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Classification of the Acanthocephala

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Abstract: In 1985, Amin presented a new system for the classification of the Acanthocephala in Crompton and Nickol's (1985) book 'Biology of the Acanthocephala' and recognized the concepts of Meyer (1931, 1932, 1933) and Van Cleave (1936, 1941, 1947, 1948, 1949, 1951, 1952). This system became the standard for the taxonomy of this group and remains so to date. Many changes have taken place and many new genera and species, as well as higher taxa, have been described since. An updated version of the 1985 scheme incorporating new concepts in molecular taxonomy, gene sequencing and phylogenetic studies is presented. The hierarchy has undergone a total face lift with Amin's (1987) addition of a new class, Polyacanthocephala (and a new order and family) to remove inconsistencies in the class Palaeacanthocephala. Amin and Ha (2008) added a third order (and a new family) to the Palaeacanthocephala, Heteramorphida, which combines features from the palaeacanthocephalan families Polymorphidae and Heteracanthocephalidae. Other families and subfamilies have been added but some have been eliminated, e.g. the three subfamilies of Arythmacanthidae: Arhythmacanthinae Yamaguti, 1935; Neoacanthocephaloidinae Golvan, 1960; and Paracanthocephaloidinae Golvan, 1969. Amin (1985) listed 22 families, 122 genera and 903 species (4, 4 and 14 families; 13, 28 and 81 genera; 167, 167 and 569 species in Archiacanthocephala, Eoacanthocephala and Palaeacanthocephala, respectively). The number of taxa listed in the present treatment is 26 families (18% increase), 157 genera (29%), and 1 298 species (44%) (4, 4 and 16; 18, 29 and 106; 189, 255 and 845, in the same order), which also includes 1 family, 1 genus and 4 species in the class Polyacanthocephala Amin, 1987, and 3 genera and 5 species in the fossil family Zhijinitidae.

Keywords: spiny-headed worms, species list, taxonomic system, Archiacanthocephala, Eoacanthocephala, Palaeacanthocephala, Polyacanthocephala

The present treatment is an updated version of the Amin (1985) system for the classification of the Acanthocephala, which has become the standard for the taxonomy of this group since its original publication in 1985. That work was preceded by a synopsis and a classification scheme of the phylum (Amin 1982). This updated treatment includes hierarchal changes, a considerable number of new taxa, continues to retain its affiliation with the systems of Meyer (1931, 1932, 1933) and Van Cleave (1936, 1941, 1947, 1948, 1949, 1951, 1952), and incorporates new contributions of molecular taxonomy and phylogenetic studies to the taxonomic system.

Amin (1985) included a detailed historical account of the Acanthocephala since the first recognizable reference to worms having proboscides was made by Redi (1684). Rudolphi (1802) was the first to name these worms Acanthocephala and gave them an ordinal rank with one genus, *Echinorhynchus*. Most early taxonomic descriptions lacked detailed morphological information until Lühe's (1904, 1905) critical review of the early descriptions.

Hamann (1892) recognized the diversity of this group of worms and fragmented the old genus *Echinorhynchus* into three families (Echinorhynchidae, Gigantorhynchidae, Neorhynchidae), which formed the basis of the more recent classification of the Acanthocephala. These conceptual divisions were elevated to the ordinal rank by Meyer (1931) and Van Cleave (1936), but to the subordinal rank by Southwell and MacFie (1925), among other variations by other observers including Travassos (1926), Thapar (1927), Witenberg (1932a,b), and Meyer (1931, 1932, 1933), among others.

The uncertainty about the position of the Acanthocephala among other animal groups was marked by Leuckart's (1848) speculation of lines of decent between the cestodes and the Acanthocephala, which he placed as two orders in his class Anenteraeti, and by Meyer (1932, 1933), who regarded the Acanthocephala as a class of the Aschelminthes including two orders, Palaeacanthocephala and Archiacanthocephala, on the basis of morphology and ontogeny.

Van Cleave (1936) removed the inconsistencies of Meyer's system by establishing a third order: Eoacanthocephala. He (Van Cleave 1941, 1948) recognized the Acanthocephala as a phylum closely associated with the Cestoda. More recently, Petrochenko (1956) devised a system based heavily on acanthor spination and Golvan (1959, 1960, 1961, 1969) considered the Eoacanthocephala (by now regarded as the most ancient group), Palaea-

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canthocephala and Archiacanthocephala to be classes, but relied heavily on the number of cement glands and trunk spination. Yamaguti (1963) recognized the three orders of Neoechinorhynchidea, Echinorhynchidea and Gigantorhynchidea corresponding to the Meyer-Van Cleave classes as well as a new fourth order: the Apororhynchidea. Golvan's (1994) nomenclature of the Acanthocephala culminated his life-long contributions to the systematics of the phylum.

Some of the more recent regional contributions to acanthocephalan taxonomy include those by Amin (2000), Salgado-Maldonado (2006), Bhattacharya (2007), and Salgado-Maldonado and Amin (2009). Amin (2000) listed and annotated the Acanthocephala in the Neotropical region. In an internal obscure publication, Bhattacharya (2007) listed 251 acanthocephalan species from India and described a few species and genera, but did not recognize order Neoechinorhynchida and included its families under order Gyracanthocephala. Salgado-Maldonado (2006) discussed and listed all helminth parasites of freshwater fishes in Mexico. Salgado-Maldonado and Amin (2009) discussed and listed the acanthocephalan species of the Gulf of Mexico.

Khatoon and Bilqees (1991) reviewed the classification of the Acanthocephala and included their version of Amin's (1985) historical introduction, a conventional taxonomy section of the higher taxa, and diagrammatic drawings of un-named representatives of discussed families. The taxonomic section included a number of misplacements of taxa without any justification. For example, among the higher taxa, they assigned order Polymorphida to class Polyacanthocephala and placed the families Pomphorhynchidae and Rhadinorhynchidae in order Polyacanthorhynchida. Later on, Khatoon and Bilqees (2011) published an expanded, well referenced version of their 1991 work updated through 1998 that included a list of species. The earlier (1991) assignments were not corrected and the species listing is outdated, incomplete and inaccurate in places that are beyond review at this time.

Amin (1982, 1985) recognized three classes: the Archiacanthocephala with four orders (Apororhynchida, Gigantorhynchida, Oligacanthorhynchida and Moniliformida), each with a single family, the Eoacanthocephala with two orders (Gyracanthocephala with one family and Neoechinorhynchida with three families), and the Palaeacanthocephala with two orders (Echinorhynchida with 11 families and Polymorphida with three families). This remained the accepted classification scheme until Amin (1987) added a fourth class to the phylum: Polyacanthocephala (and a new order and family) to remove inconsistencies in the class Palaeacanthocephala, and Amin and Ha (2008) added a third order (and a new family) to the Palaeacanthocephala: Heteramorphida, which combines features from the palaeacanthocephalan families Polymorphidae and Heteracanthocephalidae.

The number of lower taxa and families has also undergone marked increase since 1985, but some higher taxa have been eliminated, e.g. the three subfamilies of Arhythmacanthidae: Arhythmacanthinae Yamaguti, 1935, Neoacanthocephaloidinae Golvan, 1960, and Paracanthocephaloidinae Golvan, 1969 – see Amin et al. (2011a). Amin (1985) listed 22 families, 122 genera and 903 species (4, 4 and 14 families; 13, 28 and 81 genera; 167, 167 and 569 species in Archiacanthocephala, Eoacanthocephala, and Palaeacanthocephala, respectively). Monks and Richardson (2011) counted 4 classes, 10 orders, 22 families, 147 genera and 1194 species in the Acanthocephala as of December, 2011 and indicated that the number of species quoted is vastly underestimated.

The number of taxa listed in the present treatment is 26 families (18% increase), 157 genera (29%) and 1 298 species (44%) (4, 4, 16, 1, 1; 18, 29, 106, 1, 3; 189, 255, 845, 4, 5 in the Archiacanthocephala, Eoacanthocephala, Palaeacanthocephala, Polyacanthocephala Amin, 1987, and the fossil family Zhijinitidae, respectively). These numbers do not include species listed in Appendix II (see p. 298–299).

Meyer (1932, 1933) grouped the Acanthocephala with the Rotifera, Gastrotricha, Kinorhyncha, Priapuloidea, Nematomorpha and Nematoda under the Aschelminthes. Recent molecular studies by Garey et al. (1996), García-Varela et al. (2000), Welch (2000) and Near (2002), among others even suggest that Rotifera and Acanthocephala are phylogenetically related sister groups. Garey et al. (1996) and others, suggested that the Acanthocephala represent a taxon within phylum Rotifera. Several workers have since demonstrated the sister group relationship of Acanthocephala with Rotifera forming the phylum Syndermata Ahlrichs, 1997, e.g. Garey et al. (1998), Zrzavý (2001), García-Varela and Nadler (2006), Witek et al. (2008), Fontaneto and Jondelius (2011). Kristensen (2002) associated the Gnathostomulida with Micrognathozoa and the Syndermata into a larger clade called Gnathifera. The Gnathifera was first proposed by Rieger and Tyler (1995) and shown to be a monophyletic clade (Syndermata + Gnathostomulida) by Witek et al. (2009).

The phylogeny within the Syndermata subtaxon Acanthocephala was studied by sequencing the mitochondrial genomes of representatives of Palaeacanthocephala, Eoacanthocephala, Archiacanthocephala and Bdelloidea as well as of other syndermatans and 18 lophotrochozoan (spiralian) taxa, and one outgroup representative (Weber et al. 2013).

Phylogenetic analyses have shown that the monophyletic Archiacanthocephala represented the sister taxon of a clade comprising Eoacanthocephala and the monophyletic Palaeacanthocephala. This topology suggests the secondary loss of lateral sensory organs (sensory pores) in Palaeacanthocephala and is further in agreement with the emergence of apical sensory organs in the stem lineage of Archiacanthocephala (Weber et al. 2013).

Because of the absence of gut in acanthocephalans and tapeworms, both groups have also been considered related. Cholodkovsky (1897) was the first to propose such a relationship since Leuckart's (1848) early accounts; this view was supported by Skrjabin and Shults (1931), Petrochenko (1952), Van Cleave (1941) and Amin et al. (2009). Structures interpreted as microtriches on the trunk epidermis of *Rhadinorhynchus ornatus* Van Cleave, 1918 (Rhadinorhynchidae) from skipjack tuna, *Katsuwonus pelamis* (Linnaeus), in the Pacific Ocean off South America were reported by Amin et al. (2009). Another marine rhadinorhynchid acanthocephalan, *Leptorhynchoides polycristatus* Amin, Heckmann, Halajian et El-Naggar, 2013, from sturgeons in the Caspian Sea appears to have similar structures. However, these structures do not appear to be homologous with microtriches of cestodes (see Chervy 2009 for details on microtriches in cestodes).

According to Garey et al. (1998), combining molecular and morphological analyses of Bilateria leads to a tree with Platyhelminthes, Rotifera, Acanthocephala and Gnathostomulida (and probably Gastrotricha) as a sister group to the annelid-mollusk lineage of the Spiralia (Lophotrochozoa). Steinauer et al. (2005), using mitochondrial (mt) genome sequences, suggested that Acanthocephala, as inferred from the mt genome of *Leptorhynchoides thecatus* (Linton, 1891), are closer to Platyhelminthes than was previously supposed. Their data are consistent with the data contained in numerous related studies based on RNA analysis. For instance, Min and Park (2009) linked the Syndermata with the Platyhelminthes as the Platyzoa.

Under all proposals, the monophyly of the major taxonomic groups of the Acanthocephala has been established (Near et al. 1998, Monks 2001, Near 2002) suggesting that the present classification of higher taxa is natural.

The following classification incorporates developments in phylogenetic and molecular taxonomy. Many taxonomic decisions based on molecular and gene sequence studies are made and incorporated in the text where they apply. Only valid generic and specific names are in bold, whereas invalid species are not listed. Species that have been relegated to other genera are listed under the recipient genera as synonyms. References to authors of scientific names and synonymies are not included. Fossil acanthocephalan taxa are listed in Appendix I. Genera *incertae sedis* assigned to *Echinorhynchus sensu lato* are listed in Appendix II. The indices of families and genera are listed after References, at the end of the article, to facilitate searching for individual taxa. Type species are listed within the alphabetical listing of the species and not separately at the beginning.

