pyriform

Spore measurements: SL 8–9, SW 16, PCL 4.5 in diameter, PC =

Reference: Davis (1917)

***Ceratomyxa scissura* Davis (1917)**

[Syn. *Leptotheca scissura* Davis, 1917]

Host: *Dasyatis hastata* (DeKay, 1842) (Myliobatiformes: Dasyatidae) – MAR

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 125–150 length x 20–25 width μm
Spore measurements: SL 22, SW 11, PCL 4 in diameter
Note: Also found in *Gymnura micrura* Bloch & Schneider (Myliobatiformes: Gymnuridae)
Reference: Gunter & Adlard (2010)

***Ceratomyxa sphairophora* Davis, 1917**

Host: *Rhizoprionodon terraenovae* (Richardson, 1836) (Carcharhiniformes: Carcharhinidae) – MAR
Site: Gallbladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 100–110 length x 25 μm ; FC pyriform, elongate
Spore measurements: SL 12, SW 115–119, PCL 6 in diameter, PC =
Note: 75 μm length of polar filament
Reference: Davis (1917)

***Ceratomyxa starksi* Jameson, 1929**

Host: *Sebastes rosaceus* Girard, 1854 (Scorpaeniformes: Sebastidae) – MAR
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC round oval to pear shaped
Spore measurements: SL 6.2–8, SW 20–28, PC \neq
Reference: Jameson (1929)

***Ceratomyxa streptospora* Davis, 1917**

Host: *Chaetodipterus faber* (Broussonet, 1782) (Perciformes: Ephippidae) – MAR
Site: Urinary bladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 48–60 length x 9 width μm ; FC pyriform
Spore measurements: SL 4, SW 34–39, PCL 3 in diameter, PC =
Reference: Davis (1917)

***Ceratomyxa taenia* Davis, 1917**

Host: *Rhizoprionodon terraenovae* (Richardson, 1836) (Carcharhiniformes: Carcharhinidae) – MAR
Site: Gallbladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 80 length x 25 width μm
Spore measurements: SL 6, SW 140–150, PCL 3 in diameter
Reference: Davis (1917)
***Ceratomyxa undulata* Davis, 1917**

Host: *Ancylopsetta ommata* (Jordan & Gilbert, 1883) (Pleuronectiformes: Paralichthyidae) – MAR
Site: Gallbladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 25 length x 12–15 width μm
Spore measurements: SL 6, SW 22–44, PCL 3 in diameter
Reference: Davis (1917)

***Ceratomyxa urophysis* Fantham, Porter & Richardson, 1940**

Host: *Urophysis tenuis* (Mitchill, 1814) (Gadiformes: Phycidae) – MAR
Site: Gallbladder
Locality: Saint Andrews, New Brunswick, Canada
Plasmodia: 75 μm ; FC round to conical
Spore measurements: SL 5–7.5, SW 25–39.1, PC =
Note: 38.3–45 μm length of polar filament
Reference: Fantham *et al.* (1940)

***Ceratomyxa venusa* Jameson, 1931**

Host: *Atractoscion nobilis* (Ayres, 1860) (Perciformes: Sciaenidae) – MAR
Site: Gallbladder
Locality: CTNP, Monterey Bay, California, USA
Plasmodia: FC round to oval
Spore measurements: SL 4–6, SW 63–78, PC =
Reference: Jameson (1931)

***Ceratomyxa vermiformis* Adriano & Okamura, 2016**

Host: *Colossoma macropomum* (Cuvier, 1816) (Characiformes: Serrasalminidae) – FW
Site: Gallbladder
Locality: Tapajós River, Santarem, Pará, Brazil
Plasmodia: 442 length x 21 width μm ; FC elongate
Spore: SL 4.5 \pm 0.2 (4.2–4.8), TS 8.4 \pm 0.4 (7.9–9.3), PCL 2.7 \pm 0.1 (2.5–2.9) in diameter, PC =, NC 3–4
Specimens in Collection: ZUEC (No. Myx 54–55)
GenBank: 18S (No. Kx278420)
Reference: Adriano & Okamura (2016)

Genus *Ceratonova* Atkinson, Foott & Bartholomew, 2014

***Ceratonova gasterostea* Atkinson, Foott & Bartholomew, 2014**

Host: *Gasterosteus aculeatus* Linnaeus, 1758 (Gasterosteiformes: Gasterosteidae) – FW
Site: Intestine
Locality: Klamath River (41°20'34.8"N 123°51'21.6"W), California, USA
Spore measurements: SL 5.2±0.4, TS 22.4±2.6, PCL 2.3±0.2 in diameter, PC =, NC 4–5
Specimens in Collection: PCQM (No. G465690, G465691, G465692 & G465693)
GenBank: ITS-1 (No. Kf751186)
Reference: Atkinson *et al.* (2014)

***Ceratonova shasta* Atkinson, Foott & Bartholomew, 2014**

[Syn. *Ceratomyxa shasta* Noble, 1950]

Host: *Oncorhynchus mykiss* (Walbaum, 1792) (Salminiformes: Salmonidae) – FW
Site: Gallbladder, urinary bladder
Locality: Crystal Lake, Mount Shasta, California, USA
Plasmodia: 12.7 length–19.0 width µm, FC round
Spore measurements: SL 6, SW 14, PCL 8 in diameter, PC =
Reference: Atkinson *et al.* (2014)

Genus *Ellipsomyxa* Køie, 2003

***Ellipsomyxa adlardi* Whipps & Font 2013**

Host: *Gobiosoma bosc* (Lacepède, 1800) (Perciformes: Gobiidae) – FW/BW
Site: Gallbladder
Locality: Lake Pontchartrain, Louisiana, USA
Plasmodia: 1.126 length x 0.403 width mm
Spore measurements: SL 11.3–14.4 (12.4±0.18), SW 7.1–8.8 (7.7±0.1), TS 7.1–9.0 (7.8±0.23), PCL 3.9–4.9 (4.3±0.06), PCW 3.3–4.1 (3.6±0.03), NC 5–6
Specimens in Collection: HWML (accession number not provided)
GenBank: 18S (No. Jx443488)
Reference: Whipps & Font (2013)

***Ellipsomyxa fusiformis* Gunter & Adlard, 2010**

[Syn. *Leptothecca fusiformis* Davis, 1917]

Host: *Sphyrna zygaena* (Linnaeus, 1758) (Carcharhiniformes: Sphyrnidae) – MAR
Site: Gallbladder
Locality: WTNA, Beaufort, North Carolina, USA
Plasmodia: 50 length x 13 width µm; FC pyriform
Spore measurements: SL 16, SW 9, PCL 4.5 in diameter
Reference: Gunter & Adlard (2010)
***Ellipsomyxa gobioides* Azevedo, Videira, Casal,**

Matos, Oliveira, Al-Quraisy & Matos, 2013

Host: *Gobioides broussonnetii* Lacepède, 1800 (Perciformes: Gobioidae) – FW/BW
Site: Gallbladder
Locality: Amazon River (00°45'S, 48°31'W), Pará, Brazil
Plasmodia: 30 µm in diameter; FC irregular
Spore measurements: SL 6.5–7.0 (6.8±0.2), SW 6.5–7.0 (6.8±0.2), TS 12.8–13.5 (13.1±0.3), PCL 4.3–4.8 (4.6±0.3), PCW 2.1–2.7 (2.5±0.3), PC =, NC 5–6
Specimens in Collection: INPA (No. 014/12)
Reference: Azevedo *et al.* (2013)

Family Chloromyxidae Thélohan, 1892

Genus *Agarella* Dunkerly, 1915

***Agarella gracillis* Dunkerly, 1915**

Host: *Lepidosiren paradoxa* Fitzinger, 1837 (Lepidosireniformes: Lepidosirenidae) – FW
Site: Testis
Locality: swamps of the Chaco, Paraguay
Spore measurements: SL 28–35, SW 4–5.5, PCL 5–7.7
Reference: Dunkerly (1915)

Genus *Chloromyxum* Mingazzini, 1890

***Chloromyxum auratum* Hallett, Atkinson, Holt, Banner & Bartholomew, 2006**

Host: *Carassius auratus* (Linnaeus, 1758) (Cypriniformes: Cyprinidae) – FW
Site: Gallbladder
Locality: Fern Ridge Reservoir, Eugene, Oregon, USA
Plasmodia: 27(25–30) µm in diameter; FC mono- to trispore
Spore measurements: SL 13.6 (12.5–14.0), SW 12.6 (10.8–14.1), TS 13.1 (11.4–14.0), PCL 4.4 (4.1–4.7), PCW 3.5 (3.1–4.0), PC ≠, =, NC 4, R 6–9
Specimens in Collection: PCQM (No. G464757 and G464758–60)
GenBank: 18S (No. Ay971521)
Note: Also found in *Cyprinus carpio* Linnaeus, 1758 (Cypriniformes: Cyprinidae)
Reference: Hallett *et al.* (2006)

***Chloromyxum catostomi* Kudo, 1919**

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae) – FW
Site: Gallbladder

Locality: Urbana, Illinois, USA

Spore measurements: SL 8, SW 7, TS 5–6, PCL 2–2.5, PCW 1.5, PC =

Reference: Kudo (1919)

***Chloromyxum externum* Davis, 1947**

Host: *Margariscus margarita* (Cope, 1867) (Cypriniformes: Cyprinidae) – FW

Site: Gills

Locality: USA

Plasmodia: 15–17 in diameter

Spore measurements: SL 8 in diameter, R 6

Reference: Davis (1947)

***Chloromyxum gibbosum* Herrick, 1941**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW

Site: Gallbladder

Locality: Lake Erie, Ohio, USA

Spore measurements: SL 9.6 (8.8–11.2), SW 9.0 (8.0–9.6), TS 7.5 (7.2–8.8)

Reference: Herrick (1941)

***Chloromyxum granulosum* Davis, 1917**

Host: *Strongylura marina* (Walbaum, 1792) (Beloniformes: Belonidae) – MAR

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Spore measurements: SL 7 in diameter, PCL 2 in diameter

Reference: Davis (1917)

***Chloromyxum kabatai* Moser & Noble, 1977**

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – MAR

Site: Gallbladder

Locality: CTNP, Oregon, off USA

Spore measurements: SL 16.9 (16.0–18.0), SW 16.0 (15.5–17.0), PCL 4.7 (4.5–5.5) diameter, NC 5–8

Specimens in Collection: USNPC (No. 24454)

Reference: Moser & Noble (1977d)

***Chloromyxum kurisi* Sanders, Jaramillo, Ashford, Feist, Lafferty & Kent, 2015**

Host: *Atherinops affinis* (Ayres, 1860) (Atheriniformes: Atherinidae) – MAR

Site: Kidney

Locality: CTNP, Santa Monica Creech (34.40°N, 119.53°W), California, USA

Plasmodia: 600 µm in diameter

Spore measurements: SL 8.7–9.2 (9.0±0.23), SW

7.9–8.3 (8.1±0.17), TS 7.6–8.2 (7.9±0.19), PCL 2.1–2.5 (2.3±0.16), PCW 1.6–2.0 (1.8±0.09), NC 3–4, R 15

Specimens in Collection: PCQM (No. G465697 and G465698)

GenBank: 18S (No. KJ526212)

Reference: Sanders *et al.* (2015)

***Chloromyxum levigatum* Jameson, 1931**

Host: *Squatina californica* Ayres, 1859 (Squatiformes: Squatinidae) – MAR

Site: Gallbladder

Locality: CTNP, California, off USA

Spore measurements: SL 11–13, SW 8–10

Reference: Jameson (1931)

***Chloromyxum liae* Kuznestsova, 1977**

Host: *Prionace glauca* (Linnaeus, 1758) (Carcharhiniformes: Carcharhinidae) – MAR

Site: Gallbladder

Locality: M, Patagonia, Argentina

Spore measurements: SL 4.4–5.2, SW 3.7, PCL 1.8, R 4

Specimens in Collection: ZISP (No. 1437)

Reference: Kuznestsova (1977)

***Chloromyxum majori* Yasutake & Wood, 1957**

Host: *Oncorhynchus mykiss* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW

Site: Kidney glomerulus

Locality: Major Creek, Klickitat County, Washington, USA

Spore measurements: SL 7, SW 8, PCL 3.5, PCW 4, PC ≠

Note: Numerous striations ran obliquely to the straight sutural line.

Reference: Yasutake & Wood (1957)

***Chloromyxum menticirrho* Casal, Garcia, Matos, Monteiro, Matos, Azevedo, 2009**

Host: *Menticirrhus americanus* (Linnaeus, 1758) (Perciformes: Scianidae) – MAR

Site: Urinary bladder

Locality: WTSA, Florianópolis (27°34'S, 48°25'W), Santa Catarina, Brazil

Spore measurements: SL 10.5±0.4, SW 9.8±0.6, TS 10.1±0.6, PCL 3.2±0.4, PCW 2.0±0.3, PC =, NC 3–4, R 41 (37–45)

Specimens in Collection: USNPC (No. 100738)

Reference: Casal *et al.* (2009)

***Chloromyxum multicostatum* Kuznestsova, 1977**

Host: *Squatina squatina* (Linnaeus, 1758)

(Squatiniiformes: Squatinidae) – **MAR**

Site: Gallbladder

Locality: M, Patagonia, Argentina

Spore measurements: **SL** 5.9–7.4, **SW** 4.4–5.2, **PCL** 2.2

Specimens in Collection: ZISP (No. 1435)

Note: With large number of thin ridges

Reference: Kuznestsova (1977)

***Chloromyxum opladeli* Meglitsch, 1942**

Host: *Pylodictis olivaris* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – **FW**

Site: Gallbladder

Locality: Ohio River, Shawneetown, Illinois, USA

Plasmodia: 18–30 μ m

Spore measurements: **SL** 6.5–8, **SW** 6–7.5, **TS** 5.5–7, **PCL** 2.5–3, **PCW** 1.5–2.3, **PC** =, **R** 11

Reference: Meglitsch (1942)

***Chloromyxum ovatum* Jameson, 1929**

Host: *Squalus suckleyi* (Girard, 1855) (Squaliformes: Squalidae) – **MAR**

Site: Gallbladder

Locality: CTNP, Moterey Bay, California, USA

Plasmodia: **FC** large and irregular

Spore measurements: **SL** 10.3–13.6, **SW** 7.7–10.9, **NC**, **R** 3–4

Note: Also found in *Tetronarce californica* (Ayres) and *Galeorhinus galeus* (Linnaeus)

Reference: Jameson (1929)

***Chloromyxum parvicostatum* Kuznestsova, 1977**

Host: *Bathyraja brachyurops* (Fowler, 1910)

(Rajiformes: Arhynchobatidae) – **MAR**

Site: Gallbladder

Locality: M, Patagonia, Argentina

Spore measurements: **SL** 5.2–5.9, **SW** 4.4–4.6, **PCL** 2.2, **R** 6

Specimens in Collection: ZISP (No. 1434)

Reference: Kuznestsova (1977)

***Chloromyxum renalis* Meglitsch, 1947**

Host: *Fundulus majalis* (Walbaum, 1792) (Cyprinodontiformes: Fundulidae) – **MAR**

Site: Kidney

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: **FC** elongated, clavate, or pearshaped

Spore measurements: **SL** 6.5 (6–7), **SW** 6.1 (5.5–7.7), **TS** 5.7 (5.1–6.0), **PCL** 2.7, **PCW** 1.7, **PC** \neq , **NC** 3–5

Reference: Meglitsch (1947a)

***Chloromyxum riorajum* Azevedo, Casal, Garcia, Matos, Teles-Grilo & Matos, 2009**

Host: *Rioraja agassizii* (Müller & Henle, 1841) (Rajiformes: Arhynchobatidae) – **MAR**

Site: Gallbladder

Locality: TSA, Joaquina beach (27°37'S, 48°26'W), Florianópolis, Santa Catarina, Brazil

Plasmodia: 15 μ m

Spore measurements: **SL** 11.4 \pm 0.3, **SW** 8.4 \pm 0.4, **TS** 5.9 \pm 0.5, **PCL** 3.2 \pm 0.4, **PCW** 2.0 \pm 0.3, **PC** =, **NC** 6, **R** 3–4

Specimens in Collection: USNPC (No. 1122327)

GenBank: 18S (No. Fj624481)

Note: It has 33 to 37 caudal filamentous projections (12.10 \pm 0.87 μ m long) were attached to the part of the last ridge and sutural ridge of the 2 valves.

Reference: Azevedo *et al.* (2009)

***Chloromyxum salamandrae* Upton, McAllister & Trauth, 1995**

Host: *Eurycea multiplicata* (Cope, 1869) (Caudata: Plethodontidae) – **AMP**

Site: Gallbladder

Locality: Conway County and Van Buren County (35°9'N, 92°35'W, 35°36'N, 92°35'W), Arkansas, USA

Plasmodia: 20–40 (31.5 \pm 6.3) length x 20–30 (24.9 \pm 2.5) width μ m; **FC** ellipsoidal or subspherical

Spore measurements: **SL** 8.3 (7.8–8.8), **SW** 7.7 (7.0–8.2), **PCL** 4.0 (3.8–4.2), **PCW** 2.6 (2.4–2.8), **NC** 4, **R** 10–12

Specimens in Collection: USNPC (No.: 84161 and 84162)

Note: Also found in *Eurycea multiplicata* (Cope, 1869) and *Eurycea neotenes* Bishop & Wright

Reference: Upton *et al.* (1995)

***Chloromyxum sphyrnae* Cunha & Fonseca, 1918**

Host: *Sphyrna tiburo* (Linnaeus, 1758) (Carcharhiniiformes: Sphyrnidae) – **MAR**

Site: Gallbladder

Locality: TSA, Rio de Janeiro, Rio de Janeiro, USA

Spore measurements: **SL** 15, **SW** 13, **PCL** 4 in diameter

Reference: Cunha & Fonseca (1918)

***Chloromyxum thompsoni* Meglitsch, 1942**

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – **FW**

Site: Gallbladder

Locality: Ohio River, Shawneetown, Illinois, USA

Plasmodia: 15–25 µm

Spore measurements: SL 6–8, SW 6–7.5, TS 5.5–7, PCL 2–3, PCW 1.5–2, R 5

Reference: Meglitsch (1942)

***Chloromyxum transversocostatum* Kuznestsova, 1977**

Host: *Squalus acanthias* (Linnaeus, 1758) (Squatiniiformes: Squatinidae) – MAR

Site: Gallbladder

Locality: M, Patagonia, Argentina

Spore measurements: SL 5.8–5.9, SW 3.7, PCL 2.9

Specimens in Collection: ZISP (No. 1436)

Reference: Kuznestsova (1977)

***Chloromyxum trijugum* Kudo, 1919**

Host: *Lepomis megalotis* (Rafisque, 1820) (Perciformes: Centrarchidae) – FW

Site: Gallbladder

Locality: Stony Creek, Verona, New York, USA

Spore measurements: SL 8–10, SW 8–10, TS 5–7, PCL 3–5, PCW 2–3, PC ≠,

Note: 32–40 µm length of polar filament

Reference: Kudo (1919)

***Chloromyxum wardi* Kudo, 1919**

Host: *Oncorhynchus nerka* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW

Site: Gallbladder

Locality: Klutina Lake, Alaska, USA

Spore measurements: SL 7.5–9 in diameter, PCL 3, PCW 2.5, PC ≠

Reference: Kudo (1919)

Family Cocomyxidae Léger & Hesse, 1907

Genus *Auerbachia* Meglitsch, 1968

***Auerbachia pulchra* Lom, Noble & Laird, 1975**

Host: *Macrourus berglax* Lacepède, 1801 (Gadiformes: Macrouridae) – MAR

Site: Gallbladder

Locality: CTNA, Grand Banks, Newfoundland, Canada

Plasmodia: 200 µm; FC elongate

Spore measurements: SL 30 (26–34), SW 11 (11–12), PCL 12 (9–14), PCW 4 (3.5–5), PC 3–5

Reference: Lom *et al.* (1975)

***Auerbachia sphaerica* Evdokimova, 1973**

Host: *Odontesthes incisa* (Jenyns, 1841) (Atheriniformes: Atherinopsidae) – MAR

Site: Gallbladder

Locality: Argentina

Spore measurements: SL 9.8–11.2, SW 11.2–11.8, PCL 4.2–5.6, PCW 3.5–4.9

Reference: Evdokimova (1973)

Family Fabesporidae Naidenova & Zaika, 1969

Genus *Fabespora* Naidenova & Zaika, 1969

***Fabespora vermicola* Overstreet, 1976**

Host: *Crassicutis archosargi* Sparks & Thatcher, 1960 (Plagiorchiida: Apocreadiidae) in *Archosargus probatocephalus* (Walbaum, 1792) (Perciformes: Sparidae) – HEL

Site: Parenchymal cells, surrounding reproductive organs, and in integument of digenean.

Locality: Escatawpa River, Jackson County, Mississippi, USA

Plasmodia: 13 µm in diameter

Spore measurements: SL 8.4±0.1 (7.5–9.8), SW 4.7±0.0 (4.0–5.2), PCL 1.8 PCW 1.2

Specimens in Collection: USNPC (No. 74137 and 74138)

Notes: 37.2±0.8 (32–44) µm length of polar filament

Reference: Overstreet (1969)

Family Myxidiidae Thélohan, 1892

Genus *Cystodiscus* Lutz, 1889

***Cystodiscus immersus* Lutz, 1889**

[Syn. *Myxidium immersum* Kudo & Sprague, 1940]

Host: *Rhinella marina* (Linnaeus, 1758) (Anura: Bufonidae) – AMP

Site: Gallbladder

Locality: São Paulo, Brazil

Plasmodia: 1 length x 0.8 width mm; FC circular to oval

Spore measurements: SL 12–14, SW 9–10, PCL 3.5–4.5 in diameter, NC 4–5, R 7–9

Reference: Lutz (1889)

***Cystodiscus lyndoyense* Carini, 1932**

[Syn. *Myxidium lyndoyense* Kudo & Sprague, 1940]

Host: *Rhinella marina* (Linnaeus, 1758) (Anura:

Bufonidae)–AMP

Site: Gallbladder

Locality: Lindóia, São Paulo, Brazil

Spore measurements: SL 11–12, SW 7.5–8, PCL 4 in diameter

Note: Many authors suggested that this species is a synonym of *C. immersus* Lutz, 1889. However, Hartigan (2012) considers this name cautiously as *nomen dubium* until further data on the diversity of *Cystodiscus* spp. in South American frogs is available.

Reference: Hartigan *et al.* (2012)

***Cystodiscus melleni* Hartigan, Fiala, Dyková, Rose, Phalen, & Šlapeta, 2012**

[Syn. *Myxidium melleni* Jirku, Bolek, Whipps, Janovy, Kent & Modry, 2006]

Host: *Pseudacris triseriata* Wied-Nuweid, 1838 (Anura: Hylidae)–AMP

Site: Gallbladder

Locality: Pawnee Lake (40°51.18'N, 96°53.11'W), Lancaster County, Nebraska, USA

Plasmodia: 400–1,375 length x 230–1,200 width µm; FC elliptical

Spore measurements: SL 12.3 (12.0–13.5), SW 7.6 (7.0–9.0), TS 6.6 (6.8–8.0), PCL 5.2 (4.8–5.5), PCW 4.2 (3.8–4.5), PC =, NC 6–7

Specimens in Collection: HWML (No. HWML 48167–48172)

GenBank: 18S (No. DQ003031.1)

Note: Also found in *Acris crepitans blanchardi* Harper

Reference: Hartigan *et al.* (2012)

***Cystodiscus serotinus* Hartigan, Fiala, Dyková, Rose, Phalen, & Šlapeta, 2012**

[Syn. *Myxidium serotinum* Kudo & Sprague, 1940]

Host: *Rana pipiens* (Schreber, 1782) (Anura: Ranidae)–AMP

Site: Gallbladder

Locality: Illinois, USA

Spore measurements: SL 16–18, SW 9, PCL 5–5.5 in diameter, NC 3–5, R 10–13

Note: 9–14 transverse depression in the spore

Reference: Hartigan *et al.* (2012)

***Cystodiscus typhonius* Hartigan, Fiala, Dyková, Rose, Phalen, & Šlapeta, 2012**

[Syn. *Myxidium typhonius* Gray, 1993]

Host: *Bufo margaritifera* (Laurenti, 1768) (Anura: Bufonidae)–AMP

Site: Gallbladder

Locality: Rio Madre de Dios, Puerto Maldonado, Peru

Plasmodia: FC circular to oval

Spore measurements: SL 10.9 (9.8–12.2), SW 7.2 (5.7–8.9), PCL 3.8 (2.5–5.5), PCW 3.6 (3.3–5.2), PC =, NC 4–5, R 9–11

Specimens in Collection: USNPC (No. 81272)

Note: 8–10 transverse depression in the spore

Reference: Hartigan *et al.* (2012)

Genus *Myxidium* Bütschli, 1882

***Myxidium amazonense* Mathew, Silva, Maia, Adriano, 2015**

Host: *Corydoras melini* Lönnberg & Rendahl, 1930 (Siluriformes: Callichthyidae)–FW

Site: Gallbladder

Locality: Rio Negro, Santa Isabel do Rio Negro, Amazonas, Brazil

Plasmodia: FC elongated

Spore measurements: SL 16.1–17.9 (17.0±0.9), SW 3.0–4.4 (3.7±0.7), TS 8.0, PCL 4.9–5.9 (5.4±0.5), PCW 2.8–4.0 (3.4±0.6), NC 4–5

Specimens in Collection: ZUEC (No. Myx 48–49)

GenBank: 18S (No. Kt625442)

Reference: Mathew, Silva, Maia, Adriano (2015)

***Myxidium americanum* Kudo 1920**

Host: *Apalone spinifera* (Lesueur, 1827) (Testudines: Trionychidae)–REP

Site: Kidney

Locality: Urban County, Illinois, USA

Plasmodia: 12–25 µm in diameter; FC irregular

Spore measurements: SL 15–16, SW 5.5–6, PCL 4, PCW 3.5, NC 3

Note: Reptile host with 25–32 µm length of polar filament

Reference: Kudo (1920)

***Myxidium anatum* Bartholomew, Atkinson, Hallett, Lowenstine, Garner, Gardiner, Rideout, Keel & Brown, 2008**

Host: *Anas platyrhynchos* Linnaeus, 1758 (Anseriformes: Anatidae)–B

Site: Afferent bile ducts in liver

Locality: Swan Lake, (33.583954°N, 84.210316°W), Stockbridge, Georgia, USA

Spore measurements: SL 23.1±0.8 (21.3–24.3) SW 10.8±0.3 (10.3–11.5), TS 11.2±0.5 (10.2–12.1), PCL 6.6±0.4 (5.4–7.4),

PCW 5.4±0.3 (4.7–6.0), **NC** 5–6, **R** 14–16
Specimens in Collection: PCQM (No. G464979, G464980, G464981, G464982, G464983)
GenBank: 18S (No. Ef602629)
Reference: Bartholomew *et al.* (2008)

***Myxidium aplodinoti* Kudo, 1934**

Host: *Aplodinotus grunniens* Rafinesque, 1819 (Perciformes: Sciaenidae) – **FW**
Site: Gallbladder
Locality: Mississippi River, Davemport, Iowa, USA
Spore measurements: **SL** 11 – 12, **SW** 5–6, **PCL** 4–5, **PCW** 3–3.5, **R** 7–9
Reference: Kudo (1934)

***Myxidium asymmetricum* Kovaleva & Gaevskaya, 1982**

Host: *Salilota australis* (Günther, 1878) (Gadiformes: Moridae) – **MAR**
Site: Gallbladder
Locality: Southwest Atlantic
Plasmodia: 13.3 length x 13.3 width µm
Spore measurements: **SL** 18.6–19.9, **SW** 6.6–9.3, **PCL** 6.6–7.9, **PCW** 2.6, **PC** =, **NC** 12
Reference: Kovaleva & Gaevskaya (1982)

***Myxidium bajacalifornium* Noble, 1966**

Host: *Bajacalifornia burragei* Townsend & Nichols, 1925 (Osmeriformes: Alepocephalidae) – **MAR**
Site: Gallbladder
Locality: CTNP, Catalina basin, California, USA
Plasmodia: 1.5–5.5 mm in diameter
Spore measurements: **SL** 4.0 (3.0–5.0), **SW** 22.1 (19.2–32.0), **PCL** 7.4 (6.0–8.0), **NC** 12–14, **R** 6–8
Reference: Noble (1966)

***Myxidium baueri* Kovaleva & Gaevskaya, 1982**

Host: *Macrourus holotrachys* (Günther, 1878) (Gadiformes: Macrouridae) – **MAR**
Site: Gallbladder
Locality: Southwest Atlantic
Plasmodia: 1.5–3.5 mm in diameter; **FC** round to oval
Spore measurements: **SL** 15.9–19.2, **SW** 4–5.3, **PCL** 2.6–4, **PCW** 4.6–6.6, **PC** =, **R** 6
Reference: Kovaleva & Gaevskaya (1982)

***Myxidium bellum* Meglintsch, 1937**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – **FW**
Site: Gallbladder

Locality: Ohio River, Shawneetown, Illinois, USA
Plasmodia: **FC** oval
Spore measurements: **SL** 15.5–17.5, **SW** 4–5, **PCL** 6–7, **PCW** 2.5–3,
Reference: Meglintsch (1937)

***Myxidium biliare* Viozzi & Flores, 2003**

Host: *Galaxias maculatus* (Jenyns, 1842) (Osmeriformes: Galaxiidae) – **FW**
Site: Gallbladder
Locality: Lake Moreno (41°04'S, 71°33'W), Neuquén, Argentina
Plasmodia: 2,048±555 mm
Spore measurements: **SL** 13.7±0.9 (12–15), **SW** 6.9±0.6 (6–8), **TS** 6.9±0.6, **PCL** 5.7±0.5 (5–6), **PC** =, **NC** 5–7, **R** 7–9
Specimens in Collection: ZW (No. 1500 and 1501), MACN (No. 408/1–3 and 408/4) CPUNC (No. 151/1–4) and IPICAS (No. H–PM–069)
Reference: Viozzi & Flores (2003)

***Myxidium ceccarellii* Adriano, Silva, Atkinson, Bartholomew & Maia 2014**

Host: *Leporinus elongatus* Valenciennes, 1850 (Characiformes: Anostomidae) – **FW**
Site: Gallbladder
Locality: São Francisco river (20°20'54"S, 46°04'08"W), Piumhi, Minas Gerais, Brazil
Plasmodia: 9 length x 4 width mm
Spore measurements: **SL** 17.1–18.1 (17.7±0.5), **SW** 9.8–11.3 (10.4±0.47), **TS** 9.6–10.4 (10.1±0.27), **PCL** 5.7–7.0 (6.3±0.5), **PCW** 5.7–6.9 (6.4±0.44), **NC** 1–3, **R** 4–6
Specimens in Collection: ZUEC (No. Myx 45)
GenBank: 18S (No. KJ499821)
Reference: Adriano *et al.* (2014)

***Myxidium chelonarum* Johnson, 1969**

Host: *Trachemys scripta* (Schoepff, 1792) (Testudines: Emydidae) – **REP**
Site: Bile ducts and gallbladder
Locality: Chowan River, Edenton, North Carolina, USA
Plasmodia: 0.01 length – 0.18 width mm; **FC** spherical, larger forms round and flat
Spore measurements: **SL** 14.5 (12.5–16), **SW** 4.5 (3–5), **TS** 5.5 (4–7), **PCL** 4.5 (2.5–5), **PCW** 3.5 (2–3), **NC** 5–7, **R** 4–6
Specimens in Collection: USNPC (No. 71268)
Reference: Johnson (1969)

***Myxidium cholecysticum* Cordeiro & Gioia,**

1990**Host:** *Astyanax scabripinnis* (Jenyns, 1842) (Characiformes: Characidae) – **FW****Site:** Gallbladder**Locality:** Atibaia River, Campinas, São Paulo, Brazil**Plasmodia:** 0.37–0.92 length x 0.03–0.9 width mm; **FC** elongate**Spore measurements:** **SL** 12–15.9 (14.1±1.1), **SW** 6.4–9.6 (7.8±0.9), **PCL** 3.4–5.2 (4.2±0.9), **PCW** 3–4.1 (3.6±0.3), **NC** 5–6**Specimens in Collection:** ZUEC (No. 4023)**Note:** 42–60 µm length of polar filament**Reference:** Cordeiro & Goia (1990)***Myxidium commersoni* Cone & Grinham, 1992****Host:** *Catostomus commersonii* (Lacépède, 1803) (Cypriniformes: Catostomidae) – **FW****Site:** Gallbladder**Locality:** Sawler Lake (44°39'N, 64°04'W), Nova Scotia, Canada**Plasmodia:** 0.1–2.5 length x 0.1–2 width mm; **FC** ovoid**Spore measurements:** **SL** 11 (10–12), **SW** 6.5 (5.5–7), **PCL** 5.5 (5–5.5), **PCW** 3.5 (2–4) long, **PC** =, **NC** 6–7, **R** 7–12**Specimens in Collection:** USNPC (No. 82428)**Reference:** Cone & Grinham (1992)***Myxidium coryphaenoidium* Noble, 1966****Host:** *Coryphaenoides* sp. (Gadiformes) – **MAR****Site:** Gallbladder**Locality:** Off coast of Mexico, Mexico**Plasmodia:** 10–30 mm in diameter; **FC** rounded to irregular**Spore measurements:** **SL** 5.0 (3.1–6.0), **SW** 23.3 (18.8–26.0), **PCL** 6.6 (4.2–7.5), **NC** 6–7, **R** 10–11**Reference:** Noble (1966)***Myxidium cruzi* Penido, 1927****Host:** *Triportheus nematurus* (Kener, 1858) (Characiformes: Triportheidae) – **FW****Site:** Gallbladder**Locality:** Paraguay River, Porto Esperança, Mato Grosso do Sul, Brazil**Plasmodia:** 150–180 µm in diameter**Spore measurements:** **SL** 17, **SW** 18, **PCL** 5–6, **PCW** 3**Reference:** Penido (1927)***Myxidium folium* Bond, 1938****Host:** *Fundulus heteroclitus* (Linnaeus, 1766)(Cyprinodontiformes: Fundulidae) – **MAR****Site:** Gallbladder**Locality:** CTNP, Chesapeake Bay, Baltimore, Maryland, USA**Plasmodia:** 75–100 µm**Spore measurements:** **SL** 11–12, **SW** 5–6, **PCL** 3.5, **PCW** 3, **NC** 5**Note:** 34–42 µm length of polar filament**Reference:** Bond (1938)***Myxidium fonsecai* Penido, 1927****Host:** *Erichthonius fasciatus* (Stimpson, 1853) (Amphipoda: Ischyroceridae) – **CRU****Site:** Gallbladder**Locality:** Paraguay River, Porto Esperança, Mato Grosso do Sul, Brazil**Spore measurements:** **SL** 7–9, **SW** 2.5–3, **PCL** 2–3,**Reference:** Penido (1927)***Myxidium gasterostei* Noble, 1943****Host:** *Gasterosteus aculeatus* Linnaeus, 1758 (Gasteroteiformes: Gasterosteidae) – **FW****Site:** Gallbladder**Locality:** Santa Ynez River, Santa Bárbara County, California, USA**Plasmodia:** 2.5 length x 4.5 width mm; **FC** oval**Spore measurements:** **SL** 7.5, **SW** 14, **PCL** 4, **PCW** 5**Note:** 65 µm length of polar filament**Reference:** Jayasri & Hoffman (1982)***Myxidium glutinosum* Davis, 1917****Host:** *Cynoscion regalis* (Bloch & Schneider, 1801) (Perciformes: Sciaenidae) – **MAR****Site:** Gallbladder**Locality:** WTNA, Beaufort, North Carolina, USA**Plasmodia:** 20 µm; **FC** elongated to irregular**Spore measurements:** **SL** 10–11, **SW** 6, **PCL** 3 in diameter**Reference:** Davis (1917)***Myxidium gurgeli* Pinto, 1928****Host:** *Acestrorhamphus* sp. (Characiformes: Characidae) – **FW****Site:** Gallbladder**Locality:** Mogi Guaçu River, São Paulo, Brazil**Plasmodia:** 7 length x 5 width mm; **FC** elliptical**Spore measurements:** **SL** 14.6, **SW** 8.5, **PCL** 3.4, **PCW** 3**Reference:** Pinto (1928)

Myxidium hardella* Garner, Bartholomew, Whipps, Nordhausen & Raiti, 2005*Host:** *Hardella thurjii* (Gray, 1831) (Testudines: Geoemydidae) – **REP****Site:** Kidney tubules, bile duct, and gall bladder**Locality:** USA**Spore measurements:** **SL** 17.7 (14.9–20.0), **SW** 4.9 (4.5–5.7), **PCL** 6.2 (4.9–7.1), **PCW** 2.9 (2.7–3.3), **PC** =, **NC** 7–8**Specimens in Collection:** USNPC (accession number not provided)**GenBank:** 18S (No. Ay688957)**Note:** This animal was part of turtles imported from Pakistan for the pet trade.**Reference:** Garner *et al.* (2005)***Myxidium illinoisense* Meglitsch, 1937****Host:** *Anguilla rostrata* (Lesueur, 1817) (Anguilliformes: Anguillidae) – **FW****Site:** Kidney**Locality:** Ohio River, Shawneetown, Illinois, USA**Plasmodia:** 100–27 µm; **FC** oval to irregular**Spore measurements:** **SL** 12.7–15.3, **SW** 7.6–9.3, **PCL** 3.4, **PCW** 6.1, **R** 7–8**Reference:** Meglitsch (1937)***Myxidium iwamotoi* Moser, Noble & Lee, 1976****Host:** *Coryphaenoides carapinus* Goode & Bean, 1883 (Gadiformes: Macrouridae) – **MAR****Site:** Gallbladder**Locality:** WTNA, off Delaware, USA**Spore measurements:** **SL** 28.8 (26.0–31.0), **SW** 6.3 (5.0–7.0), **PCL** 6.4 (5.0–8.0), **PCW** 2.5 (1.5–4.0), **NC** 8–9, **R** 7–8**Specimens in Collection:** USNPC (No. 24434)**Reference:** Moser *et al.* (1976)***Myxidium kudoii* Meglitsch, 1937****Host:** *Ictalurus furcatus* (Valenciennes, 1840) (Siluriformes: Ictaluridae) – **FW****Site:** Gallbladder**Locality:** Ohio River, Shawneetown, Illinois, USA**Plasmodia:** 1mm; **FC** ovoid to elliptical**Spore measurements:** **SL** 10.2–11.9, **SW** 4.2–6.0, **PCL** 2.5, **PCW** 3.5, **R** 7**Reference:** Meglitsch (1937)***Myxidium macrocheili* Mitchell, 1967****Host:** *Catostomus macrocheilus* Girard, 1856 (Cypriniformes: Catostomidae) – **FW****Site:** Gallbladder**Locality:** Bitterroot River, Elbow Lake & Placid

