**Supplementary material**

**Supplementary material S2.** Taxonomic list of free-living nematodes in the deep-waters of the southwestern Gulf of Mexico. Systematics based mostly on Hodda (2022a).

Phylum **Nematoda** Cobb, 1932

 Class **Enoplea** Inglis, 1983

 Order **Enoplida** Filipjev, 1929

 Family **Thoracostomopsidae** Filipjev, 1927

 Genus *Mesacanthion* Filipjev, 1927

 *Mesacanthion* sp. 1

 *Mesacanthion* sp. 2

 Genus *Paramesacanthion* Wieser, 1953

 *Paramesacanthion* aff. *tricuspis* (Schuurmans Stekhoven, 1950) Wieser, 1953

Genus *Enoploides* Ssaweljev, 1912

 *Enoploides* sp.

 Family **Phanodermatidae** Filipjev, 1927

 Genus *Phanoderma* Bastian, 1865

 *Phanoderma* sp.

 Genus *Dayellus* Inglis, 1964

 *Dayellus* sp.

 Genus *Klugea* Filipjev, 1927

 *Klugea* sp.

 Genus *Phanodermella* Kreis, 1928

 *Phanodermella* sp.

 Genus *Phanodermopsis* Ditlevsen, 1926

 *Phanodermopsis* sp.

 Family **Anticomidae** Filipjev, 1918

 Genus *Anticoma* Bastian, 1865

 *Anticoma* sp.

 Genus *Cephalanticoma* Platonova, 1976

 *Cephalanticoma chitwoodi* (Inglis, 1964) Platonova, 1976

 Genus *Paranticoma* Micoletzky & Kreis, 1930

 *Paranticoma* sp.

 Family **Rhabdolaimidae** Chitwood, 1951

 Genus *Syringolaimus* de Man, 1888

 *Syringolaimus* sp. 1

 *Syringolaimus* sp. 2

 Order **Ironida** Hodda, 2007

 Family **Ironidae** de Man, 1876

 Genus *Thalassironus* de Man, 1889

 *Thalassironus* sp.

 Genus *Trissonchulus* Cobb, 1920

 *Trissonchulus* sp.

 Family **Leptosomatidae** Filipjev, 1916

 Genus *Leptosomatum* Bastian, 1865

 *Leptosomatum* sp.

 Genus *Platycomopsis* Ditlevsen, 1926

 *Platycomopsis* sp.

 Family **Oxystominidae** Chitwood, 1935

 Genus *Halalaimus* de Man, 1888

 *Halalaimus* aff. *pachyodoroides* Vitiello, 1970

 *Halalaimus* sp*.* 1

 *Halalaimus* sp. 2

 *Halalaimus* sp. 3

 *Halalaimus* sp. 4

 *Halalaimus* sp. 5

 Genus *Litinium* Cobb, 1920

 *Litinium* sp.

 Genus *Nemanema* Cobb, 1920

 *Nemanema* sp.

 Genus *Oxystomina* Filipjev, 1918

 *Oxystomina* sp. 1

 *Oxystomina* sp. 2

 Genus Oxystominidae gen.

 Genus *Wieseria* Gerlach, 1956

 *Wieseria* sp.

 Order **Oncholaimida** Siddiqui, 1983

 Family **Oncholaimidae** Filipjev, 1916

 Genus *Metoncholaimus* Filipjev, 1918

 *Metoncholaimus* aff. *pelor*

Genus *Oncholaimellus* de Man, 1890

 *Oncholaimellus* sp.

 Genus *Oncholaimus* Dujardin, 1845

 *Oncholaimus* sp.

 Genus *Viscosia* de Man, 1890

 *Viscosia* aff*. longissima* Filipjev, 1946

 *Viscosia glabra* (Bastian, 1865) de Man, 1890

 *Viscosia* sp. 3

 Family **Enchelidiidae** Filipjev, 1918

 Genus *Abelbolla* Huang & Zhang, 2004

 *Abelbolla* sp.