CLASSIFICATION

CLASS **ARCHIACANTHOCEPHALA** Meyer, 1931

(Monks 2001 did not support the Archiacanthocephala as a monophyletic group but García-Varela et al. 2000 authenticated the monophyly of the class as a sister group to the clade but García-Varela et al. 2000 authenticated the monophyly of the class as the basal class of the phylum and the sister group of a clade including Eoacanthocephala and Palaeacanthocephala.)

ORDER **APORORHYNCHIDA** Thapar, 1927

[syns. Apororhynchata Yokogawa et Morisita, 1933; Spheracanthocephala Byrd et Denton, 1949]

FAMILY **Apororhynchidae** Shipley, 1899

[syns. Arhynchidae Shipley, 1896; Arynchidae Monticelli, 1905]

GENUS ***Apororhynchus*** Shipley, 1899

[syns. *Arhynchus* Shipley, 1896; *Neorhynchus* de Marval, 1905]

SPECIES

A. aculeatus Meyer, 1931 (*nec aculeatum*)

A. amphistomi Byrd et Denton, 1949

A. bivolucrus Das, 1952 (*nec bivoluerus*)
(a strigeid trematode *fide* Yamaguti 1963)

A. chauhani Sen, 1975

A. hemignathi (Shipley, 1896) Shipley, 1899 (**type species**)
(*nec* 1897)
[syns. *Arhynchus hemignathi* Shipley, 1896; *Neorhynchus hemignathi* (Shipley, 1896) de Marval, 1905]

A. paulonucleatus Khokhlova et Tsimbaluk, 1966 (*nec* 1971)

A. silesiacus Okulewicz et Maruszewski, 1980

ORDER **GIGANTORHYNCHIDA** Southwell et Macfie, 1925

FAMILY **Gigantorhynchidae** Hamann, 1892

[syn. Leiperacanthidae Bhalerao, 1937]

GENUS ***Gigantorhynchus*** Hamann, 1892

SPECIES

G. echinodiscus (Diesing, 1851) Hamann, 1892 (**type species**)
[syn. *Echinorhynchus echinodiscus* Diesing, 1851]

G. lopezneyrai Diaz-Ungria, 1958 (*nec lopezneirae*)

G. lutzi Machado Filho, 1941

G. ortizi Sarmiento, 1954

G. pesteri Tadros, 1966

G. ungriai Antonio, 1958 (*nec ungariai*)

GENUS ***Mediorhynchus*** Van Cleave, 1916

[syns. *Disteganius* Lehmann, 1953, *nomen nudum*; *Empodisma* Yamaguti, 1963; *Empodius* Travassos, 1916; *Heteracanthorhynchus* Lundström, 1942; *Heteroplus* Kostylew, 1914; *Leiperacanthus* Bhalerao, 1937; *Micracanthorhynchus* Travassos, 1917]

SPECIES

M. africanus Amin, Evans, Heckmann et El-Naggar, 2013
[syns. *Empodius segmentatus* (de Marval, 1902) Southwell et MacFie, 1925; *Mediorhynchus selengensis*, Harris, 1973; *M. gallinarum* (Bhalerao, 1937) Van Cleave, 1947 *sensu* Junker et Boomker, 2006]
(Distinguishing *M. africanus* from the Asian *M. gallinarum* was based on morphological evidence, SEM and gene sequence analysis; Amin et al. 2013 used DNA sequence from one mitochondrial gene (cytochrome oxidase subunit 1) and one nuclear gene, 18S rRNA, to infer the phylogenetic relationships of *M. africanus* and *M. gallinarum* and selected Acanthocephala. *Medioryhnchus* was shown to be monophyletic and *M. africanus* and *M. gallinarum* to be allopatric sister species with 9.7% sequence divergence.)

M. alecturae (Johnston et Edmonds, 1947) Golvan, 1962

M. cambellensis Soota, Srivastava et Glosh, 1969

M. centurorum Nickol, 1969

M. channapettae George et Nadakal, 1984

M. colluricinclae Smales, 2002

M. conirostris Ward, 1966

M. corcoracis Johnston et Edmonds, 1950

M. edmondsi Schmidt et Kuntz, 1977

M. emberizae (Rudolphi, 1819) Travassos, 1924
[syn. *Echinorhynchus emberizae* Rudolphi, 1819]
(*nec* Van Cleave, 1916)

M. empodius (Skrjabin, 1913) Van Cleave, 1924 (*nec* Meyer, 1932)
[syns. *Gigantorhynchus empodius* Skrjabin, 1913; *Empodius empodius* (Skrjabin, 1913) Travassos, 1916]

M. fatimaae Khan Bilqees et Muti-ur-Rahman, 2004

M. gallinarum (Bhalerao, 1937) Van Cleave, 1947
[syn. *Leiperacanthus gallinarum* Bhalerao, 1937]
(*M. gallinarum* is found only in Asia; '*Mediorhynchus gallinarum*' in Africa is actually *M. africanus* Amin, Evans, Heckmann et El-Naggar, 2013)

M. gibsoni Bilqees, Khan, Khatoon et Khatoon, 2007

M. giganteus Meyer, 1931
[syns. *Empodius giganteus* (Meyer, 1931) Meyer, 1932; *Empodisma giganteus* (Meyer, 1931) Yamaguti, 1963] (*nec giganteum*)

M. grandis Van Cleave, 1916
[syn. *Heteroplus grandis* (Van Cleave, 1916) Van Cleave, 1918]

M. indicus George, Nadakal, Vijayakumaran et Rajendran, 1981

M. kuntzi Ward, 1960

M. lagodekhiensis Kuraschvili, 1955

M. lanius Amin, Ha et Heckmann, 2008

M. leptis Ward, 1966

M. lophurae Wang, 1966 (*nec lophura*)

M. mariae George et Nadakal, 1984

M. mattei Marchand et Vassiliades, 1982

M. meiringi Bisseru, 1960

M. micracanthus (Rudolphi, 1819) Meyer, 1932
[syns. *Echinorhynchus alaudae* Rudolphi, 1819; *E. carrucioi* Condorelli, 1897; *E. micracanthus* Rudolphi, 1819; *Micracanthorhynchus micracanthus* (Rudolphi, 1819) Travassos, 1917; *Mediorhynchus armenicus* Petrochenko, 1958]

M. mirabilis (de Marval, 1905) Travassos, 1924
[syn. *Gigantorhynchus mirabilis* de Marval, 1905]

M. muritensis Lundström, 1942

M. nickoli Khan, Bilqees et Muti-ur-Rahman, 2004

M. numidae (Baer, 1925) Meyer, 1932
[syns. *Heteroplus numidae* Baer, 1925; *Empodisma numidae* (Baer, 1925) Yamaguti, 1963]

M. orientalis Belopolskaya, 1953
[syn. *Mediorhynchus bullocki* Gupta et Jain, 1973]

M.oswaldocruzi Travassos, 1923

M. otidis (Miescher, 1841) Van Cleave, 1947
[syns. *Echinorhynchus otidis* Miescher, 1841; *Heteroplus otidis* (Miescher, 1841) Kostylew, 1914; *Empodius otidis* (Miescher, 1841) Travassos, 1917*; Empodisma otidis* (Miescher, 1841) Yamaguti, 1963]

M. pandei Bhattacharya, 2007

M. papillosus Van Cleave, 1916 (**type species**)
[syns. *Empodius alecturae* Johnston et Edmonds, 1947; *Mediorhynchus bakeri* Byrd et Kellogg, 1971; *M. colini* Webster, 1948]

M. passeris Das, 1951

M. pauciuncinatus Dollfus, 1959

M. peckeri Bhattacharya, 1999

M. peruensis Moya, Martinez et Tantalean, 2011

M. petrochenkoi Gvosdev et Soboleva, 1966

M. pintoi Travassos, 1923

M. quilonensis Bhattacharya, 2007

M. rajasthanensis Gupta, 1976
[*M. najasthanensis* Gupta, 1976, *nomen nudum* is a mis-spelling of *M. rajasthanensis* Gupta, 1976]

M. robustus Van Cleave, 1916
[syns. *Mediorhynchus garruli* Yamaguti, 1939 *fide* Schmidt and Kuntz 1977 (synonymy termed 'questionable' by Golvan 1994); *M. sipocotensis* Tubangui, 1935]

M. rodensis Cosin, 1971

M. sipocotensis Tubangui, 1935 (*nec sipposotensis*, *nec sipocotense*)

M. spinaepaucites Smales, 2011

M. taeniatus (von Linstow, 1901) Dollfus, 1936
[syns. *Echinorhynchus taeniatus* von Linstow, 1901; *E. segmentatus* de Marval, 1902]

M. tenuis Meyer, 1931 (*nec tenue*)

M. textori Barus, Sixl et Majumdar, 1978

M. thrushi Bhattacharya, 2000

M. turdi Smales, 2011

M. turnixena (Tubangui, 1931) Webster 194
[syn. *Empodius turnixena* Tubangui, 1931]

M. vaginatus (Diesing, 1851) Meyer, 1932
[syn. *Echinorhynchus vaginatus* Diesing, 1851]

M. vancleavei (Lundström, 1942) Golvan, 1962
[syn. *Heteracanthorhynchus vancleavei* Lundström, 1942]

M. wardi Schmidt et Canaris, 1967

M. zosteropis (Porta, 1913) Meyer, 1932
[syn. *Chentrorhynchus zosteropis* Porta, 1913]

ORDER **MONILIFORMIDA** Schmidt, 1972

FAMILY **Moniliformidae** Van Cleave, 1924

GENUS ***Australiformis*** Schmidt et Edmonds, 1989

SPECIES

Australiformis semoni (von. Linstow, 1898) (**type species**)
[syns. *Echinorhynchus semoni* von Linstow, 1898; *Moniliformis semoni* (von Linstow, 1898) Johnston et Edmonds, 1952]

GENUS ***Moniliformis*** Travassos, 1915

[syns. *Echinorhynchus* Zoega in Müller, 1776, in part; *Gigantorhynchus* Hamann, 1892, in part; *Hormorhynchus* Ward, 1917]

SPECIES

M. acomysi Ward et Nelson, 1967

M. aegyptiacus Meyer, 1932

M. cestodiformis (von Linstow, 1904) Travassos 1917
[syns. *Echinorhynchus cestodiformis* von Linstow, 1904; *Moniliformis erinacei* Southwell et MacFie, 1925]

M. clarki (Ward, 1917) Chandler, 1921 (*nec* Van Cleave, 1924)
[syns. *Hormorhynchus clarki* Ward, 1917; *Moniliformis spiradentatus* MacLeod, 1933 (*nec spiradentatis*, *nec spirodentatus*) (*fide* Chandler 1941)]

M. convolutus Meyer, 1932

M. echinosorexi Deveaux, Schmidt et Krishnasamy, 1988

M. gracilis (Rudolphi, 1819) Meyer 1931
[syn. *Echinorhynchus gracilis* Rudolphi, 1819]

M. kalahariensis Meyer, 1931

M. merionis Golvan et Théodoridès, 1960

M. monechinus (von Linstow, 1902) Petrochenko, 1958
[syn. *Echinorhynchus monechinus* von Linstow, 1902]

M. moniliformis (Bremser, 1811) Travassos, 1915 (**type species**)
[syns. *Echinorhynchus moniliformis* Bremser, 1811; *E. grassi* Railliet, 1893; *E. canis* Porter, 1914; *E. belgicus* Railliet, 1919; *Moniliformis moniliformis aegypticus* Meyer in Petrochenko, 1958; *M. dubius* Meyer, 1932; *M. travassosi* Meyer, 1932 (*fide* Machado Filho 1946, Van Cleave 1952)]

M. monoechinus (von Linstow, 1902) Petrochenko, 1958
(*nec monechinus*)

M. myoxi (Galli-Valerio, 1929) (*incertae sedis*)
[syn. *Echinorhynchus myoxi* Galli-Valerio, 1929]

M. siciliensis Meyer, 1932
[syns. *M. m. siciliensis* Meyer in Petrochenko, 1958; *M. pseudosegmentatus* (Knüppfer, 1888) Meyer, 1932: *species inquirenda* may be closely related if not identical to *M. siciliensis*, *fide* Golvan 1994)]