Lake, Missoula, Montana, USA

Plasmodia: 1.5–2.5 mm; **FC** spheroid to ovoid**Spore measurements:** **SL** 11.7 (10.0–14.4), **SW** 6.6 (5.5–8.0), **TS** 6.3 (5.5–8.0), **PCL** 4.0 (3.0–5.5), **PCW** 3.5 (2.0–4.5), **NC** 4–5, **R** 9–10**Specimens in Collection:** USNPC (accession number not provided)**Reference:** Mitchell (1967)***Myxidium macrourium* Moser, Noble & Lee, 1976****Host:** *Bathygadus melanobranchus* Vaillant, 1888 (Gadiformes: Macrouridae) – **MAR****Site:** Gallbladder**Locality:** Off French Guiana, French Guiana**Spore measurements:** **SL** 29.4 (27.0–34.0), **SW** 3.8 (3.5–4.5), **PCL** 8.8 (7.5–11.0), **PCW** 3.7 (3.0–4.5), **NC** 11–13, **R** 6–8**Specimens in Collection:** USNPC (No. 24433)**Reference:** Moser *et al.* (1976)***Myxidium mavori* Mavor, 1915****Host:** *Pseudopleuronectes americanus* (Walbaum, 1792) (Pleuronectiformes: Pleuronectidae) – **MAR****Site:** Gallbladder**Locality:** WTNA, New Brunswick, Canada**Spore measurements:** **SL** 14–15, **SW** 6–7.5, **PCL** 4, **PCW** 2.5**Note:** 90–95 µm length of polar filament**Reference:** Jayasri & Hoffman (1982)***Myxidium melanostigmum* Noble, 1966****Host:** *Melanostigma pammelae* Gilbert, 1896 (Perciformes: Zoarcidae) – **MAR****Site:** Gallbladder**Locality:** CTNP, Coast of southern California, California, USA**Plasmodia:** 2 mm in diameter; **FC** rounded to irregular**Spore measurements:** **SL** 4.3 (3.0–6.5), **SW** 23.7 (20.0–26.0), **PCL** 6.5 (5.0–8.0), **NC** 8–10, **R** 5–7**Reference:** Noble (1966)***Myxidium melum* Otto & John, 1943****Host:** *Ameiurus melas* (Rafinesque, 1820) (Siluriformes: Ictaluridae) – **FW****Site:** Gallbladder**Locality:** Little Miller's Bay, West Okoboji Lake, Lakeville, Iowa, USA**Plasmodiota:** 550 length x 1070 width µm; **FC**

spherical to oblong

Spore measurements: SL 11–12, SW 5–6, PCL 3 in diameter, NC 8–10, R 9–11

Reference: Otto & John (1943)

***Myxidium minteri* Yasutake & Wood, 1957**

Host: *Oncorhynchus kisutch* (Walbaum, 1792) (Salmoniformes: Salmonidae)–FW

Site: Renal tubules

Locality: Minter Creek, Olympic Peninsula, Washington, USA

Spore measurements: SL 9.3–12.6, SW 6–7, PCL 2.3, PCW 3.8

Reference: Yasutake & Wood (1957)

***Myxidium moxostomatis* Kudo 1921**

Host: *Moxostoma* sp. (Cypriniformes: Catostomidae)–FW

Site: Gallbladder

Locality: New York, New York, USA

Plasmodia: 2 length x 1.5 width mm; FC rounded

Spore measurements: SL 8.5–10.5, SW 5–6, TS 5–6, PCL 3 in diameter, R 10

Reference: Kudo (1921)

***Myxidium myxocephali* Fantham, Porter & Richardson, 1940**

Host: *Myoxocephalus octodecimspinosus* (Mitchill, 1814) (Scorpaeniformes: Cottidae)–MAR

Site: Gallbladder

Locality: CTNA, Halifax, Nova Scotia, Canada

Plasmodia: 75 µm

Spore measurements: SL 13.3–17.5, SW 6.6–8.0, PCL 4–5, PCW 2.2–3.3

Reference: Fantham *et al.* (1940)

***Myxidium percae* Fantham, Porter & Richardson, 1939**

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae)–FW

Site: Skin

Locality: Ouareaus Lake, Rawdon, Quebec, Canada

Plasmodia: 1–1.5 mm,

Spore measurements: SL 14.5–20.9, SW 2.3–6, PCL 5–7, PCW 1.8–3.2, PC ≠

Reference: Fantham *et al.* (1939)

***Myxidium phyllium* Davis, 1917**

Host: *Gambusia affinis* (Baird & Girard, 1853) (Cyprinodontiformes: Poeciliidae)–MAR

Site: Gallbladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 1.35 mm; FC large

Spore measurements: SL 11, SW 8, PCL 3 in diameter

Reference: Davis (1917)

***Myxidium scripta* Roberts, Whipps, Bartholomew, Schneider & Jacobson, 2008**

Host: *Trachemys scripta* (Schoepff, 1792) (Testudines: Emydidae)–REP

Site: Gallbladder, renal tubules

Locality: Turtle Farm, Assumption Parish, Louisiana, USA

Spore measurements: SL 18.8 (16.6–20.4), SW 5.1 (4.6–5.9), PCL 6.6 (5.1–7.8), PCW 3.5 (2.6–4.1), PC =, NC 6–8

Specimens in Collection: HWML (No. 48411, 484121 and 48414)

GenBank: 18S (No. DQ851568.1)

Reference: Roberts *et al.* (2008)

***Myxidium streisingeri* Whipps, Murray & Kent, 2015**

Host: *Danio rerio* (Hamilton, 1822) (Cypriniformes: Cyprinidae)–FW

Site: Ducts of kidney and mesonephric ducts

Locality: CTNA, Baltimore, Maryland, USA

Plasmodia: 13.6 (5.3–15.4) µm

Spore measurements: SL 7.4–9.3 (8.3±0.12), SW 4.5–5.6 (5.2±0.08), TS 3.6–4.9 (4.2±0.4), PCL 2.5–3.5 (3.0±0.05) in diameter, NC 4–5, R 3

Specimens in Collection: HWML (No. 75040–75041)

GenBank: 18S (No. KM001684–KM001688)

Reference: Whipps *et al.* (2015)

***Myxidium striatum* Cunha & Fonseca, 1917**

Host: *Menticirrhus americanus* (Linnaeus, 1758) (Perciformes: Sciaenidae)–MAR

Site: Gallbladder

Locality: TSA, Ilha Grande, Rio de Janeiro, Brazil

Plasmodia: FC spherical

Spore measurements: SL 10–14, SW 6–8, PCL 4

Note: 30µm length of polar filament

Reference: Cunha & Fonseca (1917)

***Myxidium umbri* Guilford, 1965**

Host: *Umbra limi* (Kirtland, 1840) (Esociformes: Umbridae)–FW

Site: Renal tubules

Locality: Lake Michigan, Green Bay, Wisconsin,

USA

Plasmodia: 22 µm in diameter; FC spherical to ovoid

Spore measurements: SL 12–14.4, SW 2.4–4.8,

PCL 3–4.8, **PCW** 2.4, **PC** =

Reference: Guilford (1965a)

***Myxidium volitans* Azevedo, Casal, São Clemente, Carmona, Lopes, Matos, Abdel-Baki, Oliveira & Matos, 2011**

Host: *Dactylopterus volitans* (Linnaeus, 1758) (Scorpaeniformes: Dactylopteridae) – **MAR**

Site: Gallbladder

Locality: TSA (22°58'S, 43°00'W), Niterói, Rio de Janeiro, Brazil

Spore measurements: SL 21.3–22.0 (21.7±0.3),

SW 5.2–5.9 (5.6±0.4), **PCL** 4.6–5.5 (5.0±0.4),

PCW 2.0–2.5 (2.3±0.3), **PC** =, **NC** 2–3 (rarely 4)

Specimens in Collection: INPA (No. 004/11)

Note: The PC wall measured 0.20–0.29 µm (n = 30) thick

Reference: Azevedo *et al.* (2011)

Genus *Zschokkella* Auerbach, 1910

***Zschokkella embiotociddis* Moser & Haldorson, 1976**

Host: *Rhacochilus vacca* (Girard, 1855) (Perciformes: Embiotocidae) – **MAR**

Site: Gallbladder

Locality: CTNP, Diablo Cove, California, USA

Plasmodia: 20–26 µm; FC spherical to elliptical

Spore measurements: SL 15 (13–17), SW 10.7

(9.5–13), **TS** 9.9 (9–11), **PCL** 4.3 (3.5–5), **PCW**

3.5 (3–4), **NC** 6–8

Specimens in Collection: USNPC (No. 24445)

Reference: Moser & Haldorson (1976)

***Zschokkella flexosaturalis* Evdokimova, 1977**

Host: *Paralichthys patagonicus* Jordan, 1889 (Pleuronectiformes: Paralichthyidae) – **MAR**

Site: Urinary bladder

Locality: M, Patagonian, Argentina

Plasmodia: 27–32 µm; FC elongated

Spore measurements: SL 12–15, SW 6.4–8, **TS**

7.7–9.8, **PCL** 3.2–4 in diameter

Specimens in Collection: ZISP (accession number not provided)

Reference: Evdokimova (1977)

***Zschokkella globulosa* Davis, 1917**

Host: *Sphoeroides maculatus* (Bloch & Schneider,

1801) (Tetraodontiformes: Tetraodontidae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, USA

Plasmodia: 15–16 in diameter; FC round

Spore measurements: SL 11, SW 17, **PCL** 3 in diameter

Reference: Davis (1917)

***Zschokkella kudoii* Moser & Noble, 1977**

Host: *Macrourus berglax* Lacepède, 1801 (Gadiformes: Macrouridae) – **MAR**

Site: Kidney

Locality: WTNA, Newfoundland, Canada

Spore measurements: SL 7–11 (9.1±1.3), SW 12–17 (15±2.4), **PCL** 3–5.5 (4.1±0.3) in diameter

Specimens in Collection: USNPC (No. 24443)

Reference: Moser & Noble (1977b)

***Zschokkella meglitschi* Moser & Noble, 1977**

Host: *Coelorinchus chilensis* Gilbert & Thompson, 1916 (Gadiformes: Macrouridae) – **MAR**

Site: Urinary bladder

Locality: Atlantic South, Chile

Plasmodia: 16.5–65 length x 7–25 width µm; FC spherical

Spore measurements: SL 7–13.5 (9.4±2.8), SW

14–20 (16.3±3.2), **TS** 9.8–11 (10.1±1.4), **NC** 6–8

Specimens in Collection: USNPC (No. 24442)

Note: Also found in *Coelorinchus gladius* Gilbert & Cramer, urinary bladder, MAR, Hawaii, USA;

Coryphaenoides armatus (Hector), urinary bladder

and kidney, MAR, Oregon, USA; *C. filifer*

(Gilbert), urinary bladder, MAR, Oregon, USA; *C.*

longifilis Günther, urinary bladder, MAR, Behring

Sea; *Albatrossia pectoralis* (Gilbert), urinary

bladder, MAR, California, USA; *Nezumia*

propinquus (Gilbert & Cramer), gallbladder,

MAR, Hawaii, USA; *Nezumia stelgidolepis*

(Gilbert), urinary bladder, MAR, California, USA

Reference: Moser & Noble (1977b)

Family Myxobolidae Shulman, 1953

Genus *Acauda* Whipps, 2011

***Acauda elongata* Whipps, 2011**

[Syns. *Mitraspora elongata* Kudo 1919,

Hoferellus elongata Lom 1986]

Host: *Lepomis cyanellus* Rafinesque, 1819

(Perciformes: Centrarchidae) – **FW**

Site: Kidney

Locality: Crystal Lake, Urbana County, Illinois, USA

Plasmodia: 2 µm in diameter; FC round

Spore measurements: SL 15–17, SW 5–6, TS 4.5–5.5, PCL 7.5, PCW 2, PC =, NC 7–8

Reference: Whipps (2011)

***Acauda hoffmani* Whipps, 2011**

Host: *Lepomis macrochirus* Rafinesque, 1819 (Perciformes: Centrarchidae) – FW

Site: Kidney

Locality: Cazenovia Lake (42°55.49'N, 75°52.17'W), Madison County, New York, USA

Plasmodia: 250 length–500 width µm; FC round

Spore measurements: SL 17.9–21.8 (19.7±0.12), SW 6.9–11.0 (8.5±0.13), PCL 9.4–12.5 (11.1±0.08), PCW 2.9–4.0 (3.4±0.04), PC =, NC 10–15, R 11–12

Specimens in Collection: HWML (No. 49552 & 66691)

GenBank: 18S (No. Hq913566)

Reference: Whipps (2011)

Genus *Myxobilatus* Parisi, 1912

***Myxobilatus asymmetricus* Davis 1944**

Host: *Sander vitreus* (Mitchill, 1818) (Perciformes: Percidae) – FW

Site: Urinary bladder

Locality: Mississippi River, Fairport, Iowa, USA

Spore measurements: SW 10, AL 22, TL 67, PCL 4 in diameter, PC ≠

Note: The shorter polar capsule had 7.51 µm length and the longest 10.51 µm length

Reference: Davis (1944)

***Myxobilatus caudalis* Davis 1944**

Host: *Aplodinotus grunniens* Rafinesque, 1819 (Perciformes: Sciaenidae) – FW

Site: Urinary bladder

Locality: Mississippi River, Fairport, Iowa, USA

Plasmodia: 130 length x 21 width µm; FC elongated

Spore measurements: SW 7, TS 6, AL 15, TL 85–90, PCL 3, PCW 4.5

Reference: Davis (1944)

***Myxobilatus cotti*, Guilford, 1965**

Host: *Cottus cognatus* Richardson, 1836 (Scorpaeniformes: Cottidae) – FW

Site: Urinary bladder

Locality: Plover River, Green Bay, Wisconsin, USA

Plasmodia: FC irregular

Spore measurements: SL 12.9 (9.8–14.4), SW 6.21 (4.8–7.2), TS 6.1 (6.0–7.2), AL 46.0 (10.8–84.0), TL 58.9 (30.0–98.4), PCL 5.6 (4.8–6.0), PCW 2.5, PC =, NC 3–4, R 6–8

Reference: Guilford (1965a)

***Myxobilatus mictosporus* Davis, 1944**

[Syn. *Henneguya mictosporus*, Kudo, 1920]

Host: *Micropterus salmoides* (Lacepède, 1802) (Perciformes: Centrarchidae) – FW

Site: Urinary bladder

Locality: Mississippi River, Fairport, Iowa, USA

Plasmodia: FC round to irregular

Spore measurements: SL 7–8, TS 6–7, AL 15, TL 55–60, PCL 3, PCW 5, R 8

Reference: Davis (1944)

***Myxobilatus minutus* Evdokimova, 1977**

Host: *Paralichthys patagonicus* Jordan, 1889 (Pleuronectiformes: Paralichthyidae) – MAR

Site: Gallbladder

Locality: M, Patagonian, Argentina

Plasmodia: 24–29 length x 4–7.2 width µm; FC elongated

Spore measurements: SL 7–8, TS 3.8–4.8, AL 11.8–12.8, PCL 3–3.2, PCW 1.6

Specimens in Collection: ZISP (No. 1433)

Reference: Evdokimova (1977)

***Myxobilatus noturi* Guilford, 1965**

Host: *Noturus gyrinus* (Mitchill, 1817) (Siluriformes: Ictaluridae) – FW

Site: Urinary bladder

Locality: Lake Michigan, Green Bay, Wisconsin, USA

Plasmodia: FC irregular

Spore measurements: SL 8.9 (7.2–10.8), SW 6.6 (6–7.2), TS 6.3 (6–7.2), AL 10.3 (7.2–13.2), TL 19.2 (18.6–28.0), PCL 4.8 (4.2–5.4), PCW 2.5, PC =, NC 4–6, R 8

Reference: Guilford (1965a)

***Myxobilatus ohioensis* Davis, 1944**

[Syn. *Henneguya ohioensis* Herrick, 1941]

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW

Site: Urinary bladder

Locality: Lake Erie, Put-in-Bay, Ohio, USA

Spore measurements: SL 11.2–13.6, SW 4.8–6.4, TS 4.8–6.4, AL 23.2–46.4, TL 35.2–59.2, PCL 4.8, PC =
Note: 20–27 µm length of the polar filament
Reference: Davis (1944)

***Myxobilatus rupestris* Davis 1944**

[Syn. *Henneguya rupestris* Herrick, 1941]

Host: *Pomoxis annularis* Rafinesque, 1818 (Perciformes; Centrarchidae) – FW

Site: Urinary bladder

Locality: Mississippi River, Fairport, Iowa, USA

Plasmodia: FC elongated

Spore measurements: SL 11, SW 8, TS 6, TL 65–70, PCL 3, PCW 5, R 6–8

Note: Also found in *P. annularis* from Erwin, Tennessee and Coolidge Lake, Arizona; *P. annularis* and *P. sparoides* (Lesueur) in hatchery ponds at Kearneysville, West Virginia. **Reference:** Davis (1944)

***Myxobilatus semotilii* Li & Desser, 1985**

Host: *Semotilus atromaculatus* Mitchell, 1818 (Cypriniformes: Cyprinidae) – FW

Site: Kidney

Locality: Lake Opeongo, Ontario, Canada

Spore measurements: SL 9.0 (7.5–10), SW 5.0 (4.5–6.0), TS 6.0–6.5, TL 16.5 (12.5–19.0), PCL 2.5 (2–3), PCW 1.5 (1–2), PC =, NC 4–5, R 6

Specimens in Collection: CMN (No. 1984-0366)

Reference: Li & Desser (1985)

***Myxobilatus yukonensis* Arthur & Margolis, 1975**

Host: *Cottus cognatus* Richardson, 1836 (Scorpaeniformes: Cottidae) – FW

Site: Kidney

Locality: Aishihik Lake, Yukon Territory, Canada

Plasmodia: 50–70 length x 36–54 width µm; FC round to irregular

Spore measurements: SL 16.7–36.2 (26.2±4.5), SW 9.5–14.3 (12.3±1.4), TS 5.3–6.9 (5.9±0.6), AL 5.6–22.9 (14.3±3.9), PCL 5.6–7.2 (6.5±0.5), PCW 4.9–7 (5.9±0.6), PC =, NC 4–5, R 5–7

Specimens in Collection: CMN (No. 1975 – 193/39 – 40)

Reference: Arthur & Margolis (1975)

Family Parvicapsulidae Shulman, 1953

Genus *Parvicapsula* Shulman, 1953

***Parvicapsula kabatai* Jones, Proserpi-Porta & Dawe, 2006**

Host: *Oncorhynchus gorbuscha* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW

Site: Kidney

Locality: Quinsam River (50°01'N, 125°18'W), British Columbia, Canada

Spore measurements: SL 8.7±1.2 (6.8–11.1), TS 6.0±0.7 (4.9–8.0), TL 12.3±0.9 (10.7–14.0) PCL 1.8±0.2 (1.2–2.2)

Specimens in Collection: CMNPA (No. 2006-0004/0005)

GenBank: 18S (No. Dq515821)

Reference: Jones *et al.* (2006)

***Parvicapsula minibicornis* Kent, Whitaker & Dawe, 1997**

Host: *Oncorhynchus nerka* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW

Site: Kidney

Locality: Weaver Creek, British Columbia, Canada

Spore measurements: SL 11.0 (9.7–12.6), SW 7.5 (5.5–8), TS 6.8 (6.5–7), PCL 2.5, PCW 1.3, PC = NC 3–4

Specimens in Collection: CMNPA (No. 1997–0063)

Reference: Kent *et al.* (1997)

***Parvicapsula renalis* Landsberg, 1993**

Host: *Sciaenops ocellatus* (Linnaeus, 1766) (Perciformes: Sciaenidae) – MAR

Site: Kidney

Locality: WTNA, Murray Creek (29°08'N, 80°53'W), Volusia County, Florida, USA

Spore measurements: SL 9.5, SW 4.0–5.0, PCL 3.0, PCW 2.0, NC 5–8

Specimens in Collection: USNPC (No. 82820)

Reference: Landsberg (1993b)

***Parvicapsula schulmani* Kovaleva & Gaevskaya, 1981**

Host: *Beryx splendens* Lowe, 1834 (Beryciformes: Berycidae) – MAR

Site: Gallbladder

Locality: Mid-Atlantic Ridge (35°02'N, 49°00'W)

Plasmodia: FC elongate

Spore measurements: SL 10.6–14.9, SW 4.2–5.3, PCL 1.3–1.5 in diameter PC NC

Specimens in Collection: ZISP (No. 393–397)

Reference: Kovaleva & Gaevskaya (1981)

Family Ortholineidae Lom & Noble, 1984

Genus *Triangulamyxa* Azevedo, Corral & Matos, 2005.

Triangulamyxa amazonica Azevedo, Corral & Matos, 2005

Host: *Sphaeroides testudineus* (Linnaeus, 1758) (Tetraodontiformes: Tetraodontidae) – FW

Site: Intestine

Locality: Amazon River (00°35'38"S, 47°35'00"W), Algodual, Pará, Brazil

Spore measurements: SL 8.5, SW 7.6, TS 3.8, PCL 2.5–2.8 in diameter, PC =, NC 5–6

Specimens in Collection: USNPC (No. 1027394)

Reference: Lom & Dyková (2006)

Family Sinuolineidae Shulman, 1959

Genus *Bipteria* Kovaleva, Zubchenko & Krasin, 1983

Bipteria nototheniae Kovaleva & Rodjuk, 1991

Host: *Patagonotothen ramsayi* (Regan, 1913) (Perciformes: Nototheniidae) – MAR

Site: Kidney

Locality: M, Falkland-Patagonia region, Falkland Island

Spore measurements: SL 10.7–12, SW 10.7–14.7, PCL 4.2–4.6 in diameter, NC 8

Reference: Kovaleva & Rodjuk (1991)

Genus *Myxodavisia* Zhao, Zhou, Kent & Whipps, 2008

Myxodavisia anoplopoma Zhao, Zhou, Kent & Whipps, 2008

[Syn. *Davisia anoplopoma*, Moser & Noble, 1975]

Host: *Anoplopoma fimbria* (Pallas, 1814) (Scorpaeniformes: Anoplopomatidae) – MAR

Site: Urinary bladder, kidney tubules

Locality: CTNP, California, USA

Spore measurements: SL 12.75 (12–14), SW 15.2 (13–17), PCL 4.95 (4–6) in diameter, CAL 34.7 (30–38), AW 4.38 (3–5.5), NC 5–7

Specimens in Collection: USNPC (No. 24408)

Reference: Zhao *et al.* (2008)

Myxodavisia bidens Zhao, Zhou, Kent & Whipps, 2008

[Syn. *Sinuolinea bidens* Jameson, 1931]

Host: *Porichthys notatus* Girard, 1854 (Batrachoidiformes: Batrachoididae) – MAR

Site: Urinary bladder

Locality: CTNP, Monterey Bay, California, USA

Plasmodia: FC irregular to oval

Spore measurements: SL 6.5–9, TS 8–11.5, CAL 6–10

Reference: Zhao *et al.* (2008)

Myxodavisia brachiophora Zhao, Zhou, Kent & Whipps, 2008

[Syns. *Sinuolinea brachiophora* Davis, 1917, *Davisia brachiophora* Laird, 1953]

Host: *Paralichthys albigutta* Jordan & Gilbert, 1882 (Pleuronectiformes: Paralichthyidae) – MAR

Site: Urinary bladder

Locality: WTNP, Beaufort, North Carolina, USA

Plasmodia: FC round to irregular

Spore measurements: SL 9–11, SW 9, PCL 3.5 in diameter

Reference: Zhao *et al.* (2008)

Myxodavisia cella Zhao, Zhou, Kent & Whipps, 2008

[Syn.: *Sinuolinea cella* Jameson, 1931]

Host: *Porichthys notatus* Girard, 1854 (Batrachoidiformes: Batrachoididae) – MAR

Site: Urinary bladder

Locality: CTNP, Monterey Bay, California, USA

Spore measurements: SL 8–10, TS 9–13, CAL 25–35

Reference: Zhao *et al.* (2008)

Myxodavisia coryphaenoidia Zhao, Zhou, Kent & Whipps, 2008

[Syn. *Davisia coryphaenoidia* Yoshino & Noble, 1973a]

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – MAR

Site: Urinary bladder

Locality: CTNP, San Diego, California USA

Spore measurements: SL 18.5 (17–23), SW 11.3 (9–14), PCL 3.7 (3–5) in diameter, CAL 4.8 (3–6) PC =, NC 7–8

Reference: Zhao *et al.* (2008)

Myxodavisia galeiforme Zhao, Zhou, Kent & Whipps, 2008

[Syn. *Davisia galeiforme* Kovaleva & Rodjuk, 1991]

Host: *Lycodapus australis* Norman, 1937 (Perciformes: Zoarcidae) – MAR

Site: Urinary bladder
Locality: M, Falkland Island
Spore measurements: SL 12–17.3, SW 5.3–8, PCL 5.3–6 in diameter, NC 7
Reference: Zhao *et al.* (2008)

***Myxodavisia newfoundlandia* Zhao, Zhou, Kent & Whipps, 2008**

[Syn. *Davisia newfoundlandia* Yoshino & Noble, 1973b]

Host: *Macrourus berglax* Lacepède, 1801 (Gadiformes: Macrouridae) – MAR

Site: Kidney

Locality: CTNP, eastern Newfoundland, Quebec, Canada

Plasmodia: 12.71 (10–15) length x 19 (15–26) width µm; FC irregular

Spore measurements: SL 11.63 (10.0–14.0), SW 9.65 (7.5–11.0), PCL 3.06 (2.0–4.0) in diameter, CAL 6.58 (4.5–9.0), PC =, NC 8

Note: Yoshino & Noble (1973b) described the species *M. newfoundlandia* from Newfoundland, Canada and seven years later Gayevskaya *et al.* (1980) described the same species in *Macrourus holotrachys* Günther from Falkland Islands. Both parasites found in fish hosts of same genus. However, given the morphological differences and potential for geographic isolation, these are likely different species (Zhao *et al.*, 2008)

Reference: Zhao *et al.* (2008)

***Myxodavisia opacita* Zhao, Zhou, Kent & Whipps, 2008**

[Syns. *Sinuolinea opacita* Davis 1917, *Davisia opacita* Laird, 1953]

Host: *Paralichthys albigutta* Jordan & Gilbert, 1882 (Pleuronectiformes: Paralichthyidae) – MAR

Site: Urinary bladder

Locality: WTNP, Beaufort, North Carolina, USA

Plasmodia: 22 µm in diameter; FC round to irregular

Spore measurements: SL 12–13 in diameter, SW 4 in diameter

Reference: Zhao *et al.* (2008)

***Myxodavisia pectoralis* Zhao, Zhou, Kent & Whipps, 2008**

[Syn. *Davisia pectoralis* Moser & Noble, 1975]

Host: *Albatrossia pectoralis* (Gilbert, 1892) (Gadiformes: Macrouridae) – MAR

Site: Urinary bladder, kidney tubules

Locality: CTNP, California, USA

Spore measurements: SL 13 (10–17), SW 13.05 (11–17), TS 9.5 (9–10), PCL 5.0 (3.5–7) in diameter, CAL 12.2 (9–17), AW 5.5 (3–7), NC 8–14

Specimens in Collection: USNPC (No. 24407)

Reference: Zhao *et al.* (2008)

***Myxodavisia reginae* Zhao, Zhou, Kent & Whipps, 2008**

[Syn. *Davisia reginae* Love & Moser, 1976]

Host: *Sebastes serranoides* (Eigenmann & Eigenmann, 1890) (Scorpaeniformes: Sebastidae) – MAR

Site: Urinary bladder

Locality: CTNP, California, USA

Spore measurements: SL 12.8 (11–15) SW 14.8 (12–20), TS 11.5, PCL 3.5 (2.5–4.5) in diameter, CAL 40.5 (28–85), AW 4.4 (3–6), NC 6–9

Specimens in Collection: USNPC (No. 24444)

Reference: Zhao *et al.* (2008)

***Myxodavisia spinosa* Zhao, Zhou, Kent & Whipps, 2008**

[Syns. *Ceratomyxa spinosa* Davis, 1917, *Sinuolinea spinosa* Jameson, 1931]

Host: *Paralichthys albigutta* Jordan & Gilbert, 1882 (Pleuronectiformes: Paralichthyidae) – MAR

Site: Urinary bladder

Locality: WTNP, Beaufort, North Carolina, USA

Plasmodia: FC rounded or slightly irregular in shape

Spore measurements: SL 7, SW 80, PCL 4 in diameter

Reference: Zhao *et al.* (2008)

Genus *Myxoproteus* Doflein, 1898

***Myxoproteus abyssus* Yoshino & Moser, 1974**

Host: *Coryphaenoides armatus* (Hector, 1875) (Gadiformes: Macrouridae) – MAR

Site: Urinary bladder and ducts

Locality: CTNP, Farallon Islands, California, USA

Plasmodia: 20–25 µm in diameter; FC oval

Spore measurements: SL 11.1 (9–12.5), SW 10.7 (9–12), PCL 3.4 (3–4) in diameter, NC 7–9

Specimens in Collection: USNPC (No. 24368–24369)

Reference: Yoshino & Moser (1974)

***Myxoproteus biliaris* Evdokimova, 1977**

Host: *Paralichthys patagonicus* Jordan, 1889

(Pleuronectiformes: Paralichthyidae) – **MAR**

Site: Gallbladder

Locality: M, Patagonian, Argentina

Plasmodia: 35–48.7 length x 28–29 width μm ; **FC** round

Spore measurements: **SL** 9.6–10, **SW** 6.4, **TS** 7.5–8, **PCL** 2.5–3.2 in diameter

Specimens in Collection: ZISP (No. 1427)

Reference: Evdokimova (1977)

***Myxoproteus californicus* Yoshino & Moser, 1973**

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – **MAR**

Site: Urinary bladder and ducts

Locality: CTNP, San Diego, California, USA

Spore measurements: **SL** 14.6 (12–17), **SW** 9.6 (8–11), **TS** 7.7 (6–10), **PCL** 2.7 (1–3) in diameter, **PC** =, **NC** 5–7

Reference: Yoshino and Moser (1973a)

***Myxoproteus cordiformis* Davis 1917**

Host: *Chaetodipterus faber* (Broussonet, 1782) (Perciformes: Ehippidae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 18 μm in diameter; **FC** round

Spore measurements: **SL** 12, **SW** 10–11, **TS** 6, **PCL** 3–4 in diameter

Reference: Davis (1917)

***Myxoproteus cornutus* Davis, 1917**

Host: *Bairdiella chrysoura* (Lacepède, 1802) (Perciformes: Sciaenidae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 27 μm in diameter; **FC** elongated or irregular

Spore measurements: **SL** 12, **SW** 9, **PCL** 5, **PCW** 3

Reference: Davis (1917)

***Myxoproteus hubbsi* Moser & Noble, 1977**

Host: *Coelorinchus carminatus* (Risso, 1810) (Gadiformes: Macrouridae) – **MAR**

Site: Gallbladder

Locality: TNA, Surinam

Plasmodia: 18 length x 6 width μm ; **FC** oval to ellipsoid

Spore measurements: **SL** 5.8 (5.0–7.0), **SW** 5.2 (4.2–7.5), **TS** 3.9 (3.5–4.5), **PCL** 1.4 (1.0–2.0) in diameter, **NC** 4–5

Specimens in Collection: USNPC (No. 24438)

Reference: Moser & Noble (1977c)

***Myxoproteus innae* Evdokimova, 1977**

Host: *Odontesthes incisa* (Jenyns, 1841) (Atheriniformes: Atherinopsidae) – **MAR**

Site: Gallbladder

Locality: M, Patagonian, Argentina

Plasmodia: 77 length x 22.4 width μm

Spore measurements: **SL** 10.4, **SW** 9.6, **TS** 8.8–9.6, **PCL** 3.2 in diameter

Specimens in Collection: ZISP (No. 1428)

Reference: Evdokimova (1977)

***Myxoproteus meridionalis* Evdokimova, 1977**

Host: *Merluccius hubbsi* Marini, 1933 (Gadiformes: Merlucciidae) – **MAR**

Site: Urinary bladder

Locality: M, Patagonian, Argentina

Plasmodia: 16.8 length x 14.7 width μm ; **FC** round

Spore measurements: **SL** 11.2–12.8, **TS** 7.7–9.1, **PCL** 2.8 in diameter

Specimens in Collection: ZISP (No. 1429)

Reference: Evdokimova (1977)

***Myxoproteus moseri* Kovaleva & Gaevskaya, 1982**

Host: *Salilota australis* (Günther, 1878) (Gadiformes: Moridae) – **MAR**

Site: Gallbladder

Locality: WTSA, country not specified

Plasmodia: 26–34.6 length x 20–58 width μm ; **FC** round to oval

Spore measurements: **SL** 9.5–13.3, **SW** 9–11.9, **PCL** 2.6–3.3, **PCW** 2.2–2.7

Specimens in Collection: ZISP (No. 424 – L45/2, 431 – L13/2 and 432 – L13/2)

Reference: Kovaleva & Gaevskaya (1982)

***Myxoproteus rosenblatti* Moser & Noble, 1977**

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – **MAR**

Site: Gallbladder

Locality: CTNA, Oregon, USA

Plasmodia: 35 length x 15 width μm ; **FC** elongate to circular

Spore measurements: **SL** 17.0 (15.0–22.0), **SW** 10.5 (9.0–13.5), **TS** 9.5 (8.5–11), **PCL** 4.2 (3.5–6.0) in diameter, **NC** 5–8

Specimens in Collection: USNPC (No. 24437)

Note: Also found in *Coryphaenoides ariommus* Gilbert & Thompson (Chile), *Coryphaenoides*

armatus (Hector) (Costa Rica), *Coryphaenoides filifer* (Gilbert) (Canada)

Reference: Moser & Noble (1977c)

Genus *Neobipteria* Kovaleva, Zubchenko & Krasin, 1986

***Neobipteria macrouri* Kovaleva, Gaevskaya & Krasin, 1986**

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – **MAR**

Site: Urinary bladder

Locality: A, Bering Sea, Alaska, USA

Spore measurements: SL 13.3–14.4, SW 14.6–17.3, TS 13.3–14.4, PCL 6–6.5 in diameter, NC 7–8

Reference: Kovaleva *et al.* (1986)

Genus *Noblea* Kovaleva, 1989

***Noblea admiranda* Kovaleva, 1989**

Host: *Urophycis chuss* (Walbaum, 1792) (Gadiformes: Phycidae) – **MAR**

Site: Urinary bladder

Locality: CTNA, Sable Island (43°15'N, 61°19'W), Canada

Plasmodia: 20–35 length x 18–32 width μm ; FC round to oval

Spore measurements: SL 16–18.6, SW 12–14.6, PCL 3.4–4.0 in diameter, NC 6–7

Specimens in Collection: zisp (No. 741)

Reference: Kovaleva (1989)

Genus *Schulmania* Kovaleva, Zubitchenko & Krasin, 1983

***Schulmania aenigmatica* Kovaleva, Zubitchenko & Krasin, 1983**

Host: *Hippoglossoides platessoides* (Fabricius, 1780) (Pleuronectiformes: Pleuronectidae) – **MAR**

Site: Urinary bladder

Locality: CTNA, Labrador, Newfoundland, Canada

Plasmodia: 31.9–55.9 length x 26.6–42.0 width μm ; FC round

Spore measurements: SL 19.95–23.1, SW 11.97–13.3, PCL 5.98–6.65 in diameter, AL 11.97–15.96, NC 6

Reference: Kovaleva *et al.* (1983)

***Schulmania ovale* Kovaleva, Zubitchenko &**

Krasin, 1983

Host: *Lycodes esmarkii* Collet, 1875 (Perciformes: Zoarcidae) – **MAR**

Site: Urinary bladder

Locality: CTNA, Newfoundland, Canada

Plasmodia: 29.26–39.9 length x 6.65–13.3 width μm ; FC relatively large

Spore measurements: SL 18–19.9, SW 13.3–14.63, PCL 5.32–5.98 in diameter, NC 7–8

Reference: Kovaleva *et al.* (1983)

***Schulmania quadrilobata* Kovaleva, Zubitchenko & Krasin, 1983**

Host: *Reinhardtius hippoglossoides* (Walbaum, 1792) (Pleuronectiformes: Pleuronectidae) – **MAR**

Site: Urinary bladder

Locality: CTNA, Grand Banks, Newfoundland, Canada

Plasmodia: 13.3 length x 19.95 width μm ; FC round

Spore measurements: SL 21.28–24.42, SW 10.9–13.3, TS 5.35, PCL 4.3–5.9 in diameter, AL 5.32–6.65, NC 6

Reference: Kovaleva *et al.* (1983)

Genus *Sinuolinea* Davis, 1917

***Sinuolinea arborescens* Davis, 1917**

Host: *Syngnathus floridae* (Jordan & Gilbert, 1882) (Syngnathiformes: Syngnathidae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 75 μm in diameter; FC round to irregular

Spore measurements: SL 15, SW 12, PCL 5 in diameter

Reference: Davis (1917)

***Sinuolinea capsularis* Davis, 1917**

Host: *Paralichthys albigutta* Jordan & Gilbert, 1882 (Pleuronectiformes: Paralichthyidae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 40 μm in diameter; FC round to irregular

Spore measurements: SL 12–14 in diameter, P C L 4 – 5 in diameter

Note: Also found in the urinary bladder of *Paralichthys dentatus* (Linnaeus, 1766) and *Spherooides maculatus* (Bloch & Schneider, 1801); 50 μm length of polar filament

Reference: Davis (1917)

***Sinuolinea contrariocapsularis* Evdokimova, 1977**

Host: *Paralichthys patagonicus* Jordan, 1889 (Pleuronectiformes: Paralichthyidae) – **MAR**

Site: Gallbladder

Locality: M, Patagonian, Argentina

Spore measurements: **SL** 9.6–11.2, **SW** 8–9.6, **TS** 8–9.6, **PCL** 3.2 in diameter

Specimens in Collection: ZISP (No. 1426)

Reference: Evdokimova (1977)

***Sinuolinea dimorpha* Davis, 1917**

[**Syn. *Sphaerospora dimorpha* Davis, 1916**]

Host: *Cynoscion regalis* (Bloch & Schneider, 1801) (Perciformes: Sciaenidae) – **MAR**

Site: Urinary bladder and ureters

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 575 length x 90 width μm ; **FC** irregular

Spore measurements: **SL** 15 in diameter, **SW** 4–5 in diameter

Note: 27–35 μm length of polar filament

Reference: Davis (1917)