 Genus *Bathyeurystomina* Lambshead & Platt, 1979

 *Bathyeurystomina* sp.

 Genus *Calyptronema* Marion, 1870

 *Calyptronema* sp.

 Genus *Ledovitia* Filipjev, 1927

 *Ledovitia* sp.

 Class **Chromadorea** Inglis, 1983

 Order **Chromadorida** Chitwood, 1933

 Family **Chromadoridae** Filipjev, 1917

 Genus *Actinonema*, Cobb, 1920

 *Actinonema* sp.

 Genus *Acantholaimus*, Allgén, 1933

 *Acantholaimus* sp. 1

 *Acantholaimus* sp. 2

 *Acantholaimus* sp. 3

 Genus *Chromadora* Bastian, 1865

 *Chromadora* sp.

 Genus *Chromadorita* Filipjev, 1922

 *Chromadorita* sp.

 Genus *Endeolophos* Boucher, 1976

 *Endeolophos* sp. 1

 *Endeolophos* sp. 2

 Genus *Trochamus* Boucher & De Bovée, 1971

 *Trochamus* sp.

 Family **Neotonchidae** Lorenzen, 1981

 Genus *Neotonchus* Cobb, 1933

 *Neotonchus* aff. *cuanensis* (Platt, 1982)

 *Neotonchus* *pseudocorcundus* Vitiello, 1971

 Family **Cyatholaimidae** Filipjev, 1918

 Genus *Longicyatholaimus* Micoletzky, 1924

 *Longicyatholaimus* sp.

 Genus *Metacyatholaimus* Schuurmans Stekhoven, 1942

 *Metacyatholaimus* sp.

 Genus *Paralongicyatholaimus* Schuurmans Stekhoven, 1950

 *Paralongicyatholaimus* aff. *mastigodes* Schuurmans Stekhoven, 1950

 *Paralongicyatholaimus* sp.

 Genus *Paramarylynnia* Huang & Zhang, 2007

 *Paramarylynnia* sp.

 Genus *Pomponema* Cobb, 1917

 *Pomponema* sp. 1

 *Pomponema* sp. 2

 *Pomponema* sp. 3

 Order **Selachinematida** (Hodda, 2007)

 Family **Selachinematidae** Cobb, 1915

 Genus *Cheironchus* Cobb, 1917

 *Cheironchus paravorax* Castillo-Fernández & Decraemer, 1993

 *Cheironchus vorax* Cobb, 1917

 Genus *Choniolaimus* Ditlevsen, 1918

 *Choniolaimus* sp.

 Genus *Cobbionema* Filipjev, 1922

 *Cobbionema* sp.

 Genus *Halichoanolaimus* de Man, 1886

 *Halichoanolaimus* sp. 1

 *Halichoanolaimus* sp. 2

 *Halichoanolaimus* sp. 3

 *Halichoanolaimus* sp. 4

 *Halichoanolaimus* sp. 5

 Genus *Latronema* Wieser, 1954

 *Latronema* sp.

 Genus *Synonchiella* Cobb, 1933

 *Synonchiella* sp. sp.

 Family **Richtersiidae** Kreis, 1929

 Genus *Richtersia* Steiner, 1916

 *Richtersia* sp.

 Order **Desmodorida** De Coninck, 1965

 Family **Desmodoridae** Filipjev, 1922

 Genus *Chromaspirina* Filipjev, 1918

 *Chromaspirina* sp.

 Genus *Desmodora* de Man, 1889

 *Desmodora porosum* Moura, Silva & Esteves, 2014

Genus *Desmodorella* Cobb, 1933

 *Desmodorella* sp.

 Genus *Metachromadoroides* Timm, 1961

 *Metachromadoroides* sp.

 Genus *Neonyx* Cobb, 1933

 *Neonyx* sp.

 Genus *Parabostrichus* Tchesunov, Ingels & Popova, 2012

 *Parabostrichus* sp.