M. soricis (Rudolphi, 1819) (*incertae sedis*)
[syns. *Echinorhynchus soricis* Rudolphi, 1819; *E. appendiculatus* Westrumb, 1821]

M. spiralis Subrahmanian, 1927

M. tarsii Deveaux, Schmidt et Krishnasamy, 1988

M. travassosi Meyer, 1932

GENUS ***Promoniliformis*** Dollfus et Golvan, 1963

SPECIES

Promoniliformis ovocristatus (von Linstow, 1897) Dollfus et Golvan, 1963 (**type species**)
[syn. *Echinorhynchus ovocristatus* von Linstow, 1897]

ORDER **OLIGACANTHORHYNCHIDA** Petrochenko, 1956

FAMILY **Oligacanthorhynchidae** Southwell et Macfie, 1925

GENUS ***Cucullanorhynchus*** Amin, Ha et Heckmann, 2008

SPECIES

C. constrictruncatus Amin, Ha et Heckmann, 2008 (**type species**)

GENUS ***Heptamegacanthus*** Spencer-Jones, 1990

SPECIES

H. niekerki Spencer-Jones, 1990 (**type species**)

GENUS ***Macracanthorhynchus*** Travassos, 1917
[syns. *Echinorhynchus* Zoega in Müller, 1776, in part; *Gigantorhynchus* Hamann, 1892, in part]

SPECIES

M. catulinus Kostylew, 1927

M. erinacei Dollfus, 1953

M. hirudinaceus (Pallas, 1781) Travassos, 1917 (**type species**)
[syns. *Taenia haeruca* Pallas, 1776; *T. hirudinacea* Pallas, 1781; *Echinorhynchus gigas* (Bloch, 1782) Johnston, 1918; *E. hirudinaceus* (Pallas, 1781); *Gigantorhynchus gigas* Bloch, 1782; *G. hirudinaceus* (Pallas, 1781) Hamann, 1892; *Hormorhynchus gigas* (Bloch, 1782) Johnston, 1918; *H. hirudinaceus* Johnston, 1918]

M. ingens (von Linstow, 1879) Meyer, 1932
[syns. *Echinorhynchus hirudinaceus ingens* von Linstow, 1879; *Prosthenorchis ingens* (von Linstow, 1879) Travassos, 1917]

GENUS ***Multisentis*** Smales, 1997

SPECIES

M. myrmecobius Smales, 1997 (**type species**)

GENUS ***Neoncicola*** Schmidt, 1972

SPECIES

N. artibei Smales, 2007

N. avicola (Travassos, 1917) Schmidt, 1972
[syn. *Prosthorhynchus avicola* Travassos, 1917]

N. bursata (Meyer, 1931) (**type species**)
[syn. *Oncicola bursata* Meyer, 1931]

N. curvata (von Linstow, 1897) Schmidt, 1972
[syns. *Echinorhynchus curvatus* von Linstow, 1897; *Prosthenorchis curvatus* (von Linstow, 1897) Travassos, 1917]

N. novellae (Parona, 1890) Schmidt, 1972
[syns. *Echinorhynchus novellae* Parona, 1890; *Prosthenorchis novella* (Parona, 1890) Travassos, 1917]

N. pintoi (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis pintoi* Machado Filho, 1950]

N. potosi (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis potosi* Machado Filho, 1950]

N. sinensis Schmidt et Dunn, 1974

N. skrjabini (Morosow, 1951) Schmidt, 1972
[syn. *Oncicola skrjabini* Morosow, 1951]

GENUS ***Nephridiacanthus*** Meyer, 1931
[syn. *Nephridiorhynchus* Meyer, 1931]

SPECIES

N. gerberi Baer, 1959
[syn. *Oligacanthorhynchus gerbera* (Baer, 1959) Schmidt, 1972]

N. kamerunensis Meyer, 1931 (**type species**)
[syn. *Oligacanthorhynchus kamerunensis* (Meyer, 1931) Schmidt, 1972]

N. longissimus Golvan, 1962
[syn. *Oligacanthorhynchus longissimus* (Golvan, 1962) Schmidt, 1972]

N. major (Bremser, 1811) Golvan, 1962
[syns. *Echinorhynchus major* Bremser, 1811; *Gigantorhynchus major* (Bremser, 1811) Porta, 1908]

N. manisensis Meyer, 1931
[syn. *Oligacanthorhynchus manisensis* (Meyer, 1931) Schmidt, 1972]

N. maroccanus Dollfus, 1951

N. palawanensis (Tubangui et Masilungan, 1938) Golvan, 1962
[syn. *Nephridiorhynchus palawanensis* Tubangui et Masilungan, 1938]

N. thapari (Sen et Chauhan, 1972) Golvan, 1994
[syn. *Nephridiorhynchus thapari* Sen et Chauhan, 1972]

GENUS ***Oligacanthorhynchus*** Travassos, 1915
[syns. *Echinorhynchus* Zoega in Müller, 1776, in part; *Gigantorhynchus* Hamann, 1892, in part; *Echinopardalis* Travassos, 1918; *Hamanniella* Travassos, 1915; *Pardalis* Travassos, 1917; *Travassosia* Meyer, 1931]

SPECIES

O. aenigma (Reichensperger, 1922) Meyer, 1932
[syn. *Echinorhynchus aenigma* Reichensperger, 1922]

O. atratus (Meyer, 1931) Schmidt, 1972
[syn. *Echinopardalis atrata* Meyer, 1931]

O. bangalorensis (Pujatti, 1951) Schmidt, 1972
[syn. *Echinopardalis bangalorensis* Pujatti, 1951]

O. carinii (Travassos, 1917) Schmidt, 1972
[syn. *Hamanniella carinii* Travassos, 1917; *Travassosia carinii* (Travassos, 1917) Meyer, 1932]

O. cati (Gupta et Lata, 1967) Schmidt, 1972
[syn. *Hamanniella cati* Gupta et Lata, 1967]

O. circumflexus (Molin, 1858) Meyer, 1932
[syn. *Echinorhynchus circumflexus* Molin, 1858]

O. citilli (Rudolphi, 1806) Kostylew et Zmeev, 1939
[syn. *Echinorhynchus citilli* Rudolphi, 1806]

O. compressus (Rudolphi, 1802) Meyer, 1932
[syns. *Echinorhynchus compressus* Rudolphi, 1802; *E. cornicis* (Rudolphi, 1819); *E. macracanthus* de Marval, 1902; *Gigantorhynchus compressus* (Rudolphi, 1802) de Marval, 1905]

O. decrescens (Meyer, 1931) Schmidt, 1972
[syn. *Echinopardalis decrescens* Meyer, 1931]

O. erinacei (Rudolphi, 1793) Meyer, 1932
[syns. *Echinorhynchus erinacei* Rudolphi, 1793; *E. napaeformis* Rudolphi, 1802; *E. mustelae* Rudolphi, 1819; *E. kerkoides* Westrumb, 1821; *Prosthorhynchus erinacei* (Rudolphi, 1802) Stiles et Stanley, 1932]

O. hamatus (von Linstow, 1897) Schmidt, 1972
[syns. *Echinorhynchus hamatus* von Linstow, 1897; *Gigantorhynchus hamatus* (von Linstow, 1897) Porta, 1908; *Nephridiacanthus hamatus* (von Linstow, 1897) Meyer, 1932]

O. iheringi Travassos, 1917
[syn. *Echinorhynchus lagenaeformis* Diesing, 1851, in part]

O. indicus Rengaraju et Das, 1981

O. kamtschaticus Khokhlova, 1966

O. lagenaeformis (Westrumb, 1821) Travassos, 1917
[syns. *Echinorhynchus lagenaeformis* Westrumb, 1821; *E. falconis cyanei* Rudolphi, 1819]

O. lamasi (Freitas et Costa, 1964) Amato, Nickol et Froés, 1979
[syn. *Echinopardalis lamasi* Freitas et Costa, 1964]

O. lerouxi Bisseru, 1956
[syn. *Echinopardalis lerouxi* Bisseru, 1956]

O. macrurae Meyer, 1931
[syn. *Echinopardalis macrurae* Meyer, 1931]

O. major (Machado Filho, 1963) Schmidt, 1972
[syn. *Macracanthorhynchus major* Machado Filho, 1963]

O. manifestus (Leidy, 1851) Van Cleave, 1924
[syn. *Echinorhynchus manifestus* Leidy, 1851]

O. mariemilyi (Tadros, 1969) Amin, 1985
[syn. *Echinopardalis mariemilyi* Tadros, 1969]

O. microcephala (Rudolphi, 1819) Schmidt, 1972

[syns. *Echinorhynchus microcephala* Rudolphi, 1819; *Hamanniella microcephala* (Rudolphi, 1819) Travassos, 1915]

O. minor Machado Filho, 1964

O. nickoli Bolette, 2007

O. oligacanthus (Rudolphi, 1819) Meyer, 1932
[syn. *Echinorhynchus oligacanthus* Rudolphi, 1819]

O. oti Machado Filho, 1964

O. pardalis (Westrumb, 1821) Schmidt, 1972
[syns. *Echinorhynchus pardalis* Westrumb, 1821; *Pardalis pardalis* (Westrumb, 1821) Travassos, 1917; *Echinopardalis pardalis* (Westrumb, 1821) Travassos, 1918]

O. ricinoides (Rudolphi, 1808) Meyer, 1931
[syns. *Echinorhynchus ricinoides* Rudolphi, 1808; *E. charadriiplurialis* (Rudolphi, 1819); *E. coraciae* Rudolphi in Westrumb, 1821; *E. macracanthus* Bremser in Westrumb, 1821]

O. shillongensis (Sen et Chauhan, 1972) Amin, 1985
[syn. *Nephridiacanthus shillongensis* Sen et Chauhan, 1972]

O. spira (Diesing, 1851) Travassos, 1915 (**type species**)
[syns. *Echinorhynchus spira* Diesing, 1851; *E. uromasticus* Fraipoint, 1882; *Gigantorhynchus aurae* Travassos, 1912]

O. taenioides (Diesing, 1851) Travassos 1915
[syns. *Echinorhynchus oligacanthoides* Rudolphi, 1819, in part; *E. taenioides* Diesing, 1851]

O. thumbi Haffner, 1939

O. tortuosa (Leidy, 1850) Schmidt, 1972
[syns. *Echinorhynchus tortuosa* Leidy, 1850; *Hamanniella tortuosa* (Leidy, 1850) Van Cleave, 1924]

O. tumida (Van Cleave, 1947) Schmidt, 1972
[syns. *Travassosia tumida* Van Cleave, 1947; *Hamanniella tumida* (Van Cleave, 1947) Van Cleave, 1953]

GENUS ***Oncicola*** Travassos, 1916

SPECIES

O. campanulata (Diesing, 1851) Meyer, 1931
[syns. *Echinorhynchus campanulata* Diesing, 1851; *Echinorhynchus ovatus* Leidy, 1850]

O. canis (Kaupp, 1909) Hall et Wigdor, 1918
[syn. *Echinorhynchus canis* Kaupp, 1909]

O. chibigouzouensis Machado Filho, 1963

O. confusa (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis confusus* Machado Filho, 1950] (*nec confusus*)]

O. dimorpha Meyer, 1931

O. freitasi (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis freitasi* Machado Filho, 1950]

O. gigas Meyer, 1931

O. juxtatesticularis (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis justatesticularis* Machado Filho, 1950]

O. luehei (Travassos, 1917) Schmidt, 1972
[syn. *Prosthenorchis luehei* Travassos, 1917]

O. machadoi Schmidt, 1972
[syn. *Prosthenorchis travassosi* Machado Filho, 1950]

O. macrurae Meyer, 1931
[syn. *Echinopardalis macrurae* (Meyer, 1931) Witenberg, 1938]

O. magalhaesi Machado Filho, 1962

O. malayanus Toumanoff, 1947

O. martini Schmidt, 1977

O. michaelseni Meyer, 1932

O. micracantha Machado Filho, 1949

O. oncicola (Ihering, 1892) Travassos, 1916 (**type species**)
[syn. *Echinorhynchus oncicola* Ihering, 1892]

O. paracampanulata Machado Filho, 1963

O. pomatostomi (Johnston et Cleland, 1912) Schmidt, 1983
[syns. *Echinorhynchus pomatostomi* Johnston et Cleland, 1912; *Oligacanthorhynchus pomatostomi* (Johnston et Cleland, 1912) Tubangui, 1933]