***Sinuolinea magna* Yoshino & Noble, 1973**

Host: *Coryphaenoides acrolepis* (Bean, 1884) (Gadiformes: Macrouridae) – **MAR**

Site: Urinary bladder

Locality: CTNP, San Diego, California, USA

Spore measurements: **SL** 21.2 (19–30) in diameter, **PCL** 6.1 (5–7.5) in diameter, **NC** 7–8

Reference: Yoshino & Noble (1973a)

***Sinuolinea niloticus* Rodrigues, Francisco, Biondi & Júnior, 2016**

Host: *Oreochromis niloticus* (Linnaeus, 1758) (Perciformes: Cichlidae) – **FW**

Site: Intestine, heart, kidney, liver, muscles, spleen and stomach

Locality: fish farm (19°55'47.52"S, 50°08'36.56"W), Mira Estrela and Capivari River (22°43'43"S, 48°22'29"W), Botucatu, São Paulo, Brazil

Spore measurements: **SL** 12.1 \pm 1.6 (9.1–14.3) in diameter, **PCL** 5.9 \pm 0.8 (4.1–8.1) in diameter

GenBank: 18S (No. Kr119066)

Reference: Rodrigues *et al.* (2016)

Family Sphaeromyxidae Lom & Noble, 1984

Genus *Sphaeromyxa* Thélohan, 1892

***Sphaeromyxa argentinensis* Timi & Sardella 1998**

Host: *Engraulis anchoita* Hubbs & Marini, 1935 (Clupeiformes: Engraulidae) – **MAR**

Site: Gallbladder

Locality: South West Atlantic, Argentina

Plasmodia: 1.9–4.4 length x 2.0–4.7 width mm; **FC** arcuate and fusiform, bluntly rounded ends

Spore measurements: **SL** 24.9 (23.25–27.5), **SW** 4.78 (4.5–5.28), **ST** 4.95 (4.5–5.25), **PCL** 7.25 (6–9), **PCW** 3.32 (2.55–4.5), **PC** =, **NC** 5

Specimens in Collection: LPNSM (No. 002/1; 002/2)

Reference: Timi & Sardella (1998)

***Sphaeromyxa bonaerensis* Timi & Sardella 1998**

Host: *Anchoa marinii* Hildebrand, 1943 (Clupeiformes: Engraulidae) – **MAR**

Site: Gallbladder

Locality: M, Mar del Plata Port (38°08'S, 57°32'W), Mar del Plata, Buenos Aires, Argentina

Plasmodia: 1.1–1.5 mm in diameter; **FC** slightly curved, truncate ends

Spore measurements: **SL** 17.33 (16.5–18.75), **SW** 4.45 (3.75–4.8), **ST** 4.16 (3.45–4.5), **PCL** 4.08 (3–4.5), **PCW** 2.81 (1.95–3.3), **PC** =, **NC** 5

Specimens in Collection: LPNSM (No. 003/1; 003/2)

Reference: Timi & Sardella (1998)

***Sphaeromyxa cannolii* Sears, Anderson & Greiner 2011**

Host: *Hippocampus erectus* Perry, 1810 (Syngnathiformes: Syngnathidae) – **MAR**

Site: Ducts

Locality: WTNA, Gulf of Mexico (29°5'31" N, 82°51'51"W; 28°6' 29"N, 82°52'51"W), Citrus County and Pasco County, Florida, USA

Plasmodia: 0.5–1 mm in diameter; **FC** straight, truncate ends

Spore measurements: **SL** 17.6 (16.6–20), **SW** 5.7 (5.0–7.1), **PCL** 4.8 (4.2–5.4), **PCW** 3.0 (2.4–3.3), **PC** \neq

Specimens in Collection: USNPC (No. 102986)

Reference: Sears *et al.* (2011)

***Sphaeromyxa gibbonsia* Noble 1939**

Host: *Gibbonsia elegans* (Cooper, 1864) (Perciformes: Clinidae) – **MAR**

Site: Gallbladder

Locality: CTNP, Santa Barbara, California, USA

Plasmodia: 2 mm in diameter; **FC** arcuate,

rounded ends

Spore measurements: SL 27, SW 5.2, PCL 10, PCW 4

Notes: 20 µm length of polar filament

Reference: Noble (1939)

***Sphaeromyxa intermediata* Moser & Noble 1977**

Host: *Malacocephalus occidentalis* Goode & Bean, 1885 (Gadiformes: Macrouridae)–MAR

Site: Gallbladder

Locality: TNA, Caribbean Sea, Columbia, USA

Spore measurements: SL 19.8 (17.5–24.0), SW 4.8 (3.5–7.5), PCL 7.5 (5.5–9.5), PCW 4.4 (3.5–6.5), NC 5–9, R 6–10

Specimens in Collection: USNPC (No. 24440)

Reference: Moser & Noble (1977a)

***Sphaeromyxa kenti* Whipps & Font 2013**

Host: *Gobiosoma bosc* (Lacepède, 1800) (Perciformes: Gobiidae)–FW

Site: Gallbladder

Locality: Lake Pontchartrain (30°16,083'N, 89°57.365'W), Louisiana, USA

Plasmodia: 1.4 mm in diameter; FC arcuate, rounded ends

Spore measurements: SL 18.5 (17.5–19.8), SW 4.4 (3.8–5.2), PCL 7.9 (6.9–8.6), PCW 2.3 (2.0–2.6), PC ≠, NC 2–3

Specimens in Collection: HWML (accession numbers not provided)

GenBank: 18S (No. Jx443489)

Note: The smaller polar capsule was 7.0 (5.8–7.5 ± 0.06) length x 2.3 (2.0–2.6 ± 0.02) width

Reference: Whipps & Font (2013)

***Sphaeromyxa lateralis* Noble 1941**

Host: *Artedius lateralis* (Girard, 1854) (Scorpaeniformes: Cottidae)–MAR

Site: Gallbladder

Locality: CTNP, Santa Barbara, California, USA

Plasmodia: FC slightly curved, rounded ends

Spore measurements: SL 26, SW 8, PCL 8.6, PCW 6.3

Notes: 20 µm length of polar filament

Reference: Noble (1941)

***Sphaeromyxa maiyai* Morrison & Pratt 1973**

Host: *Microgadus proximus* (Girard, 1854) (Gadiformes: Gadidae)–MAR

Site: Gallbladder

Locality: CTNP, Newport, Oregon, USA

Plasmodia: 0.5–3.0 mm in diameter; FC arcuate,

rounded to truncate ends

Spore measurements: SL 27.6 (23–30), SW 5.6 (5–7), PCL 9.3 (8–10), PCW 3.7 (3–4)

Specimens in Collection: USNPC (No. 72553)

Notes: 150 µm length of polar filament

Reference: Morrison & Pratt (1973)

***Sphaeromyxa ovula* Noble 1939**

Host: *Gobiesox rhesodon* Smith, 1881 (Gobiesociformes: Gobiesocidae)–MAR

Site: Gallbladder

Locality: CTNP, Santa Barbara, California, USA

Plasmodia: FC oval, rounded ends

Spore measurements: SL 14, SW 4.3, PCL 5, PCW 3,

Reference: Noble (1939)

***Sphaeromyxa schulmani* Kovaleva & Gaevskaya 1982**

Host: *Salilota australis* (Günther, 1878) (Gadiformes: Moridae)–MAR

Site: Gallbladder

Locality: Southwest Atlantic

Plasmodia: 24 length x 12 width mm

Spore measurements: SL 18.6–20, SW 4–5.98, PCL 4.65–5.98, PCW 2.66–3.32, NC 3

Notes: The author not specifies the country

Reference: Kovaleva & Gaevskaya (1982)

Family Sphaerosporidae Davis, 1917

Genus *Sphaerospora* Thélohan, 1892

***Sphaerospora armatura* Gunter & Adlard, 2010 [Syn. *Leptotheca armatura* Yoshino & Moser, 1974]**

Host: *Albatrossia pectoralis* (Gilbert, 1892) (Gadiformes: Macrouridae)–MAR

Site: Urinary bladder and kidney tubules

Locality: CTNP, California and Washington, USA

Spore measurements: SL 12.9 (10–16), SW 20.9 (17–26), PCL 5.7 (4–7) in diameter, NC 8–9

Note: Also found in *Coryphaenoides leptolepis* Günther (Gadiformes: Macrouridae)

Reference: Gunter & Adlard (2010)

***Sphaerospora chagasi* Gunter & Adlard, 2010 [Syn. *Leptotheca chagasi* Nemeček, 1926]**

Host: *Leptopelis ocellatus* (Mocquard, 1902) (Anura: Leptodactylidae)–AMP

Site: Urinary ducts

Locality: Rio de Janeiro, Rio de Janeiro, Brazil

Plasmodia: 150 µm

Spore measurements: SL 10–11, SW 15, PCL 8–8.5, PCW 8–8.5, PC =

Reference: Gunter & Adlard (2010)

***Sphaerospora compressa* Gunter & Adlard, 2010**
[Syn. *Leptotheca compressa* Noble, 1939]

Host: *Rimicola eigenmanni* (Gilbert, 1890)
(Gabiesociformes: Gobiesocidae)–MAR

Site: Urinary bladder

Locality: CTNP, Santa Bárbara, California, USA

Plasmodia: 17 x 22.5 µm

Spore measurements: SL 12.2, SW 10.5, PCL 3.3, PCW 4

Reference: Gunter & Adlard (2010)

***Sphaerospora diminuta* Li & Desser, 1985**

Host: *Lepomis gibbosus* (Linnaeus, 1758)
(Perciformes: Centrarchidae)–FW

Site: Kidney

Locality: Lake Sasajewun (45°35'N, 78°30'W),
Ontario, Canada

Spore measurements: SL 7.5 (5–8.5) in diameter,
PCL 2.5 (2–3) in diameter, PC =, NC 3–4

Specimens in Collection: CMN (No. 1984-0369)

Reference: Li & Desser, 1985

***Sphaerospora elwhaiensis* Jones, Fiala,
Prosperi-Porta, House & Mumford, 2011**

Host: *Oncorhynchus nerka* (Walbaum, 1792)
(Salmoniformes: Salmonidae)–FW

Site: Renal tubules

Locality: Lake Sutherland (48°05'N; 123°43'W),
Washington, USA

Spore measurements: SL 9.3–12.0 (10.3±0.6),
SW 9.9–14.3 (11.2±0.9), PCL 2.4–4.5 (3.3±0.5) in
diameter, PC =, NC 6

Specimens in Collection: CMN (No. 2010-019
and 2010-020, Hapantotype and parahapantotype
slides respectively)

GenBank: 18S (No. HQ450772.1)

Reference: Jones *et al.* (2011)

***Sphaerospora glomerosa* Gunter & Adlard, 2010**
[Syn. *Leptotheca glomerosa*, Davis, 1917]

Host: *Paralichthys albigutta* Jordan & Gilbert,
1882 (Pleuronectiformes: Paralichthyidae)–MAR

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 11 µm; FC round to irregular

Spore measurements: SL 9, SW 4.5, PCL 2 in
diameter

Reference: Gunter & Adlard (2010)

***Sphaerospora hankai* Lom, Desser & Dyková,
1989**

Host: *Ameiurus nebulosus* (Lasueur, 1819)
(Siluriformes: Ictaluridae)–FW

Site: Kidney

Locality: Lake Sasajewun (45°35'N, 78°30'W),
Ontario, Canada

Plasmodia: 11 µm in diameter; FC round

Spore measurements: SL 6.1 (5.4–6.6), SW 6.0
(5.4–6.5), PCL 2.8 (2.5–3.1), PCW 2.7 (2.3–2.9),
PC ≠, NC 4–5

Note: The smaller polar capsules had 2.4 (2.1–2.6)
length x 2.0 (1.9–2.2) width µm.

Reference: Lom *et al.* (1989)

***Sphaerospora ictaluri* Hedrick, McDowell &
Groff, 1990**

Host: *Ictalurus punctatus* (Rafinesque, 1818)
(Siluriformes: Ictaluridae)–FW

Site: Kidney

Locality: small farm, central California, USA

Plasmodia: 20.4±0.4 µm; FC oval to pleomorphic

Spore measurements: SL 5.8±0.7, SW 5.6±0.3,
TS 6.5±0.3, PCL 1.9, PCW 1.7, NC 4–5

Specimens in Collection: VMTH (No. 88B-3670)

Reference: Hedrick *et al.* (1990)

***Sphaerospora lobosa* Gunter & Adlard, 2010**
[Syn. *Leptotheca lobosa* Davis, 1917]

Host: *Paralichthys dentatus* (Linnaeus, 1766)
(Pleuronectiformes: Paralichthyidae)–MAR

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 24 µm; FC spherical

Spore measurements: SL 16–18, SW 9–10, PCL
3 in diameter

Reference: Gunter & Adlard (2010)

***Sphaerospora motemari* Holzer, Pecková,
Patra, Brennan, Yanes-Roca, Main, 2013**

Host: *Lutjanus griseus* (Linnaeus, 1758)
(Perciformes: Lutjanidae)–BW

Site: Capillaries of the glomerular tuft of the renal
corpuscles

Locality: WTNA (27°26'36.15"N, 82°41'36.09W/
27°19'37.59"N, 82°35'14.06"W), Florida, USA

Plasmodia: 41.12 (36.45–45.79) µm; FC
spherical to oval

Spore measurements: SL 16.31 (13.85–18.37),
SW 19.85 (18.23–21.65), TS 20.41 (18.83–22.03),

PCL 6.47 (5.76–7.41), **PCW** 6.43 (5.55–7.54), **NC** 5–6

Specimens in Collection: IPCAS (No. IP ProtColl P2)

GenBank: 18S (No. Kc526873)

Reference: Holzer *et al.* (2013)

***Sphaerospora ohlmacheri* Dessler, Lom & Dyková, 1986**

[Syns. *Chloromyxum ohlmacheri* Whinery, 1893, *Wardia ohlmacheri* Kudo, 1920]

Host: *Lithobates catesbeianus* (Shaw, 1802) (Anura: Ranidae) – **AMP**

Site: Kidney

Locality: Lake of Two Rivers, Algonquin Park, Ontario, Canada

Spore measurements: **SL** 12.6±0.17, **SW** 10.9±0.19, **TS** 0.7, **PCL** 4.4±0.08 in diameter, **PC** =, **NC** 6

Note: The spore surface was characterized by roughly radial striations

Reference: Dessler *et al.* (1986)

***Sphaerospora olsoni* Sanders, Jaramillo, Ashford, Feist, Lafferty & Kent, 2015**

Host: *Atherinops affinis* (Ayres, 1860) (Atheriniformes: Atherinidae) – **MAR**

Site: Kidney

Locality: CTNP, Santa Monica (34.40°N, 119.53°W), California, USA

Spore measurements: **SL** 5.2–7.1 (6.0±0.5), **SW** 5.7–6.0 (5.8±0.1), **TS** 5.8–8.4 (7.3±8) **PCL** 1.8–2.4 (2.0±0.14) in diameter, **NC** 3–5

Specimens in Collection: PCQM (No. G465699–G465700)

GenBank: 18S (No. KJ526213)

Reference: Sanders *et al.* (2015)

***Sphaerospora oncorhynchi* Kent, Whitaker & Margolis, 1993**

Host: *Oncorhynchus nerka* (Walbaum, 1792) (Salmoniformes: Salmonidae) – **FW**

Site: Kidney

Locality: Great Central Lake, Vancouver Island, British Columbia, Canada

Plasmodia: 5–15 µm; **FC** oval

Spore measurements: **SL** 9.1 (8.2–10.2), **SW** 8.6 (7.8–9.2), **TS** 10.4 (10.2–11.2), **PCL** 3.0 (2.9–3.3) in diameter, **PC** =, **NC** 4–5

Specimens in Collection: CMN (No. 1993-0035-0037)

Reference: Kent *et al.* (1993)

***Sphaerospora ovophila* Xiao & Dessler, 1997**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – **FW**

Site: Ovary

Locality: Sasajewun Lake (45°35'30"N, 78°31'30"W), Algonquin Park, Ontario, Canada

Plasmodia: up to 0.5 mm; **FC** oval or irregular

Spore measurements: **SL** 8.2 (7.2–8.4), **SW** 6.2 (6.0–7.0), **TS** 7.9 (7.4–8.2), **PCL** 3.0 (2.7–3.2), **PC** =, **NC** 6–7

Specimens in Collection: CMN (No. 1996–0085 (spores), 1996–0086 (in ovary section), and 1996–0087 (ovary tissue))

Reference: Xiao & Dessler (1997)

***Sphaerospora paulini* Lom, Dessler & Dyková, 1989**

Host: *Semotilus atromaculatus* (Mitchill, 1818) (Cypriniformes: Cyprinidae) – **FW**

Site: Kidney

Locality: Lake Sasajewun (45°35'N, 78°30'W), Ontario, Canada

Plasmodia: 20 µm; **FC** irregular

Spore measurements: **SL** 8.1 (8.0–8.5), **PCL** 2.8 (2.5–3.4), **PCW** 2.6 (2.5–3.0), **PC** =, **NC** 4–5

Reference: Lom *et al.* (1989)

***Sphaerospora polymorpha* Davis, 1917**

Host: *Opsanus tau* (Linnaeus, 1766) (Batrachoidiformes: Batrachoididae) – **MAR**

Site: Urinary bladder

Locality: WTNA, Beaufort, North Carolina, USA

Plasmodia: 35 length x 50 width µm, **FC** irregular

Spore measurements: **SL** 8(7–10) in diameter, **PCL** 2–2.5, **PCW** 4–5

Reference: Davis (1917)

***Sphaerospora sphaerula* Gunter & Adlard, 2010**

[Syn. *Leptotheca sphaerula* Noble, 1939]

Host: *Gibbonsia metzi* Hubbs, 1927 (Perciformes: Clinidae) – **MAR**

Site: Urinary bladder

Locality: CTNP, Santa Barbara, California, USA

Plasmodia: 20 length x 28 width µm

Spore measurements: **SL** 13 in diameter, **PCL** 4.6, **PCW** 5

Reference: Gunter & Adlard (2010)

Genus *Palliatius* Shulman, Kovaleva & Dubina, 1979

***Palliatius magellanicus* Kalavati, Mackenzie,**

Collins, Hemmingsen & Brickle, 2013

Host: *Macruromus magellanicus* Lönnberg, 1907 (Gadiformes: Merlucciidae) – **MAR**

Site: Gallbladder

Locality: M (43°S, 73°W), Chiloe Island, Chile

Plasmodia: 28.4–38.4 length x 28.0–36.0 width; **FC** oval or irregular

Spore measurements: **SL** 9.6–19.2 (13.64±3.67), **SW** 10.2–22.4 (19.03±3.64), **TS** 14.0–20.0 (16.09±1.92) **PCL** 6.4–8.0 (6.93±0.64), **PCW** 3.2–5.4 (4.0±0.80), **SV** 32.0–48.0 (40.43±6.47), **NC** 3–4

Specimens in Collection: NHMUK (No. 2012.3.19.2)

Reference: Kalavati *et al.* (2013)

Genus *Wardia* Kudo, 1920***Wardia lucci* Kudo, 1921**

Host: *Esox niger* Lesueur, 1818 (Esociformes: Esocidae) – **FW**

Site: Kidney

Locality: New York, New York, USA

Plasmodia: usually rounded

Spore measurements: **SL** 8–9 **SW** 8–8.5, **TS** 5–6, **PCL** 2.5–3.5 in diameter, **PC** =, **NC** 4–5

Note: 50–70 µm length of polar filament

Reference: Kudo (1921)

***Wardia ovinocua* Kudo 1920**

Host: *Lepomis humilis* (Girard, 1858) (Perciformes: Centrarchidae) – **FW**

Site: Ovary

Locality: Salt Fork Lake, Ohio, USA

Plasmodia: 30–40 µm

Spore measurements: **SL** 9–10, **SW** 10–12, **TS** 6, **PCL** 4 in diameter, **NC** 5–6

Note: 35–45 µm length of polar filament

Reference: Kudo (1921)

Suborder Platysporina Kudo, 1919**Family Myxobolidae Thélohan, 1892****Genus *Dicauda* Hoffman, 1978*****Dicauda atherinoidi* Hoffman, 1978**

Host: *Notropis atherinoides* Rafinesque, 1818 (Cypriniformes: Cyprinidae) – **F**

Locality: Lake Erie, Sterling State Park, Michigan; Hudson and Mohawk Rivers, New York, USA. **W**

Site: Head and ventral body

Plasmodia: 0.1–1.0 mm; **FC** elongate

Spore measurements: **SL** 10.3 (8.5–12.5), **SW** 9.3 (8.5–11), **TS** 7.3(7–9), **AL** 49(25–73), **PCL** 5.2 (4–7), **PCW** 3.3 (2.5–4), **NC** 8–9

Specimens in Collection: USNPC (No. 74582)

Reference: Hoffman (1978)

Genus *Henneguya* Thélohan, 1892***Henneguya acuta* Bond, 1939**

Host: *Esox masquinongy* Mitchell, 1824 (Esociformes: Esocidae) – **FW**

Site: Gills

Locality: Chautauqua Lake, New York, USA

Plasmodia: 1–2 length x 2–3 width

Spore measurements: **SL** 16.5 (14–18), **SW** 4–5, **TS** 4, **TL** 57 (33–66), **PCL** 5–7, **PCW** 2, **NC** 8–9

Reference: Bond (1939)

***Henneguya adherens* Azevedo & Matos, 1995**

Host: *Acestrorhynchus falcatus* Bloch, 1794 (Characiformes: Acestrorhynchidae) – **FW**

Site: Gills

Locality: Amazon River, Belém, Pará, Brazil

Plasmodia: 0.2–0.3 mm in diameter; **FC** irregular

Spore measurements: **SL** 12.4 (10.5–13.8), **SW** 5.8 (5.1–6.5), **AL** 20.5 (18.5–21.7), **TL** 32.3 (30.7–35.1), **PCL** 3.1 (2.8–3.5), **PCW** 1.2 (1.0–1.6), **PC** =, **NC** 3–4

Reference: Azevedo & Matos (1995)

***Henneguya adiposa* Minchew, 1977**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – **FW**

Site: Adipose fin

Locality: Private pond, Lee County, Mississippi, USA

Plasmodia: 120 length x 290–500 width µm

Spore measurements: **SL** 16.3 (12–19), **SW** 4.0 (3.5–5.0), **TS** 3.0 (2.5–3.5), **AL** 44.8 (28–59), **TL** 61.0 (45–75), **PCL** 7.7 (6.2–9.0), **PCW** 1.5 (1.0–2.0), **PC** ≠, =, **NC** 6–8

Reference: Minchew (1977)

***Henneguya aequidens* Videira, Valasco, Azevedo, Silva, Gonçalves, Matos & Matos, 2015**

Host: *Aequidens plagiozonatus* Kullander, 1984 (Perciformes: Cichlidae) – **FW**

Site: Gills

Locality: Amazon River (01°11'S, 47°18'W),

Peixe Boi, Pará, Brazil

Plasmodia: FC ellipsoid

Spore measurements: SL 15±0.9, SW 6±0.8, AL 27±0.6, TL 41±1.5, PCL 3±0.3, PCW 2±0.3, PC =, NC 4–6

Specimens in Collection: INPA (No. 22)

Reference: Videira *et al.* (2015)

***Henneguya akule* Work, Takata, Whipps & Kent, 2008**

Host: *Selar crumenophthalmus* (Bloch, 1793) (Perciformes: Carangidae) – MAR

Site: Bulbus arteriosus

Locality: EIP, Southern Oahu (21.15°N, 158.00°W), Barbers Point, Hawaii, USA

Plasmodia: 0.01–0.7 mm long; FC pleomorphic

Spore measurements: SL 12.1 (10–14), SW 7.4 (5–9), TS 5.3 (3–7), TL 40.8 (29–52), PCL 3.4 (2–6), PCW 1.4 (1–2), NC 3–4

Specimens in Collection: USNPC (No. 099994.00 and 099995.00)

GenBank: 18S (No. Eu016076)

Note: Also found in others localities: Southern Oahu: Mauna Lua Bay (21.15° N, 157.45° W), Waianae coast (21.30° N, 158.15° W), Sand Island (21.18° N, 157.54° W)

Reference: Word *et al.* (2008)

***Henneguya amazonica* Rocha, Matos & Azevedo, 1992**

Host: *Crenicichla lepidota* Heckel (1840) (Perciformes: Cichlidae) – FW

Site: Gills

Locality: Amazon River, Belém, Pará, Brazil

Plasmodia: 0.05 length × 0.15 width mm; FC oval
Spore measurements: SL 13.9 (11.5–14.9), SW 5.7 (5.2–6.3), TS 4.4 (3.3–5.0), AL 45.4 (41.7–52.1), TL 59.3 (55.0–65.9), PCL 3.3 (2.7–3.6), PCW 1.5 (1.1–1.9), PC =, NC 6

Reference: Rocha *et al.* (1992)

***Henneguya ameiurensis* Nigrelli & Smith, 1940**

Host: *Ameiurus nebulosus* (Lesueur, 1819) (Siluriformes: Ictaluridae) – FW

Site: Barbels

Locality: New Hampshire Lake, New Hampshire, USA

Plasmodia: 190 length × 342 width μm; FC spherical, oval or irregular

Spore measurements: SW 4.1, TS 3, AL 15–41.5, TL 23.3

Reference: Nigrelli & Smith (1940)

***Henneguya amiae* Fantham, Porter & Richardson, 1940**

Host: *Amia calva* Linnaeus, 1766 (Amiiformes: Amiidae) – FW

Site: Gills

Locality: Montreal, Quebec, Canada

Plasmodia: 1 mm in diameter

Spore measurements: SL 15.8–25, SW 4.1–6.6, AL 18–25, PCL 5.5–6.6, PCW 1.6–2.5, PC =

Reference: Fantham *et al.* (1940)

***Henneguya arapaima* Feijó, Arana, Ceccarelli & Adriano, 2008**

Host: *Arapaima gigas* Schinz, 1822 (Osteoglossiformes: Arapaimidae) – FW

Site: Gill arch, gallbladder

Locality: Araguaia River (13°22'48"S, 50°41'02"W), Nova Crixás, Goiás, Brazil

Plasmodia: 0.2–0.6 mm in diameter; FC round or ellipsoidal

Spore measurements: SL 14.2 (13.5–15.2), SW 5.7 (5.1–6.1), TS 4.9 (4.7–5.3), AL 38.3 (38.0–41.2), TL 51.6 (48.4–53.1), PCL 6.5 (6.3–6.8), PCW 1.5 (1.4–1.6), PC =, NC 5

Specimens in Collection: ZUEC (No. 23)

Reference: Feijó *et al.* (2008)

***Henneguya astyanax* Vita, Corral, Matos & Azevedo, 2003**

Host: *Jupiaba keithi* (Géry, Planquette & Le Bail, 1996) (Characiformes: Characidae) – FW

Site: Gills

Locality: Amazon River (01°11'30"S, 47°18'54"W), Belém, Pará, Brazil

Plasmodia: 0.25 mm; FC ellipsoidal

Spore measurements: SL 15.2±0.77, SW 5.7±0.71, TS 4.2±0.31, AL 32.6±1.11, TL 47.8±0.71, PCL 5.0±0.13, PCW 1.5±0.0, NC 8–9

Specimens in Collection: USNPC (No. 1004430)

Reference: Vita *et al.* (2003)

***Henneguya azevedoi* Barassa, Adriano, Cordeiro, Arana & Ceccarelli, 2012**

Host: *Leporinus obtusidens* (Valenciennes, 1837) (Characiformes: Anostomidae) – FW

Site: Gills

Locality: Mogi Guaçu River, Pirassununga, São Paulo, Brazil

Plasmodia: 40–200 μm in diameter

Spore measurements: SL 10.0±0.07 (9.9–10.2), SW 4.4±0.4 (4.0–5.0), AL 35.6±0.9 (34.9–36.5),

TL 45.2±0.6 (45.0–47.0), PCL 3.8±0.3 (3.5–4.0), PCW 1.0, PC =, NC 6–7

Specimens in Collection: ZUEC (No. 30)

Reference: Barassa *et al.* (2012)

***Henneguya bulbosus* Rosser, Griffin, Quiniou, Khoo & Pote, 2014**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Commercial catfish pond, Washington County, Mississippi, USA

Plasmodia: ~1.25 mm in diameter; FC oval

Spore measurements: SL 17.1±0.1 (15.0–19.3), SW 4.8±0.4 (3.7–5.6), AL 40.0±5.1 (29.5–50.0), TL 57.2±4.7 (46.8–66.8), PCL 5.8±0.3 (5.1–6.4), PCW 1.7±0.1 (1.4–1.9)

Specimens in Collection: USNPC (No. 1251670)

GenBank: 18S (No. Km000055)

Reference: Rosser *et al.* (2014)

***Henneguya caudalongula* Adriano, Arana & Cordeiro, 2005**

Host: *Prochilodus lineatus* (Valenciennes, 1837) (Characiformes: Prochilodontidae) – FW

Site: Gills

Locality: Center for the Research and Management of Continental Fishing Resources Cepta/Ibama (21°56'3.6528"S, 47°22'19.7436"W), Pirassununga, São Paulo

Plasmodia: 1 mm in diameter; FC round or ellipsoidal

Spore measurements: SL 16.6±0.5, SW 4.6±0.2, AL 52.6±1.5, TL 71±1.4, PCL 6.1±0.2, PCW 1.6±0.2, NC 10–11

Specimens in Collection: ZUEC (No. 16 and 17)

Reference: Adriando *et al.* (2005a)

***Henneguya caudicula* Eiras, Takemoto & Pavanelli, 2008**

Host: *Leporinus lacustris* Amaral Campos, 1945 (Characiformes: Anostomidae) – FW

Site: Gills

Locality: Paraná River, Porto Rico, Paraná, Brazil

Plasmodia: 0.05 mm; FC elongate

Spore measurements: SL 11.3 (11–12), SW 5.4 (5–6), TS 3.6 (3–4), AL 3.4 (3–4), TL 14.7 (14–16), PCL 3.7 (3–4), PCW 1.5, PC =, NC 3

Specimens in Collection: MNHUP (accession numbers not provided)

Reference: Eiras *et al.* (2008)

***Henneguya chydadea* Barassa, Cordeiro & Arana, 2003**

Host: *Astyanax altiparanae* Garutti & Britski, 2000 (Characiformes: Characidae) – FW

Site: Gills

Locality: Rio das Pedras farm, Campinas, São Paulo, Brazil

Plasmodia: 40–64 length x 64–80 width µm; FC oval

Spore measurements: SL 8.8–11.2, SW 3.2–5.6, AL 8–9.6, TL 17.6–20, PCL 3.2–4.4, PCW 1.2–1.6, NC 9–19

Specimens in Collection: ZUEC (No. 10 and 11)

Reference: Barassa *et al.* (2003)

***Henneguya corruscans* Eiras, Takemoto & Pavanelli, 2009**

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae) – FW

Site: Gills

Locality: Paraná River, Porto Rico, Paraná, Brazil

Plasmodia: 0.1–0.3 mm; FC round, oval

Spore measurements: SL 14.3 (13–15), SW 5, TS 4, AL 13.7 (12–15), TL 27.6 (25–29), PCL 6.8 (6–7), PCW 2, NC 5–6

Reference: Eiras *et al.* (2009)

***Henneguya cuniculator* Naldoni, Maia, Silva & Adriano 2014**

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae) – FW

Site: Gills

Locality: São Francisco River (17°12'8"S; 44°50'0"W), Pirapora, Minas Gerais, Brazil

Plasmodia: Up to 1 cm long; FC elongate

Spore measurements: SL 12.1±1.0 (10.0–14.7), SW 4.8±0.4 (4.0–5.9), TS 4.2±0.7 (3.9–4.9), AL 16.7±2.0 (12.3–19.4), TL 29.4±2.4 (23.3–32.4), PCL 6.2±0.3 (5.2–6.2), PCW 1.8±0.1 (1.4–1.9), PC =, NC 10–11

Specimens in Collection: ZUEC (No. MYX 40 and MYX 41)

GenBank: 18S (No. Kf732840)

Reference: Naldoni *et al.* (2014)

***Henneguya curimata* Azevedo & Matos, 2002**

Host: *Curimata inornata* Vari, 1989 (Characiformes: Curimatidae) – FW

Site: Kidney

Locality: Amazon River (00°35'38"S, 47°35'00"W), Belém, Pará, Brazil

Plasmodia: 0.6–1.2 mm in diameter; FC round

Spore measurements: SL 16.0–17.4, SW 5.8–6.6, AL 18.3–19.9, TL 34.2–36.1, PCL 6.5 ± 0.3, PCW 1.2 ± 0.2, NC 10–11

Specimens in Collection: USNPC (accession numbers not provided)

Reference: Azevedo & Matos (2002)

***Henneguya curvata* Barassa, Adriano, Arana & Cordeiro, 2003**

Host: *Serrasalmus spilopleura* Kner, 1858 (Characiformes: Serrasalminidae)–FW

Site: Gills

Locality: Rio das Pedras farm, Campinas, São Paulo

Plasmodia: 0.1–0.5 mm long; FC round

Spore measurements: SL 16.4 ± 0.8, SW 4.7 ± 0.2, AL 25.3 ± 2.3, TL 41.7 ± 2.7, PCL 7.8 ± 0.3, PCW 1.4 ± 0.2, NC 10–11

Specimens in Collection: ZUEC (No. 06 and 07)

Reference: Barassa *et al.* (2003)

***Henneguya cynoscioni* Dyková, Buron, Roumillat & Fiala, 2011**

Host: *Cynoscion nebulosus* (Cuvier, 1830) (Perciformes: Sciaenidae)–FW

Site: Bulbus arteriosus

Locality: Low Ashley Rive, Charleston Harbor estuary, California, USA

Plasmodia: FC large

Spore measurements: SL 10.4 (9.8–11.7), SW 8.8, TS 5.8, AL 28.0 (23.5–33.3), TL 38.6 (34.3–44.1), PCL 3.3, PCW 2, PC =, NC 2–4

Specimens in Collection: IPCAS (accession numbers not provided)

GenBank: 18S (No. Jn017203)

Reference: Dyková *et al.* (2011)

***Henneguya cyphocharax* Abdallah, Azevedo, Luque & Bomfim, 2007**

Host: *Cyphocharax Gilbert* (Quoy & Gaimard, 1824) (Characiformes: Curimatidae)–FW

Site: Gills

Locality: Guandú River (22°48'32"S, 43°37'35"W), Seropédica, Rio de Janeiro, Brazil

Plasmodia: 0.10–0.32 length x 0.12–0.35 width mm; FC ellipsoidal

Spore measurements: SL 11.3 (7.7–13.4), SW 4.4 (2.9–6.3), AL 23.7 (20.8–31.5), TL 35.1 (29.6–44.4), PCL 5.2 (4.2–6.3), PCW 1.9 (1.5–2.3), PC ≠, NC 7–9

Specimens in Collection: CHIOC (accession numbers not provided)

Reference: Abdallah *et al.* (2007)

***Henneguya diversis* Minchew, 1977**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae)–FW

Site: Base of dorsal barbel, pectoral fins, liver, kidney and muscles

Locality: Commercial catfish farm, Perry County, Alabama, USA

Plasmodia: 250 length x 600 width μm

Spore measurements: SL 14.8(13.5–16.5), SW 4.0(3.2–5.0), TS 3.9(3.0–4.5), AL 34.6(25–47), TL 49.5(40–62), PCL 6.5(6.0–7.5), PCW 1.5(1.0–2.0), NC 6–8

Reference: Minchew (1977)

***Henneguya doori* Guilford, 1963**

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae)–FW

Site: Gills

Locality: Lake Michigan, Green Bay, Wisconsin, USA

Plasmodia: 0.15.0.5 mm in diameter; FC round to oval

Spore measurements: SL 20.1 (15–24), SW 8.7 (6–16), TS 7.1 (4–8.4), AL 18.7 (6–27), TL 38.8 (31–45), PCL 9.1 (7–9.6), PCW 1.5–3, PC =, NC 9–14

Reference: Guilford (1963)

***Henneguya eirasi* Naldoni, Arana, Maia, Silva, Carriero, Ceccarelli, Tavares & Adriano, 2011**

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae)–FW

Site: Gills

Locality: Aquidauna River (20°29'19" S, 55°46'49"W), Miranda River (20°11'27" S, 56°30'19"W), Paraguay River (17°54'58"S, 57°28'01"W), Cuiabá River (17°50'32"S, 57°23'46"W), Pantanal, Mato Grosso do Sul, Brazil

Plasmodia: 3.0 mm; FC elongate

Spore measurements: SL 12.9 ± 0.8, SW 3.4 ± 0.3, TS 3.1 ± 0.1, AL 24.6 ± 2.2, TL 37.1 ± 1.8, PCL 5.4 ± 0.5, PCW 0.7 ± 0.1, NC 12–13

Specimens in Collection: ZUEC (No. 29)

GenBank: 18S (No. Hq655111)

Reference: Naldoni *et al.* (2011)

***Henneguya electrica* Jakowska & Nigrelli, 1953**

Host: *Electrophorus electricus* (Linnaeus, 1766) (Gymnotiformes: Gymnotidae)–FW

Site: Large electric organs

Locality: New York Aquarium, New York, New York, USA

Spore measurements: SL 11–13, SW 6–8, AL 24–27, TL 35–39, PCL 5–7, PCW 2

Note: The fish is from Brazil, but went at New York Aquarium, USA

Reference: Jakowska and Nigrelli (1953)

***Henneguya episclera* Minchew & Sleight, 1977**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW

Site: Eye

Locality: Private fish hatchery, Carolina, Rhode Island, USA

Plasmodia: 2.5 length x 1.2 width mm; FC bilobed or multilobed

Spore measurements: SL 21.7 (16–25), SW 8.0 (7–9), TS 8.7 (7–10), AL 37.1 (28–49), TL 62.6 (49–81), PCL 6.0 (4–7), PCW 2.7 (2–3), PC ≠, NC 5–6

Reference: Minchew & Sleight (1977)

***Henneguya esocis* Fantham, Porter & Richardson, 1939**

Host: *Esox niger* Lesueur, 1818 (Esociformes: Esocidae) – FW

Site: Gills

Locality: Brome Lake, Quebec, Canada

Plasmodia: up to 10 mm

Spore measurements: SL 15–23.6, SW 3.2–4.6, AL 19–50, PCL 5–7.3, PCW 1.4–2.7

Reference: Fantham *et al.* (1939)

***Henneguya exilis* Kudo, 1929**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Rock River, Sterling, Illinois, USA

Plasmodia: 0.5–2 mm in diameter; FC subcircular to oblong

Spore measurements: SL 18–20, SW 4–5, TS 3–3.5, TL 60–70, PCL 8–9, PCW 1–1.5, PC =