 Genus *Parallelocoilas* Boucher, 1975

 *Parallelocoilas* sp.

 Genus *Pseudodesmodora* Boucher, 1975

 *Pseudodesmodora* sp.

 Genus *Spirodesma* Cavalcanti, Silva & Fonseca-Genevois, 2009

 *Spirodesma* aff. *magdae* Da FonsecaCavalcanti, Da Silva & Da Fonseca-Genevois, 2009

 Family **Draconematidae** Filipjev, 1918

 Genus *Paradraconema* Allen & Noffsinger, 1978

 *Paradraconema* sp.

 Family **Microlaimidae** Micoletzky, 1922

 Genus *Microlaimus* de Man, 1880

 *Microlaimus* sp.

 Family **Monoposthiidae** Filipjev, 1934

 Genus *Rhinema* Cobb, 1920

 *Rhinema* sp.

 Order **Desmoscolecida** Filipjev, 1929

 Family **Desmoscolecidae** Shipley, 1896

 Genus *Calligyrus* Lorenzen, 1969

 *Calligyrus* sp.

 Genus *Desmoscolex* Claparède, 1863

 *Desmoscolex* sp. 1

 *Desmoscolex* sp. 2

 Genus *Greeffiella* Cobb, 1922

 *Greeffiella* sp.

 Genus *Greeffiellopsis* Schrage & Gerlach, 1975

  *Greeffiellopsis* sp.

 Genus *Tricoma* Cobb, 1894

 *Tricoma* sp. 1

 *Tricoma* sp. 2

 *Tricoma* sp. 3

 Family **Meyliidae** De Coninck, 1965

 Genus *Antarcticonema* Timm, 1978

 *Antarcticonema* sp.

 Order **Monhysterida** Filipjev, 1929

 Family **Monhysteridae** de Man, 1876

 Genus *Halomonhystera* Andrassy, 2006

 *Halomonhystera* sp.

 Genus Monhysteridae gen.

 Family **Xyalidae** Chitwood, 1951

 Genus *Amphimonhystrella*, Timm, 1961

 *Amphimonhystrella* sp.

 Genus *Cobbia* de Man, 1907

 *Cobbia* aff. *trefusiaeformis* de Man, 1907

 Genus *Daptonema* Cobb, 1920

 *Daptonema* aff. *elaboratum* (Chitwood, 1951)

 *Daptonema* *flagellicauda* (Lorenzen, 1973)

 *Daptonema* sp.

 Genus *Elzalia* Gerlach, 1957

 *Elzalia kimae* Castillo-Fernandez & Lambshead, 1990

 *Elzalia poli* Castillo-Fernandez & Lambshead, 1990

 Genus *Enchonema* Bussau, 1993

 *Enchonema* sp. 1

 *Enchonema* sp. 2

 *Enchonema* sp. 3

 Genus *Linhystera* Juario, 1974

 *Linhystera* sp.

 Genus *Manganonema* Bussau, 1993

 *Manganonema* sp.

 Genus *Marisalbinema* Tchesunov, 1990

 *Marisalbinema* aff. *galtsovae* Tchesunov, 1990

 *Marisalbinema* sp.

 Genus *Paramphimonhystrella* Huang & Zhang, 2006

 *Paramphimonhystrella* sp. 1

 *Paramphimonhystrella* sp. 2

 Genus *Promonhystera* Wieser, 1956

 *Promonhystera* sp.

 Genus *Theristus* Bastian, 1865

 *Theristus* sp. 1

 *Theristus* sp. 2

 Genus Xyalidae gen.

 Family **Sphaerolaimidae** Filipjev, 1918

 Genus *Metasphaerolaimus* Gourbault & Boucher, 1981

 *Metasphaerolaimus crassicauda* (Freudenhammer, 1975) Gourbault & Boucher, 1981

 *Metasphaerolaimus* sp.