O. schacheri Schmidt, 1972

O. sigmoides (Meyer, 1932) Schmidt, 1972
[syn. *Prosthenorchis sigmoides* Meyer, 1932]

O. spirula (Olfers in Rudolphi, 1819) Schmidt, 1972
[syns *Echinorhynchus spirula* Olfers in Rudolphi, 1819; *Prosthenorchis spirula* (Olfers in Rudolphi, 1819) Travassos, 1917; *P. elegans* Travassos, 1917]

O. travassosi Witenberg, 1938

O. venezuelensis Marteau, 1977

GENUS ***Pachysentis*** Meyer, 1931

SPECIES

P. angolensis (Golvan, 1957) Schmidt, 1972
[syn. *Oncicola angolensis* Golvan, 1957]

P. canicola Meyer, 1931 (type species) (*fide* Van Cleave 1953)

P. dollfusi (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis dollfusi* Machado Filho, 1950]

P. ehrenbergi Meyer, 1931

P. gethi (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis gethi* Machado Filho, 1950]

P. lenti (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis lenti* Machado Filho, 1950]

P. procumbens Meyer, 1931

P. procyonis (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis procyonis* Machado Filho, 1950]

P. rugosus (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis rugosus* Machado Filho, 1950]

P. septemserialis (Machado Filho, 1950) Schmidt, 1972
[syn. *Prosthenorchis septemserialis* Machado Filho, 1950]

GENUS ***Paraprosthenorchis*** Amin, Ha et Heckmann, 2008

SPECIES

P. ornatus Amin, Ha et Heckmann, 2008 (**type species**)

GENUS ***Prosthenorchis*** Travassos, 1915

SPECIES

P. elegans (Diesing, 1851) Travassos, 1915 (**type species**)
[syn. *Echinorhynchus elegans* Diesing, 1851]

P. fraterna (Baer, 1959) Schmidt, 1972
[syn. *Oncicola fraterna* Baer, 1959]

P. lemuri Machado Filho, 1950
[syn. *P. elegans* sensu Dollfus, 1938]

P. pardalis Southwell et MacFie, 1925 (*nomen nudum*)

P. sinicus Hu-Jiand, 1990

GENUS ***Tchadorhynchus*** Troncy, 1970

SPECIES

T. quentini Troncy, 1970 (**type species**)

CLASS **EOACANTHOCEPHALA** Van Cleave, 1936

ORDER **GYRACANTHOCEPHALA** Van Cleave, 1936

FAMILY **Quadrigyridae** Van Cleave, 1920

[syns. Acanthogyridae Thapar, 1927; Pallisentidae Van Cleave, 1928]

SUBFAMILY **Pallisentinae** Van Cleave, 1928

GENUS ***Acanthogyrus*** Thapar, 1927
[syn. *Hemigyrus* Achmerov et Dombrovskaja, 1941]

SUBGENUS ***Acanthogyrus*** Thapar, 1927

SPECIES

A.* (*A.*) *acanthogyrus Thapar, 1927 (**type species**)
[syn. *Acanthogyrus guptai* Gupta et Verma, 1976] (*fide* Farooqi 1989)

A.* (*A.*) *tripathii Rai, 1967 (*nec tripathi*)

SUBGENUS ***Acanthosentis*** Verma et Datta, 1929
(Amin 2005 reviewed the subgenus and its zoogeography, identified problematic species, and provided a key to the valid species)

SPECIES

A.* (*A.*) *acanthuri (Cable et Quick, 1954) Amin, 1985
[*Acanthosentis acanthuri* Cable et Quick, 1954; *A. acanthuri* (Cable et Quick, 1954) Golvan, 1959]

A.* (*A.*) *adriaticus Amin, 2005
[syn. *Acanthogyrus lizae* Orecchia, Paggi et Radujkovic, 1988]

A.* (*A.*) *alternatspinus Amin, 2005

A.* (*A.*) *anguillae (Wang, 1981) Amin, 1985
[syn. *Acanthosentis anguillae* Wang, 1981]

A.* (*A.*) *antespinus (Verma et Datta, 1929) Amin, 1985 (**type species**)
(original spelling '*antspinus*' was corrected by Meyer 1932; *nec antespinis*)
[syns. *Acanthosentis antspinus* Verma et Data, 1929; *A. antspinus* (Verma et Datta, 1929) Dollfus et Golvan, 1956; *A. oligospinus* Anantaraman, 1980]

A.* (*A.*) *arii (Bilqees, 1971) Amin, 1985
[syn. *Acanthosentis arii* Bilqees, 1971]

A* (*A.*) *bacailai (Verma, 1973) Amin, 1985
[syn. *Acanthosentis bacailai* Verma, 1973]

A.* (*A.*) *barmeshoori Amin, Gholami, Akhlaghi et Heckmann, 2013

A.* (*A.*) *betwai (Tripathi, 1959) (*nec* 1956) Amin, 2005
[syn. *Acanthosentis betwai* Tripathi, 1959]

A.* (*A.*) *bilaspurensis (Chowhan, Gupta et Khera, 1987) **comb. n.**
[syn. *Acanthosentis bilaspurensis* Chowhan, Gupta et Khera, 1987]

A.* (*A.*) *commersoni Gupta et Kajaji, 1969 (*nec cammersoni*)
[syn. *Acanthosentis cameroni* Amin, 1985]

A.* (*A.*) *cheni Amin, 2005
[syns. *Acanthosentis coiliae* (Yamaguti, 1939) sensu Chen, 1973; *Neoechinorhynchus coiliae* Yamaguti, 1939].

A.* (*A.*) *dattai (Podder, 1938) (*nec* 1933) Amin, 1985
[syns. *Acanthosentis dattai* Podder, 1938; *A. dattai* (Podder, 1938) Dollfus et Golvan, 1956]

A.* (*A.*) *giuris (Soota et Sen, 1956) Amin, 1985
[syn. *Acanthosentis giuris* Soota et Sen, 1956]

A.* (*A.*) *gobindi (Chowhan, Gupta et Khera, 1987) **comb. n.**
[syn. *Acanthosentis gobindi* Chowhan, Gupta et Khera, 1987]

A.* (*A.*) *golvani (Gupta et Jain, 1980) Amin, 1985
[syn. *Acanthosentis golvani* Gupta et Jain, 1980]

A.* (*A.*) *heterospinus (Khan et Bilqees, 1990) **comb. n.**

A.* (*A.*) *holospinus (Sen, 1937) Amin, 1985
[syn. *Acanthosentis holospinus* Sen, 1937; *A. holospinus* (Sen, 1937) Dollfus et Golvan, 1956]

A.* (*A.*) *indica (sic!) (Tripathi, 1959) Amin, 1985
[syns. *Acanthosentis hilsai* Pal, 1963; *A. indicus* Tripathi, 1959; *A. indica* (Tripathi, 1959) Chubb, 1982]

A.* (*A.*) *intermedius (Achmerov et Dombrowskaya-Achmerova, 1941) Amin, 1985
[syns. *Hemigyrus intermedius* Achmerov et Dombrowskaya-Achmerova, 1941; *Acanthocephalorhynchoides intermedius* (Achmerov et Dombrowskaya-Achmerova, 1941) Petrochenko, 1956]

A.* (*A.*) *lizae Wang, 1986

A.* (*A.*) *malawiensis Amin et Hendrix, 1999

A.* (*A.*) *maroccanus (Dollfus, 1951) Amin, 1985
[syns. *Acanthosentis maroccanus* Dollfus, 1951; *A. maroccanus* (Dollfus, 1951) Dollfus et Golvan 1956]

A.* (*A.*) *multispinus (Wang, 1966) Amin, 1985
[syn. *Acanthosentis multispinus* Wang, 1966]

A.* (*A.*) *nigeriensis (Dollfus et Golvan, 1956) Amin, 1985
[syn. *Acanthosentis nigeriensis* Dollfus et Golvan, 1956]

A.* (*A.*) *papilo (Troncy et Vassiliades, 1974) Amin, 1985
[syn. *Acanthosentis papilo* Troncy et Vassiliades, 1974]

A.* (*A.*) *parareceptaclis Amin, 2005

A.* (*A.*) *partispinus (Furtado, 1963) Amin, 1985
[syn. *Acanthosentis partispinus* Furtado, 1963]

A.* (*A.*) *paucispinus Wang, 1966

A.* (*A.*) *periophthalmi (Wang, 1980) Amin, 1985
[syn. *Acanthosentis periophthalmi* Wang, 1980]

A.* (*A.*) *phillipi (Mashego, 1988) Amin, 2005
[syn. *Acanthosentis phillipi* Mashego, 1988]

A.* (*A.*) *putitorae (Chowhan, Gupta et Khera, 1988) Amin, 2005
[syn. *Acanthosentis putitorae* Chowhan, Gupta et Khera, 1988]

A.* (*A.*) *scomberomori (Wang, 1980) Amin, 1985
[syn. *Acanthosentis scomberomori* Wang, 1980]

A.* (*A.*) *seenghalae (Chowhan, Gupta et Khera, 1988) Amin, 2005
[syn. *Acanthosentis seenghalae* Chowhan, Gupta et Khera, 1988]

A.* (*A.*) *shashiensis (Tso, Chen et Chien, 1974) Amin, 1985
[syn. *Acanthosentis shashiensis* Tso, Chen et Chien, 1974]

A.* (*A.*) *shuklai (Agrawal et Singh, 1982) Amin, 2005
[syn. *Acanthosentis shuklai* Agrawal et Singh, 1982]

A.* (*A.*) *siamensis (Farooqi et Sirikanchana, 1987) Amin, 2005
[syn. *Acanthosentis siamensis* Farooqi et Sirikanchana, 1987]

A.* (*A.*) *similis (Wang, 1980) Amin, 1985
[syn. *Acanthogyrus* (*Acanthosentis*) sp. of Wang 1966; *Acanthosentis similis* Wang, 1980]

A.* (*A.*) *sircari (Podder, 1941) Amin, 1985
[syn. *Acanthosentis sircari* Podder, 1941; *A. sircari* (Podder, 1941) Dollfus et Golvan, 1956]

A.* (*A.*) *thapari (Parasad, Sahay et Shambhunath, 1969) Amin, 1985
[syn. *Acanthosentis thapari* Parasad, Sahay et Shambhunath, 1969]

A.* (*A.*) *tilapiae (Baylis, 1948) Amin, 1985
[syn. *Acanthosentis tilapiae* Baylis, 1948]

A.* (*A.*) *tripathi Rai, 1967

A.* (*A.*) *vancleavei (Gupta et Fatma, 1986) Amin, 2005
[syn. *Acanthosentis vancleavei* Gupta et Fatma, 1986]

A.* (*A.*) *vittatusi (Verma, 1973) Amin, 1985
[syn. *Acanthosentis vittatusi* Verma, 1973]

GENUS ***Palliolisentis*** Machado Filho, 1960

SPECIES

P. ornatus Machado Filho, 1960

P. polyonca Schmidt et Hugghins, 1973

P. quinqueungulis Machado Filho, 1960 (**type species**)

GENUS ***Pallisentis*** Van Cleave, 1928

[syns. *Devendrosentis* Sahay, Sinha et Ghosh, 1971; *Farzandia* Thapar, 1931; *Neosentis* Van Cleave 1928; *Saccosentis* Tadros, 1966]

(Revision by Amin et al. 2000 created three subgenera based on the size of proboscis hooks.)

SUBGENUS ***Brevitritospinus*** Amin, Heckmann, Ha, Luc et Doanh, 2000

(posterior hooks about half as long as middle hooks)

SPECIES

P.* (*B.*) *allahabadi Agarwal, 1958 (**type species**)
[syn. *P. buckleyi* Tadros, 1966] (*nec allahabadii*)

P.* (*B.*) *cavasii Gupta et Verma, 1980

P.* (*B.*) *croftoni Mital et Lal, 1981

P.* (*B.*) *fasciati Gupta et Verma, 1980 (*nec fasciata*)

P.* (*B.*) *fotedari Gupta et Sinha, 1991

P.* (*B.*) *guntei Sahay, Nath et Sinha, 1967

P.* (*B.*) *indica Mital et Lal, 1981

P.* (*B.*) *jagani Koul, Raina, Bambroo et Koul, 1991

P.* (*B.*) *mehrai Gupta et Fatma, 1986

P.* (*B.*) *vietnamensis Amin, Heckmann, Ha, Luc et Doanh, 2000
[syn. *Pallisentis ophiocephali* Moravec et Sey, 1989]
(The identification of *P. vietnamensis* sp. n. as *P. ophiocephali* by Moravec and Sey 1989 overlooked the difference in proboscis hook size, these species belong in two different subgenera, and the fact that trunk spines of the latter species extend to the posterior ends of individuals of both sexes Amin et al. 2000.)