Reference: Kudo (1929)

***Henneguya friderici* Casal, Matos & Azevedo, 2003**

Host: *Leporinus friderici* (Bloch, 1794) (Characiformes: Anostomidae) – FW

Site: Gills, intestine, kidney and liver

Locality: Amazon River (01°11'30"S, 47°18'54' W), Belém, Pará, Brazil

Plasmodia: 0.5–1.0 mm; FC round

Spore measurements: SL 10.4 (9.6–11.8), SW 5.7 (4.8–6.6), TS 4.9 (4.6–5.2), AL 23.3 (19.1–28.7), TL 33.8 (28.7–39.3), PCL 4.9 (4.2–5.9), PCW 2.1 (1.5–2.6), NC 7–8

Specimens in Collection: USNPC (No. 1007181)

Reference: Casal *et al.* (2003)

***Henneguya gambusi* Parker, Spall & Warner, 1971**

Host: *Gambusia affinis* (Baird & Girard, 1853) (Cyprinodontiformes: Poeciliidae) – FW

Site: Integument

Locality: Little Stillwater Creek, Payne County, Oklahoma, USA

Spore measurements: SL 10.2 (9.5–11.0), SW 6.1 (5.0–7.0), TS 5.4 (4.8–6.0), AL 17.7 (13–21), PCL 3.0 (3.0–3.5), PCW 2.0 (1.8–2.2), PC =, NC 3–5

Specimens in Collection: USNPC (No. 71668)

Reference: Parker *et al.* (1971)

***Henneguya garavelli* Martins & Onaka, 2006**

Host: *Cyphocharax nagelli* (Steindachner, 1881) (Characiformes: Curimatidae) – FW

Site: Gills

Locality: Rio das Pedras Reservoir, Sao Jose do Rio Pardo, São Paulo, Brazil

Plasmodia: 60.9±13.7 (42.8–63.2) length x 34.7±7.3 (24.5–42.8) width μm; FC circular to ellipsoidal

Spore measurements: SL 13.6 (12.0–14.4), SW 4.0 (3.9–4.1), AL 33.0 (29.2–37.5), TL 46.6 (41.2–51.5), PCL 5.4 (4.8–6.0), PCW 1.2 (1.0–1.5)

Specimens in Collection: CHIOC (No. 34986)

Reference: Martins & Onaka (2006)

***Henneguya guanduensis* Abdallah, Azevedo, Luque & Bomfim, 2007**

Host: *Hoplosternum littorale* (Hancock, 1828) (Siluriformes: Callichthyidae) – FW

Site: Gills

Locality: Guandú River (22°48'32"S, 43°37'35"W), Seropédica, Rio de Janeiro, Brazil

Plasmodia: 0.06–0.30 length x 0.08–0.38 width mm

Spore measurements: SL 14.6 (11.4–16.7), SW 6.5 (4.9–7.9), AL 19.0 (15.6–22.5), TL 33.6 (27.3–38.1), PCL 4.4 (3.3–5.6), PCW 2.0 (1.6–2.3), PC ≠

Specimens in Collection: CHIOC (accession numbers not provided)

Reference: Abdallah *et al.* (2007)

***Henneguya gurleyi* Kudo, 1919**

Host: *Ameiurus melas* (Rafinesque, 1820)
(Siluriformes: Ictaluridae) – FW

Site: Base spines

Locality: Storm Lake, Storm Lake, Iowa, USA

Plasmodia: 1 mm in diameter; FC spherical

Spore measurements: SL 19, SW 5–6, TS 3

Reference: Kudo (1919)

***Henneguya hemiodopsis* Azevedo, Casal, Mendonça & Matos, 2009**

Host: *Hemiodopsis microlepis* Kner, 1858
(Characiformes: Hemiodontidae) – FW

Site: Gills

Locality: Poty River (05°05'S, 42°48'W), Teresina, Piauí, Brazil

Plasmodia: Up to 0.2 mm in diameter; FC round

Spore measurements: SL 10.8±0.5, SW 3.3±0.4, TS 2.5±0.5, AL 8.7±0.6, TL 19.7±0.9, PCL 3.5±0.3, PCW 1.0±0.2, NC 5–6

Specimens in Collection: USNPC (No. 1123997)

Reference: Azevedo *et al.* (2009)

***Henneguya ictaluri* Pote, Hanson & Shivaji, 2000**

Host: *Ictalurus punctatus* (Rafinesque, 1818)
(Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Commercial catfish pond, Brooksville, Mississippi, USA

Plasmodia: 638.5 length x 661.3 width µm; FC oval

Spore measurements: SL 23.9 (20.8–26.1), SW 6.0 (4.5–6.4), AL 63 (48.1–80.2), PCL 8.1 (7.6–9.6), PCW 2.5 (2.0–3.2), PC =

GenBank: 18S (No. AFO298320)

Reference: Pote *et al.* (2000)

***Henneguya jocu* Azevedo, Rocha, Matos, Matos, Oliveira, Al-Quraishy & Casal, 2014**

Host: *Lutjanus jocu* (Bloch & Schneider, 1801)
(Perciformes: Lutjanidae) – FW/BW

Site: Gills

Locality: NBS (00°35'S, 48°30'W), Algodual, Pará, Brazil

Plasmodia: ~260 length x 130 width µm; FC ellipsoidal to subspherical

Spore measurements: SL 10.9±0.4 (10.3–11.4), SW 8.2±0.3 (7.8–8.6), TS 2.9±0.5 (2.6–3.4), AL 34.1±1.0 (44.0–55.3), TL 45.2±1.0 (44.0–55.3),

PCL 45.2±1.0 (44.0–55.3), PCW 5.0±0.3 (4.6–5.3), PC =, NC 4–5

Specimens in Collection: INPA (No. 019/13)

GenBank: 18S (No. Kf264964)

Reference: Azevedo *et al.* (2014)

***Henneguya lagodon* Hall & Iversen, 1967**

Host: *Lagodon rhomboides* (Linnaeus, 1766)
(Perciformes: Sparidae) – FW

Site: Skin (ocular region)

Locality: Buttonwood Canal, Everglades National Park, Florida, USA

Plasmodia: 0.7 (0.2–1.4) mm in width

Spore measurements: SL 8.4 (7–9), SW 6.4 (5.7–7.1), TS 5.7 (4.6–6.8), AL 23.8 (17.1–3), TL 31.3 (25.7–39.3), PCL 3.5 (2.2–4.3), PCW 2.1 (1.8–2.5), PC ≠, NC 3

Reference: Hall & Iversen (1967)

***Henneguya leporini* Nemeček, 1926**

Host: *Hypomasticus mormyrops* (Steindachner, 1875)
(Characiformes: Anostomidae) – FW

Site: Urinary ducts

Locality: Rio de Janeiro, Brazil

Plasmodia: 30–40 µm; FC oval

Spore measurements: SL 13–15, SW 5, AL 15–18, TL 28–33, PCL 5–8

Reference: Nemeček (1926)

***Henneguya leporinicola* Martins, Souza, Moraes & Moraes, 1999**

Host: *Leporinus macrocephalus* Garavento & Britski, 1988
(Characiformes: Anostomidae) – FW

Site: Gills

Locality: commercial fish farm, Capivari, São Paulo, Brazil

Plasmodia: 53.1 (23.4–70.3) µm in diameter; FC round

Spore measurements: SL 7.6 (5.5–8.7), SW 4.2 (3.6–4.9), AL 21.8 (12.9–32.2), PCL 3.0 (2.0–3.6), PCW 1.6 (1.2–2.0)

Reference: Martins *et al.* (1999)

***Henneguya limatula* Meglitsch, 1937**

Host: *Ictalurus punctatus* (Rafinesque, 1818)
(Siluriformes: Ictaluridae) – FW

Site: Gallbladder

Locality: Ohio River, Shawneetown, Illinois, USA

Spore measurements: SL 13–17, SW 5–6, AL 27–37, PCL 6.5–8, PCW 1.5–2

Note: Also found in *I. furcatus* Rafinesque

Reference: Meglitsch (1937)

***Henneguya longicauda* Minchew, 1977**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Private pond, Neshoba County, Mississippi, USA

Plasmodia: 130–370 length x 110–120 width μm ; FC circular to oblong

Spore measurements: SL 16.2 (14–17.5), SW 4.0 (3.5–4.5), TS 4.0 (3.5–4.0), AL 90.5 (75–110), TL 108.3 (91–127), PCL 7.7 (7.0–8.5), PCW 1.8 (1.5–2.0), PC \neq , =, NC 9–12

Reference: Minchew (1977)

***Henneguya maculosus* Carriero, Adriano, Silva, Ceccarelli & Maia, 2013**

Host: *Pseudoplatystoma corruscans* Spix & Agassiz, 1829 (Siluriformes: Pimelodidae) – FW

Site: Gills

Locality: Pantanal National Park (17°50'48"S, 57°24'14"), Mato Grosso do Sul, Brazil

Plasmodia: 1.5 mm in diameter; FC elliptical

Spore measurements: SL 13.7 \pm 0.6, SW 4.1 \pm 0.2, TS 3.0 \pm 0.2, AL 17.5 \pm 1.0, PCL 5.6 \pm 0.5, PCW 1.6 \pm 0.2, PC =, NC 6–7

Specimens in Collection: ZUEC (No. MYX 34)

GenBank: 18S (No. Kf296344)

Note: Also in *P. reticulatum* Eigenmann & Eigenmann (GenBank accession number Kf2963459)

Reference: Carriero *et al.* (2013)

***Henneguya magna* Rice & Jahn, 1943**

Host: *Morone chrysops* (Rafinesque, 1820) (Perciformes: Moronidae) – FW

Site: Gills

Locality: Spirit Lake, Okoboji region, Iowa, USA

Spore measurements: SL 24.8, SW 6.2, TL 87, PCL 4

Reference: Rice & Jahn (1943)

***Henneguya malabarica* Azevedo & Matos, 1996**

Host: *Hoplias malabaricus* (Bloch, 1794) (Characiformes: Erythrinidae) – FW

Site: Gills

Locality: Amazon River, Belém, Pará, Brazil

Spore measurements: SL 12.6 (11.8–13.1), SW 3.6–4.8, TL 28.3 (26.6–29.8), PCL 3.7 (3.0–4.3), PCW 1.8 (1.6–2.2), NC 6–7

Note: These species are surrounded by an external

hyaline sheet surrounding the spore body and the two tails

Reference: Azevedo & Matos (1996a)

***Henneguya melini* Mathews, Maia & Adriano, 2016**

Host: *Corydoras melini* Lönnberg & Rendahl, 1930 (Siluriformes: Callichthyidae) – FW

Site: Gill filaments

Locality: Negro River (0°24'50"S, 65°01'08"W), Santa Izabel do Rio Negro, Amazonas, Brazil

Plasmodia: 260 μm in diameter; FC round to ellipsoidal

Spore measurements: SL 15.5 \pm 0.2 (15.3–15.7), SW 4.7 \pm 0.1 (4.6–4.8), AL 25.3 \pm 0.1 (25.2–25.4), TL 40.8 \pm 0.3 (40.3–41.1), PCL 4.8 \pm 0.5 (4.3–5.3), PCW 1.7 \pm 0.3 (1.4–2.0), PC =, NC 5–6

Specimens in Collection: ZUEC (No. Myx 51)

GenBank: 18S (No. Kp404438)

Reference: Mathews *et al.* 2016.

***Henneguya mississippiensis* Rosser, Griffin, Quiniou, Khoo, Greenway, Wise & Pote, 2015**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Commercial catfish pond, Washington County, Mississippi, USA

Plasmodia: 0.3–0.5 mm in diameter

Spore measurements: SL 17.1 \pm 1.0 (14.4–19.3), SW 5.0 \pm 0.3 (4.5–5.5), AL 31.0 \pm 4.1 (22.9–40.6), TL 48.8 \pm 4.8 (40.7–61.6), PCL 6.2 \pm 0.4 (5.8–7.0), PCW 1.7 \pm 0.2 (1.4–1.9), NC 8–9

Specimens in Collection: USNPC (No. 1270623)

GenBank: 18S (No. Kp404438)

Reference: Rosser *et al.* (2015)

***Henneguya multiplasmodialis* Adriano, Carriero, Maia, Silva, Naldoni, Ceccarelli & Arana, 2012**

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae) – FW

Site: Gills

Locality: Aquidauna River (20°29'19"S, 55°46'49"W), Miranda River (20°11'27"S, 56°30'19"W), Paraguay River (17°54'58"S, 57°28'01"W), Cuiabá River (17°50'32"S, 57°23'46"W), Pantanal wetland, Mato Grosso do Sul, Brazil

Plasmodia: 25 mm; FC large

Spore measurements: SL 14.7 \pm 0.5, SW 5.2 \pm 0.3, TS 4.4 \pm 0.1, AL 15.4 \pm 1.3, TL 30.8 \pm 1.3, PCL

6.1±0.1, PCW 1.4±0.1, NC 6–7

GenBank: 18S (No. JQ654969 and Jq654970)

Note: Also in *P. reticulatum* Eigenmann & Eigenmann (values for *P. reticulatum*: SL 14.5±0.4, SW 5.2±0.2, TS 4.2±0.3, AL 14.8±1.4, TL 30.6±1.2, PCL 6.2±0.2, PCW 1.5±0.2, NC 6–7)

Reference: Adriano *et al.* (2012)

***Henneguya nagelii* Azevedo, Abdallah, Paes, Silva, Matos, Velasco & Matos 2013**

Host: *Cyphocharax nagelii* (Steindachner, 1881) (Characiformes: Curimatidae) – FW

Site: Gills

Locality: Peixe's River (22°49'53.1"S, 48°06'38"W), Anhembi, São Paulo, Brazil

Plasmodia: 150–250 µm; FC fusiform

Spore measurements: SL 12.0±0.5 (11.2–11.9), SW 4.9±0.3 (4.4–5.5), TS 4.1±0.2 (3.6–5.7), AL 22.4±4.0 (14.7–27.3), TL 34.5±4.2 (26.4–39.9), PCL 4.9±0.4 (4.0–5.9), PCW 1.8±0.2 (1.5–2.2), PC ≠, NC 6–8

Specimens in Collection: INPA (No. 005 and 006)

Reference: Azevedo *et al.* (2013)

***Henneguya nigris* Bond, 1939**

Host: *Esox niger* Lesueur, 1818 (Esociformes: Esocidae) – FW

Site: Gills

Locality: Middle River, Baltimore County, Maryland, USA

Plasmodia: 1–2 length x 4–5 width mm; FC irregular

Spore measurements: SL 22, SW 7–8, TS 4–5, TL 57 (45–60), PCL 5–6, PCW 2.5, NC 5–6

Note: Also found in *E. masquinongy* Mitchill

Reference: Bond (1926)

***Henneguya occulta* Nemeček, 1926**

Host: *Loricaria* sp. (Siluriformes: Loricariidae) – FW

Site: Gills

Locality: Rio de Janeiro, Brazil

Plasmodia: 75 µm; FC round

Spore measurements: SL 16–20, TS 8–10, AL 20, TL 36–50, PCL 8

Reference: Nemeček (1926)

***Henneguya ocellata* Iversen & Yokel, 1963**

Host: *Sciaenops ocellatus* (Linnaeus, 1766) (Perciformes: Scianidae) – MAR

Site: Intestine, pyloric caeca

Locality: TNA, Everglades National Park and Florida Bay, Florida, USA

Plasmodia: 1.2–2.0 mm; FC spherical to elliptical
Spore measurements: SW 8.3 (7.3–8.9), TS 6.3 (5.9–6.6), TL 19.2 (17.2–21.1), PCL 3.6–4.3 2.0–3.0, PC =

Specimens in Collection: USNPC (No. 23696)

Reference: Iversen & Yokel (1963)

***Henneguya paraensis* Velasco, Videira, Nascimento, Matos, Gonçalves & Matos, 2016**

Host: *Cichla temensis* Humboldt, 1821 (Perciformes: Cichlidae) – FW

Site: Gill filaments

Locality: Tocantins River (02° 14' S, 49° 49' W), Cametá, Pará, Brazil

Plasmodia: 800 µm; FC elongated

Spore measurements: SL 12.8±0.42 (12.38–13.22), SW 8.6±0.32 (8.18–8.92), AL 29.5±0.73 (28.77–30.23), TL 42.3±0.65 (41.65–42.95), PCL 7.4±0.16 (6.67–7.56), PCW 2.6±0.08 (2.52–2.68), NC 5–7

Specimens in Collection: INPA (No. 24)

GenBank: 18S (No. Ku535882)

***Henneguya paranaensis* Eiras, Pavanelli & Takemoto, 2004**

Host: *Prochilodus lineatus* (Valenciennes, 1837) (Characiformes: Prochilodontidae) – FW

Site: Gills

Locality: Paraná River, Porto Rico, Paraná, Brazil

Plasmodia: 0.1 mm, FC oval to round

Spore measurements: SL 16.1 (14–17), SW 6.5 (6–7), TS 5, AL 43.1 (41–46), TL 50 (56–63), PCL 8.4 (8–9), PC ≠, NC 10–12

Reference: Eiras *et al.* (2004)

***Henneguya pellis* Minchew, 1977**

Host: *Ictalurus furcatus* (Valenciennes, 1840) (Siluriformes: Ictaluridae) – FW

Site: Skin

Locality: Lee County, Alabama, Brazil

Plasmodia: 1–2 mm in diameter; FC circular to irregular

Spore measurements: SL 13.0 (11.0–14.5), SW 5.0 (4.5–5.2), TS 4.8 (4–5), AL 87.8 (66–112), TL 100.4 (79–124), PCL 6.9 (5.5–8.5), PCW 1.8 (1.5–2.0), NC 8–10

Reference: Minchew (1977)

***Henneguya pellucida* Adriano, Arana & Cordeiro, 2005**

Host: *Piaractus mesopotamicus* (Holmberg, 1887) (Characiformes: Serrasalminidae) – FW

Site: Serous membrane of visceral cavity and tunica externa of swim bladder

Locality: Center for the Research and Management of Continental Fishing Resources Cepta/Ibama (21°56'3.6528"S, 47°22'19.7436"W), Pirassununga, São Paulo, Brazil

Plasmodia: 0.5–3 mm; FC round

Spore measurements: SL 11.4±0.3, SW 4.1±0.4, AL 24.1±1.5, TL 33.3±1.5, PCL 4.0±0.4, PCW 1.6±0.2, NC 6–7

Specimens in Collection: ZUEC (No. 20, 21 and 22)

Reference: Adriano *et al.* (2005b)

***Henneguya percae* Fantham, Porter & Richardson, 1939**

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae) – FW

Site: Gills

Locality: Lake Memohremagog, Quebec, Canada

Plasmodia: 0.25 mm

Spore measurements: SL 13.2–16.8, SW 9.5–12.3, AL 14.5–18.5, TL 8.5–10, PCL 2.3–3.2, NC 10–15

Reference: Fantham *et al.* (1939)

***Henneguya piaractus* Martins & Souza, 1997**

Host: *Piaractus mesopotamicus* (Holmberg, 1887) (Characiformes: Serrasalminidae) – FW

Site: Gills

Locality: Jaboticaabal, São Paulo, Brazil

Plasmodia: 0.1–0.9 mm; FC ellipsoidal

Spore measurements: SL 12.7 (11.8–13.6), SW 3.6 (3.2–3.9), AL 41.2 (39.7–43.6), TL 52.5 (47.6–56.3), PCL 6.7 (6.3–7.1), PCW 1.2 (0.9–1.6), PC =, NC 8–9

Reference: Martins & Souza (1997)

***Henneguya pilosa* Azevedo & Matos, 2003**

Host: *Serrasalmus altuvei* Ramirez, 1965 (Characiformes: Serrasalminidae) – FW

Site: Gills

Locality: Zoological Garden (05°05'21"S, 42°48'07"W), Teresina, Piauí, Brazil

Plasmodia: up to 0.2 mm in diameter; FC spherical to ellipsoidal

Spore measurements: SL 21.1 (20.0–13.1), SW 5.9 (5.5–6.5), AL 31.1 (30.5–34.9), TL 54.2 (52.3–56.0), PCL 7.4 (7.1–7.6), PCW 1.2 (1.0–1.3), NC 11–12

Specimens in Collection: IPCAS (No. H-PM-068, H2027071)

Reference: Azevedo & Matos (2003)

***Henneguya pisciforme* Cordeiro, Artigas, Gióia & Lima, 1984**

Host: *Hyphessobrycon anisitsi* (Eigenmann, 1907) (Characiformes: Characidae) – FW

Site: Gills

Locality: Campinas, São Paulo, Brazil

Plasmodia: 0.09–0.1 mm; FC round to oval

Spore measurements: SL 20.4 (17.3–23.2), SW 6.1 (4.4–6.7), AL 10.6 (8.4–12.8), PCL 4.2 (3.1–6.1), PCW 1.7 (1.1–2.4), PC ≠

Reference: Cordeiro *et al.* (1984)

***Henneguya postexilis* Minchew, 1977**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW

Site: Gills

Locality: Private rearing pond, Saline County, Missouri, USA

Plasmodia: 12 x 12–80 µm; FC circular to oblong

Spore measurements: SL 15.0 (13.5–17), SW 3.4 (3.5–4.0), TS 3.0 (3.5–4.0), AL 37.0 (28–49), TL 52.0 (42–62), PCL 6.6 (5.9–7.2), PCW 1.5 (1.0–2.0), PC ≠, =, NC 6–8

Reference: Minchew (1977)

***Henneguya pseudoplatystoma* Naldoni, Arana, Maia, Ceccarelli, Tavares, Borges, Pozo & Adriano, 2009**

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae) – FW

Site: Gills

Locality: Fish farms, Mogi Mirim and Bandeirantes, São Paulo and Mato Grosso do Sul, Brazil

Plasmodia: 0.5 mm in diameter

Spore measurements: SL 10.4±0.6, SW 3.4±0.4, TS 4.5±0.1, AL 22.7±1.7, TL 33.2±1.9, PCL 3.3±0.4, PCW 1.0±0.1, NC 6–7

Specimens in Collection: ZEUC (No. 26)

Reference: Naldoni *et al.* (2009)

***Henneguya rhamdia* Matos, Tajdari & Azevedo, 2005**

Host: *Rhamdia quelen* (Quoy & Gaimard, 1824) (Siluriformes: Heptapteridae) – FW

Site: Gills

Locality: Peixe Boi River (01°11'30"S, 47°18'54"W), Peixe Boi, Pará, Brazil

Plasmodia: up to 0.3 mm; **FC** spherical to ellipsoidal

Spore measurements: **SL** 13.1±1.1, **SW** 5.2±0.5, **TS** 2.5±0.25, **AL** 36.9±1.6, **TL** 50.0±1.8, **PCL** 4.7±0.4, **PCW** 1.1±0.2, **NC** 10–11

Specimens in Collection: USNPC (No. 1076957)

Reference: Matos *et al.* (2005)

***Henneguya rondoni* Azevedo, Casal, Matos & Matos, 2008**

Host: *Gymnorhamphichthys rondoni* (Miranda Ribeiro, 1920) (Gymnotiformes: Rhamphichthyidae)–FW

Site: Peripheral lateral nerves beneath lateral lines

Locality: Amazon River (01°46'S, 47°26'W), Irituia Beach, Pará, Brazil

Plasmodia: Up to 0.110 mm, **FC** spherical

Spore measurements: **SL** 7.0 (6.8–7.3), **SW** 3.6 (3.0–3.9), **TS** 2.5 (2.2–2.8), **AL** 10.7 (10.3–11.0), **TL** 17.7 (16.9–18.1), **PCL** 2.5 (2.2–2.6), **PCW** 0.85 (0.79–0.88), **NC** 6–7

Specimens in Collection: USNPC (No. 1110541 and 1110542)

Reference: Azevedo *et al.* (2008)

***Henneguya rotunda* Moreira, Adriano, Silva, Ceccarelli & Maia, 2014**

Host: *Salminus brasiliensis* (Cuvier, 1816) (Characiformes: Bryconidae)–FW

Site: Fins and gill

Locality: Mogi Guaçu River (21°55'37"S, 47°22'03"W), Pirassunga, São Paulo, Brazil

Plasmodia: 0.7 mm; **FC** elongate

Spore measurements: **SL** 7.1±0.2, **SW** 5.6±0.2, **TS** 3.7±0.1, **AL** 16.4±1.2, **TL** 23.6±1.1, **PCL** 3.4±0.2, **PCW** 1.8±0.1, **PC** =, **NC** 6–7

Specimens in Collection: ZUEC (No. Myx 43 and Myx 44)

GenBank: 18S (No. KJ416130 & KJ416131)

Reference: Moreira *et al.* (2014)

***Henneguya salminicola* Ward 1919**

Host: *Oncorhynchus kisutch* (Walbaum, 1792) (Salmoniformes: Salmonidae)–FW

Site: Connective tissue and body muscles

Locality: Stickeen River, Alaska, USA

Plasmodia: 6–8 length x 3–6 width mm; **FC** piriform

Spore measurements: **SL** 11.97–14.75, **SW** 7.12–8.43, **AL** 30.78–38.19, **TL** 42.75–52.44, **PCL** 3.7–4.56, **PCW** 1.59–2.85, **PC** =

Reference: Ward (1919)

***Henneguya salmonis* Fantham, Porter & Richardson, 1939**

Host: *Salmo salar* Linnaeus, 1758 (Salmoniformes: Salmonidae)–FW

Site: Skin (near dorsal fin)

Locality: Gaspé Peninsula, Quebec, Canada

Spore measurements: **SL** 10–11.6, **SW** 5–7.7, **TS** 4.5–5.5, **AL** 36.8–45.6, **PCL** 1.5–2.3

Reference: Fantham *et al.* (1939)

***Henneguya santae* Guimaraes & Bergamin, 1934**

Host: *Hypheosobrycon santae* (Eigenmann, 1907) (Characiformes: Characidae)–FW

Site: Gills

Locality: Pinheiros River, São Paulo, Brazil

Plasmodia: 1–1.2 length x 0.7–0.75 width mm; **FC** oval

Spore measurements: **SL** 8.5–10.6, **SW** 4.9–5.7, **AL** 8.7–12.7, **PCL** 2.5–3.5, **PC** ≠, =

Reference: Guimaraes & Bergamin (1934)

***Henneguya schizodon* Eiras, Malta, Varela & Pavanelli, 2004**

Host: *Schizodon fasciatus* Spix & Agassiz, 1829 (Characiformes: Anostomidae)–FW

Site: Kidney

Locality: Amazon River, Manaus, Amazonia, Brazil

Spore measurements: **SL** 13.1 (12–14), **SW** 3.3 (3.4), **AL** 16.3 (15–17), **TL** 28.9 (27–30), **PCL** 5.4 (5–6), **PCW** 1.3 (1–1.5), **NC** 8–10

Specimens in Collection: INPA (No.001)

Reference: Eiras *et al.* (2004)

***Henneguya schizura* Labbé, 1899**

[**Syn. *Myxobolus schizurus* Gurley, 1894**]

Host: *Esox lucius* Linnaeus, 1758 (Esociformes: Esocidae)–FW

Site: Eyes

Locality: USA

Plasmodia: 0.44–1.09 mm

Spore measurements: **SL** 12, **SW** 6, **TS** 3, **AL** 36–48

Reference: Labbé (1899)

***Henneguya sebasta* Moser & Love, 1975**

Host: *Sebastes paucispinis* Ayres, 1854 (Scorpaeniformes: Sebastidae)–MAR

Site: Bulbus; truncus arteriosus

Locality: CTNP, Morro Bay, Santa Bárbara, California, USA

Plasmodia: 1–5 mm; **FC** round or irregular
Spore measurements: **SL** 15.1 (13.0–17.5), **SW** 9.2 (5.6–11.0), **TS** 7.1 (5.0–8.7), **AL** 62 (32.5–87.5), **TL** 77.1 (48.1–82.8), **PCL** 4.5 (3.7–5.6), **PCW** 2.4 (1.8–3.1), **NC** 4–6
Specimens in Collection: USNPC (No. 24406)
Note: Also in the heart chamber. Other hosts: *Sebastes Jordani* Gilbert, *S. chlorostictus* Jordan & Gilbert, *S. diploproa* Gilbert, *S. miniatus* Jordan & Gilbert, *S. serranoides* Eigenmann & Eigenmann
Reference: Moser & Love (1975)

***Henneguya shackletoni* Brickle, Kalavati & MacKenzie, 2006**

Host: *Eleginops maclovinus* (Cuvier, 1830) (Perciformes: Eleginopsidae)–**MAR**
Site: Wall of alimentary tract, mesenteries, surfaces of gonad and heart
Locality: Port Louis (51°40'S, 59°36'W) and Teal Creek (51°48'S, 58°55'W), Falkland Islands
Plasmodia: 0.5–0.8 mm; **FC** spherical or ellipsoidal
Spore measurements: **SL** 11.4 (9.5–14.5), **SW** 8.5 (7.0–11.0), **TS** 7.0 (5.4–8.6), **AL** 37.0 (25.0–51.0), **TL** 49.0 (34.5–65.5), **PCL** 3.5 (3.0–5.0), **PCW** 3.1 (2.5–3.5), **PC** =
Specimens in Collection: BMNH (No. 2005:4:14:1–4)
Reference: Brickle *et al.* (2006)

***Henneguya striolata* Casal, Matos & Azevedo, 1997**

Host: *Pristobrycon striolatus* (Steindachner, 1908) (Characiformes: Serrasalminidae)–**FW**
Site: Gills
Locality: Amazon River, Belém, Pará, Brazil
Plasmodia: 0.06–0.18 mm; **FC** round to irregular
Spore measurements: **SL** 15.8 (14.4–17.0), **SW** 5.3 (4.9–5.9), **TS** 42.2 (39.3–45.6), **AL** 25.9 (23.6–29.8), **TL** 6.8 (5.1–7.0), **PCL** 1.2 (1.1–1.3), **PC** ≠, =, **NC** 13–14
Reference: Casal *et al.* (1997)

***Henneguya sutherlandi* Griffin, Pote, Wise, Greenway, Mauel & Camus, 2008**

Host: *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae)–**FW**
Site: Skin nodules
Locality: Comercial farm, Mississippi, USA
Plasmodia: up to 2 mm; **FC** round to oval
Spore measurements: **SL** 15.4 (12.2–19.3), **SW** 5.5 (4.5–6.8), **AL** 50.5 (34.8–71.4), **TL** 65.9

(48.2–90), **PCL** 6.1 (4.0–7.9), **PCW** 1.7 (1.0–2.2), **PC** ≠, **NC** 6
Specimens in Collection: USNPC (accession numbers not provided)
GenBank: 18S (No. Ef191200)
Reference: Griffin *et al.* (2008)

***Henneguya testicularis* Azevedo, Corral & Matos, 1997**

Host: *Moenkhausia oligolepis* (Günther, 1864) (Characiformes: Characidae)–**FW**
Site: Testis
Locality: Amazon River (01°11'30"S, 47°18'54"W), Belém, Pará, Brazil
Spore measurements: **SL** 14.0 (14.0–14.5), **SW** 6.5 (6.0–6.5), **AL** 13.5 (13–14.5), **TL** 27.5 (27.0–28.5), **PCL** 9.0 (8.5–9.5), **PCW** 2.0 (2.0–2.5), **NC** 12–13
Specimens in Collection: USNPC (No. 47844 holotype; 1996:12:3:1–3 paratypes)
Reference: Azevedo *et al.* (1997)

***Henneguya texana* Joy, 1972**

Host: *Pogonias cromis* (Linnaeus, 1766) (Perciformes: Sciaenidae)–**MAR**
Site: Gills
Locality: Galveston Bay, Texas, USA
Spore measurements: **SL** 8.1 (7–9), **SW** 6.7 (6–7), **TS** 4.7 (4–5), **AL** 48.6 (36–59), **TL** 56.7 (44–66), **PCL** 4.0 (3.6–4.4), **PCW** 2.0 (1–2), **PC** =, **NC** 3
Specimens in Collection: USNPC (No. 24121)
Reference: Joy (1972)

***Henneguya theca* Kent & Hoffmann 1984**

Host: *Eigenmannia virescens* (Valenciennes, 1836) (Gymnotiformes: Sternopygidae)–**FW**
Site: Brain
Locality: Brazil
Spore measurements: **SW** 3.5 (3.0–4.1), **AL** 23.2 (20.3–24.2), **TL** 48.0 (40.6–52.6), **PCL** 11.1 (9.8–12.5), **PCW** 1.4 (1.0–1.6), **PC** ≠
Reference: Kent & Hoffman (1984)

***Henneguya torpedo* Azevedo, Casal, Matos, Alves & Matos, 2011**

Host: *Brachyhyopomus pinnicaudatus* (Hopkins, 1991) (Gymnotiformes: Sternopygidae)–**FW**
Site: Brain, spinal chord
Locality: Peixe Boi River (01° 11' S, 47° 18' W), Peixe Boi, Pará, Brazil
Spore measurements: **SL** 28.5 (28.3–30.1), **SW** 7.2 (7.0–7.5), **TS** 3.0

(2.9–3.1), **AL** 19.6 (19.2–19.9), **TL** 48.6 (48.3–48.9), **PCL** 6.4 (6.3–6.6), **PCW** 1.8 (1.7–1.9), **NC** 5–6

Specimens in Collection: USNPC (No. 2055216)

Reference: Azevedo *et al.* (2011)

***Henneguya travassoi* Guimaraes & Bergamin, 1933**

Host: *Leporinus* sp. (Characiformes: Anostomidae)–FW

Site: Muscle

Locality: Brazil

Plasmodia: up to 5 mm; FC round

Spore measurements: **SL** 10.1–10.8, **SW** 3.8–4.8, **AL** 15.3–18, **TL** 26.3–28.1, **PCL** 3.2–4.0

Reference: Guimaraes & Bergamin (1933)

***Henneguya umbri* Guilford, 1965**

Host: *Umbra limi* (Kirtland, 1840) (Esociformes: Umbridae)–FW

Site: Gills

Locality: Lake Michigan, Green Bay, Wisconsin, USA

Plasmodia: Up to 0.19 mm; FC round to slightly ovoid

Spore measurements: **SL** 18.4 (15.6–20.4), **SW** 6.05 (5.4–7.0), **TS** 5.4 (4.8–6.0), **AL** 26.8 (19.2–38.8), **TL** 45.2 (35.6–56.4), **PCL** 6.1 (4.8–7.2), **PCW** 1.5–2.4, **PC** =, **NC** 6

Reference: Guilford (1965a)

***Henneguya visceralis* Jakovska & Nigrelli, 1953**

Host: *Electrophorus electricus* (Linnaeus, 1766) (Gymnotiformes: Gymnotidae)–FW

Site: Kidney, liver, heart, mesentery

Locality: New York Aquarium, New York, New York, USA

Spore measurements: **SL** 11–12, **SW** 5.0–6.5, **TS** 4.5, **TL** 22–24, **PCL** 6.5–8, **PCW** 2, **PC** =, **NC** 11–12

Note: The fish was from Brazil, but went at New York Aquarium, USA

Reference: Jakowska & Nigrelli (1953)

***Henneguya visibilis* Moreira, Adriano, Silva, Ceccarelli & Maia, 2014**

Host: *Leporinus obtusidens* (Valenciennes, 1837) (Characiformes: Anostomidae)–FW

Site: Connective tissue of the fins

Locality: Mogi Guaçu River (21°55'37"S, 47°22'03"W), Pirassununga, São Paulo, Brazil

Plasmodia: 400–1.000 µm long; FC elongate

Spore measurements: **SL** 10.8±0.6, **SW** 3.9±0.2, **AL** 18±1.2, **TL** 26.8±1.1, **PCL** 4.9±0.3, **PCW** 1.4±0.1, **NC** 6–9

Specimens in Collection: ZUEC (No. MYX 33)

GenBank: 18S (No. Kc771143)

Reference: Moreira *et al.* (2014)

***Henneguya wenyoni* Pinto, 1928**

Host: *Tetragonopterus* sp. (Characiformes: Characidae)–FW

Site: Gills

Locality: São Paulo, Brazil

Plasmodia: 2 length x 1 width mm; FC oval

Spore measurements: **SL** 8–12, **SW** 4.5–6, **AL** 8–12, **TL** 20, **PCL** 2.5–3 in diameter, **PC** ≠

Reference: Pinto (1928)

***Henneguya wisconsinensis* Mavor & Strasser, 1916**

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae)–FW

Site: Urinary bladder

Locality: Lake Mendota, Wisconsin, USA

Plasmodia: 300 length x 70 width µm; FC elongate

Spore measurements: **SL** 11.5, **SW** 7, **AL** 9.6, **TL** 21.1, **PCL** 3.5, **PCW** 2.5

Reference: Mavor & Strasser (1916)

Genus *Myxobolus* Bütschli, 1882

***Myxobolus absonus* Cellere, Cordeiro, Adriano 2002**

Host: *Pimelodus maculatus* Lacepède, 1803 (Siluriformes: Pimelodidae)–FW

Site: Opercular cavity

Locality: Piracicaba River (22°42'08.4"S, 47°38'30.4"W), Piracicaba, São Paulo, Brazil

Plasmodia: 1–2 mm; FC spherical

Spore measurements: **SL** 15.7±1.5, **SW** 10.2±0.7, **PCL** 6.4±0.7, **PCW** 3.6±0.5, **PC** ≠, **NC** 5

Specimens in Collection: ZUEC (No. 01–03)

Reference: Cellere *et al.* (2002)

***Myxobolus algonquinensis* Xiao & Desser 1997**

Host: *Notemigonus crysoleucas* (Mitchill, 1814) (Cypriniformes: Cyprinidae)–FW

Site: Ovary

Locality: Sasajewun Lake (45°35'N, 78°30'W), Algonquin Park, Ontario, Canada

Plasmodia: Up to 0.8 mm; FC elliptical

Spore measurements: **SL** 14.7 (13.6–15.4), **SW**

10.9 (10.1–12.1), **TS** 5.8 (5.0–6.9), **PCL** 5.3 (5.1–5.5), **PCW** 2.7 (2.5–2.9), **PC** =, **NC** 4–5

Specimens in Collection: CMN (No. 1996–0088 (spores), 1996–0089 (in ovary section), and 1996–0090 (ovary tissue))

Reference: Xiao & Desser (1997)

***Myxobolus angustus* Kudo, 1934**

Host: *Pimephales vigilax* (Baird & Girard, 1853) (Cypriniformes: Cyprinidae)–FW

Site: Gills

Locality: Illinois River, Meredosia Bay, Illinois, USA

Plasmodia: 260 length x 100 width μ m; **FC** elliptical

Spore measurements: **SL** 14–15, **SW** 7–8, **TS** 6–7, **PCL** 8–9.5, **PCW** 2.5–3, **PC** =