 Genus *Sphaerolaimus* Bastian, 1865

 *Sphaerolaimus macrocirculus* Filipjev, 1918

 *Sphaerolaimus* sp.

 Family **Siphonolaimidae** Filipjev, 1918

 Genus *Astomonema* Ott, Rieger, Rieger & Enderes, 1982

 *Astomonema* sp.

 Genus *Siphonolaimus* de Man, 1893

 *Siphonolaimus* sp.

 Family **Linhomoeidae** Filipjev, 1922

 Genus *Eleutherolaimus* Filipjev, 1922

 *Eleutherolaimus* sp.

 Genus *Linhomoeus* Bastian, 1865

 *Linhomoeus* sp.

 Genus *Megadesmolaimus* Wieser, 1954

 *Megadesmolaimus* sp.

 Genus *Metalinhomoeus* de Man, 1907

 *Metalinhomoeus* sp.

 Genus *Terschellingia* de Man, 1888

 *Terschellingia* sp.

 Family **Axonolaimidae** Filipjev, 1918

 Genus *Axonolaimus* de Man, 1889

 *Axonolaimus* sp.

 Family **Bodonematidae** Jensen, 1991

 Genus *Bodonema* Jensen, 1991

 *Bodonema* sp.

 Family **Comesomatidae** Filipjev, 1918

 Genus *Cervonema* Wieser, 1954

 *Cervonema* sp. 1

 *Cervonema* sp. 2

 Genus *Dorylaimopsis* Ditlevsen, 1918

 *Dorylaimopsis* sp.

 Genus *Hopperia* Vitiello, 1969

 *Hopperia metatypica* (Chitwood, 1936) Fu, Leduc, Rao & Cai, 2019 Genus *Laimella* Cobb, 1920

 *Laimella vera* Vitiello, 1971

 Genus *Minolaimus* Vitiello, 1970

 *Minolaimus* sp.

 Genus *Pierrickia* Vitiello, 1970

 *Pierrickia* aff*. decasetosa* Vitiello, 1970

Genus *Sabatieria* Rouville, 1903

 *Sabatieria* aff. *ancudiana* Wieser, 1954

 *Sabatieria* aff. *steckhoveni* Vitiello, 1970

 *Sabatieria conicauda* Vitiello, 1970

 *Sabatieria ornata* (Ditlevsen. 1918) Filipjev, 1922

 *Sabatieria* sp. 6

 Genus *Setosabatieria* Platt, 1985

 *Setosabatieria hilarula* (de Man, 1922)

 Family **Diplopeltidae** Filipjev, 1918

 Genus *Campylaimus* Cobb, 1920

 *Campylaimus* sp.

 Genus *Diplopeltula* Gerlach, 1950

 *Diplopeltula* sp. 1

 *Diplopeltula* sp. 2

 *Diplopeltula* sp. 3

 Order **Leptolaimida** Hodda, 2007

 Family **Diplopeltoididae** Tchesunov, 1990

 Genus *Diplopeltoides* Gerlach, 1962

 *Diplopeltoides* sp.1

 *Diplopeltoides* sp. 2

 *Diplopeltoides* sp. 3

 Family **Ceramonematidae** Cobb, 1933

 Genus *Metadasynemella* De Coninck, 1942

 *Metadasynemella elegans* Vitiello, 1974

 Genus *Pselionema* Cobb, 1933

 *Pselionema* sp. 1

 *Pselionema* sp. 2

 *Pselionema* sp. 3

 Order **Plectida** Gadea, 1973

 Family **Camacolaimidae** Micoletzky, 1924

 Genus *Anguinoides*, Chitwood, 1936

 *Anguinoides stylosum* Chitwood, 1936

 Genus *Diodontolaimus* Southern, 1914

 *Diodontolaimus* sp.

 Family **Haliplectidae** Chitwood, 1951

 Genus *Haliplectus* Cobb, 1913

 *Haliplectus* sp.