SUBGENUS ***Demidueterospinus*** Amin, Heckmann, Ha, Luc et Doanh, 2000

(middle hooks about half as long as anterior hooks)

SPECIES

P.* (*D.*) *basiri Farooqi, 1958

P.* (*D.*) *ophiocephalus (Thapar 1931) Baylis, 1933 (**type species**)
[syns. *Farzandia ophiocephali* Thapar, 1931; *Pallisentis magnum* Saeed et Bilqees, 1971] (*nec ophiocephali*)

P.* (*D.*) *panadei Raj, 1967

SUBGENUS ***Pallisentis*** Van Cleave, 1928 *sensu stricto*

(hooks gradually decrease in size posteriorly)

SPECIES

P.* (*P.*) *celatus (Van Cleave, 1928) Baylis, 1933
[syn. *Neosentis celatus* Van Cleave, 1928] (*nec cleatus*)

P.* (*P.*) *cholodkowskyi (Kostylew, 1928) Amin, 1985
[syns. *Quadrigyrus cholodkowskyi* Kostylew, 1928; *Acanthogyrus cholodkowskyi* (Kostylew, 1928) Golvan, 1959; *Acanthocephalynchoides cholodkowskyi* (Kostylew, 1928) Williams, Gibson et Sadighian, 1980]

P.* (*P.*.) *chongqingensis Liu et Zhang, 1993

P.* (*P.*) *colisai Sarkar, 1954
[syn. *P. panadei* Rai, 1967; *P. buckley* Tadros, 1966]

P.* (*P.*) *clupei Gupta et Gupta, 1980

P.* (*P.*) *gaboes (MacCallum, 1918) Van Cleave, 1928
[syns. *Echinorhynchus gaboes* MacCallum, 1918; *Pallisentis* (*Farzandia*) *gaboes* (MacCallum, 1918) Van Cleave, 1928]

P.* (*P.*) *garuai (Sahay, Sinha et Gosh, 1971) Jain et Gupta, 1979 (*nec* Gupta et Fatma, 1986)
[syn. *Devendrosentis garuai* Sahay, Sinha et Gosh, 1971]

P.* (*P.*) *gomtii Gupta et Verma, 1980

P.* (*P.*) *guptai Gupta et Fatma, 1986

P.* (*P.*) *jagani Koul, Raina, Bambroo et Koul, 1992

P.* (*P.*) *kalriai Khan et Bilqees, 1985

P.* (*P.*) *magnum Saeed et Bilqees, 1971

P.* (*P.*) *nagpurensis (Bhalerao, 1931) Baylis, 1931
[syn. *Pallisentis* (*Farzandia*) *nagpurensis* (Bhalerao, 1931) Baylis, 1933]

P.* (*P.*) *nandai Sarkar, 1953

P.* (*P.*) *pesteri (Tadros, 1966) Chowhan, Gupta et Khera, 1987
[syn. *Saccosentis pesteri* Tadros, 1966]

P.* (*P.*) *rexus Wongkham et Whitfield, 1999

P.* (*P.*) *sindensis Khan et Bilqees, 1987

P.* (*P.*) *umbellatus Van Cleave, 1928 (**type species**)

P.* (*P.*) *ussuriense (Kostylew, 1941) Golvan, 1959
[syn. *Acanthocephalorhynchoides ussuriense* Kostylew, 1941]

GENUS ***Pararaosentis*** Amin, Heckmann, Ha, Luc et Doanh, 2000

SPECIES

P. golvani (Troncy et Vassiliades, 1973) Amin, Heckmann, Ha, Luc et Doanh, 2000 (**type species**)
[syn. *Pallisentis golvani* Troncy et Vassiliades, 1973; *Pallisentis tetraodontae* Troncy, 1978]
(The characters on which Troncy 1978 based his assignment of *P. tetraodontae* as a subspecies of *P. golvani* are not sufficient enough to justify a subspecific status, and *P. tetraodontae* is herein relegated to a synonym of *P. golvani* Amin et al. 2000.)

GENUS ***Raosentis*** Datta, 1947

SPECIES

R. dattai Gupta et Fatma, 1986

R. godavarensis Vankara et Vijayalakshmi, 2009

R. ivaniosi George et Nadakal, 1978

R. podderi Datta, 1947 (**type species**)

R. thapari Rai, 1967

GENUS ***Triaspiron*** Smales, Aydogdu et Emre, 2012

SPECIES

T. aphanii Smales, Aydogdu et Emre, 2012 (**type species**)

SUBFAMILY **Quadrigyrinae** Van Cleave, 1920

GENUS ***Acanthodelta*** Diaz-Ungria et Garcia-Rodrigo, 1958 (*nec Acanthrodelta*)
[syns. *Deltacanthus* Diaz-Ungria et Garcia-Rodrigo, 1958; *Deltania* Diaz-Ungria et Garcia-Rodrigo, 1957]

SPECIES

A. scorzai (Diaz-Ungria et Garcia-Rodrigo, 1957) Diaz-Ungria et Gracia-Rodrigo, 1958 (**type species**)
[syns. *Deltania scorzai* Diaz-Ungria et Garcia-Rodrigo, 1957; *Deltacanthus scorzai* (Diaz-Ungria et Garcia-Rodrigo, 1957) Diaz-Ungria et Gracia-Rodrigo, 1958]

GENUS ***Machadosentis*** Noronha, 1992

SPECIES

M. travassosi Noronha, 1992 (**type species**)

GENUS ***Quadrigyrus*** Van Cleave, 1920

SPECIES

Q. brasiliensis Machado Filho, 1941

Q. chinensis Mao, 1979

Q. guptai Gupta et Gunjan-Sinha, 1992

Q. machadoi Fabio, 1983

Q. nickoli Schmidt et Hugghins, 1973

Q. polyspinosus Li, 1984

Q. rhodei Wang, 1980

Q. simhai Gupta et Fatma, 1986

Q. torquatus Van Cleave, 1920 (**type species**)

Q. torquatus sensu Ortlepp (1924)
(may be another species from Surinam *fide* Meyer 1932)

ORDER **NEOECHINORHYNCHIDA** Southwell et Macfie, 1925
[syn. Neoacanthocephala Van Cleave, 1936]

FAMILY **Dendronucleatidae** Sokolovskaya, 1962

GENUS ***Dendronucleata*** Sokolovskaya, 1962

SPECIES

D. americana Moravec et Huffman, 2000

D. dogieli Sokolovskaya, 1962 (**type species**)

D. petruschewskii Sokolovskaya, 1962

FAMILY **Neoechinorhynchidae** (Ward, 1917) Van Cleave, 1928
[syns. Hebesomatidae Yamaguti, 1963; Hebesomidae Van Cleave, 1928; Neorhynchidae Hamann, 1892]

SUBFAMILY **Atactorhynchinae** Petrochenko, 1956
[syn. Floridosentinae Golvan, 1959]

GENUS ***Atactorhynchus*** Chandler, 1935

SPECIES

A. duranguensis Salgado-Maldonado, Aguilar-Aguilar et Cabañas-Carranza, 2005

A. verecundus Chandler, 1935 (**type species**)

GENUS ***Floridosentis*** Ward, 1953

(Rosas-Valdez et al. 2012 presented phylogenetic trees for two known species of *Floridosentis*, indicating that *Floridosentis* is monophyletic comprising of two major, well-supported clades corresponding with the two noted species and their geographical distribution.)

SPECIES

F. mugilis (Machado Filho, 1951) Bullock, 1962 (**type species**)
[syns. *Atactorhynchus mugilis* Machado Filho, 1951; *Floridosentis elongatus* Ward, 1953]

F. pacifica Bravo-Hollis, 1969

GENUS ***Tanaorhamphus*** Ward, 1918

SPECIES

T. longirostris (Van Cleave, 1913) Ward, 1918 (**type species**)
[syns. *Neorhynchus longirostris* Van Cleave, 1913; *Neoechinorhynchus longirostris* (Van Cleave, 1913) Van Cleave, 1916]

SUBFAMILY **Eocollinae** Petrochenko, 1956

GENUS ***Eocollis*** Van Cleave, 1947

SPECIES

E. arcanus Van Cleave, 1947 (**type species**)

E. catostomi Buckner, 1992

E. harengulae Wang, 1981

SUBFAMILY **Gracilisentinae** Petrochenko, 1956

GENUS ***Gracilisentis*** Van Cleave, 1919

SPECIES

G. gracilisentis (Van Cleave, 1913) Van Cleave, 1919 (**type species**)
[syns. *Neorhynchus gracilisentis* Van Cleave, 1913; *Neoechinorhynchus gracilisentis* (Van Cleave, 1913) Van Cleave, 1916]

G. mugilus Gupta et Lata, 1967 (*nec mugilis*)
[syn. *Gracilisentis mugilus sharmai* Gupta et Lata, 1967]

G. sharmai Gupta et Lata, 1967

G. variabilis (Diesing, 1856) Petrochenko 1956
[syn. *Echinorhynchus variabilis* Diesing, 1856]

GENUS ***Pandosentis*** Van Cleave, 1920

SPECIES

P. iracundus Van Cleave, 1920 (**type species**)

P. napoensis Smales, 2007

GENUS ***Wolffhugelia*** Mañé-Garzon et Dei-Cas, 1974

SPECIES

W. matercula Mañé-Garzon et Dei-Cas, 1974 (**type species**)

SUBFAMILY **Neoechinorhynchinae** (Ward, 1917) Travassos, 1926

GENUS ***Dispiron*** Bilqees, 1970

SPECIES

D. catlai Khan et Bilqees, 1987

D. heteroacanthus Khan et Bilqees, 1985

D. mugilis Bilqees, 1970 (**type species**) (*nec mugili*)

GENUS ***Gorytocephalus*** Nickol et Thatcher, 1971

SPECIES

G. elongorchis Thatcher, 1979

G. plecostomorum Nickol et Thatcher, 1971 (**type species**)

G. spectabilis (Machado Filho, 1959) Nickol et Thatcher, 1971
[syn. *Neoechinorhynchus spectabilis* Machado Filho, 1959]

G. talaensis Vizcaino et Lunaschi, 1988

GENUS ***Hexaspiron*** Dollfus et Golvan, 1956

SPECIES

H. nigericum Dollfus et Golvan, 1956 (**type species**)
(*nec nigeriensis*)

H. spinibarbi Yu et Wang, 1977

GENUS ***Microsentis*** Martin et Multani, 1966

SPECIES

M. wardae Martin et Multani, 1966 (**type species**)

GENUS ***Neoechinorhynchus*** Stiles et Hassall, 1905
[syns. *Echinorhynchus* Zoega in Müller, 1776, in part; *Eorhynchus* Hamann, 1892; *Neorhynchus* Hamann, 1892; *Eosentis* Van Cleave, 1928]
(Revision by Amin 2002 created 2 subgenera based on egg structure, included a list of invalid and relegated species, and a key to 88 species.)