Reference: Kudo (1934)

***Myxobolus argentus* Lewis 1968**

Host: *Notemigonus crysoleucas* (Mitchill, 1814) (Cypriniformes: Cyprinidae)–FW

Site: Subdermal connective tissue

Locality: Gorhan, Illinois, USA

Plasmodia: 3.0 length x 3.7 width mm; **FC** oval

Spore measurements: **SL** 13.93 (12.65–14.65), **SW** 8.60 (8.56–9.71), **TS** 6.4 (5.7–7.4), **PCL** 5.6 (5.1–6.3), **PCW** 2.9 (2.8–3.4), **PC** =, **NC** 6–8

Specimens in Collection: USNPC (No. 71287)

Reference: Lewis (1968)

***Myxobolus associatus* Nemeček, 1926**

Host: *Hypomasticus mormyrops* (Steindachner, 1875) (Characiformes: Anostomidae)–FW

Site: Kidney

Locality: São Gonçalo das Tabocas River, Minas Gerais, Brazil

Plasmodia: **FC** spherical

Spore measurements: **SL** 15, **SW** 10, **PCL** 7

Reference: Nemeček (1926)

***Myxobolus aureatus* Ward 1919**

Host: *Notropis anogenus* Forbes, 1885 (Cypriniformes: Cyprinidae)–FW

Site: Between the fin membranes

Locality: Lake Erie, near Put-in-Bay, Ohio, USA

Plasmodia: 1–1.6 length x 0.8–1.2 width mm; **FC** elliptical

Spore measurements: **SL** 12.4–13.5, **SW** 6.5–7.5, **TS** 5, **PCL** 6–7.5, **PC** =, **NC** 6–7

Reference: Ward (1919)

***Myxobolus aureus* Carriero, Adriano, Silva, Ceccarelli & Maia, 2013**

Host: *Salminus brasiliensis* (Cuvier, 1816) (Characiformes: Bryconidae)–FW

Site: Liver

Locality: Pantanal National Park (17°50'48"S, 57°24'14"W), Poconé, Mato Grosso do Sul, Brazil

Plasmodia: 0.40 mm in length

Spore measurements: **SL** 12.6 \pm 0.5, **SW** 8.3 \pm 0.3, **TS** 5.5 \pm 0.3, **PCL** 5.7 \pm 0.3, **PCW** 2.9 \pm 0.2, **PC** =, **NC** 7–8

Specimens in Collection: ZUEC (No.: MYX35)

GenBank: 18S (No.: Kf296348)

Reference: Carriero *et al.* (2013)

***Myxobolus bartai* Salim & Desser 2000**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae)–FW

Site: Body wall musculature (intracellular)

Locality: Sasajewun Lake (45°35'30"N, 78°31'30"W) and Kathlyn Lake (45°35'50"N, 78°32'00"W), Algonquin Park, Ontario, Canada

Plasmodia: 10 mm in length; **FC** elongate

Spore measurements: **SL** 11.0 (10.3–11.4), **SW** 10.8 (10.0–11.3), **TS** 7.1 (6.1–7.5), **PCL** 6.3 (5.9–7.0), **PCW** 3.8 (3.2–4.2), **PC** \neq , **NC** 3–4

Specimens in Collection: CMNP (No. 1999–0025)

GenBank: 18S (No. AF186835.1)

Note: The smaller polar capsules were 5.7 (4.9–6.3) in length and 3.3 (3.0–4.0) in width

Reference: Salim & Desser (2000)

***Myxobolus bartoni* Kalavati, Brickle, Mackenzie 2000**

Host: *Galaxias maculatus* (Jenyns, 1842) (Osmeriformes: Galaxiidae)–MAR

Site: Trunk musculature

Locality: M, Fox Bay, Falkland Island, Argentina

Spore measurements: **SL** 7.2 (6.4–8.0), **SW** 4.3 (4.0–4.8), **PCL** 3.6 (3.2–4.0), **PCW** 1.6, **PC** =, **NC** 3–4

Specimens in Collection: NHMUK (No. 1999:3:2:3/1999:3:2:4)

Reference: Kalavati *et al.* (2000)

***Myxobolus bellus* Kudo, 1934**

Host: *Carpiodes carpio* (Refinesque, 1920) (Cypriniformes: Cyprinidae)–FW

Site: Integument

Locality: Kaskakia River, Carlyle, Illinois, USA

Plasmodia: 1.8 length x 1.2 width

Spore measurements: SL 10–11, SW 6.5–7, TS 4–5, PCL 4–5, PCW 1.5–2, PC =
Reference: Kudo (1934)

***Myxobolus bibullatus* Grinham & Cone, 1990**

[Syn. *Myxosoma bibullatum* Kudo, 1934]

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae) – FW

Site: Integument

Locality: Rock River, Beloit, Illinois, USA

Plasmodia: 0.25–1 mm

Spore measurements: SL 14–15, SW 11.5–12.5, TS 6–7.5, PCL 7, PCW 3.5, PC =

Specimens in Collection: CMN (No. 1990–0008) and USNPC (No. 8–1050)

Reference: Grinham & Cone (1990)

***Myxobolus bilobus* Cone, Yang, Sun & Easy, 2005**

Host: *Notemigonus crysoleucas* (Mitchill, 1814) (Cypriniformes: Cyprinidae) – FW

Site: Gill filaments

Locality: Brewer Lake (45°35'N, 78°19'W), Algonquin Park, Ontario, Canada

Plasmodia: Up to 1.0 mm; FC oval

Spore measurements: SL 20.0–22.1 (21±0.6), SW 7.5–9.3 (8.4±0.5), TS 6, PCL 9.2–12.0 (10.8±0.7), PCW 2.2–3.6 (2.7±0.2), PC ≠, NC 8–9

Specimens in Collection: USNPC (No. 96438)

GenBank: 18S (No. Dq008579)

Reference: Cone *et al.* (2005)

***Myxobolus bondi* Landsberg & Lom, 1991**

[Syn. *Myxosoma muelleri* Bond, 1939]

Host: *Esox masquinongy* Mitchill, 1824 (Esociformes: Esocidae) – FW

Site: Gills

Locality: Chautauqua Lake, New York, USA

Plasmodia: 1 length x 2–3 width; FC oval

Spore measurements: SL 13 (12–13.5), SW 7, TS 4.5, PCL 7, PCW 2.5–3, PC =, NC 8–10

Reference: Landsberg & Lom (1991)

***Myxobolus branchiarum* Walsh, Iwanowicz, Glenney, Iwanowicz & Blazer, 2012**

Host: *Micropterus dolomieu* Lacepède, 1802 (Perciformes: Centrarchidae) – FW

Site: Gill lamellae

Locality: Potomac River, Shenandoah River and Cowpasture River, West Virginia and Maryland, USA

Plasmodia: 0.21–0.42 (0.32±0.02) length x 0.15–0.42 (0.24±0.02) width mm; FC subcircular

Spore measurements: SL 8.0–15.1 (12.8±0.14), SW 4.0–8.9 (6.8±0.1), TS 4.7–7.1 (5.6±0.08), PC =, NC 8–9

Specimens in Collection: USNPC (No. 104898 and 104899)

GenBank: 18S (No. Jf714994)

Reference: Walsh *et al.* (2012)

***Myxobolus braziliensis* Casal, Matos & Azevedo, 1996**

Host: *Bunocephalus coracoideus* (Cope, 1874) (Siluriformes: Aspredinidae) – FW

Site: Gill

Locality: Amazon River, Belém, Pará, Brazil

Plasmodia: 0.3 length x 0.75 width mm; FC ellipsoidal

Spore measurements: SL 10.2 (9.4–10.9), SW 5.2 (4.7–5.9), TS 3.6 (3.2–4.0), PCL 5.3 (5.0–5.4), PCW 1.4 (1.4–1.4), PC =, NC 8–9

Reference: Casal *et al.* (1996)

***Myxobolus brycon* Azevedo, Casal, Marques, Silva & Matos, 2011**

Host: *Brycon hilarii* (Valenciennes, 1850) (Characiformes: Bryconidae) – FW

Site: Gills

Locality: Paraguai River (18°49'S, 57°39'W), Corumbá, Mato Grosso do Sul, Brazil

Plasmodia: Up to 0.18 mm; FC elongate

Spore measurements: SL 6.5–7.2 (6.9±0.6), SW 3.9–4.8 (4.2±0.5), TS 1.9–2.8 (2.5±0.7), PCL 3.8–4.7 (4.2±0.6), PCW 1.7–2.5 (1.9±0.6), PC =, NC 8–9

Specimens in Collection: INPA (No. 2)

Reference: Azevedo *et al.* (2011)

***Myxobolus bubalis* Otto & Jahn, 1943**

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – FW

Site: Muscles

Locality: Little Miller's Bay, Iowa, USA

Plasmodia: 0.438 mm

Spore measurements: SL 13.1–14.7, SW 10.2–11.7, PCL 5.8–6.3, PCW 2.2–2.9, PC =

Reference: Otto & Jahn (1943)

***Myxobolus burti* Cone & Marcogliese, 2010**

Host: *Notropis hudsonius* (Clinton, 1824) (Cypriniformes: Cyprinidae) – FW

Site: Muscles

Locality: St. Lawrence River (45°55'N, 73°13'W), Quebec, Canada

Plasmodia: 1.00 length x 0.25 width; **FC** elongate
Spore measurements: **SL** 9.7–11.3 (10.3±0.6), **SW** 7.1–8.4 (7.7±0.4), **TS** 5.6–6.0 (5.8±0.2), **PCL** 4.0–5.8 (5.3±0.5), **PCW** 2.1–3.2 (2.7±0.3), **PC** ≠, **NC** 4–5

Specimens in Collection: USNPC (No.: 103474)

Note: Other known localities include Lake Superior, Lake Michigan, Lake Huron, Lake St. Claire, Lake Erie, and Lake Ontario.

Reference: Cone & Marcogliese (2010)

***Myxobolus capsulatus* Davis, 1917**

Host: *Cyprinodon variegatus* Lacepède, 1803 (Cyprinodontiformes: Cyprinodontidae)–FW

Site: Visceral connective tissue

Locality: Beaufort Region (32°26'0"N, 80°41'0"W), South Carolina, USA

Spore measurements: **SL** 10–11, **SW** 16, **PCL** 11, **PCW** 4

Reference: Davis (1917)

***Myxobolus cartilaginis* Landsberg & Lom, 1991**

[Syn. *Myxosoma cartilaginis* Hoffman, Putz & Dunbar 1965]

Host: *Lepomis macrochirus* Rafinesque, 1819 (Perciforme: Centrarchidae)–FW

Site: Head cartilage

Locality: Shenandoah River, Millville, Virginia, USA

Plasmodia: 420–1500 µm; **FC** oval

Spore measurements: **SL** 10.2 (9.5–10.5), **SW** 8.9 (8.4–9.5), **TS** 6.4 (6.3–7.3), **PCL** 5.3 (5.2–5.6), **PCW** 3.3 (3–3.5), **PC** =, **NC** 5–7

Reference: Landsberg & Lom (1991)

***Myxobolus catostomi* Fantham, Porter & Richardson, 1939**

[Syn. *Myxosoma catostomi* Kudo, 1939]

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae)–FW

Site: Mouth

Locality: Tributary of Nicolet River, Ford Village, Quebec, Canada

Plasmodia: 1 mm

Spore measurements: **SL** 11.8–14.5, **SW** 6.8–9.5, **PCL** 4.5–5.8, **PCW** 1.3–3.2

Reference: Fantham *et al.* (1939)

***Myxobolus centropomi* Landsberg, 1993**

Host: *Centropomus undecimalis* (Bloch, 1792)

(Perciformes: Centropomidae)–FW

Site: Gill

Locality: Bishops Harbor (27°38'N, 82°35'W), Little Manatti River (27°43'N, 82°23'W) and Murray Creek (29°08'N, 80°53'W), Florida, USA

Spore measurements: **SL** 8.1 (7.5–9), **SW** 4.6 (3.5–5), **T** 3.8 (3.5–4), **PCL** 3.3 (3–4), **PCW** 1.5 (1–2), **PC** =

Specimens in Collection: USNPC (No. 82393)

Note: 28.6 (19–39) length of polar filament

Reference: Landsberg (1993a)

***Myxobolus cephalus* Landsberg & Lom, 1991**

[Syn. *Myxosoma cephalis* Iversen, Chitty & Meter 1971]

Host: *Mugil cephalus* Linnaeus, 1758 (Mugiliformes: Mugilidae)–FW/BW

Site: Brain meninges, gill arches

Locality: TNA, Buttonwood Canal, Everglades National Park, Florida, USA

Plasmodia: 2.4 length x 11.5 width mm; **FC** spherical to oblong

Spore measurements: **SL** 14.1 (14–15), **SW** 11.0 (10–11), **TS** 9.0 (8–10), **PCL** 4.7 (4–5), **PCW** 3.2 (3–4), **PC** =, **NC** 4–5

Specimens in Collection: USNPC (No. 24109)

Reference: Landsberg & Lom (1991)

***Myxobolus colossomati* Molnár & Békési, 1993**

Host: *Colossoma macropomum* (Cuvier, 1816) (Characiforme: Serrasalminidae)–FW

Site: Gills, liver, muscles

Locality: Curu River, Pentecoste, Ceará, Brazil

Plasmodia: 0.5–2 mm

Spore measurements: **SL** 11.8 (11.4–12.2), **SW** 6.9 (6.6–7.2), **TS** 3.7 (3.5–4.0), **PCL** 6.0 (5.8–6.6), **PCW** 2.1 (1.8–2.5), **PC** =, **NC** 7–8

Reference: Molnár & Békési (1993)

***Myxobolus chondrophilus* Nemeček, 1926**

Host: *Sardinella aurita* Valenciennes, 1847 (Clupeiformes: Clupeidae)–MAR

Site: Gills

Locality: WTSA, Rio de Janeiro, Brazil

Plasmodia: 0.125 x 1 mm; **FC** spherical

Spore measurements: **SL** 6, **SW** 4.5, **TS** 3.5, **PCL** 3, **PC** =

Reference: Nemeček (1926)

***Myxobolus cognati* Cone, Stickel, Eck & Muzzall, 1996**

Host: *Cottus cognatus* Richardson, 1836 (Scorpaeniformes: Cottidae)–FW

Site: Operculum

Locality: Lake Michigan, Michigan, USA

Plasmodia: 0.2–0.5 mm in diameter; **FC** round to elongate

Spore measurements: **SL** 13.3 (12–14), **SW** 10 (9.5–10.5), **TS** 8.5 (8.0–9.0), **PCL** 6.6 (5.5–7.5), **PCW** 3, **PC** =, **NC** 8–11

Specimens in Collection: USNPC (No. 85336)

Reference: Cone *et al.* (1996)

***Myxobolus commersonii* Landsberg & Lom, 1991**

[Syn. *Myxosoma commersonii* Fantham, Porter & Richardson, 1939]

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae) – **FW**

Site: Skin

Locality: Stoke River, Quebec, Canada

Spore measurements: **SL** 9.5–16.5, **SW** 7–11.4, **PCL** 7.7, **PCW** 3.2, **PC** =

Reference: Landsberg & Lom (1991)

***Myxobolus compressus* Kudo, 1934**

Host: *Notropis blennioides* (Girard, 1856) (Cypriniformes: Cyprinidae) – **FW**

Site: integument

Locality: Rock River, Beloit, Illinois, USA

Plasmodia: 0.3–0.6 mm; **FC** irregular

Spore measurements: **SL** 12–14, **SW** 7–10, **TS** 7–7.5, **PCL** 5, **PCW** 2.5, **PC** =

Reference: Kudo (1934)

***Myxobolus congesticus* Kudo, 1934**

Host: *Moxostoma anisurum* (Rafinesque, 1820) (Cypriniformes: Catostomidae) – **FW**

Site: Fins

Locality: Fox River, Dundee, Illinois, USA

Plasmodia: 0.3–1 mm; **FC** spherical to irregular

Spore measurements: **SL** 9–10, **SW** 8.5–9.5, **TS** 6, **PCL** 5.6, **PCW** 2.5–3.5, **PC** =

Reference: Kudo (1934)

***Myxobolus conspicus* Kudo, 1929**

Host: *Moxostoma breviceps* (Cope, 1870) (Cypriniformes: Catostomidae) – **FW**

Site: Head integument

Locality: Rock River, Rockford, Illinois, USA

Plasmodia: 0.5–4 mm; **FC** circular to irregular

Spore measurements: **SL** 9–11.5, **SW** 6.5–8, **TS** 4.5–5.5, **PCL** 5–7, **PCW** 2–2.5, **PC** =, **NC** ~10

Reference: Kudo (1929)

***Myxobolus cordeiroi* Adriano, Arana, Alves, Silva, Ceccarelli, Henrique-Silva & Maia 2009**

Host: *Zungaro jahu* (Ihering, 1898) (Siluriformes: Pimelodidae) – **FW**

Site: Gill arch, skin, serosa, urinary bladder, eye

Locality: Miranda and Aquidauna Rivers, Pantanal, Mato Grosso do Sul, Brazil

Plasmodia: 0.3–2.0 mm in diameter; **FC** round

Spore measurements: **SL** (10.9±0.4)–(11.3±0.3), **SW** (7.1±0.2)–(7.5±0.3), **TS** (5.3±0.3)–(5.6±0.1),

PCL (5.2±0.3)–(5.4±0.2), **PCW** (1.4±0.1)–(1.5±0.3), **PC** =, **NC** 5–6

Specimens in Collection: ZUEC (No. 24)

GenBank: 18S (No. Fj827757)

Reference: Adriano *et al.* (2009)

***Myxobolus corneus* Cone, Horner & Hoffman, 1990**

Host: *Lepomis macrochirus* Rafinesque, 1819 (Perciformes: Centrarchidae) – **FW**

Site: Eye

Locality: Farm pond (39°05'N, 89°45'W), Macoupin County, Illinois, USA

Spore measurements: **SL** 9.4 (8.0–10.5), **SW** 8.0 (6.5–9.0), **PCL** 5.3 (4.0–5.5), **PCW** 2.4 (2.5–3.0),

PC =, **NC** 7–8

Specimens in Collection: USNPC (No. 80994 and H 81-25)

Reference: Cone *et al.* (1990)

***Myxobolus couesii* Fantham, Porter & Richardson, 1939**

Host: *Couesius plumbeus* (Agassiz) (Cypriniformes: Cyprinidae) – **FW**

Site: Eye

Locality: Missisquoi County, Quebec, Canada

Plasmodia: 0.8 mm

Spore measurements: **SL** 10.4–13.2, **SW** 7.7–9.4, **PCL** 4.1–5.5, **PCW** 1.4–3.2, **PC** =

Reference: Fantham *et al.* (1939)

***Myxobolus cuneatus* Landsberg & Lom, 1991**

[Syn. *Myxosoma cuneatus* Bond, 1939]

Host: *Esox masquinongy* Mitchell, 1824 (Esociformes: Esocidae) – **FW**

Site: Gills

Locality: Chautauqua Lake, New York, USA

Plasmodia: 2–3 mm; **FC** spherical

Spore measurements: **SL** 10 (9–10), **SW** 6 (5–7), **TS** 4.5, **PCL** 4–6, **PCW** 1.5–3, **PC** =, **NC** 9–10

Reference: Landsberg & Lom (1991)

Myxobolus cuneus* Adriano, Arana & Cordeiro, 2006*Host:** *Piaractus mesopotamicus* (Holmberg, 1887) (Characiformes: Serrasalminidae) – FW**Site:** Gallbladder, urinary bladder, gills, spleen, fins, head surface, liver, heart.**Locality:** Mogi Guaçu River, Pirassununga, São Paulo, Brazil**Plasmodia:** 0.02–2.10 mm; FC spherical**Spore measurements:** SL 10.0±0.6, SW 5.1±0.3, PCL 5.7±0.3, PCW 1.7±0.2, PC =, NC 8–9**Specimens in Collection:** ZUEC (No. 18 and 19)**Reference:** Adriano *et al.* (2006)***Myxobolus cunhai* Penido 1927****Host:** *Synodontis clarias* (Linnaeus) (Siluriformes: Mochokidae) – FW**Site:** Intestine**Locality:** Paraguay River, Porto Esperança, Mato Grosso do Sul, Brazil**Spore measurements:** SL 9–11, SW 4–6**Reference:** Penido (1927)***Myxobolus curimatae* Zatti, Naldoni, Silva, Maia & Adriano, 2015****Host:** *Prochilodus costatus* Valenciennes, 1850 (Characiformes: Prochilodontidae) – FW**Site:** Gills**Locality:** São Francisco River (17°12'75"S, 44°50'95"W), Pirapora, Minas Gerais, Brazil**Plasmodia:** 5 mm; FC elongated**Spore measurements:** SL 13.2±0.9 (12–14.7), SW 9.7±1 (7–10.8), PCL 5.2±0.5 (4.1–5.8), PCW 2.5±0.5 (1.7–3.9), PC =, NC 9–10**Specimens in Collection:** ZUEC (No. MYX42)**GenBank:** 18S (No. Kp120979)**Reference:** Zatti *et al.* (2015)***Myxobolus dechtiari* Cone & Anderson, 1977****Host:** *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW**Site:** Gills**Locality:** Ryan Lake, Algonquin Park, Ontario, Canada**Plasmodia:** 0.3–0.8 mm in diameter; FC elongated**Spore measurements:** SL 11.5 (10–14), SW 8 (7–9), TS 7.5 (7–8), PCL 5 (4–6), PCW 2.5 (2–3), PC =, NC 7–8**Specimens in Collection:** USNPC (No. 24493)**Reference:** Cone & Anderson (1977)***Myxobolus dentium* Fantham, Porter & Richardson, 1939****Host:** *Esox masquinongy* Mitchill, 1824 (Esociformes: Esocidae) – FW**Site:** Palate**Locality:** Lake St. Louis, Quebec, Canada**Plasmodia:** 7.5 mm**Spore measurements:** SL 11.8–14.5, SW 5.5–7.3, PCL 4.5–7.3, PCW 1.3–3.2, PC =**Reference:** Fantham *et al.* (1939)***Myxobolus desaequalis* Azevedo, Carral & Matos, 2002****Host:** *Apteronotus albifrons* (Linnaeus, 1766) (Teleostei: Apterontidae) – FW**Site:** Gill**Locality:** Amazon River (00°45'21"S, 48°30'54"W), Marajo Island, Pará, Brazil**Plasmodia:** 0.5–1.8 mm; FC spherical to ellipsoidal**Spore measurements:** SL 18.3 (17.6–19.1), SW 11.2 (10.6–11.9), TS 4.4 (4.0–5.0), PCL 11.2 (10.7–11.9), PCW 4.9 (4.5–5.2), PC ≠, NC 11–12**Specimens in Collection:** USNPC (No. 1007023)**Note:** The smaller polar capsules are 4.6 (4.1–4.8) length x 2.8 (2.5–3.1) width and the polar filament forms 4–5 coils.**Reference:** Azevedo *et al.* (2002)***Myxobolus diaphanous* Landsberg & Lom, 1991 [Syn. *Myxosoma diaphanous* Fantham, Porter & Richardson, 1939]****Host:** *Fundulus diaphanus* (Lesueur, 1817) (Cyprinodontiformes: Fundulidae) – FW**Site:** Testis**Locality:** Salmon River, Guysborough County, Nova Scotia, Canada**Spore measurements:** SL 15.5–20, SW 5.2–7.6, PCL 7.4–9.6, PCW 1.5–2.2, PC ≠, NC 11–15**Reference:** Landsberg & Lom (1991)***Myxobolus discrepans* Kudo, 1919****Host:** *Carpoides velifer* (Rafinesque, 1820) (Cypriniformes: Catostomidae) – FW**Site:** Gill**Locality:** Salt Lake, Ohio, USA**Plasmodia:** 0.5–1 mm; FC round to elongate**Spore measurements:** SL 11.4–13.5, SW 9.5–11, TS 8.5–9.5, PCL 5.5–6, PCW 3.5–4, PC =**Reference:** Kudo (1919)***Myxobolus ellipticoides* Landsberg & Lom, 1991**

[Syn. *Myxosoma ellipticoides* Fantham, Porter & Richardson, 1939]

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae)–FW

Site: Skin

Locality: Coaticook River, Hatley, Quebec, Canada

Plasmodia: 5–8 mm

Spore measurements: SL 11.4–14.1, SW 6.8–8.2, PCL 4.5–5.9, PCW 1.8–3.2, NC 5–8

Reference: Landsberg & Lom (1991)

Myxobolus endovasus Grinham & Cone, 1990

[Syn. *Myxosoma endivasa* Davis, 1947]

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae)–FW

Site: Gills

Locality: Mississippi River, Fairport, Illinois, USA

Spore measurements: SL 9, SW 8, PCL 5, PCW 3.3, PC =

Reference: Grinham & Cone (1990)

Myxobolus enoblei Lom & Cone 1996

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae)–FW

Site: Gills

Locality: Small creek near Allenville, Illinois, USA

Plasmodia: 1.5 length x 0.3 width mm; FC elongate

Spore measurements: SL 14.4 (13.5–15.0), SW 11 (10.5–11.5), TS 7.5, PCL 8.3 (7.9–8.5), PCW 4.8 (4.5–5), PC =, NC 6–7

Reference: Lom & Cone (1996)

Myxobolus eucalii Landsberg & Lom, 1991

[Syn. *Myxosoma eucalli* Guilford, 1965]

Host: *Culaea inconstans* (Kirtland, 1840) (Gasterosteiformes: Gasterosteifae)–FW

Site: Cranium, pectoral fins

Locality: Lake Michigan, Green Bay, Michigan, USA

Plasmodia: 200 µm, FC spherical

Spore measurements: SL 14.4 (12.0–15.6), SW 9.9 (8.4–10.8), TS 6.9 (6.0–7.2), PCL 11.1 (9.6–12.0), PCW 3.7 (3.0–4.8), PC =, NC 9–11

Reference: Landsberg & Lom (1991)

Myxobolus fanthami Landsberg & Lom, 1991

[Syn. *Myxobolus grandis* Fantham, Porter & Richardson, 1939]

Host: *Luxilus cornutus* (Mitchill, 1817)

(Cypriniformes: Cyprinidae)–FW

Site: Body cavity

Locality: Salmon River, Nova Scotia, Canada

Plasmodia: 8 length x 5 width

Spore measurements: SL 13.2–17.3, SW 9.5–10.9, PCL 4.5–6.4, PCW 2.3–3.6

Note: Fantham, Porter & Richardson (1939) named *Myxobolus grandis*. Since this name was already preoccupied by *M. grandis* Kudo, 1934, it was reassigned as *M. fanthami*.

Reference: Landsberg & Lom (1991)

Myxobolus filamentum Naldoni, Zatti, Capodifoglio, Milanin, Maia, Silva & Adriano, 2015

Host: *Brycon orthotaenia* Günther, 1864 (Characiformes: Bryconidae)–FW

Site: Gill

Locality: São Francisco River (17°12'8.26"S; 44°50'0.45"W), Pirapora, Minas Gerais, Brazil

Plasmodia: 5 mm; FC elongate

Spore measurements: SL 7.5–9.7 (9.0±0.3) SW 5.2–7.3 (6.2±0.4), TS 4.8–5.7 (5.3±0.3), PCL 3.8–5.5 (4.7±0.3), PCW 1.3–2.2 (1.7±0.1), PC =, NC 10–11

Specimens in Collection: ZUEC (No. Myx 46)

GenBank: 18S (No. KJ849240)

Reference: Naldoni *et al.* (2015)

Myxobolus filamentus Grinham & Cone, 1990

[Syn. *Myxosoma okoboensis*, Rice & Jahn, 1943]

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae)–FW

Site: Gills

Locality: Okoboji Lake, Iowa, USA

Plasmodia: 0.17–0.20 mm; FC oval

Spore measurements: SL 13.1, SW 16.3, PCL 7.8, PCW 6.2, PC =, NC 14–16

Reference: Grinham & Cone (1990)

Myxobolus flavus Carriero, Adriano, Silva, Ceccarelli & Maia, 2013

Host: *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829) (Siluriformes: Pimelodidae)–FW

Site: Gills

Locality: Pantanal National Park (17°50'48"S, 57°24'14"W), Mato Grosso do Sul, Brazil

Plasmodia: 1–5 mm; FC spherical

Spore measurements: SL 9.2±0.2, SW 6.5±0.3, TS 4.2±0.2, PCL 4.5±0.2, PCW 1.6±0.1, PC =, NC 4–5

Specimens in Collection: ZUEC (No. MYX 39)
GenBank: 18S (No. Kf296347)
Reference: Carriero *et al.* (2013)

***Myxobolus franciscoi* Eiras, Monteiro & Brasil-Sato 2010**

Host: *Prochilodus argenteus* Spix & Agassiz, 1829 (Characiformes: Prochilodontidae) – FW
Site: Fin connective tissue
Locality: São Francisco river (18°12'59"S, 45°15'41"W), Três Marias, Minas Gerais, Brazil
Plasmodia: 1 length x 1 width mm; FC elongate
Spore measurements: SL 6.0–6.9, SW 5.8–6.4, TS 3.2, PCL 2, PCW 1.5, PC =, NC 3
Specimens in Collection: MZUSP (No. 95167)
Reference: Eiras *et al.* (2010)

***Myxobolus fryeri* Ferguson, Atkinson, Whipps & Kent, 2008**

Host: *Oncorhynchus kisutch* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW
Site: Nerve cells in muscles
Locality: Mill Creek of Siletz River (44°44'44.89" N, 123°47'35.72" W), Lincoln County, Oregon, USA
Plasmodia: 35 length x 25 width μm ; FC elliptical
Spore measurements: SL 12.9 \pm 0.8, SW 8.6 \pm 0.7, TS 7.2 \pm 0.4, PCL 7.1 \pm 0.6, PCW 3.0 \pm 0.3, PC \neq , NC 8–10
Specimens in Collection: PCQM (No. G465048–G465050)
GenBank: 18S (No. EU346370–Eu346372)
Note: Also found in *Oncorhynchus clarkii* (Richardson) and *Oncorhynchus mykiss* (Walbaum, 1792)
Reference: Ferguson *et al.* (2008)

***Myxobolus galaxii* Szidat, 1953**

Host: *Galaxias maculatus* (Jenyns, 1842) (Osmeriformes: Galaxiidae) – FW
Site: All organs except gills
Locality: La Planta River, Argentina
Spore measurements: SL 13–15, SW 8.8–10, PC =
Reference: Szidat (1953)

***Myxobolus gibbosus* Herrick, 1941**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW
Site: Gills
Locality: Lake Erie, Ohio, USA
Plasmodia: 0.75 mm

Spore measurements: SL 11.9 (10.6–12.3), SW 10.9 (9.8–12.3), TS 7.1 (6.5–8.2), PCL 6.5 (5.7–7.4), PCW 3.3–4.1, PC =, NC 8–12
Reference: Herrick (1941)

***Myxobolus globosus* Gurley 1893**

Host: *Erimyzon sucetta* (Lacepède, 1803) (Cypriniformes: Catostomidae) – FW
Site: Gills
Locality: Fox River, Illinois, USA
Plasmodia: 0.5 mm; FC round or elongate
Spore measurements: SL 7–8, SW 6, TS 5
Reference: Gurley (1893)

***Myxobolus grandis* Landsberg & Lom, 1991 [Syn. *Myxosoma grandis* Kudo, 1934]**

Host: *Ericymba buccata* Cope, 1865 (Cypriniformes: Cyprinidae) – FW
Site: Liver
Locality: Salt Fork River, Vermilion, Illinois, USA
Spore measurements: SL 15–16, SW 9–11, TS 6.8, PCL 6.7, PCW 2.5–3, PC =
Reference: Landsberg & Lom (1991)

***Myxobolus gravidus* Kudo, 1934**

Host: *Moxostoma anisurum* (Rafinesque, 1820) (Cypriniformes: Catostomidae) – FW
Site: Integument and fins
Locality: Fox River, Carpentersville, Illinois, USA
Plasmodia: 0.5 mm
Spore measurements: SL 12–14, SW 9.5–10, TS 7, PCL 5–5.5, PCW 2.5, PC =
Reference: Kudo (1934)

***Myxobolus heckelii* Azevedo, Casal, Matos, Ferreira & Matos, 2009**

Host: *Centromochlus heckelii* (De Filippi, 1853) (Siluriformes: Auchenipteridae) – FW
Site: Gills
Locality: Tocantins River (02°14'S, 49°30'W), Cametá, Pará, Brazil
Plasmodia: 250 μm , FC spherical to elliptical
Specimens in Collection: USNPC (No. 1123999)
Reference: Azevedo *et al.* (2009)

***Myxobolus heterolepis* Li & Desser 1985**

Host: *Notropis heterolepis* Eigenmann & Eigenmann, 1893 (Cypriniformes: Cyprinidae) – FW
Site: Brain, eye
Locality: Lake Sasajewun (45°35'N, 78°30'W)

and Lake Opeongo (45°42'N, 78°22'W), Algonquin Park, Ontario, Canada

Spore measurements: SL 14 (12.5–14.5), SW 10 (8.5–10.5), TS 9, PCL 6.5 (6–8), PCW 3 (2.5–3.5), PC =, NC 6–7

Specimens in Collection: CMN (No. 1984-0361)

Reference: Li & Desser (1985)

***Myxobolus hilarii* Capodifoglio, Adriano, Milanin, Silva & Maia, 2016**

Host: *Brycon hilarii* (Valenciennes, 1850) (Characiformes: Bryconidae) – FW

Site: Renal tubule

Locality: fish farm (22°30'40.21''S, 47°02'08.80''W), Mogi Mirim, São Paulo, Brazil

Plasmodia: 0.5 mm in diameter; FC round

Spore measurements: SL 11.5±0.8 (9.8–13.4), SW 11.0±0.7 (9.7–12.4), TS 7.6 ±1.0 (6.7–9.0), PCL 6.5±0.4 (6.0–7.2), PCW 4.0 ± 0.2 (3.6–5.3), PC =, NC 5–7

Specimens in Collection: ZUEC (No. Myx 47)

GenBank: 18S (No. Km403404)

Reference: Capodifoglio *et al.* (2016)

***Myxobolus hoffmani* Landsberg & Lom, 1991**

[Syn. *Myxosoma hoffmani* Meglitsch, 1963]

Host: *Pimephales notatus* (Rafinesque, 1820) (Cypriniformes: Cyprinidae) – FW

Site: Eyeball wall

Locality: some small streams, Dakota, USA

Spore measurements: SL 9.3 (8.6–10.8), SW 8.4 (7.8–8.9), TS 6.2 (5.9–6.5), PCL 5.0 (4.6–5.7), PCW 2.4 (2.2–2.7), PC =, NC 10

Reference: Landsberg & Lom (1991)

***Myxobolus hudsonis* Landsberg & Lom, 1991**

[Syn. *Myxosoma hudsoni* Bond, 1938]

Host: *Fundulus heteroclitus* (Linnaeus, 1766) (Cyprinodontiformes: Fundulidae) – MAR

Site: Between scales at base of fins

Locality: WTNA, Chesapeake Bay, Baltimore, Maryland, USA

Plasmodia: 307 length x 260 width µm

Spore measurements: SL 11.5–12.5, SW 7, PCL 4–5, PCW 2–2.5, PC =, NC 7–9

Reference: Landsberg & Lom, 1991

***Myxobolus hyborhynchi* Fantham, Porter & Richardson, 1939**

Host: *Pimephales notatus* (Rafinesque, 1820) (Cypriniformes: Cyprinidae) – FW

Site: Bone at the posterior end of the mandible

Locality: Francoeur brook, Quebec, Canada

Plasmodia: 400 µm

Spore measurements: SL 9.1–10.9, SW 7.3–8.6, PCL 4.1–5.9, PCW 2.3–2.5

Reference: Fantham *et al.* (1939)

***Myxobolus ictiobus* Rosser, Griffin, Quiniou, Alberson, Woodyard, Mischke, Greenway, Wise & Pote, 2016**

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – FW

Site: Gill filaments

Locality: Catfish aquaculture pond, Washington County, Mississippi, USA

Plasmodia: 148 length x 122 width µm; FC round
Spore measurements: SL 13.9±0.4 (12.7–14.5), SW 12.5±0.7 (10.7–13.6), TS 12.6±2.3 (10.3–14.8), PCL 6.6±0.4 (5.6–7.4), PCW 4.5±0.8 (3.7–4.9), NC 5–6

Specimens in Collection: USNPC (No. 1406398)

GenBank: 18S (No. Ku232371)

Reference: Rosser *et al.* (2016)

***Myxobolus inaequus* Kent & Hoffman, 1984**

Host: *Eigenmannia virescens* (Valenciennes, 1836) (Gymnotiformes: Sternopygidae) – FW

Site: Brain

Locality: Brazil

Spore measurements: SL 19.8 (15.6–22), SW 8.6 (7.8–9.3), TS 8.0 (7.7–8.5), PCL 11.8 (9.4–13), PCW 3.6 (3.1–3.9), PC ≠

Reference: Kent & Hoffman (1984)

***Myxobolus inaequalis* Gurley 1893**

Host: *Synodontis clarias* (Linnaeus, 1758) (Siluriformes: Mochokidae) – FW

Site: Head integument

Locality: Guyana, Surinam

Spore measurements: SL 11, SW 7, PC ≠

Reference: Gurley (1893)

***Myxobolus inornatus* Fish, 1939**

Host: *Micropterus dolomieu* Lacepède, 1802 (Perciforme: Centrarchiae) – FW

Site: Caudal peduncle muscles

Locality: Miles City, Montana, USA

Plasmodia: 1–7 mm; FC oval

Spore measurements: SL 12.3, SW 8.2, TS 5.8, PCL 5.2, PCW 2.4, PC ≠

Reference: Fish (1939)

***Myxobolus insidiosus* Wyatt & Pratt, 1963**

Host: *Oncorhynchus tshawytscha* (Walbaum, 1792) (Salmoniformes: Salmonidae) – FW

Site: Muscles

Locality: Santiam River, Willamette River and McKenzie River, Linn and Lane County, Oregon, USA

Plasmodia: 674 length x 79–142 width μm

Spore measurements: SL 15 (12.8–17.3), SW 10.3 (9–11.5), TS 7.5 (6.4–9), PCL 8.8 (7–10.2), PCW 3.3 (2.6–4.5), PC =

Reference: Wyatt & Pratt (1963)

***Myxobolus insidiosus clarki* Wyatt, 1979**

Host: *Oncorhynchus clarkii* (Richardson, 1836) (Salmoniformes: Salmonidae) – FW

Site: Muscle

Locality: Santiam River, Linn County, Oregon, USA

Plasmodia: 47–143 length x 16–76 width μm ; FC oval to oblong

Spore measurements: SL 12.5 (11.5–13.5), SW 8.4 (7.5–9.0), TS 7.4 (7.3–8.4), PCL 8.3 (7.5–9.5), PCW 2.9 (2.5–3.5)

Reference: Wyatt (1979)

***Myxobolus insignis* Eiras, Malta, Varella & Pavanelli, 2005**

Host: *Semaprochilodus insignis* (Jardine, 1841) (Characiformes: Prochilodontidae) – FW

Site: Gills

Locality: Amazon River, Manaus, Amazonas, Brazil

Plasmodia: 0.02–0.80 mm in diameter; FC irregular

Spore measurements: SL 14.0–15.0, SW 11.0–12.0, TS 7.0–8.0, PCL 7.0–8.0, PCW 3.0–5.0, PC =, NC 6

Specimens in Collection: INPA (No. 002)

Reference: Eiras *et al.* (2005)

***Myxobolus intestinalis* Kudo, 1929**

Host: *Pomoxis nigromaculatus* (Lesueur, 1829) (Perciformes: Centrarchidae) – FW

Site: Intestine

Locality: Rock River, Rockford, Illinois, USA

Plasmodia: 1–3 mm in diameter; FC oblong

Spore measurements: SL 12–13, SW 10–12.5, TS 8, PCL 7.5–8.5, PCW 3.5–4, PC =, NC 10–12

Reference: Kudo (1929)

***Myxobolus intramusculi* Easy, Johnson & Cone, 2005**

Host: *Percopsis omiscomaycus* (Walbaum, 1792) (Percopiformes: Percopsidae) – FW

Site: Muscles

Locality: St Lawrence River (45°26'N, 72°44'W), Île Dorval, Quebec, Canada

Plasmodia: 1.0 mm in diameter; FC oblong

Spore measurements: SL 9.9–15.7 (12.5 \pm 0.9), SW 4.6–8.0 (6.2 \pm 0.6), PCL 4.0–7.9 (5.8 \pm 0.6), PCW 1.0–2.7 (1.7 \pm 0.4), PC \neq , NC 3–4

Specimens in Collection: USNPC (No. 095333.00)

GenBank: 18S (No. Ay665297)

Reference: Easy *et al.* (2005)

***Myxobolus iowensis* Otto & Jahn, 1943**

Host: *Pomoxis nigromaculatus* (Lesueur, 1829) (Perciformes: Centrarchidae) – FW

Site: Gills

Locality: East Okoboji, Iowa, USA

Plasmodia: 210 length x 338 width μm

Spore measurements: SL 12.2–12.9, SW 10.6–11.4, TS 7.6, PCL 7.6, PCW 3–3.8, PC =, NC 8–9

Reference: Otto & Jahn (1943)

***Myxobolus jahnricei* Landsberg & Lom, 1991**

[Syn. *Myxosoma okobojiensis* Rice & Jahn, 1943]

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – FW

Site: Gill

Locality: West Okoboji Lake, Dickinson County, Iowa, USA

Plasmodia: 175–200 μm in diameter; FC spherical

Spore measurements: SL 9.5–10.5, SW 4.2–5.2, PCL 3.0–3.8, PCW 1.3–1.9, PC =, NC 6–7

Note: The transfer of the species from *Myxosoma* to *Myxobolus* would have resulted in the combination “*Myxobolus okobojiensis*” which was preoccupied by *Myxobolus okobojiensis* Otto & Jahn, 1943. Therefore, Landsberg & Lom (1991) proposed the name *M. jahnricei*

Reference: Landsberg & Lom (1991)

***Myxobolus jollimorei* Cone & Overstreet, 1998**

Host: *Lepomis macrochirus* Rafinesque, 1819 (Perciformes: Centrarchidae) – FW

Site: Bulbus arteriosus

Locality: Pascagoula River, Jackson County, Mississippi, USA

Plasmodia: 50–300 µm in diameter; **FC** spherical
Spore measurements: **SL** 11.0 (10.5–11.5), **SW** 13.8 (12–14.5), **TS** 7.5 (6.5–8.0), **PCL** 6.0 (5.5–6.0), **PCW** 3.8 (3.5–4.5), **PC** =, **NC** 6–9
Specimens in Collection: USNPC (No. 87588)
Reference: Cone & Overstreet, 1998

***Myxobolus kisutchi* Yasutake & Wood, 1957**

Host: *Oncorhynchus kisutch* (Walbaum, 1792) (Salmoniformes: Salmonidae) – **FW**
Site: Spinal cord
Locality: Samonberry River, Clatsop County, Oregon, USA
Spore measurements: **SL** 7–8.5, **SW** 6.5–7, **TS** 3.5–3.8, **PCL** 3.8–5.5, **PC** =
Reference: Yasutake & Wood (1957)

***Myxobolus kostiri* Herrick, 1936**

Host: *Micropterus dolomieu* Lacepède, 1802 (Perciformes: Centrarchidae) – **FW**
Site: Gills
Locality: Western Lake Erie, Ohio, USA
Plasmodia: 0.75–1.5 mm; **FC** oval
Spore measurements: **SL** 9.6 (8.8–11.2), **SW** 7.4 (6.4–8.0), **TS** 5.4 (4.9–5.8), **PCL** 4.7 (4.1–4.9), **PCW** 2.5 (2.4–3.3), **PC** ≠, **NC** 13
Reference: Herrick (1936)

***Myxobolus kozloffii* Wyatt, 1979**

Host: *Deltistes luxatus* (Cope, 1879) (Cypriniformes: Catostomidae) – **FW**
Site: Kidney
Locality: Williamson River, Klamath County, Oregon, USA
Spore measurements: **SL** 13.5 (13.5–15.5), **SW** 8.6 (8.0–9.5), **TS** 7.2 (6.5–7.5), **PCL** 7.7 (7.5–8.5), **PCW** 3.2 (3.0–3.5)
Reference: Wyatt (1979)

***Myxobolus kudoii* Guimarães & Bergamin, 1938**

Host: *Nemathognata* sp (Siluriformes) – **FW**
Site: Intergument
Locality: Mogi Guaçu River, Pirassununga, São Paulo, Brazil
Plasmodia: 0.5–1.0 mm in diameter; **FC** spherical
Spore measurements: **SL** 8.5–8.9, **SW** 6.5–7.3, **PCL** 3.5–4.1, **PCW** 1.3–2.0, **PC** =
Reference: Guimarães & Bergamin (1938)

***Myxobolus lamellus* Grinham & Cone, 1990**

Host: *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae) – **FW**

Site: Gills

Locality: Sawler Lake (44°39'N, 64°4'W), Nova Scotia, Canada

Spore measurements: **SL** 12.0 (9.5–13.5), **SW** 10.5 (9.0–12.0), **TS** 7.0 (5.0–8.0), **PCL** 6.0 (5.0–7.0), **PCW** 3.5 (3.0–4.5), **PC** =, **NC** 5–6
Specimens in Collection: CMN (No. 1990-0006 and 0007)

Note: Additional voucher slides are in the USNPC (No. 81049)

Reference: Grinham & Cone (1990)

***Myxobolus latipinnacola* Wold & Iversen, 1978**

Host: *Poecilia latipinna* (Lesueur) (Cyprinodontiformes: Poeciliidae) – **FW**
Site: Gallbladder

Locality: canals on Virginia Key, Miami, Florida, USA

Plasmodia: 59 µm in diameter; **FC** spherical
Spore measurements: **SL** 13.1 (12.0–14.0), **SW** 8.6 (7.1–9.8), **TS** 6.7 (5.7–7.3), **PCL** 5.1 (3.9–5.9), **PCW** 2.2 (1.7–2.8), **PC** =, **NC** 4
Reference: Wold & Iversen (1978)

***Myxobolus lepomicus* Lii & Desser 1985**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – **FW**

Site: Gallbladder, gill, intestine, heart, muscle, swim bladder, ureters

Locality: Lake Sasajewun (45°35'N, 78°30'W), Algonquin Park, Ontario, Canada

Spore measurements: **SL** 14.5 (12.5–16.5), **SW** 9.5 (9–11.5), **TS** 7–7.5, **PCL** 5.5 (5–6.5), **PCW** 3.5 (3–4), **PC** ≠, **NC** 5–7

Specimens in Collection: CMN (No. 1984–0362)
Reference: Lii & Desser (1985)

***Myxobolus lutzi* Aragão, 1919**

Host: *Poecilia vivipara* Bloch & Schneider (Cyprinodontiformes: Poeciliidae) – **FW**

Site: Testis

Locality: Rio de Janeiro, Rio de Janeiro, Brazil

Spore measurements: **SL** 10, **SW** 7, **PC** =

Reference: Aragão (1919)

***Myxobolus macroplasmoidal* Molnár, Ranzani-Paiva, Eiras & Rodrigues, 1998**

Host: *Salminus brasiliensis* (Cuvier, 1816) (Characiformes: Bryconidae) – **FW**

Site: Free in the body

Locality: Mogi Guaçu River (21°55'35.8" S, 47°21'57.0" W), Pirassununga, São Paulo, Brazil

Plasmodia: 7–24 length x 3–13 width mm; FC subspherical

Spore measurements: SL 11 (10.5–12), SW 8.5 (8–9), TS 5.2 (5–5.5), PCL 4.5 (4–5), PCW 2.8 (2–3), PC =, NC 6

Specimens in Collection: MTM (accession number not provide)

Reference: Molnár *et al.* (1998)

***Myxobolus maculatus* Casal, Matos & Azevedo, 2002**

Host: *Metynnis maculatus* (Kner) (Characiformes: Serrasalminidae) – FW

Site: Kidney

Locality: Amazon River (01°11'30"S, 47°18'54"W), Belém, Pará, Brazil

Plasmodia: 150 µm in diameter

Spore measurements: SL 21.0 (9.7–23.0), SW 8.9 (7.9–9.5), TS 7.5 (7.2–7.9), PCL 12.7 (11.8–13.8), PCW 3.2 (3.0–3.6), PC =, NC 14–15

Specimens in Collection: USNPC (No. 1002151)

Reference: Casal *et al.* (1996)

***Myxobolus magellanicus* Szidat, 1953**

Host: *Galaxias maculatus* (Jenys, 1842) (Osmeriformes: Galaxiidae) – FW

Site: Gills

Locality: La Plata River, Argentina

Plasmodia: 0.6 mm in diameter

Spore measurements: SL 10–13, SW 8.1–8.8, PCL 3 in diameter, PC =

Reference: Szidat (1953)

***Myxobolus magnaspherus* Cone & Anderson, 1977**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW

Site: Kidney

Locality: Ryan Lake, Algonquin Park, Ontario, Canada

Plasmodia: 0.1–0.3 mm; FC spherical

Spore measurements: SL 18 (16–22), SW 20 (18–22), TS 12 (11–13), PCL 10 (9–12), PCW 6 (5–7), PC =, NC 10–12

Specimens in Collection: USNPC (No. 24494)

Reference: Cone & Anderson (1977)

***Myxobolus manueli* Cone & Overstreet, 1998**

Host: *Pomoxis nigromaculatus* (Lesueur, 1829) (Perciformes: Centrarchidae) – FW

Site: Bulbus arteriosus

Locality: Lake Erie, Wheatley, Ontario, Canada

Plasmodia: 100 – 800 µm in diameter; FC spherical

Spore measurements: SL 10.8 (10–11), SW 9.1 (8–10), TS 7.0 (6.5–7.0), PCL 5.3 (4.5–6.0), PCW 2.9 (2.5–3.0), PC =, NC 6–7

Specimens in Collection: USNPC (No. 87589)

Reference: Cone & Overstreet (1998)

***Myxobolus martini* Salim & Desser, 2000**

Host: *Notemigonus crysoleucas* (Mitchill, 1814) (Cypriniformes: Cyprinidae) – FW

Site: Eye

Locality: Sasajewun Lake (45°35'30"N, 78°31'30"W), Algonquin Park, Ontario, Canada

Plasmodia: 3–4 mm in diameter; FC spherical

Spore measurements: SL 17.9 (16.4–19.5), SW 12.1 (10.3–13.5), TS 8.4 (7.3–9.5), PCL 6.0 (5.2–6.4), PCW 3.2 (3.0–3.6), PC =, NC 6–7

Specimens in Collection: CMNP (No. 1999-0027)

GenBank: 18S (No. AF186836.1)

Reference: Salim & Desser (2000)

***Myxobolus mauriensis* Lovy & Hutcheson, 2016**

Host: *Alosa aestivalis* (Mitchill) (Clupeiformes: Clupeidae) – FW

Site: Cartilage of pleural ribs, mainly in ventral part of rib

Locality: Maurice River (39°21'38.5"N, 75°01'56"W), New Jersey, USA

Plasmodia: 5 mm in diameter

Spore measurements: SL 11.4±0.44, SW 12.1±0.44, PCL 6.1±0.48, PCW 3.9±0.26, PC =, NC 5–7

Specimens in Collection: USNPC (No. 1254742–1254743)

GenBank: 18S (No. Ku255436)

Note: Also found in *Alosa pseudoharengus* (Wilson) and in other locality: Great Egg Harbor River (39°25'09.2"N, 74°42'52.6"W), Delaware River (40°10'40"N, 74°44'07.5"W), New Jersey, USA

Reference: Lovy & Hutcheson (2016)

***Myxobolus medius* Landsberg & Lom, 1991**

[Syn. *Myxosoma media* Fantham, Porter & Richardson, 1939]

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW

Site: Body cavity

Locality: Missisquoi River, Abercom Village, Quebec, Canada

Spore measurements: SL 11–16.8, SW 7.7–10.4,

PCL 5–8.2, **PCW** 1.8–3.2, **PC** =

Reference: Landsberg & Lom (1991)

***Myxobolus meglitschi* Grinham & Cone 1990**

[Syn.: *Myxosoma rotundum* Meglitsch, 1937]

Host: *Carpiooides cyprinus* (Lesueur) (Cypriniformes: Catostomidae) – FW

Site: Gills

Locality: Embarrass River, Villa Grove, Illinois, USA

Plasmodia: 0.5 mm in diameter, FC spherical

Spore measurements: SL 12–14, SW 11–13, TS 7–8.5, PCL 6–7, PCW 3–4, PC =

Note: The transfer of the species from *Myxosoma* to *Myxobolus* would have resulted in the combination “*Myxobolus rotundus*”, but this was preoccupied by *Myxobolus rotundus* Nemeček, 1911. With that, Grinham & Cone (1990) proposed the name *Myxobolus meglitschi*

Reference: Grinham & Cone (1990)

***Myxobolus mesentericus* Kudo 1919**

Host: *Lepomis cyanellus* Rafinesque, 1819 (Perciformes: Centrarchidae) – FW

Site: Mesentery, liver, spleen

Locality: Crystal Lake, Urbana, Illinois, USA

Plasmodia: 0.5–1.5 mm; FC spherical

Spore measurements: SL 10–11.5, SW 8.5–9.5, TS 6.5, PCL 4.7, PCW 1.5–2, PC =

Note: Also found in the wall of the stomach, pyloric caeca, intestine and gall-bladder

Reference: Kudo (1919)

***Myxobolus metynnis* Casal, Matos & Azevedo, 2006**

Host: *Metynnis argenteus* Ahl (Characiformes: Serrasalminidae) – FW

Site: Connective subcutaneous tissue of the orbicular region

Locality: Amazon River (01°11'30"S, 47°18'54"W), Peixe Boi, Pará, Brazil

Plasmodia: 0.35 mm in diameter; FC spherical to elliptical

Spore measurements: SL 12.9–13.5, SW 7.5–8.3, TS 3.4–4.5, PCL 5.0–5.5, PCW 3.0–3.6, PC =, NC 8–9

Specimens in Collection: USNPC (No. 1086177)

Reference: Casal *et al.* (2006)

***Myxobolus mexicanus* Yoshino & Noble, 1973**

Host: *Coelorhynchus scaphopsis* Gilbert (Gadiformes: Macrouridae) – MAR

Site: Kidney

Locality: WTNAP, Baja California, off Mexico

Plasmodia: 1.2–2.5 mm; FC irregular

Spore measurements: SL 8.7 (7.5–10), SW 6.2 (5.5–7), PCL 2.9 (2–4), PCW 1.6 (1–2), PC =

Reference: Yoshino & Noble (1973b)

***Myxobolus microcystus* Price & Mellen, 1980**

Host: *Micropterus salmoides* (Lacepède, 1802) (Perciformes: Centrarchidae) – FW

Site: Gills

Locality: Crab Orchard Lake, Williamson County, Illinois, USA

Plasmodia: 0.3–0.75 mm; FC oval to fusiform

Spore measurements: SL 12.5 (11–14), SW 7.5 (7–10), TS 5.5 (5–7), PCL 6.5 (5–7), PCW 2.5 (2–4), PC =, NC 6–7

Specimens in Collection: USNPC (No. 75230)

Reference: Price & Mellen (1980)

***Myxobolus micropterii* Walsh, Iwanowicz, Glenney, Iwanowicz & Blazer, 2012**

Host: *Micropterus salmoides* (Lacepède, 1802) (Perciformes: Centrarchidae) – FW

Site: Gills

Locality: State fish hatchery in Ohio River drainage, Virginia, USA

Plasmodia: 0.33–0.95 (0.57±0.11) length x 0.11–0.19 (0.15±0.17) width mm; FC subcircular

Spore measurements: SL 9.1–12.2 (10.8±0.09), SW 9.0–11.7 (10.6±0.08), TS 5.2–8.6 (6.8±0.08), PCL 4.0–5.0, PCW 2.0–3.0, PC =, NC 7–8

Specimens in Collection: USNPC (No. 104900)

GenBank: 18S (No. Jf714995)

Note: Also in *M. dolomieu* Lacepède

Reference: Walsh *et al.* (2012)

***Myxobolus microthecus* Landsberg & Lom, 1991**

[Syn. *Myxosoma microthecum* Meglitsch, 1942]

Host: *Minytrema melanops* (Rafinesque) (Cypriniformes: Catostomidae) – FW

Site: Mesenteries, peritoneum

Locality: Ohio River, Shawneetown, Illinois, USA

Plasmodia: 350 length x 300 width μm; FC round

Spore measurements: SL 11.7 (10–12.5), SW 10.2 (8.3–11.4), TS 4.5 (4.3–5.2), PCL 5.5 (3.8–6.3), PCW 3.4 (1.9–3.2), PC =, NC 5–7

Reference: Landsberg & Lom (1991)

***Myxobolus minutus* Rosser, Griffin, Quiniou, Alberson, Woodyard, Mischke, Greenway, Wise**

& Pote, 2016

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – FW

Site: Gill filaments

Locality: Catfish aquaculture pond, Washington County, Mississippi, USA

Plasmodia: 1.3 length x 0.4 width mm; FC elongate

Spore measurements: SL 8.6.9±0.7 (7.4–9.6), SW 8.8±0.7 (7.5–9.9), TS 6.7±0.3 (6.5–7.3), PCL 4.3±0.3 (3.6–4.9), PCW 3.3±0.3 (2.8–3.8), NC 5–6

Specimens in Collection: USNPC (No. 1406399)

GenBank: 18S (No. Ku232372)

Reference: Rosser *et al.* (2016)

***Myxobolus mississippiensis* Cone & Overstreet, 1997**

Host: *Lepomis macrochirus* Rafinesque, 1819 (Perciformes: Centrarchidae) – FW

Site: Gills

Locality: Pascagoula River, Jackson County, Mississippi, USA

Plasmodia: 0.3 mm in diameter, FC irregular

Spore measurements: SL 17.7 (16.4–18.7), SW 5.2 (3.9–6.2), TS 5.4 (4.7–6.2), PCL 7.2 (5.5–7.8), PCW 6.3 (5.5–7.0), PC =, NC 9–10

Specimens in Collection: USNPC (No. 86817)

Reference: Cone & Overstreet (1997)

***Myxobolus morrisonae* Lom & Cone 1996**

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Perciformes: Centrarchidae) – FW

Site: Gills

Locality: small creek near Allenville, Illinois, USA

Plasmodia: 1.5 length x 0.3 width mm, FC elongate

Spore measurements: SL 10 (9.6–10.5), SW 9.5 (9.1–10.3), TS 5, PCL 5.5 (5.3–5.8), PCW 3.7 (3.4–4.0), PC =, NC 6

Reference: Lom & Cone (1996)

***Myxobolus moxostomi* Nigrelli, 1948**

Host: *Moxostoma pisolabrum* Trautman & Martin, 1951 (Cypriniformes: Catostomidae) – FW

Site: Skin

Locality: Illinois, USA

Plasmodia: 0.5–4 mm, FC irregular

Spore measurements: SL 7.6 (6.2–9.4), SW 7.2 (5.5–9.4), TS 3.9 (3.1–4.7), PCL 3.6 (2.3–3.9), PCW 2.3 (1.6–3.2), PC =, NC 3–5

Reference: Nigrelli (1948)

***Myxobolus mutabilis* Kudo, 1934**

Host: *Pimephales notatus* (Rafinesque, 1820) (Cypriniformes: Cyprinidae) – FW

Site: Integument

Locality: Rock River, Beloit, Illinois, USA

Plasmodia: 1 mm; FC oval

Spore measurements: SL 9.5–12, SW 7.5–9, TS 6–7, PCL 5–6.5, PCW 2–3.5, PC =

Reference: Kudo (1934)

***Myxobolus myleus* Azevedo, Clemente, Casal, Matos, Alves, Al-Quraishy & Matos, 2012**

Host: *Myloplus rubripinnis* (Müller & Troschel, 1844) (Characiformes: Serrasalminidae) – FW

Site: Gallbladder

Locality: Sapuruá Lagoon (01°24'S, 55°59'W), Oriximiná, Pará, Brazil

Spore measurements: SL 19.0–20.0 (19.3±0.5), SW 7.5–9.0 (8.3±0.5), TS 3.5–4.5 (4.0±0.3), PCL 12.5–13.5 (13.2±0.4), PCW 2.5–3.5 (3.0±0.3), PC =, NC 19–21

Specimens in Collection: INPA (No. 011/12)

Reference: Azevedo *et al.* (2012)

***Myxobolus neurophilus* Landsberg & Lom, 1991**

[Syn. *Myxosoma neurophila* Guilford, 1963]

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae) – FW

Site: Optic tectum in midbrain

Locality: Michigan Lake, Green Bay, Michigan, USA

Plasmodia: 950 length x 30–45 width µm; FC spherical

Spore measurements: SL 13.9 (12–16), SW 6.2 (6–8.5), TS 4.9 (4–6), PCL 6.8 (5–8), PCW 1.4–2.4, PC =

Reference: Landsberg & Lom (1991)

***Myxobolus niger* Mathews, Maia & Adriano, 2016**

Host: *Corydoras melini* Lönnberg & Rendahl, 1930 (Siluriformes: Callichthyidae) – FW

Site: Gill

Locality: Negro River, Santa Izabel do Rio Negro, Amazonas, Brazil

Plasmodia: 180±0.5 µm in diameter; FC round to ellipsoidal

Spore measurements: SL 11.3±0.4, SW 6.8±0.2, TS 4.1 ± 0.2, PCL 5.0±0.3, PCW 2.0±0.1, PC =,

NC 6–7

Specimens in Collection: ZUEC (No. Myx 52)

Reference: Mathews *et al.* 2016

***Myxobolus nodosus* Kudo, 1934**

Host: *Pimephales notatus* (Rafinesque, 1820)
(Cypriniformes: Cyprinidae) – FW

Site: Intergument

Locality: Rock River, Byron, Illinois, USA

Plasmodia: 0.5–1; FC round

Spore measurements: SL 9–10.5, SW 8.5–9.5,
TS 7, PCL 5–6, PCW 2.5–3.5, PC =

Reference: Kudo (1934)

***Myxobolus noguchii* Pinto, 1928**

Host: *Serrasalmus spilopleura* Kner, 1858
(Characiformes: Serrasalminae) – FW

Site: Gills

Locality: Turvo River, Pirangi, São Paulo, Brazil

Spore measurements: SL 13.6, SW 8.5, PCL 6.8,
PCW 2.2, PC, NC

Reference: Pinto (1928)

***Myxobolus notemigoni* Lewis & Summerfelt, 1964**

Host: *Notemigonus crysoleucas* (Mitchill, 1814)
(Cypriniformes: Cyprinidae) – FW

Site: Abdomen region

Locality: Fish obtained from a commercial
minnow farm, Paragoul, Arkansas, USA

Plasmodia: 0.9–3 mm in diameter; FC irregular

Spore measurements: SL 11.8, SW 8.9, TS 7.5,
PCL 4.1, PCW 3.3, PC =, NC 6–8

Reference: Lewis & Summerfelt (1964)

***Myxobolus notropis* Fantham, Porter & Richardson, 1939**

Host: *Luxilus cornutus* (Mitchill, 1817)
(Cypriniformes: Cyprinidae) – FW

Site: Body surface

Locality: Brook south of Haseville, Yamaska
watershed, Quebec, Canada

Plasmodia: 2 mm in diameter

Spore measurements: SL 11.8–13.2, SW 7.3–9.5,
PCL 4.5–6.4, PCW 1.8–2.7, PC =, ≠

Reference: Fantham *et al.* (1939)

***Myxobolus nuevoleonensis* Salinas, Jiménez-Guzmán, Galaviz-Silva & Ramírez-Bom, 1991**

Host: *Poecilia mexicana*, Steindachner, 1863
(Cyprinodontiformes: Poeciliidae) – FW

Site: Fin bones

Locality: La Silla River, Monterrey, Nuevo León,
México

Plasmodia: 0.1–0.6 mm; FC spherical or oval

Spore measurements: SL 12.0 (10.7–13.7), SW
7.3 (6.1–7.6), TS 6.1 (6.1–6.1), PCL 7.6 (6.1–9.1),
PCW 3.4 (3.0–4.5), PC ≠, NC 10–11

Note: also found in *P. reticulata* Peters

Reference: Slinas *et al.* (1991)

***Myxobolus obliquus* Kudo, 1934**

Host: *Carpionodes velifer* (Rafinesque, 1820)
(Cypriniformes: Catostomidae) – FW

Site: Muscles

Locality: Rock River, Beloit, Illinois, USA

Plasmodia: 50–1800 length x 60–250 width µm;
FC fusiform

Spore measurements: SL 8–9, SW 7–8, TS 5–6,
PCL 4.5, PCW 2, PC =

Reference: Kudo (1934)

***Myxobolus oblongus* Gurley 1893**

Host: *Erimyzon sucetta* (Lacepède, 1803)
(Cypriniformes: Catostomidae) – FW

Site: Head integument

Locality: Fox River, Illinois, USA

Plasmodia: 1 mm in diameter; FC round to
elliptical

Spore measurements: SL 14–17, SW 8.5, TS 5–6

Reference: Gurley (1893)

***Myxobolus okobojiensis* Otto & Jahn, 1943**

Host: *Pomoxis nigromaculatus* (Lesueur, 1829)
(Perciformes: Cantrarchidae) – FW

Site: Intestine

Locality: Little Miller's Bay, Iowa, USA

Plasmodia: 0.5 length x 0.5 width; FC spherical

Spore measurements: SL 11.7, SW 10.2–11.7,
PCL 5.8, PC =, NC 8

Reference: Otto & Jahn (1943)

***Myxobolus oliveirai* Milanin, Eiras, Arana, Maia, Alves, Silva, Carriero, Ceccarelli & Adriano, 2010**

Host: *Brycon hilarii* (Valenciennes, 1850)
(Characiformes: Bryconidae) – FW

Site: Gills

Locality: Aquidauana River, Cuiabá River,
Miranda River and Paraguay River, Pantanal, Mato
Grosso do Sul, Brazil

Plasmodia: 3 mm in diameter; FC irregular

Spore measurements: SL 11.2±0.4, SW 7.4±0.5,
TS 4.6±0.6, PCL 5.6±0.2, PCW 2.3±0.2, PC =,

NC 6–8

Specimens in Collection: ZUEC (No.: 28)

GenBank: 18S (No. Hm754633)

Reference: Milanin *et al.* (2010)

***Myxobolus orbiculatus* Kudo 1919**

Host: *Notropis dorsalis* (Agassiz) (Cypriniformes: Cyprinidae) – FW

Site: Muscles

Locality: Stone Creek, USA

Spore measurements: SL 9–10, SW 9–10, TS 6.5–7, PCL 6–7.5, PCW 2.5–3, PC =

Reference: Kudo (1919)

***Myxobolus orbitalis* Fantham, Porter & Richardson, 1939**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW

Site: Eye

Locality: Missisquoi River, Quebec, Canada

Spore measurements: SL 13.3–17.5, SW 8.0–12, PCL 4.1–6.4, PCW 1.8–3

Reference: Fantham *et al.* (1939)

***Myxobolus osburni* Herrick, 1936**

Host: *Micropterus dolomieu* Lacepède, 1802 (Perciformes: Centrarchidae) – FW

Site: Mesenteries, peritoneum

Locality: Western Lake Erie, Ohio, USA

Plasmodia: 0.5–1.5 mm; FC oval and round

Spore measurements: SL 10.1 (9.6–11.2), SW 11.7 (9.6–12.8), TS 6.8 (6.4–8.0), PCL 4.8–5.6, PC =, NC 6–7

Note: Also found in *Lepomis gibbosus* (Linnaeus, 1758)

Reference: Herrick (1936)

***Myxobolus ovalis* (Davis, 1923)**

[Syns. *Lentospora ovalis* Davis, 1923; *Myxosoma ovalis* (Davis) Kudo, 1933]

Host: *Ictiobus bubalus* (Rafinesque, 1818) (Cypriniformes: Catostomidae) – FW

Site: Gills

Locality: U.S. Fisheries Biological Station, Fairport, Illinois, USA

Plasmodia: 0.5–0.9 mm in diameter; FC oval

Spore measurements: SL 15–17, SW 15, TS 11, PCL 8–9, PCW 6, PC =, NC 5–6

Reference: Grinham & Cone, 1990

***Myxobolus ovatus* Kudo, 1934**

Host: *Ictiobus bubalus* (Rafinesque, 1818)

(Cypriniformes: Catostomidae) – FW

Site: Integument

Locality: Rock River, Rockford, Illinois, USA

Plasmodia: 1.5–1 length x 1–2 width mm

Spore measurements: SL 1.5–13.0, SW 9–10, TS 7, PCL 5.5–6.5, PCW 2.5–3, PC =

Reference: Kudo (1934)

***Myxobolus pantanalis* Carriero, Adriano, Silva, Ceccarelli & Maia, 2013**

Host: *Salminus brasiliensis* (Cuvier, 1816) (Characiformes: Bryconidae) – FW

Site: Gills

Locality: Pantanal Natinal Park (17°50'48"S, 57°24'14"W), Poconé, Mato Grosso do Sul, Brazil

Plasmodia: 0.20–1.20 mm in length; FC round to elongate

Spore measurements: SL 9.3±0.4, SW 6.5±0.4, PCL 4.2±0.5, PCW 2.0±0.1, PC =, NC 4–5

Specimens in Collection: ZUEC (No. MYX 38)

GenBank: 18S (No. Kf296349)

Reference: Carriero *et al.* (2013)

***Myxobolus paralintoni* Li & Desser 1985**

Host: *Lepomis gibbosus* (Linnaeus, 1758) (Perciforme: Centrarchidae) – FW

Site: Heart

Locality: Lake Sasajewun (45°35'N, 78°30'W), Algonquin Park, Ontario, Canada

Spore measurements: SL 11 (9.5–11.5), SW 10 (9–11.5), TS 6.5–7.5, PCL 4–4.5, PCW 2–2.5, PC =, NC 5

Specimens in Collection: CMN (No. 1984–0364)

Reference: Lii & Desser (1985)

***Myxobolus parallepticoides* Landsberg & Lom, 1991**

[Syn. *Myxosoma parallepticoides* Fantham, Porter & Richardson, 1939]

Host: *Chrosomus neogaeus* (Cope, 1867) (Cypriniformes: Cyprinidae) – FW

Site: Visceral cavity

Locality: Ulverton River, Quebec, Canada

Plasmodia: 10 mm in diameter

Spore measurements: SL 11.4–16.4, SW 7.3–10, PCL 4.1–5.5, PCW 2.3–3.2

Reference: Landsberg & Lom (1991)

***Myxobolus peculiaris* Martins & Onaka, 2006**

Host: *Cyphocharax nagelii* (Steindachner, 1881) (Characiformes: Curimatidae) – FW

Site: Gills

Locality: Rio do Peixe Reservoir, São José do Rio Pardo, São Paulo, Brazil

Spore measurements: SL 23.0–23.2, SW 14.4–15.2, PCL 10.5–10.9, PCW 4.0–4.8, PC =, NC 4–5

Specimens in Collection: CHIOC (No. 34987)

Reference: Martins & Onaka (2006)

***Myxobolus pendula* Landsberg & Lom, 1991**

[Syns. *Myxosoma pendula* Guilford, 1967b; *Myxobolus pellicides*, Lii & Dessler 1985]

Host: *Semotilus atromaculatus* (Mitchill, 1818) (Cypriniformes: Cyprinidae)–FW

Site: gills

Locality: Kewaunee River, Kewaunee, Wisconsin, USA

Plasmodia: 1–1.5 mm in diameter; FC spherical

Spore measurements: SL 15.3 (13.2–16.5), SW 10.4 (8.8–12.1), TS 7.8 (6.6–8.8), PCL 6.8 (6–7.7), PCW 3.4 (3.3–4.4), PC =, NC 6–7

Reference: Landsberg & Lom (1991),

***Myxobolus percae* Fantham, Porter & Richardson, 1939**

Host: *Semotilus atromaculatus* (Mitchill, 1818) (Cypriniformes: Cyprinidae)–FW

Site: Gills

Locality: St Lawrence River, Ford Village, Quebec, Canada

Plasmodia: 1–1.55 mm; FC spherical

Spore measurements: SL 7.3–10.4, SW 10.4 (8.8–12.1), TS 7.8 (6.6–8.8), PCL 6.8 (6–7.7), PCW 3.4 (3.3–4.4), PC =, NC 6–7

Reference: Fantham *et al.* (1939)

***Myxobolus petenensis* Frey, Cone & Duobinis-Gray 1998**

Host: *Dorosoma petenense* (Günther, 1867) (Clupeiformes: Clupeidae)–FW

Site: Circumorbital integument cartilage

Locality: Kentucky Lake (36°45'N, 88°08'W), Calloway County, Kentucky, USA

Plasmodia: 0.1–1.6 mm in diameter; FC oval to round

Spore measurements: SL 11.8 (10.1–13.1), SW 13.8 (12–15.8), TS 0.8 (0.7–0.9), PCL 7.1 (6.0–8.0), PCW 5.3 (4.8–5.7), PC ≠, NC 8–11

Specimens in Collection: USNPC (No. 47831–47835)

Note: The smaller polar capsules are 6.3 (5.7–7.4) in length and 4.8 (4.2–5.5) in width

Reference: Frey *et al.* (1998)

***Myxobolus pfrille* Landsberg & Lom, 1991**

[Syn. *Myxosoma pfrille* Fantham, Porter & Richardson, 1939]

Host: *Chrosomus neogaeus* (Cope, 1867) (Cypriniformes: Cyprinidae)–FW

Site: Body-cavity

Locality: Ulverton River, Nova Scotia, Canada

Spore measurements: SL 12.7–19.1, SW 7.7–11.4, PCL 4.5–6.4, PCW 1.8–3.2

Reference: Landsberg & Lom, 1991

***Myxobolus pharyngeus* Landsberg & Lom, 1991**

[Syn. *Myxosoma pharyngeus* Parker, 1971]

Host: *Gambusia affinis* (Baird & Girard, 1853) (Cyprinodontiformes: Poeciliidae)–FW

Site: Pharyngeal epithelium

Locality: Stillwater Creek, Payne County, Oklahoma, USA

Plasmodia: 0.5–1.5 mm; FC variable

Spore measurements: SL 16.5 (15.0–17.0), SW 5.9 (5.0–6.5), TS 5.0 (4.2–5.5), PCL 7.2 (6.8–8.0), PCW 1.9 (1.5–2.0), PC ≠, NC 8–11

Specimens in Collection: USNPC (No. 71669)

Reference: Landsberg & Lom (1991)

***Myxobolus piraputangae* Carriero, Adriano, Silva, Ceccarelli & Maia, 2013**

Host: *Brycon hilarii* (Valenciennes, 1850) (Characiformes: Bryconidae)–FW

Site: Kidney

Locality: Pantanal National Park (17°50'48"S, 57°24'14"W), Poconé, Mato Grosso do Sul, Brazil

Plasmodia: 0.50–1.00 mm; FC spherical

Spore measurements: SL 10.1±0.5, SW 8.7±0.5, TS 6.7±0.3, PCL 5.2±0.4, PCW 3.0±0.3, PC =, NC 4–5

Specimens in Collection: ZUEC (No. MYX 36)

GenBank: 18S (No. Kf296351)

Reference: Carriero *et al.* (2013)

***Myxobolus platanus* Eiras, Abreu & Pereira Júnior, 2007**

Host: *Mugil platanus* Valenciennes (Mugiliformes: Mugilidae)–FW/BW

Site: Spleen

Locality: Lagoa dos Patos, Rio Grande do Sul, Brazil

Plasmodia: 0.05–0.10 in diameter; FC oval

Spore measurements: SL 10.0–11.0, SW 10.0–11.0, TS 5, PCL 7.0–8.0, PCW 3.5–4.0, PC =, NC 5–6

Reference: Eiras *et al.* (2007)

***Myxobolus pleuronectidae* Hahn, 1917**

Host: *Pseudopleuronectes americanus* (Walbaum, 1792) (Pleuronectiformes: Pleuronectidae) – MAR

Site: Integument

Locality: WTNA, Falmouth, Massachusetts, USA

Spore measurements: SL 14.8, SW 11.9, PCL 6, PCW 3.7, PC =

Reference: Hahn (1917)

***Myxobolus poecilichthidis* Fantham, Porter & Richardson, 1939**

Host: *Etheostoma exile* (Girard, 1859) (Perciformes: Percidae) – FW

Site: Fatty tissue

Locality: Black lake, Quebec, Canada

Plasmodia: 0.5 mm

Spore measurements: SL 12.3–15.4, SW 4.5–6.8, PCL 5–7.3, PCW 0.9–2.3

Note: Many spores are 5.5–6.4 wide and the polar capsules are sometimes unequal.