SUBGENUS ***Neoechinorhynchus*** Hamann, 1892
(eggs with concentric shells)

SPECIES

N.* (*N.*) *africanus Troncy, 1969

N.* (*N.*) *armenicus Mikailov, 1975

N.* (*N.*) *ascus Amin, Ha et Amin, 2011

N.* (*N.*) *australis Van Cleave, 1931 (*nec australe*)

N.* (*N.*) *beringianus Mikhailova et Atrashkevich, 2008

N.* (*N.*) *brentnickoli Monks, Pulido-Flores et Violante-Gonzalez, 2011

N.* (*N.*) *buckneri Amin et Heckmann, 2009

N.* (*N.*) *buttnerae Golvan, 1956

N.* (*N.*) *carassii Roytmann, 1961 (*nec* Rotman)

N.* (*N.*) *carpiodi Dechtiar, 1968

N.* (*N.*) *chelonos Schmidt, Esch et Gibbons, 1970

N.* (*N.*) *chilkaensis Podder, 1937
[syn. *Neoechinorhynchus elongatus* Tripathi, 1956]
(*fide* Chandra et al. 1982)

N.* (*N.*) *chimalapasensis Salgado-Maldonado, 2010

N.* (*N.*) *crassus Van Cleave, 1919 (*nec crassum*)

N.* (*N.*) *cristatus Lynch, 1936 (*nec cristatum*)

N.* (*N.*) *curemai Noronha, 1973

N.* (*N.*) *cylindratus (Van Cleave, 1913) Van Cleave 1919
[syn. *Neorhynchus cylindratus* Van Cleave, 1913] (*nec cylindratum*)

N.* (*N.*) *dattai Golvan, 1994
[syn. *Neoechinorhynchus rutili* sensu Datta, 1936
(*nec* Müller, 1780)]

N.* (*N.*) *dimorphospinus Amin et Sey, 1996

N.* (*N.*) *distractus Van Cleave, 1949
[syn. in part *Neoechinorhynchus australis* Van Cleave, 1931]
(*nec distractum*)

N.* (*N.*) *dorsovaginatus Amin et Christison, 2005

N.* (*N.*) *edmondsi Golvan, 1994
[syn. *Neoechinorhynchus agilis* sensu Edmonds, 1982]

N.* (*N.*) *emydis (Leidy, 1851) Van Cleave, 1919 (*nec* 1916)
[syns. *Echinorhynchus emydis* Leidy, 1851; *E. hamulatus* Leidy, 1856]

N.* (*N.*) *emyditoides Fisher, 1960
[syn. *Neoechinorhynchus emydis* sensu Bravo-Hollis, 1946]
(*nec* Leidy, 1851)

N.* (*N.*) *formosanus (Harada, 1938) Kaw, 1951
[syn. *Eosentis formosanus* Harada, 1938]
(*nec formosanum*, *nec formosans*)

N.* (*N.*) *gibsoni Khan et Bilqees, 1989
(*err*: *gilbesoni fide* Golvan 1994)

N.* (*N.*) *golvani Salgado-Maldonado, 1978
(Salgado-Maldonado 2006 suggested the existence of two cryptic species of *N. golvani*, one associated with cichlids and the other with eleotrids in Mexico. Monks et al. 2011 subsequently described *N.* (*N.*) *brentnickoli* from eleotrid fishes. Martinez-Aquino et al. 2009 detected a complex of three cryptic species within *N. golvani* using two nuclear gene sequences that were associated with eleotrid and cichlid fish lineages in waters of different salinities.)

N.* (*N.*) *hartwichi Golvan, 1994
[syn. *Neoechinorhynchus australis* sensu Hartwich, 1956]

N.* (*N.*) *iraqensis Amin, Al-Sady, Mhaisen et Bassat, 2001

N.* (*N.*) *johnii Yamaguti, 1939 (*nec johni*)

N.* (*N.*) *limi Muzzall et Buckner, 1982

N.* (*N.*) *longnucleatus Amin, Ha et Ha, 2011

N.* (*N.*) *macronucleatus Machado Filho, 1954
(*nec macronucleatum*)

N.* (*N.*) *magnapapillatus Johnson, 1969

N.* (*N.*) *mamesi Pinacho-Pinacho, Pérez-Ponce de León et García-Varela, 2012
(Species identity and distinction from *N. brentnickoli* and *N. golvani* were established by Pinacho-Pinacho et al. 2012, using morphology, genetic divergence with LSU and *cox1* sequences.)

N.* (*N.*) *moleri Barger, 2005

N.* (*N.*) *nawazi Naqvil, Aly Khan, Ghazi, et Noor-un-Nissa, 2012

N.* (*N.*) *nickoli Khan, Bilqees, Noor-Un-Nisa, Ghazi et Ata-Ur-Rahim, 1999

N.* (*N.*) *notemigoni Dechtiar, 1967

N.* (*N.*) *panucensis Salgado Maldonado, 2013

N.* (*N.*) *paraguayensis Machado Filho, 1959
[syn. *Echinorhynchus paucihamatum* Leidy, 1890]
(*nec paraguayense*)

N.* (*N.*) *pimelodi Brasil-Sato et Pavanelli, 1998

N.* (*N.*) *plagiognathopitis Wang et Zhang, 1987

N.* (*N.*) *plaquensis Amin, Ha et Ha, 2011

N.* (*N.*) *prochilodorum Nickol et Thatcher, 1971

N.* (*N.*) *prolixoides Bullock, 1963

N.* (*N.*) *prolixus Van Cleave et Timmons, 1952 (*nec prolixum*)

N.* (*N.*) *pseudemydis Cable et Hopp, 1954
[syn. *Neoechinorhynchus constrictus* Little et Hopkins, 1968]
(Dezfuli and Tinti 1998 managed to separate specimens of *N. pseudemydis* from those of the *N. emydis*-*N. emyditoides* group using random-amplified polymorphic DNA (RAPD) analysis.)

N. (N.) pterodoridis Thatcher, 1981

N.* (*N.*) *qatarensis Amin, Saoud et Alkuwari, 2002

N.* (*N.*) *quinghaiensis Liu, Wang, et Yang, 1981 (*nec* 1980)

N.* (*N.*) *rigidus (Van Cleave, 1928) Kaw, 1951
[syn. *Eosentis rigidus* Van Cleave, 1928] (*nec rigidum*, *nec rigidis*)

N.* (*N.*) *robertbaueri Amin, 1985

N.* (*N.*) *roseum (sic!) Salgado-Maldonado, 1978 (emend.)
(*nec* Salgado et Maldonado)

N.* (*N.*) *rutili (Müller, 1780) (**type species**)
[syn. *Echinorhynchus rutili* Müller, 1780]

N.* (*N.*) *salmonis Ching, 1984
(Mikhailova 2013 recognized a polar population of *N. salmonis* from northern Asia different from the temperate population originally described from Canada in size, seasonality and developmental cycle.)

N.* (*N.*) *saurogobi Yi et Wu, 1989

N.* (*N.*) *schmidti Barger, Thatcher et Nickol, 2004

N.* (*N.*) *strigosus Van Cleave, 1949 (*nec strigosum*)

N.* (*N.*) *stunkardi Cable et Fisher, 1961 (*vide* Acholonu 1969)

N.* (*N.*) *sootai Bhattacharya, 1999

N.* (*N.*) *tenellus (Van Cleave, 1913) Van Cleave, 1919
[syn. *Neorhynchus tenellus* Van Cleave, 1913] (*nec tenellum*)

N.* (*N.*) *tumidus Van Cleave et Bangham, 1949 (*nec tumidum*)

N.* (*N.*) *tylosuri Yamaguti, 1939
[syn. *Neoechinorhynchus asymetricus* Belous, 1952]

N.* (*N.*) *venustus Lynch, 1936 (*nec venustum*)

N.* (*N.*) *villoldoi Vizcaino, 1992

N.* (*N.*) *wuyiensis Wang, 1981

N.* (*N.*) *zabensis Amin, Abdullah et Mhaisen, 2003

SUBGENUS ***Hebesoma*** Van Cleave, 1928

(eggs with polar prolongation of fertilization membrane)

SPECIES

N.* (*H.*) *agilis (Rudolphi, 1819) Van Cleave, 1916
[syn. *Echinorhynchus agilis* Rudolphi, 1819]
(Shih et al. 2010 differentiated between *N. agilis*, *Neorhadinorhynchus macrospinosus* and *Rhadinorhynchus pristis* using morphological, SEM and molecular methods. The nuclear ribosomal DNA region across the first internal transcribed spacer (ITS-1), the 5.8S gene and the second internal transcribed spacer (ITS-2) were amplified and the sizes of the PCR products were found to be different in length.)

N. (H.) anguillum El-Damarany, 2001

N.* (*H.*) *carinatus Buckner et Buckner, 1993

N.* (*H.*) *chrysemydis Cable et Hopp, 1954

N.* (*H.*) *didelphis Amin, 2001

N.* (*H.*) *doryphorus Van Cleave et Bangham, 1949
(*nec doryphorum*)

N.* (*H.*) *idahoensis Amin et Heckmann, 1992

N. (H.) kallarensis George et Nadakal, 1978

N.* (*H.*) *lingulatus Nickol et Ernst, 1987

N.* (*H.*) *manasbalensis Kaw, 1951 (*nec manasbalense*)

N.* (*H.*) *manubrianus Amin, Ha et Ha, 2011 (*nec manubriensis*)

N.* (*H.*) *pungitius Dechtiar, 1971

N.* (*H.*) *rostratus Amin et Bullock, 1998

N.* (*H.*) *violentus (Van Cleave, 1928) Salgado-Maldonado, 1978 (emend.) (**type species**) (*nec violentum*)

Valid species of ***Neoechinorhynchus*** not assigned to either subgenus; eggs unknown:

N. afghanus Moravec et Amin, 1978

N. ampullata Amin, Ha et Ha, 2011

N. aldrichettae Edmonds, 1971

N. argentatus Chandra, Rao et Shyamasundari, 1984

N. bangoni Tripathi, 1956

N. brayi Bilqees, Shaikh et Khan, 2011

N. cirrhinae Gupta et Jain, 1979

N. coiliae Yamaguti, 1939

N. cyanophlyctic Kaw, 1951 (*nec cyanophyctis*)

N. devdevi (Datta 1936) Kaw, 1951
[syn. *Eosentis yalei* Datta, 1936; *Neoechinorhynchus yalei* (Datta, 1936) Kaw, 1951 *fide* Amin 2002]

N. glyptosternumi Fotedar et Dhar, 1977
(published as a new species by Dhar and Kharoo 1984)

N. hutchinsoni Datta, 1936

N. ichthyobori Saoud, El Naffar et Abu Sinna, 1974

N. indicus Gudivada, Chikkam et Vankara, 2010

N. karachiensis Bilqees, 1972

N. longilemniscus Yamaguti, 1954

N. longiorchis Khatoon et Bilqees, 2007

N. magnus Southwell et MacFee, 1925

N. nematalosi Tripathi, 1956

N. nigeriensis Farooqi, 1981

N. ningalooensis Pichelin et Cribb, 2001

N. octonucleatus Tubangui, 1933 (*nec octonucleatum*)

N. oreini Fotedar, 1968

N. ovalis Tripathi, 1956 (*nec ovale*)

N. roonwali Datta et Soota, 1961

N. saginatus Van Cleave et Bangham, 1949 (*nec saginatum*)

N. satori Morisita, 1937

N. simansularis Roitman, 1961

N. sinicus Wang, 1966

N. topseyi Podder, 1937

N. tsintaoensis Morisita, 1937 (*nec tsintaoense*)

N. zacconis Yamaguti, 1935

GENUS ***Octospinifer*** Van Cleave, 1919

SPECIES

O. macilentus Van Cleave, 1919 (**type species**)

O. rohitaii Zuberi et Farooq, 1976

O. torosus Van Cleave et Haderlie, 1950

O. variabilis (Diesing, 1851) Kritscher, 1976
[syn. *Echinorhynchus variabilis* Diesing, 1851]

GENUS ***Octospiniferoides*** Bullock, 1957

SPECIES

O. australis Schmidt et Hugghins, 1973

O. chandleri Bullock, 1957 (**type species**)

O. incognita Schmidt et Hugghins, 1973

GENUS ***Paraechinorhynchus*** Bilqees et Khan, 1983

SPECIES

P. kalriai Bilqees et Khan, 1983 (**type species**)

GENUS ***Paulisentis*** Van Cleave et Bangham, 1949

SPECIES

P. fractus Van Cleave et Bangham, 1949 (**type species**)

P. missouriensis Keppner, 1974

GENUS ***Zeylonechinorhynchus*** Fernando et Furtado, 1963

SPECIES

Z. longinuchalis Fernando et Furtado, 1963 (**type species**)

FAMILY **Tenuisentidae** Van Cleave, 1936

GENUS ***Paratenuisentis*** Bullock et Samuel, 1975

SPECIES

P. ambiguus (Van Cleave, 1921) Bullock et Samuel, 1975 (**type species**)
[syn. *Tanaorhamphus ambiguus* Van Cleave, 1921]

(The proboscis of *P. ambiguus* appears to have an epidermal cone with three nuclei at the apex as per Herlyn 2001. Dendritic terminations, sensory nerves and secretory ducts were absent suggesting a mechanical function of the cone as have been suggested in other eoacanthocephalan reports. Herlyn 2001 proposed that the presence of epidermis cone only in the Eoacanthocephala supports its monophyly but draws no conclusions regarding the relationships with other acanthocephalan groups including polyacanthocephalans, e.g. *P. kenyensis*, with apical cones having demonstrable secretory ducts as described in Amin and Dezfuli 1995.)

GENUS ***Tenuisentis*** Van Cleave, 1936

SPECIES

T. niloticus (Meyer, 1932) Van Cleave, 1936 (**type species**)
[syn. *Rhadinorhynchus niloticus* Meyer, 1932]

CLASS **PALAEACANTHOCEPHALA** Meyer, 1931

(The criteria for the classification of families of Palaeacanthocephala based on morphological characteristics may need to be re-evaluated using gene sequence methods, see, e.g. García-Varela and Nadler 2005, to establish phylogenetic relationships. Verweyen et al. 2011 analyzed 39 species from all 4 classes of Acanthocephala using nuclear 18S rDNA sequences. They found that the resulting trees suggested a paraphyletic arrangement of the Echinorhynchida and Polymorphida inside the Palaeacanthocephala, which questions the placement of the genera *Gorgorhynchoides* and *Serrasentis* within the Echinorhynchida and not the Polymorphida.)

ORDER **ECHINORHYNCHIDA** Southwell et Macfie, 1925

FAMILY **Arhythmacanthidae** Yamaguti, 1935

(The three subfamilies, Arhythmacanthinae Yamaguti, 1935, Neoacanthocephaloidinae Golvan, 1960 and Paracanthocephaloidinae Golvan, 1969, as well as Yamagutisentinae Golvan, 1969 and Hypoechinorhynchidae Petrochenko, 1956 are unjustified and deleted, see Pichelin and Cribb 1999, Amin et al. 2011a.)

GENUS ***Acanthocephaloides*** Meyer, 1932
[syns. *Neoacanthocephaloides* Cable et Quick, 1954; *Pseudorhynchus* Petrochenko, 1956; *Yamagutisentis* Golvan, 1969]

SPECIES

A. claviformis Araki et Machida, 1987

A. cyrusi Bray, Spencer-Jones et Lewis, 1988

A. delamuri (Parukhin, 1989) **comb. n.**
[syn. *Yamagutisentis delamuri* Parukhin, 1989]

A. distinctus Golvan, 1969

A. geneticus de Buron, Renaud et Euzet, 1986

A. ichiharai Araki et Machida, 1987

A. incrassatus (Molin, 1858) Meyer, 1932

A. irregularis Amin, Oğuz, Heckmann, Tepe et Kvach, 2011

A. neobythitis (Yamaguti, 1939) **comb. n.**
[syns. *Neoacanthocephaloides neobythitis* Yamaguti 1939; *Pseudorhadinorhynchus neobythitis* Yamaguti, 1939; *Yamagutisentis neobythitis* (Yamaguti, 1939) Golvan, 1969]

A. nicoli (Kumar, 1992) **comb. n.**
[syn. *Yamagutisentis nicoli* Kumar, 1992]

A. plagiusae Piñeros, Quintana, Chalé et Martinez, 2013

A. propinquus (Dujardin, 1845) Meyer, 1932 (**type species**)
[syns. *Echinorynchus propinquus* Dujardin, 1845; *E. fabri* Rudolphi, 1819; *E. kostylewi* Meyer, 1932; *E. pumilio* Rudolphi, 1819] (*nec propinguus*)

A. rhinoplagusiae (Yamaguti, 1935) **comb. n.**
[syn. *Yamagutisentis rhinoplagusiae* (Yamaguti, 1935) Golvan, 1969] (*nec rhynoplagusiae*)

A. spinicaudatus (Cable et Quick, 1954) Pichelin et Cribb, 1999
[syn. *Neoacanthocephaloides spinicaudatus* Cable et Quick, 1954]

GENUS ***Bolborhynchoides*** Achmerov et Dombrovskaja, 1959
[syn. *Bolborhynchus* Achmerov et Dombrovskaja-Achmerova, 1941; *Fresnyarhynchus* Golvan, 1960]

SPECIES

B. exiguus (Achmerov et Dombrovskaja-Achmerova, 1941) Achmerov 1959 (**type species**)
[syns. *Bolborhynchus exiguus* Achmerov et Dombrovskaja-Achmerova, 1941; *Fresnyarhynchus exiguous* (Achmerov et Dombrovskaja-Achmerova, 1941) Golvan, 1960]

GENUS ***Breizacanthus*** Golvan, 1969

SPECIES

B. aznari Hernández-Orts, Alama-Bermejo, Crespo, Garcia, Raga et Montero, 2012

B. chabaudei Golvan, 1969 (**type species**)

B. golvani Gaevskaya et Shukhgalter, 1984

B. irenae Golvan, 1969

B. ligur Paggi, Orecchia et Della Seta, 1975

GENUS ***Euzetacanthus*** Golvan et Houin, 1964

SPECIES

E. chorinemusi Gupta et Naqvi, 1984

E. golvani Gupta et Fatma, 1983

E. simplex (Rudolphi, 1810) Golvan et Houin 1964 (**type species**)
[syns. *Echinorynchus simplex* Rudolphi, 1810; *E. triglae gurnardi* Rathike, 1799]

GENUS ***Heterosentis*** Van Cleave, 1931
[syn. *Arhythmacanthus* Yamaguti, 1935]

SPECIES

H. brasiliensis Vieira, Felizardo et Luque, 2009

H. fusiformis (Yamaguti, 1935) Tripathi, 1959
[syn. *Arhythmacanthus fusiformis* Yamaguti, 1935]

H. heteracanthus (von Linstow, 1896) Van Cleave, 1931 (**type species**)
[syn. *Echinorynchus heteracanthus* von Linstow, 1896] (*nec hetracanthus*)

H. hirsutus Pichelin et Cribb, 1999

H. holospinus Amin, Heckmann et Ha, 2011

H. martini Lanfranchi et Timi, 2011

H. mysturi Wei, Huang, Chen et Jiang, 2002

H. overstreeti (Schmidt et Paperna, 1978) Amin, 1985
[syn. *Arhythmacanthus overstreeti* Schmidt et Paperna, 1978]

H. paraplagusiarum (Nickol, 1972) Amin 1985
[syn. *Arhythmacanthus paraplagusiarum* Nickol, 1972]

H. parasiluri Yin et Wu, 1984

H. plotosi (Yamaguti, 1935) Schmidt et Paperna, 1978
[syn. *Arhythmacanthus plotosi* Yamaguti, 1935]

H. pseudobagri (Wang et Zhang, 1987) Pichelin et Cribb, 1999

H. septacanthus (Sita, 1969) Amin, 1985
[syn. *Arhythmacanthus septacanthus* Sita in Golvan, 1969]

H. thapari (Gupta et Fatma, 1979) Amin, 1985
[syn. *Arhythmacanthus thapari* Gupta et Fatma, 1979]

H. zdzitowieckii (Kumar, 1992) Pichelin et Cribb, 1999
[syn. *Arhythmacanthus zdzitowieckii* Kumar, 1992]

GENUS ***Hypoechinorhynchus*** Yamaguti, 1939
(*Hypoechinorhynchus* was previously placed in family Hypoechinorhynchidae by Amin 1985.)

SPECIES

H. alaeopis Yamaguti, 1939 (**type species**)

H. golvani Gupta et Pramod-Kuma, 1987

H. magellanicus Szidat, 1950

H. robustus Pichelin, 1999

H. thermaceri de Buron, 1988

GENUS ***Paracanthocephaloides*** Golvan, 1969

SPECIES

P. cabelleroi (Gupta et Fatma, 1983) Bhattacharya, 2007 [syn. *Heterosentis cabelleroi* Gupta et Fatma, 1983]

P. chabanaudi (Dollfus, 1951) Golvan, 1969 (**type species**)
[syn. *Acanthocephaloides chabanaudi* Dollfus, 1951]

P. golvani Chandra, Hanumantha-Rao et Shyamasundari, 1984

P. incrassatus (Molin, 1858) Meyer, 1932

[syns. *Echinorynchus incrassatus* Molin, 1858; *E. devisiana* Molin, 1858; *E. flavus* Molin, 1858; *Acanthocephaloides incrassatus* (Molin, 1858) Meyer, 1932 *fide* Bray et al. (1988)]

P. tripathii Golvan, 1969
[syn. *Heterosentis plotosi* (sensu Tripathi, 1959) Golvan, 1969]

GENUS ***Solearhynchus*** de Buron et Maillard, 1985

SPECIES

S. kostylewi (Meyer, 1932) Kvach et Oğuz, 2010
[syns. *Paracanthocephaloides kostylewi* Meyer, 1932; *Acanthocephaloides kostylewi* (Meyer, 1932) sensu Bray et al. 1988]

S. soleae (Porta, 1905) de Buron et Maillard, 1985 (**type species**)
[syns. *Acanthocephaloides rhytidotes* (Monticelli, 1904) Belofastova et Korniychus, 2000; *Echinorynchus aurantiacus* sensu Monticelli, 1887; *E. corrogatus* sensu Monticelli, 1887; *E. rhytidotes* Monticelli, 1905; *E. soleae* Porta, 1905; *Acanthocephaloides soleae* (Porta, 1905) Meyer, 1932; *Paracanthocephaloides soleae* (Porta, 1905) Paggi et Orecchia, 1983; *Solearhynchus rhytidotes* (Monticelli, 1904) Belofastova, 2006]

GENUS ***Spiracanthus*** Muñoz et George-Nascimento, 2002

SPECIES

S. bovichthys Muñoz et George-Nascimento, 2002 (**type species**)

FAMILY **Cavisomidae** Meyer, 1932
[syn. Cavisomatidae Petrochenko, 1956]

GENUS ***Caballerorhynchus*** Salgado-Maldonado, 1977

SPECIES

C. lamothei Salgado-Maldonado, 1977 (**type species**)

GENUS ***Cavisoma*** Van Cleave, 1931

SPECIES

C. magnum (Southwell, 1927) Van Cleave, 1931 (**type species**)
[syn. *Oligoterorhynchus magnus* Southwell, 1927]

GENUS ***Echinorhynchoides*** Achmerov et Dombrovskaja-Achmerova, 1941

SPECIES

E. dogieli Achmerov et Dombrovskaja-Achmerova, 1941 (**type species**)
[syn. *Neorhadinorhynchus dogieli* (Achmerov et Dombrovskaja-Achmerova, 1941) Yamaguti, 1963]

GENUS ***Femogibbosus*** Parukhin, 1973

SPECIES

F. assi Parukhin, 1973 (**type species**)

GENUS ***Filisoma*** Van Cleave, 1928

SPECIES

F. acanthocybii Wang, Wang et Wu, 1993

F. atropt Wang, 1988

F. bucerium Van Cleave, 1940 (*nec bucerinum*)

F. fidum Van Cleave et Manter, 1948

F. filiformis Weaver et Smales, 2013

F. indicum Van Cleave, 1928 (**type species**)
[syn. *Filisoma hoogliensis* Datta et Soota, 1962]

F. inglisi Gupta et Naqvi, 1984

F. longcementglandatus Amin et Nahhas, 1994

F. microcanthi Harada, 1938 (*nec micracanthi*, *nec macrocanthi*)

F. oplegnathi Wang, 1988

F. rizalinum Tubangui et Masilungan, 1946

F. scatophagusi Datta et Soota, 1962

GENUS ***Megapriapus*** Golvan, Garcia-Rodrigo et Diaz-Ungria, 1964

SPECIES

M. ungriai (Garcia-Rodrigo, 1960) (**type species**)
[syn. *Echinorhynchus ungriai* Garcia-Rodrigo, 1960]

GENUS ***Neorhadinorhynchus*** Yamaguti, 1939
[syns. *Neogorgorhychus* Golvan, 1960; *Diplosentis fide* Pichelin and Cribb 2001]