Reference: Fantham *et al.* (1939)

***Myxobolus porofilus* Adriano, Arana, Ceccarelli & Cordeiro, 2002**

Host: *Prochilodus lineatus* (Valenciennes, 1837) (Characiformes: Prochilodontidae) – FW

Site: Body cavity

Locality: Mogi Guaçu River (21°55'35.8"S 47°21'57.0"W), Pirassununga, São Paulo, Brazil

Plasmodia: 3–5 mm in length; FC spherical

Spore measurements: SL 5.7, SW 4.8, PCL 1.6, PCW 1.1, PC =, NC 3

Specimens in Collection: ZUEC (No. 04 and 05)

Reference: Adriano *et al.* (2002)

***Myxobolus pratti* Landsberg & Lom, 1991**

[Syn. *Facieplatycauda pratti* Wyatt, 1979]

Host: *Deltistes luxatus* (Cope, 1879) (Cypriniformes: Catostomidae) – FW

Site: Kidney

Locality: Williamson River, Chiloquin, Oregon, USA

Spore measurements: SL 18.2 (17.0–20.5), SW 12.6 (11.0–14.0), TS 7.9 (7.5–8.5), PCL 6.6 (5.5–7.5), PCW 3.2 (2.5–3.5), PC =

Reference: Landsberg & Lom (1991)

***Myxobolus procerus* Landsberg & Lom, 1991**

[Syn. *Myxosoma procerus* Kudo 1934]

Host: *Percopsis omiscomaycus* (Walbaum, 1792) (Percopsiformes: Percopsidae) – FW

Site: Integument, caudal fin

Locality: Illinois River, Quiver Lake, Meredosia, Havana, Illinois, USA

Plasmodia: 0.5–1.5 mm in diameter; FC spherical to irregular

Spore measurements: SL 15–17, SW 6.5–7, TS 5–6, PCL 7–9, PCW 1.5–2, PC =, NC

Reference: Landsberg & Lom (1991)

***Myxobolus prochilodus* Eiras, Zhang & Molnár, 2014**

[Syn. *Myxobolus lomi* Azevedo, Vieira, Vieira, Silva, Matos & Abdallah, 2014]

Host: *Prochilodus lineatus* (Valenciennes, 1837) (Characiformes: Prochilodontidae) – FW

Site: Gills

Locality: Peixes River (48°06'38"W; 22°49'53.1"S), Anhembi, São Paulo, Brazil

Plasmodia: 250–300 µm in diameter; FC round

Spore measurements: SL 11.8–15.8 (14.2±1.4) SW 8.7–12.5 (11.1±1.5), PCL 5.2–7.9 (6.4±0.9), PCW 2.3–4.0 (3.1±0.7), PC ≠, NC 8–11

Specimens in Collection: INPA (No. 017 and 018)

GenBank: 18S (No. Kf677014)

Note: The name proposed by Azevedo *et al.* (2014) was a homonym of *Myxobolus lomi* Donec & Kulalovskaya in Shulman, 1962. To resolve this, Eiras *et al.* (2014) proposed *M. prochilodus*, to replace the preoccupied name

Reference: Eiras *et al.* 2014

***Myxobolus pseudokoi* Li & Desser 1985**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW

Site: Gills, skin

Locality: Lake Sasajewun (45°35'N, 78°30'W) and Lake Opeongo (45°42'N, 78°22'W), Algonquin Park, Ontario, Canada

Plasmodia: 80–120 length x 500–800 width µm, FC round to ellipsoidal

Spore measurements: SL 13.5 (11.5–14), SW 6.5 (6–7), TS 5, PCL 6.5 (6–7.5), PCW 2.5 (2–3), PC =, NC 6–7

Specimens in Collection: CMN (No. 1984-0365)

Reference: Lii & Desser (1985)

***Myxobolus pygocentrus* Penido 1927**

Host: *Pygocentrus piraya* (Cuvier, 1819) (Characiformes: Serrasalminidae) – FW

Site: Intestine

Locality: Paraguay River, Porto Esperança, Mato Grosso do Sul, Brazil

Spore measurements: SL 15–16, SW 9–11, PCL

9–11, PCW 3–4, PC =
Reference: Penido (1927)

***Myxobolus rhinichthidis* Landsberg & Lom, 1991**

[Syn. *Myxosoma rhinichthidis* Fantham, Porter & Richardson, 1939]

Host: *Rhinichthys atratulus* (Hermann, 1804) (Cypriniformes: Cyprinidae)–FW

Site: Skin

Locality: St Lawrence River, Ford Village, Quebec, Canada

Plasmodia: 2 mm in diameter

Spore measurements: SL 8.6–11.8, SW 5.9–8.2, PCL 3.6–5.5, PCW 1.8–2.7

Reference: Landsberg & Lom (1991)

***Myxobolus ridouti* Easy & Cone, 2009**

Host: *Pimephales notatus* (Rafinesque, 1820) (Cypriniformes: Cyprinidae)–FW

Site: Muscle

Locality: Brewer Lake (45°35'N, 78°19'W), Algonquin Park, Ontario, Canada

Plasmodia: up to 0.30 mm; FC oblong

Spore measurements: SL 9.5–10.5 (9.9±0.3), SW 9.4–10.9 (10.1±0.4), TS 6.7–6.8 (6.7±0.01), PCL 4.6–5.6 (5.2±0.3), PCW 2.6–3.6 (3.0±0.3), PC =, NC 5–6

Specimens in Collection: USNPC (No. 102126)

GenBank: 18S (No. Gq292745)

Reference: Easy & Cone (2009)

***Myxobolus ridwayi* Easy & Cone, 2009**

Host: *Semotilus atromaculatus* (Mitchill, 1818) (Cypriniformes: Cyprinidae)–FW

Site: Muscle

Locality: Brewer Lake (45°35'N, 78°19'W), Algonquin Park, Ontario, Canada

Plasmodia: Up to 0.30 mm; FC oblong

Spore measurements: SL 10.0–12.1 (11.3±0.5), SW 9.5–10.5 (10.4±0.3), TS 6.6–6.7 (6.5±0.01), PCL 4.6–5.6 (5.2±0.3), PCW 2.6–3.6 (3.0±0.3), PC =, NC

Specimens in Collection: USNPC (No. 102127)

GenBank: 18S (No. Gq292746)

Reference: Easy & Cone (2009)

***Myxobolus robustus* Landsberg & Lom, 1991**

[Syn. *Myxosoma robustus* Kudo, 1934]

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae)–FW

Site: Integument

Locality: Rock River, Newbury, Illinois, USA

Plasmodia: 1.3 mm in diameter; FC spherical

Spore measurements: SL 14–16, SW 10–11, TS 7–8, PCL 6.5–7, PCW 2.5, PC =

Reference: Landsberg & Lom, 1991

***Myxobolus salminus* Adriano, Arana, Carriero, Naldoni, Ceccarelli & Maia, 2009**

Host: *Salminus brasiliensis* (Cuvier, 1816) (Characiformes: Bryconidae)–FW

Site: Gills

Locality: Pantanal National Park, Mato Grosso do Sul, Brazil

Plasmodia: 0.10 mm; FC oval to round

Spore measurements: SL 9.6–10.5 (10.1±0.4), SW 5.8–6.6 (6.1±0.4), TS 4.7–5.3 (5.0±0.6), PCL 4.3–4.8 (4.6±0.2), PCW 1.5–1.9 (1.7±0.1), PC =, NC 7–8

Specimens in Collection: ZUEC (No. 25)

Reference: Adriano *et al.* (2009)

***Myxobolus schuberti* Li & Desser 1985**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae)–FW

Site: Brain, kidney, muscle, nares, spleen

Locality: Lake Sasajewun (45°35'N, 78°30'W), Algonquin Park, Ontario, Canada

Spore measurements: SL 11.5 (8.5–12.5), SW 8.5 (7.5–10), TS 6.5, PCL 4.5 (3.5–5.5), PCW 2.5 (2–3), PC =, NC 5

Specimens in Collection: CMN (No. 1984-0363)

Reference: Li & Desser (1985)

***Myxobolus sciades* Azevedo, Casal, Mendonça, Carvalho, Matos & Matos, 2010**

Host: *Sciades herzbergii* (Bloch, 1794) (Siluriformes: Ariidae)–FW

Site: Gills

Locality: Poti River (05°05'S, 42°48'W), Teresina, Piauí, Brazil

Plasmodia: 0.06 mm; FC spherical to elliptical

Spore measurements: SL 9.2±0.39, SW 4.3±0.23, TS 4.3±0.23, PCL 4.4±0.41, PCW 1.4±0.42, PC =, NC 9–10

Specimens in Collection: USNPC (No. 1134556)

Reference: Azevedo *et al.* (2010)

***Myxobolus scleroperca* Landsberg & Lom, 1991**

[Syn. *Myxosoma scleroperca* Guilford, 1963b]

Host: *Perca flavescens* (Mitchill, 1814) (Perciformes: Percidae)–FW

Site: Eye

Locality: Lake Michigan, Green Bay, Michigan,

USA

Plasmodia: 5 mm in diameter; **FC** spherical to irregular

Spore measurements: **SL** 16.4 (10–19.2), **SW** 8.7 (7.2–9.6), **TS** 7.1 (7.2–13), **PCL** 9.5 (7.2–12.6), **PCW** 2.4–3.6, **PC** ≠, **NC** 6–9

Reference: Landsberg & Lom (1991)

***Myxobolus serrasalmi* Walliker, 1969**

Host: *Serrasalmus rhombeus* (Linnaeus, 1766) (Characiformes: Serrasalminidae) – **FW**

Site: Spleen, kidneys, liver

Locality: Negro River, Manaus, Amazonas, Brazil

Spore measurements: **SL** 14.8 (12.5–18.0), **SW** 8.6 (7.0–10.0), **PCL** 7.7 (6–9), **PCW** 3.1 (2.5–4), **PC** =

Reference: Walliker (1969)

***Myxobolus siddalli* Salim & Desser 2000**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – **FW**

Site: Kidney

Locality: Lake Sasajewun (45°35'30"N, 78°31'30"W) and Kathlyn Lake (45°35'50"N, 78°32'00"W), Algonquin Park, Ontario, Canada

Plasmodia: 0.25 mm; **FC** subspherical

Spore measurements: **SL** 10.3 (9.3–11.2), **SW** 8.9 (8.2–9.7), **TS** 6.3 (5.4–7.1), **PCL** 5.4 (4.1–6.2), **PCW** 3.1 (2.9–3.5), **PC** =, **NC** 5–7

GenBank: 18S (No. AF186840.1)

Reference: Salim & Desser (2000)

***Myxobolus smith* Salim & Desser 2000**

Host: *Chrosomus eos* Cope, 1861 (Cypriniformes: Cyprinidae) – **FW**

Site: Kidney

Locality: Kathlyn Lake (45°35'50"N, 78°32'00"W), Algonquin Park, Ontario, Canada

Plasmodia: 0.25 mm; **FC** round

Spore measurements: **SL** 10.6 (9.9–11.4), **SW** 8.8 (8.3–9.3), **TS** 6.2 (5.4–6.7), **PCL** 4.5 (4.1–5.1), **PCW** 2.9 (2.2–3.1), **PC** =, **NC** 5–7

Specimens in Collection: CMN (No. 1999-0026)

GenBank: 18S (No. AF186841.1)

Reference: Salim & Desser (2000)

***Myxobolus spalli* Landsberg & Lom, 1991**

[Syn. *Myxosoma spalli* Spall, 1974]

Host: *Cyprinella lutrensis* (Baird & Girard, 1853) (Cypriniformes: Cyprinidae) – **FW**

Site: Gills

Locality: Stillwater Creek, Payne County,

Oklahoma, USA

Spore measurements: **SL** 14.4 (14.0–15.0), **SW** 8.0 (7.5–8.3), **TS** 7.5 (7.1–8.0), **PCL** 7.1 (6.7–7.5), **PCW** 3.0 (2.8–3.0), **PC** =, **NC** 9

Reference: Landsberg & Lom (1991)

***Myxobolus sparoides* Otto & Jahn, 1943**

Host: *Pomoxis nigromaculatus* (Lesueur, 1829) (Perciformes: Centrarchidae) – **FW**

Site: Intestine

Locality: Little Miller's Bay, Iowa, USA

Plasmodia: 0.2 mm in diameter; **FC** spherical

Spore measurements: **SL** 11.7–12.4, **SW** 8.8–9.3, **TS** 8.5, **PCL** 4.4–5.4, **PC** =, **NC** 9–10

Reference: Otto & Jahn (1943)

***Myxobolus squamosus* Kudo, 1934**

Host: *Oncorhynchus mykiss* (Walbaum, 1792) (Salmoniformes: Salmonidae) – **FW**

Site: Skin

Locality: Sangamon River, Dewey, Illinois, USA

Spore measurements: **SL** 8–9, **SW** 8.6 (7.7–9.9), **TS** 6.7 (5.6–7.7), **PCL** 4.4 (3.9–5.1), **PCW** 3.1 (2.6–3.9), **PC** =, **NC** 4

Reference: Kudo (1934)

***Myxobolus stanlii* Iwanowicz, Iwanowicz, Howerth, Schill, Blazer & Johnson, 2013**

Host: *Campostoma oligolepis* Hubbs & Greene, 1935 (Cypriniformes: Cyprinidae) – **FW**

Site: Connective tissue and muscle

Locality: Birmingham, Alabama and South Branch of the Potomac River, West Virginia, USA

Spore measurements: **SL** 7.5–11.0 (10.3±0.7) **SW** 6.3–11.3 (8.8±1.5), **TS** 6.2–8.6 (6.3±2.7), **PCL** 4.5–6.9 (4.6±2.7), **PCW** 2.1–4.3 (2.4±1.5), **PC** =, **NC** 5–7

Specimens in Collection: USNPC (No. 98811)

GenBank: 18S (No. DQ779995, Alabama isolates and DQ779996, West Virginia isolates)

Reference: Iwanowicz *et al.* (2013)

***Myxobolus stokesi* Pinto, 1928**

Host: *Pimelodus* sp. (Siluriformes: Pimelodidae) – **FW**

Site: Subcutaneous tissue of snout

Locality: Turvo River, Pirangi, São Paulo, Brazil

Plasmodia: 1 mm in diameter

Spore measurements: **SL** 8.5, **SW** 5.3, **PCL** 3.1, **PCW** 1.7

Reference: Pinto (1928)

Myxobolus subcircularis* Fantham, Porter & Richardson, 1939*Host:** *Catostomus commersonii* (Lacepède, 1803) (Cypriniformes: Catostomidae) – FW**Site:** Ventral muscles of pelvic fins**Locality:** Francoeur Brook, tributary of the Nicolet River, Quebec, Canada**Plasmodia:** 1.5 length x 0.5 width mm**Spore measurements:** SL 9.1–11.8, SW 8.2–10, PCL 3.2–5, PCW 1.8–3**Reference:** Fantham *et al.* (1939)***Myxobolus subtecalis* Landsberg & Lom, 1991 [Syn. *Myxosoma subtecali* Bond, 1938]****Host:** *Fundulus heteroclitus* (Linnaeus, 1766) (Cyprinodontiformes: Fundulidae) – MAR**Site:** Fins**Locality:** WTNA, Chesapeake Bay, Baltimore, Maryland, USA**Plasmodia:** 50–300 µm in diameter**Spore measurements:** SL 15–18, SW 6.5–8, TS 6, PCL 7–8, PCW 2, PC ≠, NC 11–12**Reference:** Landsberg & Lom (1991)***Myxobolus symmetricus* Rice & Jahn, 1943****Host:** *Pomoxis nigromaculatus* (Lesueur, 1829) (Perciformes: Centrarchidae) – FW**Site:** Gills**Locality:** Little Miller's Bay, Iowa, USA**Spore measurements:** SL 10, SW 9.3 PCL 3.1, PCW 2.3, NC 12–14**Reference:** Rice & Jahn (1943)***Myxobolus teres* Kudo, 1934****Host:** *Cyprinella whipplei* Girard, 1856 (Cypriniformes: Cyprinidae) – FW**Site:** Fins**Locality:** Rock River, Illinois, USA**Plasmodia:** 0.7–1.75 mm in diameter; FC elliptical**Spore measurements:** SL 9.5–11.5, SW 9–10.5, TS 5–6, PCL 6, PCW 3, PC =**Reference:** Kudo (1934)***Myxobolus testicularis* Tajdari, Matos, Mendonça & Azevedo, 2005****Host:** *Hemiodus microlepis* Kner, 1858 (Characiformes: Hemiodontidae) – FW**Site:** Testis**Locality:** Poty River (05°05'21"S, 42°48'07"W), Teresina, Piauí, Brazil**Plasmodia:** up to 0.50 in diameter; FC spherical to

elliptical

Spore measurements: SL 8.2–9.1, SW 6.7–7.5, TS 2.4–3.0, PCL 3.3–3.8, PCW 1.3–2.0, PC =, NC 5–6**Specimens in Collection:** USNPC (No. 1076956)**Reference:** Tajdari *et al.* (2005)***Myxobolus transovalis* Gurley 1893****Host:** *Clinostomus funduloides* Girard, 1856 (Cypriniformes: Cyprinidae) – FW**Site:** Under scales**Locality:** Potomac River, Delaware, USA**Spore measurements:** SL 6–7, SW 8, PC =**Reference:** Gurley (1893)***Myxobolus transversalis* Fantham, Porter & Richardson, 1939****Host:** *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW**Site:** Muscles of penducle**Locality:** Riviere des Rosieres, Quebec, Canada**Spore measurements:** SL 7.7–1.0, SW 9.1–10.5, PCL 4.1–5, PCW 2.3–3.2, NC**Reference:** Fantham *et al.* (1939)***Myxobolus umidus* Carriero, Adriano, Silva, Ceccarelli & Maia, 2013****Host:** *Brycon hilarii* (Valenciennes, 1850) (Characiformes: Bryconidae) – FW**Site:** Spleen**Locality:** Pantanal National Park (17°50'48"S, 57°24'14"W), Poconé, Mato Grosso do Sul, Brazil**Plasmodia:** 0.40–0.80 in diameter; FC spherical**Spore measurements:** SL 13.5±0.7, SW 7.8±0.4, TS 7.7±0.1, PCL 5.1±0.4, PCW 2.7±0.3, PC =, NC 4–5**Specimens in Collection:** ZUEC (No. MYX 37)**GenBank:** 18S (No. Kf296350)**Reference:** Carriero *et al.* (2013)***Myxobolus uvuliferis* Cone & Anderson, 1977****[Syns. *Myxobolus gibbosus*, Li & Desser, 1985; *Myxobolus lii* Desser, 1993]****Host:** *Lepomis gibbosus* (Linnaeus, 1758) (Perciformes: Centrarchidae) – FW**Site:** Skin**Locality:** Ryan Lake, Algonquin Park, Ontario, Canada**Spore measurements:** SL 9 (7–12), SW 11.5 (10–13), TS 6.5 (6–7), PCL 4.5 (3–5), PCW 2.5 (2–3), PC =, NC 5–7**Specimens in Collection:** USNPC (No. 24492)

Reference: Cone & Raesly (1995)

***Myxobolus vastus* Kudo, 1934**

Host: *Moxostoma pisolabrum* Trautman & Martin, 1951 (Cypriniformes: Catostomidae) – FW

Site: Integument

Locality: Fox River, Dundee, Illinois, Brazil

Plasmodia: 2.5 length x 3.8 width mm

Spore measurements: SL 9–10.5, SW 7.5–8, TS 4.5–5.5, PCL 4.5–5.5, PCW 1.5–2.5, PC =

Reference: Kudo (1934)

***Myxobolus wellerae* Li & Desser 1985**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW

Site: Muscles

Locality: Lake Sasajewun (45°35'N, 78°30'W), Algonquin Park, Ontario, Canada

Spore measurements: SL 15 (12.5–16.5), SW 10 (9.5–11.5), TS 6.5–7, PCL 6 (5.5–6.5), PCW 3.5 (3–4), PC =, NC 5–7

Specimens in Collection: CMN (No. 1984-0358)

Reference: Li & Desser (1985)

***Myxobolus xiaoi* Salim & Desser 2000**

Host: *Luxilus cornutus* (Mitchill, 1817) (Cypriniformes: Cyprinidae) – FW

Site: Cartilage of gill arch

Locality: Lake Sasajewun, Kathlyn Lake (45°35' 30" N, 78° 31' 30" W) and Broad Wing Lake (45°35' 50" N, 78°32' 00" W), Algonquin Park, Ontario, Canada

Plasmodia: FC oval to irregular

Spore measurements: SL 11.0 (9.8–12.2), SW 8.5 (8.1–9.2), TS 6.0 (5.2–6.9), PCL 4.8 (4.2–5.4), PCW 2.8 (2.1–3.1), PC =, NC 5–7

Specimens in Collection: CMN (No. 1999-0029)

GenBank: 18S (No. AF186843.1)

Note: Also found in *Notemigonus crysoleucas* (Mitchill) (Cypriniformes: Cyprinidae)

Reference: Salim & Desser (2000)

Genus *Tetrauronema* Wu, Wang & Jiang, 1988

***Tetrauronema desaequalis* Azevedo & Matos, 1996**

Host: *Hoplias malabaricus* (Boch, 1794) (Characiformes: Erythrinidae) – FW

Site: Connective tissue at bases of the ventral fins

Locality: Estuarine region of the Amazon River (01°11'30"S, 47°18'54"W), Belém, Pará, Brazil

Plasmodia: 1–2 mm in diameter; FC oval to

ellipsoidal

Spore measurements: SL 13.6 (12.5–13.9), SW 6.5 (6.0–6.7), TS 3.7 (3.1–4.1), PCL 7.0 (6.8–7.4), PCW 2.6, PC =, NC 9–11

Specimens in Collection: USNPC (No. 47812)

Notes: The spore contained 4 unequal projections, longest projections 13.0 (12.0–14.1); smallest 5.1 (4.8–5.7). The others were 12.2 (10.0–12.4) and 7.2 (6.6–8.7) long.

Reference: Azevedo & Matos (1996b)

Genus *Thelohanellus* Kudo, 1933

***Thelohanellus notatus* Kudo, 1933**

[Syn. *Myxobolus notatus* Mavor, 1916]

Host: *Pimephales notatus* (Rafinesque, 1820) (Cypriniformes: Cyprinidae) – FW

Site: Connective tissue of the integument

Locality: Rock River, Sterling, Illinois, USA

Plasmodia: 2 mm in diameter

Spore measurements: SL 14–17, SW 7–8, TS 5.5–6.5, PCL 6–7, PCW 3

Reference: Kudo (1933)

***Thelohanellus toyamai* Griffin & Goodwin, 2011**

[Syn. *Myxobolus toyamai* Kudo, 1915]

Host: *Cyprinus carpio* Linnaeus, 1758 (Cypriniformes: Cyprinidae) – FW

Site: Gills

Locality: Fish cultured, North Carolina, USA

Plasmodia: 200 µm in diameter

Spore measurements: SL 16.2 (14.7–16.8), SW 5.6 (4.6–6), PCL 6.4 (5.8–7.2), PCW 4.2 (3.4–4.6), PC ≠, NC 8

GenBank: 18S (No. HQ338729.1)

Reference: Griffin & Goodwin (2011)

***Thelohanellus oviformis* Lom, Desser & Dyková, 1989**

Host: *Notemigonus crysoleucas* (Mitchill, 1814) (Cypriniformes: Cyprinidae) – FW

Site: Eye and muscle

Locality: Lake Sasajewun & Lake Opeongo, Ontario, Canada

Spore measurements: SL 11 (10.5–14), SW 8.5 (7.5–9.5), TS 6.5–7, PCL 6.5 (5.5–7), PCW 3.5 (3–4.5), NC 6

Specimens in Collection: CMN (No. 1984-0367)

Reference: Lom *et al.* (1989)

Genus *Unicauda* Davis, 1944

Unicauda brachyuran* Davis, 1944*[Syn. *Henneguya brachyura* Ward 1919]****Host:** *Notropis anogenus* Forbes, 1885 (Cypriniformes: Cyprinidae) – FW**Site:** Fin ray**Locality:** Lake Erie, Ohio, USA**Plasmodia:** 360 length x 240 width μm ; FC round**Spore measurements:** SL 10–11.5, SW 8–8.75, TS 4–5, AL 17, TL 27–28.5, PCL 3–4, PCW 2, PC =**Reference:** Davis (1944) and Ward (1919)***Unicauda clavicauda* Davis, 1944****[Syn. *Henneguya clavicauda*, Kudo, 1934]****Host:** *Notropis blennius* (Girard, 1856) (Cypriniformes: Cyprinidae) – FW**Site:** Subdermal connective tissue**Locality:** Rock River, Rockford, Illinois, USA**Plasmodia:** 1–1.5 mm in diameter; FC oblong or ellipsoid**Spore measurements:** SL 10.5–11.5, SW 8.5–9.5, TS 6, AL 20–30, PCL 5–5.5, PCW 2.5, PC =**Reference:** Davis (1944) and Kudo (1934)***Unicauda crassicauda*, Davis 1944****[Syn. *Henneguya crassicauda* Kudo, 1934]****Host:** *Campostoma anomalum* (Rafinesque, 1820) (Cypriniformes: Cyprinidae) – FW**Site:** Fins and intertegument**Locality:** Small creek near Rockford, Illinois, USA**Plasmodia:** 200–400 length x 100–250 width μm ; FC ovoid**Spore measurements:** SL 12–14.5, SW 8.5–10.5, TS 6–7, AL 40–55, PCL 5–6, PCW 3–3.5**Reference:** Davis (1944) and Kudo (1934)***Unicauda fimbriata* Rosser, Alberson, Baumgartner, Mauel, Pote & Griffin, 2016****Host:** *Ictalurus punctatus* (Rafinesque, 1818) (Siluriformes: Ictaluridae) – FW**Site:** Throughout intestinal tract**Locality:** Commercial catfish pond, Brooksville, Mississippi, Noxubee County, USA**Spore measurements:** SL 7.31 ± 0.26 (6.75–7.84), SW 7.01 ± 0.63 (6.1–8.01), AL 82.98 ± 14.97 (63.39–118.63), TL 90.39 ± 14.97 (70.88–126.02), PCL 3.45 ± 0.33 (3.02–4.03), PCW 2.65 ± 0.32 (2.18–3.11)**Specimens in Collection:** USNPC (Halotype No. 1283045; Paratypes No. 1283046–1283047)**GenBank:** 18S (No. Kt072742)**Reference:** Rosser *et al.* 2016***Unicauda fontinalis* Davis, 1944****[Syn. *Henneguya fontinalis* Fantham, Porter & Richardson, 1939]****Host:** *Salvelinus fontinalis* (Mitchill, 1814) (Salmoniformes: Salmonidae) – FW**Site:** Pectoral fin**Locality:** Gaspé, Quebec, Canada**Plasmodia:** 1–5 mm in diameter**Spore measurements:** SL 11.8–14.2, SW 8.6–10.6, TL 18.8–23, PCL 5.5–7.5, PCW 2.6–4.1, NC 5–6**Note:** 52 μm length of polar filament**Reference:** Davis (1944) and Fantham *et al.* (1939)***Unicauda magna* Minchew, 1981****Host:** *Pimephales promelas* Rafinesque, 1820 (Cypriniformes: Cyprinidae) – FW**Site:** Tissue of the pectoral, pelvic and caudal fins**Locality:** Fish hatchery, Pennsylvania, USA**Plasmodia:** 1.0–1.5 mm**Spore measurements:** SL 15.5 (14–17), SW 13.2 (12–14.5), TS 12.1 (10–13), AL 94.1 (60–154), TL 109.6 (75–170), PCL 8.6 (7.5–9.5), PCW 4.1 (3–5), NC 5–6**Reference:** Minchew (1981)***Unicauda monera* Davis, 1944****[Syn. *Myxobolus monurus*, Gurley, 1894]****Host:** *Aphredoderus sayanus* (Gilliams, 1824) (Percopsiformes: Aphredoderidae) – FW**Site:** Subcutaneous intermuscular tissue**Locality:** Woodbury, New Jersey, USA**Plasmodia:** 2.18 mm in diameter**Note:** The original description not provided the spore measurements**Reference:** Davis (1944) and Gurley (1894)***Unicauda plasmodia* Davis, 1944****[Syn. *Henneguya plasmodia* Davis, 1922]****Host:** *Ictalurus punctatus* (Rafinesque 1818) (Siluriformes: Ictaluridae) – FW**Site:** Gills**Locality:** Mississippi River, Fairport, Iowa, USA**Spore measurements:** SL 15, SW 8, TS 6, TL 21, PCL 4.5, PCW 3**Reference:** Davis (1922) and Davis (1924)**Order Multivalvulida Shulman, 1959**

Family Kudoidae Meglitsch, 1960**Genus *Kudoa* Meglitsch, 1947*****Kudoa aequidens* Casal, Matos, Matos & Azevedo, 2008****Host:** *Aequidens plagiozonatus* Kullander, 1984 (perciformes: Cichidae) – **FW****Site:** Sub-opercular skeletal musculature**Locality:** Peixe Boi River (01°11'S, 47°18'W), Peixe Boi, Pará, Brazil**Plasmodia:** 125 µm; **FC** spherical to ellipsoidal**Spore measurements:** **SL** 3.2 (2.9–3.5), **SW** 6.8 (6.2–7.1), **PCL** 2.2(2.0–2.6), **PCW** 1.2 (1.1–1.5), **PC** =, **NC** 3–4**Specimens in Collection:** USNPC (No. 1112643)**Reference:** Casal *et al.* 2008***Kudoa alliararia* Kovaleva & Schulman, 1979****Host:** *Micromesistius australis* Norman, 1937 (Gadiformes: Gadidae) – **MAR****Site:** Muscles**Locality:** M, Falkland Island**Plasmodia:** 3.5 length x 6.0 width mm; **FC** fusiform**Spore measurements:** **SL** 7–8, **SW** 8–9, **TS** 9–10, **PCL** 2.4, **PCW** 1.8, **PC** =, **NC** 3–4**Reference:** Kovaleva & Schulman (1979)***Kudoa branchiata* Joy, 1972****Host:** *Leiostomus xanthurus* Lacepède, 1802 (Perciformes: Sciaenidae) – **FW****Site:** Gills**Locality:** Clear lake, Texas, USA**Plasmodia:** 0.76 (0.55–1.08) length x 0.3 (0.22–0.41) width mm**Spore measurements:** **SL** 4.15 (3.88–4.85), **SW** 4.73 (4.36–4.85), **PCL** 1.46, **PCW** 0.9, **PC** =**Specimens in Collection:** USNPC (No. 24122)**Reference:** Joy (1972)***Kudoa caudata* Kovaleva & Gayevskaya, 1983****Host:** *Scomber japonicus* Houttuyn, 1782 (Perciformes: Scombridae) – **MAR****Site:** Muscles**Locality:** WTSP (10°09'S, 82°22'W), off Peru**Plasmodia:** 13.3 µm; **FC** spherical**Spore measurements:** **SL** 5.3–6.6, **SW** 7.9–8.6, **TS** 6.6, **PCL** 2.0–2.6, **PCW** 1.6–2.0, **PC** =, **NC** 2**Specimens in Collection:** ZISP (No. 586 and 587)**Reference:** Kovaleva & Gayevskaya (1983)***Kudoa cerebralis* Paperna & Zwerner, 1974****Host:** *Morone saxatilis* (Walbaum, 1792) (Perciformes: Moronidae) – **FW/BW****Site:** Brain**Locality:** York River, Rappahannock Rive, Atlantic Ocean, Chesapeake Bay, Virginia, USA**Plasmodia:** Up to 0.22 mm in diameter**Spore measurements:** **SL** 4.8–5.8 (5.5±0.4), **SW** 5.8–7.2 (6.4±0.4), **PCL** 2.6–4.7(3.7±0.5), **PCW** 1.0–1.8(1.5±0.2), **PC** =, **NC****Specimens in Collection:** USNPC (No. 72641 and 72642)**Reference:** Paperna & Zwerner (1974)***Kudoa clupeiidae* Meglitsch, 1947****[Syn. *Chloromyxum clupeiidae* Hahn, 1917]****Host:** *Clupea harengus* Linnaeus, 1758 (Clupeiformes: Clupeidae) – **MAR****Site:** In muscles all over fish body**Locality:** WTNA, U. S. Bureau of Fisheries Station, Beaufort, North Carolina, USA**Plasmodia:** Up to 5 mm**Spore measurements:** **SL** 5.1, **SW** 6.4, **PCL** 1.5, **PCW** 1.0, **PC** =**Reference:** Meglitsch (1947b)***Kudoa crumena* Iversen & Van Meter, 1967****Host:** *Scomberomorus maculatus* (Mitchill, 1815) (Perciformes: Scombridae) – **MAR****Site:** Muscles**Locality:** Commercial fishery, Miami, Florida, USA**Plasmodia:** 1.2 (0.8–1.7) length x 1.9 (1.1–2.6) width mm; **FC** ellipsoid**Spore measurements:** **SL** 7.5 (6.8–8.2), **SW** 9.9 (9.3–10.4), **PCL** 4.0 (3.2–4.6), **PCW** 2.5 (2.1–2.9), **PC** =**Specimens in Collection:** USNPC (No. 23748)**Reference:** Iversen & Van Meter (1967)***Kudoa diana* Dyková, Avila & Fiala, 2002****Host:** *Spherooides annulatus* (Jenyns, 1842) (Tetraodontiformes: Tetraodontidae) – **MAR****Site:** Oesophagus and mesentery**Locality:** TEP, Bahía de La Paz, Sinaloa, Mexico**Plasmodia:** 5 mm in diameter; **FC** spherical or ovoid**Spore measurements:** **SL** 5 (4.5–5.5), **SW** 6 (5.5–6.5), **PCL** 2, **PCW** 1.5, **PC** =**Specimens in Collection:** IPCAS (No. H-PM 065-069)**GenBank:** 18S (No. Af414692)

Reference: Dyková *et al.* (2002)

***Kudoa funduli* Meglitsch, 1947**

[Syn. *Chloromyxum funduli* Hahn, 1915]

Host: *Fundulus heteroclitus* (Linnaeus, 1766) (Cyprinodontiformes: Fundulidae) – **MAR**

Site: Muscles

Locality: CTNA, Woods Hole, Falmouth, Massachusetts, USA

Plasmodia: 3.0 length x 0.5 width mm; **FC** elongate

Spore measurements: **SL** 6, **SW** 7.4

Reference: Meglitsch (1947b)

***Kudoa hypoepicardialis* Blaylock, Bullard & Whipps, 2004**

Host: *Nomeus gronovii* (Gmelin, 1789) (Perciformes: Nomeidae) – **MAR**

Site: Heart

Locality: TNA, Northern Gulf of Mexico (29°38'N, 88°27'W), USA

Plasmodia: 0.66 (0.53–0.72) length x 0.29 (0.23–0.34) width mm; **FC** Polysporic, ovoid and oblong

Spore measurements: **SL** 6.5, **SW** 10.1 (9.3–11.2), **TS** 8.4 (7.4–9.3), **PCL** 2.8, **PCW** 0.97 (0.9–1.4), **PC** =, **NC** 1

Specimens in Collection: USNPC syntype (No. 93691), 1 plasmodium (No. 93692), 1 hematoxylin and eosin slide (No. 93693)

GenBank: 18S (No. Ay302722)

Note: Also found in *Caranx crysos* (Mitchill), *Hyporthodus nigritus* (Holbrook), *Lobotes surinamensis* (Bloch), *Lutjanus campechanus* (Poey), *Pogonias cromis* (Linnaeus), *Pomatomus saltatrix* (Linnaeus)

Reference: Blaylock *et al.* (2004)

***Kudoa inornata* Dyková, de Buron, Fiala & Roumillat, 2009**

Host: *Cynoscion nebulosus* (Cuvier, 1830) (Perciformes: Sciaenidae) – **MAR**

Site: Muscles

Locality: WTNA, Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve (32°30'0"N, 80°26'18"W), South Carolina, USA

Plasmodia: 200–300 µm in length

Spore measurements: **SL** 5.4 (5.3–5.5), **SW** 5.9 (5.8–6.0), **TS** 6.0 (5.9–6.1), **PCL** 2.7, **PC** =, **NC** 2

Specimens in Collection: IPCAS (accession numbers not provided)

GenBank: 18S (No. FJ790311) and 28S (No.

Fj790312)

Reference: Dyková *et al.* (2009)

***Kudoa leiostomi* Dyková, Lom & Overstreet, 1994**

Host: *Leiostomus xanthurus* Lacepède, 1802 (Perciformes: Sciaenidae) – **MAR**

Site: Muscles

Locality: TNA, Gulf of Mexico, Mississippi, USA

Spore measurements: **SL** 6.8, **SW** 9.1 (8.0–9.8), **TS** 6.5 (5.8–7.0), **PCL** 3.3, **PCW** 1.7, **PC** =, **NC** 2

Reference: Dyková *et al.* (1994)

***Kudoa miniauriculata* Whitaker, Kent & Sakanari, 1996**

Host: *Sebastes paucispinis* Ayres, 1854 (Scorpaeniformes: Sebastidae) – **MAR**

Site: Muscles

Locality: CTNP, California, USA

Plasmodia: few millimeters to 2 cm in length and 1–2 mm in width

Spore measurements: **SL** 5.41 (4.97–5.85), **SW** 7.94 (7.02–8.48), **PCL** 2.15 (1.76–2.34), **PC** =

Specimens in Collection: USNPC (No. 85279 and 85301)

Reference: Whitaker *et al.* (1996)

***Kudoa orbicularis* Azevedo, Rocha, Matos, Oliveira, Matos, Al-Quraishy & Casal, 2016**

Host: *Chaetobranchopsis orbicularis* Steindachner, 1875 (Perciformes: Cichlidae) – **FW**

Site: Muscles of the dorsal and ventral column

Locality: Arari River (01°00'31"S, 48°57'46"), Marajó Island, Pará, Brazil

Plasmodia: 270 µm in diameter; **FC** irregular

Spore measurements: **SL** 4.3 (3.6–5.0), **SW** 5.1 (4.2–5.8), **PCL** 2.1 (1.7–2.6), **PCW** 1.3 (0.9–1.7), **PC** =, **NC** 2–3

Specimens in Collection: INPA (No. 023/2015)

GenBank: 18S (No. Km192365)

Reference: Azevedo *et al.* (2016)

***Kudoa ovivora* Swearer & Robertson, 1999**

Host: *Thalassoma bifasciatum* (Bloch, 1791) (Perciformes: Labridae) – **MAR**

Site: Ovary

Locality: TNA, San Blas Islands (9°34'N, 78°58'W), Panamá

Plasmodia: 25–50 µm in diameter

Spore measurements: **SL** 6.5 (5.0–7.5), **SW** 7.7 (6.7–8.3), **TS** 6.9 (5.8–7.7), **PCL** 2.1 (1.7–2.5), **PCW** 1.5 (1.3–1.7), **PC** =, **NC**

Specimens in Collection: MSE (No. KOV1, KOV2, KVO3)

Note: Also found in *Halichoeres bivittatus* (Bloch), *H. garnoti* (Valenciennes), *H. poeyi* (Steindachner), *Sparisoma aurofrenatum* (Valenciennes), *S. rubripinne* (Valenciennes)

Reference: Swearer & Robertson (1999)

***Kudoa paniformis* Kabata & Whitaker, 1981**

Host: *Merluccius productus* (Ayres, 1855) (Gadiformes: Merlucciidae) – **MAR**

Site: Muscles

Locality: CTNP, Vancouver Island (48°30'N, 125°15'W), Canada

Spore measurements: SL 4.5–6.0 (5.0±0.2), SW 5.0–6.5 (5.9±0.3), TS 6.0–7.0 (6.6±0.4), PCL 1.9–2.4 (2.0±0.04), PCW 1.4–1.9 (1.6±0.06), PC ≠

Specimens in Collection: CMN (No. 1981-95)

Reference: Kabata & Whitaker (1981)

***Kudoa peruvianus* Mateo Salas, 1972**

Host: *Merluccius gayi peruanus* Ginsburg, 1954 (Gadiformes: Merlucciidae) – **MAR**

Site: Muscles

Locality: WTSP, Instituto Del Mar, Peru

Plasmodia: 0.50–2.50 length x 0.02–0.09 width mm

Spore measurements: SL 4.6–5.1, SW 5.5–6.1, PCL 2.2–2.6, PCW 1.3–1.7, PC =

Reference: Mateo Salas (1972)

***Kudoa ramsayi* Kalavati, Brickle, Mackenzie 2000**

Host: *Patagonotothen ramsayi* (Regan, 1913) (Perciformes: Nototheniidae) – **MAR**

Site: Trunk musculature

Locality: M, Falkland Islands Shef (59°53'S, 57°24'W), Falkland Islands

Plasmodia: FC subconical

Spore measurements: SL 8.0–10.4 (9.1±0.6), SW 4.8–8.0 (5.6±0.8), TS 2.8–4.8 (3.4±0.5), PCL 2.0–3.6 (2.6±0.4), PCW 1.6–3.2 (2.2±0.3), PC =, NC 3–4

Specimens in Collection: BMNH (No. 1999:3:2:6 and 1999:3:2:7)

Reference: Kalavati *et al.* (2000)

***Kudoa rayformis* Shin, Shirakashi, Hamano, Kato, Lasso & Yokoyama, 2016**

Host: *Scomberomorus sierra* Jordam & Starks, 1895 (Perciformes: Scombridae) – **MAR**

Site: Trunk muscle

Locality: TNA, Coast of Tonosi, Los Santos Province, Panama

Spore measurements: SL 5.0±0.3 (4.6–5.7), SW 5.4±0.2 (5.0–5.7), TS 8.2±0.6 (7.5–9.2), PCL 1.9±0.3 (1.5–2.6), PCW 1.9±0.2 (1.5–2.5), PC ≠

Specimens in Collection: MPM (No. 21010)

GenBank: 18S (No. KR140014); 28S (No. Kr140015)

Reference: Shin *et al.* (2016)

***Kudoa rosenbuschi* Meglitsch, 1947**

[**Syn.** *Chloromyxum rosenbuschi* Gelormini, 1944]

Host: *Merluccius gayi gayi* (Guichenot, 1848) (Gadiformes: Merlucciidae) – **MAR**

Site: Muscles

Locality: commercial fishery, Buenos Aires, Argentina

Spore measurements: SW 7, PCW 2.5, PC =

Reference: Meglitsch (1947b)

***Kudoa sciaenae* Terán, Llicán & Luque, 1990**

Host: *Sciaena deliciosa* (Tschudi, 1846) (Perciformes: Sciaenidae) – **MAR**

Site: Muscles

Locality: WTSP, Chorrillos, Lima, Peru

Plasmodia: 9.6–76.8 length x 3.2–12.8 width µm

Spore measurements: SL 5.28, SW 6.4, PCL 3.2, PCW 1.6, PC =

Specimens in Collection: LPURP (No. P-101,102)

Reference: Teran *et al.* (1990)

***Kudoa shkae* Dyková & Lom, 1994**

Host: *Ariopsis felis* (Linnaeus, 1766) (Siluriformes: Ariidae) – **MAR**

Site: Muscles

Locality: TNA, Gulf of Mexico, Mississippi, USA

Plasmodia: 200 length x 60 width µm

Spore measurements: SL 6.2 (6.1–6.2), SW 7.5 (7.0–8.1), PCL 2.5, PCW 2, PC =, NC 3

Reference: Dyková & Lom (1994)

Family Trilosporidae Shulman, 1959

Genus *Trilospora* Shulman, 1959

***Trilospora sphaerica* Aseeva & Krasim, 2001**

Host: *Laemonema longipes* Schmidt, 1938 (Gadiformes: Moridae) – **MAR**

Site: Muscles

Locality: A, Bering Sea, Alaska, USA
Plasmodia: 2.5 length x 5 width mm
Spore measurements: SL 5.4-6.3 in diameter,
 PCL 5.4-6.3 in diameter
Note: Also found in *Lycodes diapterus* Gilbert
Reference: Aseeva & Krasim (2001)

Host-Parasite list

Phylum Arthropoda

Class Malacostraca

Order Amphipoda

Family Ischyroceridae

Erichthonius fasciatus: *Myxidium fonsesai*

Phylum Chordata

Class Amphibia

Order Anura

Family Bufonidae

Bufo typhonius: *Cystodiscus typhonius*
Rhinella marina: *Cystodiscus immersus*,
Cystodiscus lyndoyense

Family Hylidae

Pseudacris triseriata: *Cystodiscus melleni*

Family Leptodactylidae

Leptopelis ocellatus: *Sphaerospora chagasi*

Family Ranidae

Lithobates catesbeianus: *Sphaerospora ohlmacheri*
Rana pipiens: *Cystodiscus serotinus*

Class Aves

Order Anseriformes

Family Anatidae

Anas platyrhynchos: *Myxidium anatum*

Order Caudata

Family Plethodontidae

Eurycea multiplicata: *Chloromyxum salamandrae*

Class Reptilia

Order Testudines

Family Emydidae

Trachemys scripta: *Myxidium chelonarum*,
Myxidium scripta

Family Geoemydidae

Hardella thurjii: *Myxidium hardella*

Family Trionychidae

Apalone spinifera: *Myxidium americanum*

Class Actinopterygii

Order Amiiformes

Family Amiidae

Amia calva: *Henneguya amiae*

Order Anguilliformes

Family Anguillidae

Anguilla rostrata: *Myxidium illinoisense*

Order Atheriniformes

Family Atherinidae

Atherinops affinis: *Chloromyxum kurisi*,
Sphaerospora olsoni

Family Atherinopsidae

Odontesthes incisa: *Auerbachia sphaerica*,
Ceratomyxa opisthocornata, *Myxoproteus innae*,
Sphaerospora lobata

Order Aulopiformes

Family Synodontidae

Synodus foetens: *Ceratomyxa aglomerata*,
Ceratomyxa amorpha

Order Batrachoidiformes

Family Batrachoididae

Porichthys notatus: *Ceratomyxa elegans*,
Myxodavisia bidens, *Myxodavisia cella*
Opsanus tau: *Sphaerospora polymorpha*

Order Beloniformes

Family Belonidae*Strongylura marina*: *Chloromyxum granulorum***Order Beryciformes****Family Berycidae***Beryx splendens*: *Parvicapsula schulmani***Order Carcharhiniformes****Family Carcharhinidae***Carcharhinus* sp.: *Ceratomyxa flagellifera*
Galeocerdo cuvier: *Ceratomyxa lunata*
Prionace glauca: *Chloromyxum liae*
Rhizoprionodon terraenovae: *Ceratomyxa abbreviata*, *Ceratomyxa attenuata*, *Ceratomyxa flagellifera*, *Ceratomyxa sphairophora*, *Ceratomyxa taenia***Family Sphyrnidae***Sphyrna tiburo*: *Chloromyxum sphyrnae*
Sphyrna zygaena: *Ceratomyxa mesospora*, *Ceratomyxa recurvata*, *Ellipsomyxa fusiformis***Family Triakidae***Triakis semifasciatus*: *Ceratomyxa jamesoni***Order Characiformes****Family Acestrorhynchidae***Acestrorhynchus falcatus*: *Henneguya adherens***Family Anostomidae***Hypomasticus mormyrops*: *Henneguya leporini*, *Myxobolus associatus*
Leporinus elongatus: *Myxidium ceccarellii*
Leporinus friderici: *Henneguya friderici*
Leporinus lacustris: *Henneguya caudicula*
Leporinus macrocephalus: *Henneguya leporinicola*
Leporinus obtusidens: *Henneguya azevedoi*, *Henneguya visibilis*
Leporinus sp.: *Henneguya travassoi*
Schizodon fasciatus: *Henneguya schizodon***Family Bryconidae***Brycon hilarii*: *Myxobolus brycon*, *Myxobolus hilarii*, *Myxobolus piraputangae*, *Myxobolus oliveirai*, *Myxobolus umidus*
Brycon orthotaenia: *Myxobolus filamentum*
Salminus brasiliensis: *Henneguya rotunda*, *Myxobolus aureus*, *Myxobolus**macroplasmoidal*, *Myxobolus pantanalis*, *Myxobolus salminus***Family Characidae***Astyanax altiparanae* Garutti & Britski: *Henneguya chydadea*
Astyanax fasciatus: *Henneguya hoimba*
Astyanax scabripinnis: *Henneguya artigasi*, *Henneguya intracornea*, *Myxidium cholecysticum*
Hypheobrycon anisitsi: *Henneguya pisciforme*
Hypheobrycon santae: *Henneguya santae*
Jupiaba keithi: *Henneguya astyanax*
Moenkhausia oligolepis: *Henneguya testicularis*
Moxostoma sp.: *Myxidium gurgeli*
Tetragonopterus sp.: *Henneguya wenyoni***Family Curimatidae***Curimata inornata*: *Henneguya curimata*
Cyphocharax gilbert: *Henneguya cyphocharax*
Cyphocharax nagelli: *Henneguya garavelli*, *Henneguya nagelii*, *Myxobolus peculiaris***Family Erythrinidae***Hoplias malabaricus*: *Henneguya malabarica*, *Tetrauronema desaequalis***Family Hemiodontidae***Hemiodus microlepis*: *Ceratomyxa microlepis*, *Henneguya hemiodopsis*, *Myxobolus testicularis***Family Prochilodontidae***Prochilodus argenteus*: *Myxobolus franciscoi*
Prochilodus costatus: *Myxobolus curimatae*
Prochilodus lineatus: *Myxobolus porofilus*, *Henneguya caudalongula*, *Henneguya paranaensis*, *Myxobolus prochilodus*
Semaprochilodus insignis: *Myxobolus insignis***Family Serrasalminidae***Colossoma macropomum*: *Ceratomyxa vermiformis*, *Myxobolus colossomati*
Metynnis argenteus: *Myxobolus metynnis*
Metynnis maculatus: *Myxobolus maculatus*
Myloplus rubripinnis: *Myxobolus myleus*
Piaractus mesopotamicus: *Henneguya pellucida*, *Henneguya piaractus*, *Myxobolus cuneus*
Pristobrycon striolatus: *Henneguya striolata*
Pygocentrus piraya: *Myxobolus pygocentrus*
Serrasalmus altuvei: *Henneguya pilosa*
Serrasalmus rhombeus: *Myxobolus serrasalmi*
Serrasalmus spilopleura: *Myxobolus noguchii*, *Henneguya curvata*

Family Triportheidae*Triportheus nematurus*: *Myxidium cruzi***Order Clupeiformes****Family Clupeidae***Alosa aestivalis*: *Myxobolus mauriensis**Clupea harengus*: *Kudoa clupeidae**Dorosoma petenense*: *Myxobolus petenensis**Sardinella aurita*: *Myxobolus chondrophilus**Sardinops sagax*: *Ceratomyxa pacifica***Family Engraulidae***Anchoa marinii*: *Sphaeromyxa bonaerensis**Engraulis anchoita*: *Sphaeromyxa argentinensis***Order Cypriniformes****Family Catostomidae***Carpoides carpio*: *Myxobolus bellus**Carpoides cyprinus*: *Myxobolus meglitschi**Carpoides velifer*: *Myxobolus obliquus**Catotomus commersoni*: *Chloromyxum catostomi*,*Myxidium commersoni*, *Myxobolus bibullatus*,*Myxobolus commersonii*, *Myxobolus ellipticoides*,*Myxobolus lamellus*, *Myxobolus subcircularis**Catostomus macrocheilus*: *Myxidium macrocheili**Erimyzon sucetta*: *Myxobolus globosus*,*Myxobolus oblongus**Deltistes luxatus*: *Myxobolus pratti*, *Myxobolus**kozloffii**Ictiobus bubalus*: *Chloromyxum thompsoni*,*Myxobolus bubalis*, *Myxobolus endovasus*,*Myxobolus enoblei*, *Myxobolus filamentus*,*Myxobolus ictiobus*, *Myxobolus jahnrici*,*Myxobolus minutus*, *Myxobolus morrisonae*,*Myxobolus ovalis*, *Myxobolus ovatus**Minytrema melanops*: *Myxobolus microthecus**Moxostoma anisurum*: *Myxobolus congesticus*,*Myxobolus gravidus**Moxostoma breviceps*: *Myxobolus conspicuus**Moxostoma pisolabrum*: *Myxobolus moxostomi*,*Myxobolus vastus**Moxostoma* sp.: *Myxidium moxostomatis***Family Cyprinidae***Campostoma anomalum*: *Unicauda crassicauda**Campostoma oligolepis*: *Myxobolus stanlii**Carassius auratus*: *Chloromyxum auratum**Chrosomus eos*: *Myxobolus smith**Clinostomus funduloides*: *Myxobolus transovalis**Chrosomus neogaeus*: *Myxobolus**parallepticoides*, *Myxobolus pfrille**Couesius plumbeus*: *Myxobolus couesii**Cyprinella lutrensis*: *Myxobolus spalli**Cyprinella whipplei*: *Myxobolus teres**Cyprinus carpio*: *Thelohanellus toyamai**Danio rerio*: *Myxidium streisingeri**Ericymba buccata*: *Myxobolus grandis**Luxilus cornutus*: *Myxobolus bartai*, *Myxobolus**fanthami*, *Myxobolus medius*, *Myxobolus notropis*,*Myxobolus orbitalis*, *Myxobolus pseudokoi*,*Myxobolus robustus*, *Myxobolus schuberti*,*Myxobolus siddalli*, *Myxobolus transversalis*,*Myxobolus wellerae*, *Myxobolus xiaoi**Margariscus margarita*: *Chloromyxum externum**Notemigonus crysoleucas*: *Myxobolus**algonquinensis*, *Myxobolus argentus*, *Myxobolus**bilobus*, *Myxobolus martini*, *Myxobolus**notemigoni*, *Myxobolus xiaoi*, *Thelohanellus**oviformis**Notropis anogenus*: *Myxobolus aureatus*,*Unicauda brachyura**Notropis atherinoidi*: *Dicauda atherinoides**Notropis blennius*: *Myxobolus compressus*,*Unicauda clavicauda**Notropis dorsalis*: *Myxobolus orbiculatus**Notropis heterolepis*: *Myxobolus heterolepis**Notropis hudsonius*: *Myxobolus burti**Pimephales notatus*: *Myxobolus hoffmani*,*Myxobolus hyborhynchi*, *Myxobolus mutabilis*,*Myxobolus nodosus*, *Myxobolus ridouti*,*Thelohanellus notatus**Pimephales promelas* Rafinesque: *Unicauda**magna**Pimephales vigilax*: *Myxobolus angustus**Rhinichthys atratulus*: *Myxobolus rhinichthidis**Semotilus atromaculatus*: *Myxobolus semotilii*,*Myxobolus pendula*, *Myxobolus percae*,*Myxobolus ridwayi*, *Sphaerospora paulini***Order Cyprinodontiformes****Family Cyprinodontidae***Cyprinodon variegatus*: *Myxobolus capsulatus***Family Fundulidae***Fundulus diaphanus*: *Myxobolus diaphanus**Fundulus heteroclitus*: *Kudoa funduli*, *Myxidium**folium*, *Myxobolus hudsonis*, *Myxobolus subtecalis**Fundulus majalis*: *Chloromyxum renalis***Family Poeciliidae***Gambusia affinis*: *Henneguya gambusi*, *Myxidium*

phyllium, *Myxobolus pharyngeus*
Poecilia latipinna: *Myxobolus latipinnicola*
Poecilia mexicana: *Myxobolus nuevoleonensis*
Poecilia reticulata: *Myxobolus nuevoleonensis*
Poecilia vivipara: *Myxobolus lutzi*

Order Esociformes

Family Esocidae

Esox lucius: *Henneguya schizura*
Esox masquinongy: *Henneguya acuta*, *Henneguya nigris*, *Myxobolus bondi*, *Myxobolus cuneatus*, *Myxobolus dentium*, *Esox niger*: *Henneguya esocis*, *Henneguya nigris*, *Wardia lucci*

Family Umbridae

Umbra limi: *Henneguya umbri*, *Myxidium umbri*

Order Gadiformes

Family Gadidae

Microgadus proximus: *Sphaeromyxa maiyai*
Micromesistius australis: *Kudoa alliararia*

Family Macrouridae

Albatrossia pectoralis: *Myxodavisia pectoralis*, *Sphaerospora armatura*, *Zschokkella meglitschi*
Bathygadus melanobranchus: *Myxidium macrourium*
Coelorhynchus scaphopsis: *Myxobolus mexicanus*
Coelorinchus carminatus: *Myxoproteus hubbsi*
Coelorinchus chilensis: *Zschokkella meglitschi*
Coelorinchus gladius: *Zschokkella meglitschi*
Coryphaenoides acrolepis: *Chloromyxum kabatai*, *Myxodavisia coryphaenoidia*, *Myxoproteus californicus*, *Myxoproteus rosenblatti*, *Neobipteria macrouri*, *Sinuolinea magna*
Coryphaenoides armatus: *Myxoproteus abyssus*, *Myxoproteus rosenblatti*, *Zschokkella meglitschi*
Coryphaenoides ariommu: *Myxoproteus rosenblatti*
Coryphaenoides carapinus: *Myxidium iwamotoi*
Coryphaenoides cinereus: *Ceratomyxa asymmetrica*, *Ceratomyxa coryphaenoida*
Coryphaenoides filifer: *Myxoproteus rosenblatti*, *Zschokkella meglitschi*
Coryphaenoides leptolepis: *Sphaerospora armatura*
Coryphaenoides longiflis: *Zschokkella meglitschi*
Macrourus berglax: *Auerbachia pulchra*, *Myxodavisia newfoundlandia* *Zschokkella kudo*
Macrourus holotrachys: *Myxidium baueri*,

Myxodavisia newfoundlandia II
Malacocephalus occidentalis: *Sphaeromyxa intermediata*
Nezumia propinquus: *Zschokkella meglitschi*
Nezumia stelgidolepis: *Zschokkella meglitschi*

Family Moridae

Laemonema longipes: *Trilospora sphaerica*
Salilota australis: *Myxidium asymmetricum*, *Myxoproteus moseri*, *Sphaeromyxa schulmani*

Family Merlucidae

Macruronus magellanicus: *Palliatum magellanicum*, *Pseudalataspora kovalevae*
Merluccius australis: *Alataspora merluccii*
Merluccius gayi gayi: *Kudoa rosenbuschi*
Merluccius gayi peruanus: *Kudoa peruvianus*
Merluccius hubbsi: *Myxoproteus meridionalis*
Merluccius productus: *Kudoa paniformis*

Family Phycidae

Urophycis tenuis: *Ceratomyxa urophycis*

Order Gasterosteiformes

Family Gasterosteidae

Culaea inconstans: *Myxobolus eucalii*
Gasterosteus aculeatus: *Ceratonova gasterostea*, *Myxidium gasterostei*
Urophycis chuss: *Ceratomyxa acadiensis*

Order Gobiesociformes

Family Gobiesocidae

Gobiesox rhessodon: *Sphaeromyxa ovula*
Rimicola eigenmanni: *Sphaerospora compressa*

Order Gymnotiformes

Family Gymnotidae

Electrophorus electricus: *Henneguya electrica*, *Henneguya visceralis*

Family Hypopomidae

Brachyhypopomus pinnicaudatus: *Henneguya torpedo*

Family Sternopygidae

Eigenmannia virescens: *Myxobolus inaequus*, *Henneguya theca*

Family Rhamphichthyidae

Gymnoramphichthys rondoni: *Henneguya rondoni*

Order Mugiliformes**Family Mugilidae***Mugil cephalus*: *Myxobolus cephalus**Mugil platanus*: *Myxobolus platanus***Order Osmeriformes****Family Alepocephalidae***Bajacalifornia burragei*: *Myxidium bajacalifornium***Family Galaxiidae***Galaxias maculatus*: *Myxidium biliare*, *Myxobolus bartoni*, *Myxobolus galaxii*, *Myxobolus magellanicus***Order Osteoglossiformes****Family Arapaimidae***Arapaima gigas*: *Henneguya arapaim***Order Perciformes****Family Carangidae***Selar crumenophthalmus*: *Henneguya akule**Trachurus murphyi*: *Ceratomyxa meglitschi*, *Ceratomyxa ovalis***Family Centrarchidae***Lepomis cyanellus*: *Acauda elongata*, *Myxobolus mesentericus**Lepomis gibbosus*: *Chloromyxum gibbosum*, *Henneguya episclera*, *Myxobilatus ohioensis*, *Myxobolus gibbosus*, *Myxobolus lepomicus*, *Myxobolus magnaspherus*, *Myxobolus osburni*, *Myxobolus paralintoni*, *Myxobolus uvuliferis*, *Myxobolus dechtiari*, *Sphaerospora diminuta*, *Sphaerospora ovophila**Lepomis humilis*: *Wardia ovinocua**Lepomis macrochirus*: *Acauda hoffmani*, *Myxobolus cartilaginis*, *Myxobolus corneus*, *Myxobolus jollimorei*, *Myxobolus mississippiensis**Lepomis megalotis*: *Chloromyxum trijugum**Micropterus dolomieu*: *Myxobolus branchiarum*, *Myxobolus inornatus*, *Myxobolus kostiri*, *Myxobolus micropterii*, *Myxobolus osburni**Micropterus salmoides*: *Myxobolus microcystus*, *Myxobolus micropterii*, *Myxobilatus mictosporus**Pomoxis annularis*: *Myxobilatus rupestris**Pomoxis nigromaculatus*: *Myxobolus intestinalis*, *Myxobolus iowensis*, *Myxobolus manueli*,*Myxobolus okobojiensis*, *Myxobolus sparoides*, *Myxobolus symmetricus***Family Centropomidae***Centropomus undecimalis*: *Ceratomyxa choleospora*, *Myxobolus centropomi***Family Cichlidae***Aequidens plagiozonatus*: *Henneguya aequidens*, *Kudoa aequidens**Cichla temensis*: *Henneguya paraensis**Chaetobranchopsis orbicularis*: *Kudoa orbicularis**Crenicichla lepidota*: *Henneguya amazônica**Oreochromis niloticus*: *Sinuolinea niloticus**Symphysodon discus*: *Ceratomyxa amazonensis***Family Clinidae***Gibbonsia elegans*: *Ceratomyxa gracilis*, *Ceratomyxa noblei*, *Sphaeromyxa gibbonsia**Gibbonsia metzi*: *Sphaerospora sphaerula***Family Elegendinopsidae***Elegendinops maclovinus*: *Henneguya shackletoni***Family Embiotocidae***Rhacochilus vacca*: *Zschokkella embiotociddis***Family Ehippidae***Chaetodipterus faber*: *Ceratomyxa streptospora*, *Myxoproteus cordiformis***Family Labridae***Thalassoma bifasciatum*: *Kudoa ovivora***Family Lutjanidae***Lutjanus griseus*: *Sphaerospora motemarinii**Lutjanus jocu*: *Henneguya jocu***Family Moronidae***Morone chrysops*: *Henneguya magna**Morone saxatilis*: *Kudoa cerebralis***Family Nomeidae***Nomeus gronovii*: *Kudoa hypoepicardialis***Family Nototheniidae***Patagonotothen ramsayi*: *Bipteria nototheniae*, *Kudoa ramsayi**Patagonotothen sima*: *Renispora simae***Family Percidae***Etheostoma exile*: *Myxobolus poecilichthidis*

Perca flavescens: *Henneguya doori*, *Henneguya percae*, *Henneguya wisconsinensis*, *Myxidium percae*, *Myxobolus neurophilus*, *Myxobolus scleroperca*

Sander vitreus: *Myxobilatus asymmetricus*

Family Sciaenidae

Aplodinotus grunniens: *Myxidium aplodinoti*, *Myxobilatus caudalis*

Atractoscion nobilis: *Ceratomyxa venusa*

Bairdiella chrysoura: *Myxoproteus cornutus*

Cynoscion nebulosus: *Henneguya cynoscioni*, *Kudoa inornata*

Cynoscion regalis: *Myxidium glutinosum*, *Sinuolinea dimorpha*

Leiostomus xanthurus: *Kudoa branchiata*, *Kudoa leiostomi*

Menticirrhus americanus: *Chloromyxum menticirri*, *Myxidium striatum*

Pogonias cromis: *Henneguya texana*

Sciaena deliciosa: *Kudoa sciaenae*

Sciaenops ocellatus: *Henneguya ocellata*, *Parvicapsula renalis*

Family Scombridae

Scomber japonicus: *Ceratomyxa inconstans*, *Kudoa caudata*, *Pseudalataspora scombri*

Scomber scombrus: *Ceratomyxa americana*

Scomberomorus maculatus: *Kudoa crumena*

Scomberomorus sierra: *Kudoa rayformis*

Family Sparidae

Lagodon rhomboides: *Henneguya lagodon*

Family Zoarcidae

Lycodapus australis: *Myxodavisia galeiforme*

Lycodes esmarkii: *Schulmania ovale*

Melanostigma pammelas: *Myxidium melanostigmum*

Zoarces americanus: *Ceratomyxa acadensis*

Order Percopsiformes

Family Percopsidae

Percopsis omiscomaycus: *Myxobolus intramusculi*, *Myxobolus procerus*

Order Pleuronectiformes

Family Paralichthyidae

Ancylopsetta ommata: *Ceratomyxa undulata*

Paralichthys albigutta: *Myxodavisia brachiophora*, *Myxodavisia opacita*, *Myxodavisia*

spinosa, *Sinuolinea capsularis*, *Sphaerospora glomerata*

Paralichthys dentatus: *Ceratomyxa navicularia*, *Sphaerospora lobosa*

Paralichthys patagonicus: *Ceratomyxa flexa*, *Myxobilatus minutus*, *Myxoproteus biliaris*, *Sinuolinea contrariocapsularis*, *Zschokkella flexosaturalis*

Family Pleuronectidae

Hippoglossoides plaiessoides: *Schulmania aenigmata*

Parophrys vetulus: *Ceratomyxa hopkinsi*

Pseudopleuronectes americanus: *Myxidium mavori*, *Myxobolus pleuronectidae*

Reinhardtius hippoglossoides: *Schulmania quadrilobata*

Order Salminiformes

Family Salmonidae

Oncorhynchus clarkii: *Myxobolus insidiosus clarki*

Oncorhynchus gorbuscha: *Parvicapsula kabatai*

Oncorhynchus kisutch: *Henneguya salminicola*, *Myxobolus fryeri*, *Myxobolus kisutchi*, *Myxidium minteri*

Oncorhynchus mykiss: *Ceratonova shasta*, *Chloromyxum majori*, *Myxobolus squamosus*

Oncorhynchus nerka: *Chloromyxum wardi*, *Sphaerospora elwhaiensis*, *Sphaerospora oncorhynchi*, *Parvicapsula minibicornis*

Oncorhynchus tshawytscha: *Myxobolus insidiosus*

Salmo salar Linnaeus: *Henneguya salmonis*

Salvelinus fontinalis: *Unicauda fontinalis*

Order Scorpaeniformes

Family Anoplopomatidae

Anoplopoma fimbria: *Ceratomyxa anoplopoma*, *Myxodavisia anoplopoma*

Family Cottidae

Artedius lateralis: *Sphaeromyxa lateralis*

Clinocottus analis: *Ceratomyxa obesa*

Cottus cognatus: *Myxobilatus cotti*, *Myxobilatus yukonensis*, *Myxobolus cognati*

Leptocottus armatus: *Ceratomyxa crassa*

Myoxocephalus octodecimspinosus: *Myxidium myxocephali*

Family Dactylopteridae

Dactylopterus volitans: *Myxidium volitans*

Family Sebastidae

Sebastes paucispinis: *Henneguya sebasta*, *Kudoa miniauriculata*

Sebastes rosaceus: *Ceratomyxa starksi*

Sebastes serranoides: *Ceratomyxa lovei*, *Myxodavisia reginae*

Order Siluriformes

Family Ariidae

Ariopsis felis: *Kudoa shkae*

Sciades herzbergii: *Myxobolus sciades*

Family Aspredinidae

Bunocephalus coracoideus: *Myxobolus braziliensis*

Family Auchenipteridae

Centromochlus heckelii: *Myxobolus heckelii*

Family Callichthyidae

Hoplosternum littorale: *Henneguya guanduensis*

Corydoras melini: *Henneguya milini*, *Myxidium amazonense*, *Myxobolus niger*

Family Heptapteridae

Rhamdia quelen: *Henneguya rhamdia*

Family Ictaluridae

Ameiurus melas: *Henneguya gurleyi*, *Myxidium melum*

Ameiurus nebulosus: *Henneguya ameiuensis*, *Sphaerospora hankai*

Ictalurus furcatus: *Henneguya limatula*, *Henneguya pellis*, *Myxidium kudo*

Ictalurus punctatus: *Henneguya adiposa*, *Henneguya bulbosus*, *Henneguya diversis*, *Henneguya exilis*, *Henneguya ictaluri*, *Henneguya limatula*, *Henneguya longicauda*, *Henneguya mississippiensis*, *Henneguya postexilis*, *Henneguya sutherlandi*, *Myxidium bellum*, *Sphaerospora ictaluri*, *Unicauda fimbriata*, *Unicauda plasmodia*

Noturus grinus: *Myxobilatus noturi*

Pylodictis olivaris: *Chloromyxum opladeli*

Family Loricariidae

Loricaria sp.: *Henneguya occulta*

Family Mochokidae

Synodontis clarias: *Myxobolus cunhai*

Family Pimelodidae

Pimelodus maculatus: *Myxobolus absonus*

Pimelodus sp.: *Myxobolus stokesi*

Pseudoplatystoma corruscans: *Henneguya corruscans*, *Henneguya cuniculator*, *Henneguya eirasi*, *Henneguya maculosus*, *Henneguya multiplasmodialis*, *Henneguya pseudoplatystoma*, *Myxobolus flavus*

Pseudoplatystoma fasciatum: *Henneguya pseudoplatystoma*

Zungaro jahu: *Myxobolus cordeiroi*

Order Syngnathiformes

Family Syngnathidae

Hippocampus erectus: *Sphaeromyxa cannolii*

Syngnathus floridae: *Sinuolinea arborescens*

Order Teleostei

Family Apterontidae

Apterontus albifrons: *Myxobolus desaequalis*

Order Tetraodontiformes

Family Tetraodontidae

Sphaeroides annulatus: *Kudoa diana*

Sphaeroides maculatus: *Zschokkella globulosa*

Sphaeroides testudineus: *Triangula amazonica*

Class Chondrichthyes

Order Chimaeriformes

Family Chimaeridae

Hydrolagus colliei: *Ceratomyxa fisheri*

Order Myliobatiformes

Family Dasyatidae

Dasyatis hastata: *Ceratomyxa scissura*

Order Rajiformes

Family Arhynchobatidae

Bathyraja brachyurops: *Chloromyxum parvicostatum*

Rioraja agasizii: *Chloromyxum riorajum*

Order Squaliformes

Family Squalidae*Squalus suckleyi*: *Chloromyxum ovatum***Order Squatiniformes****Family Squatinidae***Squalus acanthias*: *Chloromyxum transversocostatum**Squatina californica*: *Chloromyxum levigatum**Squatina squatina*: *Chloromyxum multicostatum***Class Myxini****Order Myxiniformes****Family Myxiniformes***Eptatretus stoutii*: *Ceratomyxa californica*,
*Ceratomyxa galeata***Class Sarcopterygii****Order Lepidosireniformes****Family Lepidosirenidae***Lepidosiren paradoxa*: *Agarella gracilllis***Phylum Platyhelminthes****Infraclass Trematoda****Order Plagiorchiida****Family Apocreadiidae***Crassicutis archosargi*: *Fabespora vermicola*

1995; Schlegel *et al.*, 1996). The small subunit (SSU) 18S rDNA has been the most common molecular marker used for the detection, identification and phylogenetic analysis for myxozoans and has the most data available for comparison (Fiala *et al.*, 2015). The difficulties of relying on spore morphology for species identification have led authors to recommend that SSU rDNA sequence should be included when new species are described (Andree *et al.*, 1999; Kent *et al.* 2001; Lom & Dyková, 2006). Descriptions should aggregate as many data sources as possible (Atkinson *et al.*, 2015) including transmission electron micrographs, molecular data, traditional morphological data, etc. Here, we made note of what sequences are available for each species described, and expect the number of representatives to grow as DNA sequencing becomes routine.

According Okamura *et al.* (2015) myxozoans represent around 18 % of cnidarian species diversity, and of them, about 1200 belong to the family Myxobolidae (Eiras, 2002; Eiras *et al.*, 2014; Zhang *et al.*, 2013), representing approximately 52% of myxozoan species diversity. Previous compilations of *Myxobolus* listed 905 nominal species (Eiras *et al.*, 2014), more than 200 species of *Henneguya* (Eiras, 2002) and 108 of *Thelohanellus* (Zhang *et al.*, 2013). In our synopsis, members of the Myxobolidae, represented 52.6% of valid species in the Americas, corroborating with world data, and suggesting these are not over or under represented in our data set.

DISCUSSION

Classification of myxozoan species has been based almost exclusively on spore morphology since the first systems were established (Kudo, 1933; Shul'man, 1966). The majority of species descriptions are of morphological nature, or are ultrastructural and histopathological studies. Nonetheless, DNA sequencing and analysis is becoming more commonplace. Molecular markers reveal unexpected myxosporean relationships and show discrepancies between spore based classifications and phylogenies based on gene sequences (Smothers *et al.*, 1994; Siddall *et al.*,

The results revealed that Neartic region has the highest number of nominal species. Furthermore, most of the the records, and the molecular data for known speices originates in the U.S (Gurley, 1893; Whinery, 1893; Smothers *et al.*, 1994; Siddall *et al.*, 1995). Taxonomic publications from the Neotropics has increased in recent years with several researchers initiating studies on myxozoans from freshwater fish from South America (Azevedo *et al.*, 2005; Naldoni *et al.*, 2006; Eiras *et al.*, 2008; Azevedo *et al.*, 2009; Carriero *et al.*, 2013; Azevedo *et al.*, 2014; Moreira *et al.*, 2014; Videira *et al.*, 2015; Mathews *et al.*, 2016.), however, given the number of known species from the United States where fish host diversity is relatively lower as compared to fish

diversity of the tropics and Amazon basin, myxozoan species diversity is probably greatly underestimated (Okamura *et al.*, 2015). Only a small fraction of the potential fish hosts in South America have been examined for parasites. In addition, DNA sequencing data may reveal many cryptic species, i.e. genetically distinct species that look similar morphologically, which further contributes to an underestimate of the true number of species (Poulin *et al.*, 2016).

Myxozoan species descriptions are primarily based on observations made from myxospores; the number of known actinospores is rather low (Szekely *et al.*, 2009). Although certainly not exclusive to the Americas, the lack of information on these stages, and therefore life cycles limits our complete understanding of myxozoan diversity and biology. To date, no life cycle studies have been undertaken in Neotropic region and only a few in Nearctic region (Cone, 1994; Bartholomew *et al.*, 1997; Bartholomew *et al.*, 2006).

Some of the species most familiar in fisheries were not originally described in the Americas, but were introduced (*M. cerebralis*) or have broad distributions (*K. thyrssites*). In German hatcheries, whirling disease was unknown until *M. cerebralis* was imported to North America and rainbow trout were infected (Hallett *et al.*, 2015). Subsequently, the parasite was accidentally introduced to the eastern USA and decimated several trout hatcheries that then had to close (Bartholomew & Reno, 2002). In western Canadian mariculture, *K. thyrssites*, endemic in native fishes, became prevalent in introduced Atlantic salmon. Infections can result in post-mortem myoliquifaction and render fillets unmarketable (Moran *et al.*, 1999). Infections in commercially reared Atlantic salmon have also been reported from Ireland, Chile, and Australia (Castro & Burgos, 1996; Munday *et al.*, 1998; Henning *et al.*, 2013). As aquaculture efforts expand globally, continuing surveys for myxozoan parasites is critical.

Studies of myxozoans in Neotropical region are still scarce in comparison to Nearctic region, and those that exist, often lack any DNA sequence analysis. As mentioned previously, this is not likely due to lack of diversity, but an historical bias of where expertise and resources are found. According Poulin (2010), it is premature to attempt

any rigorous analysis the large- diversity of parasites, because temperate and tropical data are not yet comparable in a quantitative manner. The parasitological knowledge is increasing in the tropical region and this suggests that the data of parasites will be realistic within just a few years. Many of the Myxozoa specialists are in North America, especially in Canada and in the U.S. In addition, both of these countries have generally invested more in science and technology than Latin America (Hermes-Lima *et al.*, 2007). On the other hand, Brazil is the country with the largest area of exclusively Neotropical territory, and is the principal home of the Amazon River basin which has the highest freshwater fish biodiversity on the planet. In terms of marine ecosystems, Brazil possesses the longest littoral in the South Atlantic Ocean, with the highest biodiversity in the region (Luque & Poulin, 2007). As such, it is likely that myxozoan diversity (and fish parasite diversity in general) are vast, with many additional species in existing genera, but possibly new genera as well. Indeed, two monotypic genera, *Agarella* (Dunkerly, 1915) and *Triangulamyxa* (Azevedo *et al.*, 2005) are only reported from Brazil in South America.

With the ever growing list of known myxozoan species, and the prospect for immense growth when more research is conducted in diverse localities like Brazil, synopses and checklists such as this are a valuable resource. Because we based our data on original descriptions, what report here can be used, at least initially, as source data. We always encourage prospective authors to consult original papers when describing new species. Regardless, this resource can be used as source of data for anyone contemplating a study of parasitism in a host population, or as a guide to the types of myxozoa that you could expect to find at a certain site of infection, or to provide clues regarding parasite identification (Poulin *et al.*, 2016). We believe we have provided an accurate estimate of species numbers, and the most robust resource to date for myxozoans from the Americas.

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