SPECIES

N. aspinosus (Fukui et Morisita, 1937) Yamaguti, 1939 (**type species**)
[syns. *Rhadinorhynchus aspinosus* Fukui et Morisita, 1937; *Neogorgorhynchus aspinosus* (Fukui et Morisita) Golvan, 1960; *Pararhadinorhynchus aspinosus* (Fukui et Morisita, 1937) Petrochenko, 1956] (*nec aspinosum*)

N. atlanticus Gaevskaja et Nigmatullin, 1977

N. atypicalis Amin et Ha, 2011

N. macrospinosus Amin et Nahhas, 1994

N. madagascariensis Golvan, 1969

N. myctophumi Mordvinova, 1988

N. nudus (Harada, 1938) Yamaguti, 1939
[syns. *Rhadinorhynchus nudus* Harada, 1938; *Neogorgorhynchus nudus* (Harada, 1938) Golvan, 1960; *Nipporhynchus nudus* (Harada, 1938) Van Cleave et Lincicome, 1940; *Echinorhynchus nudus* (Harada, 1938) Petrochenko, 1956] (*nec nudum*)

GENUS ***Paracavisoma*** Kritscher, 1957

SPECIES

P. impudica (Diesing, 1851) Kritscher, 1957 (**type species**)
[syn. *Echinorhynchus impudicus* Diesing, 1851] (*nec impudicum*)

GENUS ***Pseudocavisoma*** Golvan et Houin, 1964
[syn. *Rhadinorhynchoides* in Yamaguti 1963]

SPECIES

P. chromitidis (Cable et Quick, 1954) Golvan et Houin, 1964 (**type species**)
[syns. *Cavisoma chromitidis* Cable et Quick, 1954; *Rhadinorhynchus chromitidis* (Cable et Quick, 1954) Yamaguti, 1963]

GENUS ***Rhadinorhynchoides*** Fukui et Morista, 1937

SPECIES

R. miyagawai Fukui et Morisita, 1937 (**type species**)

FAMILY **Diplosentidae** Tubangui et Masilungan, 1937
[syn. Cavisomidae in Pichelin and Cribb 2001]

SUBFAMILY **Allorhadinorhynchinae** Golvan, 1969
(diagnosis in Amin and Sey 1996)

GENUS ***Allorhadinorhynchus*** Yamaguti, 1959

SPECIES

A. segmentatus Yamaguti, 1959 (**type species**) (*nec segmentatum*)

GENUS ***Golvanorhynchus*** Noronha, Fabio et Pinto, 1978

SPECIES

G. golvani Noronha, Fabio et Pinto, 1978 (**type species**)

SUBFAMILY **Diplosentinae** Tubangui et Masilungan, 1937

GENUS ***Amapacanthus*** Salgado-Maldonado et Portes Santos, 2000

SPECIES

A. amazonicus Salgado-Maldonado et Portes Santos, 2000 (**type species**)

GENUS ***Diplosentis*** Tubangui et Masilungan, 1937

SPECIES

D. amphacanthi Tubangui et Masilungan, 1937 (**type species**)

D. manteri Gupta et Fatma, 1979

GENUS ***Pararhadinorhynchus*** Johnston et Edmonds, 1947

SPECIES

P. coorongensis Edmonds, 1973

P. mugilis Johnston et Edmonds, 1947 (**type species**)

FAMILY **Echinorhynchidae** Cobbold, 1876

SUBFAMILY **Circinatechinorhynchinae** Bhattacharya, 2007

GENUS ***Circinatechinorhynchus*** Bhattacharya, 2007

SPECIES

C. pseudorhombi Bhattacharya, 2007 (**type species**)

SUBFAMILY **Echinorhynchinae** Cobbold, 1876

GENUS ***Acanthocephalus*** Koelreuther, 1771
[syns. *Paracanthocephalus* Achmerov et Dombrovskaja-Achmerova, 1941; *Pseudoechinorhynchus* Petrochenko, 1956]

SPECIES

A. acutispinus Machado Filho, 1968

A. acutulus Van Cleave, 1931

A. alabamensis Amin et Williams, 1983
[syn. *Acanthocephalus etowani* Williams, 1974]
(*A. etowani* was improperly described and named in an unpublished dissertation – Williams 1974.)

A. amini Salgado-Maldonado, 2009

A. anguillae (Müller, 1780) Lühe, 1911 (**type species**)
[syns. *Echinorynchus anguillae* Müller, 1780; *E. globulosus* Rudolphi, 1802; *E. linstowi* Hamann, 1891; *E. paronai* Condorelli, 1897; *E. proteus* Porta, 1905; *Acanthocephalus paronai* (Condorelli, 1897) Meyer, 1932 (*fide* Golvan 1960)]

A. anthuris (Dujardin, 1845) Lühe, 1911
[syn. *Echinorynchus anthuris* Dujardin, 1845]

A. atratus Van Cleave, 1925 (*nec aratus*)
[syn. *Acanthocephalus lucidus* (*fide* Harada 1935, *fide* Yamaguti 1939)]

A. balkanicus Bachvarov, 1974

A. clavula (Dujardin, 1845) Grabda-Kazubska et Chubb, 1968 (*nec* Hamann, 1892)
[syn. *Echinorynchus clavula* Dujardin, 1845]

A. correalimai Machado Filho, 1970

A. criniae Snow, 1971

A. curtus (Achmerov et Dombrovskaja-Achmerova, 1941) Yamaguti, 1963
[syns. *Paracanthocephalus curtus* Achmerov et Dombrovskaja-Achmerova, 1941; *Acanthocephalus amuriensis* Kostylew, 1941]

A. dirus (Van Cleave, 1931) Van Cleave et Townsend, 1936;
[syns. *Echinorynchus dirus* Van Cleave, 1931; *Acanthocephalus jacksoni* Bullock, 1962; *A. parksidei* Amin, 1975]

A. domerguei Golvan, Bygoo et Gassmann, 1972

A. echigoensis Fujita, 1920
[syns. *Acanthocephalus acerbus* Van Cleave, 1931; *A. aculeatus* Van Cleave, 1931 (*fide* Harada 1935); *A. onchorhynchi* Fujita, 1920]

A. elongatus Van Cleave, 1937

A. falcatus (Frölich, 1789) Lühe, 1911
[syn. *Echinorynchus falcatus* Frölich, 1789]

A. fluviatilis Paperna, 1964 (*nec fluviatilus*)

A. galaxii Hine, 1978 (*nec* 1977)

A. goaensis Jain et Gupta, 1981

A. gotoi Van Cleave, 1925

A. gracilacanthus (Meyer, 1932) Grabda et Grabda-Kazubska, 1967
[syn. *Paracanthocephalus gracilacanthus* (Meyer, 1932) Grabda-Kazubska, 1967]

A. halongensis Amin et Ha, 2011

A. haranti Golvan et Oliver in Golvan, 1969

A. hastae Baylis, 1944

A. japonicus (Fukui et Morisita, 1936) Petrochenko 1956
[syns. *Filisoma japonicum* Fukui et Morisita, 1936; *Acanthocephaloides japonicus* (Fukui et Morisita, 1936) Yamaguti, 1939]

A. kabulensis Datta et Soota, 1956

A. kashmirensis Datta, 1936

A. lizus Li-Minmin, 1984

A. loktakensis Shomorendra, Ranibala et Jha, 2009

A. lucii (Müller, 1776) Lühe 1911
[syns. *Echinorynchus lucii* Müller, 1776; *E. angustus* Rudolphi, 1809; *E. blennii* Rudolphi, 1807]

A. madagascariensis Golvan, 1965

A. manipurensis Bhattacharya, 2007

A. minor Yamaguti, 1935

A. nanus Van Cleave, 1925

A. nickoli Khan et Bilqees, 1994

A. opsariichthydis Yamaguti, 1935 (*nec opsalichtydis*, *nec opsalichthydis*) (*vide* Yamaguti 1939)

A. parallelotestis Achmerov et Dombrovskaja-Achmerova, 1941

A. pesteri Tadros, 1966

A. ranae (Schrank, 1788) Lühe 1911
[syns. *Echinorynchus ranae* Schrank, 1788; *E. haeruca* Rudolphi, 1809; *Acanthocephalus praetextus* Molin, 1858] (*fide* Porta 1908)

A. rauschi (Schmidt, 1969) Amin, 1985
[syn. *Paracanthocephalus rauschi* Schmidt, 1969; *A. rauschi* Golvan, 1969]

A. reunionensis Smales, Sasal et Taraschewski, 2007

A. rhinensis Amin, Thielen, Münderle, Taraschewski et Sures, 2008

A. saurius Bursey et Goldberg, 2003

A. serendibensis Crusz et Mills, 1970

A. sichuanensis Wang et Zhang, 1987

A. sinensis Van Cleave, 1937

A. srilankensis Crusz et Ching, 1976

A. tahlequahensis Oetinger et Buckner, 1976

A. tenuirostris (Achmerov et Dombrovskaja-Achmerova, 1941) Yamaguti 1963
[syn. *Paracanthocephalus tenuirostris* Achmerov et Dombrovskaja Achmerova, 1941]

A. tigrinae (Shipley, 1903) Yamaguti, 1963
[syn. *Echinorynchus tigrinae* Shipley, 1903]

A. tumescens (von Linstow, 1896) Porta, 1905
[syn. *Echinorynchus tumescens* von Linstow, 1896]

A. ula Lent et Santos, 1990

GENUS ***Anuracanthorhynchus*** Bursey, Vrcibradic, Hatano et Rocha, 2006

SPECIES

A. tritaxisentis Bursey, Vrcibradic, Hatano et Rocha, 2006
(**type species**)

GENUS ***Brasacanthus*** Thatcher, 2001

SPECIES

B. sphoeroides Thatcher, 2001 (**type species**)

GENUS ***Echinorhynchus*** Zoega in Müller, 1776
[syns. *Metechinorhynchus* Petrochenko, 1956; *Pseudoechinorhynchus* Petrochenko, 1956]

(The extremely variable and overlapping cement gland pattern in this originally well defined genus was the basis for splitting it to three poorly defined genera by Petrochenko 1956 or subgenera by Golvan 1960–1961. Yamaguti 1963 did not accept this arrangement; neither do we. The synonymy was established by Amin and Redlin 1980.)

SPECIES

E. abyssicola Dollfus, 1931

E. alpinus von Linstow, 1901

E. armoricanus Golvan, 1969

E. attenuatus Linton, 1888 (*nec* 1890, *nec* 1891)

E. baeri Kostylew, 1928
[syns. *Echinorhynchus sevangi* Dinnik, 1933; *Metechinorhynchus baeri* (Kostylew, 1928) Petrochenko, 1956]

E. bothniensis Zdzitowiecki et Valtonen, 1987
(Using allozyme analysis, Väinölä et al. 1994 showed that *E. bothniensis* from the northern Baltic Sea represents a complex of freshwater taxa associated with the 'glacial relic' *Mysis* spp. intermediate hosts.)

E. brayi Wayland, Sommerville et Gibson, 1999

E. briconi Machado Filho, 1959
[syn. *Metechinorhynchus brinconi* (Machado Filho, 1959) Golvan, 1969]

E. calloti Golvan, 1969

E. canyonensis Huffman et Kliever, 1977 (*nec* Kleiver)

E. cestodicola von Linstow, 1905

E. cherchiae Monticelli, 1889 (*nec chierchiae*)

E. cinctulus (Porta, 1905) **comb. n.**
[syns. *Pseudoechinorhynchus cinctulus* (Porta, 1905) Petrochenko, 1956; *E. borealis* von Linstow, 1901]

E. coregoni Linkins in Van Cleave, 1919
[syn. *Echinorhynchus* (*Metechinorhynchus*) *coregoni* (Linkins in Van Cleave, 1919) Golvan, 1994]

E. cotti Yamaguti, 1939

E. cryophilus (Sokolovskaja, 1962) Amin, 1985
[syn. *Metechinorhynchus cryophilus* Sokolovskaja, 1962]

E. dissimilis Yamaguti, 1939

E. gadi Zoega in Müller, 1776 (**type species**)
[syns. *Echinorhynchus acus* Rudolphi, 1802; *E. gadicallariae* Viborg, 1795; *E. gadiverentis* Rathke, 1799; *E. hepaticola* von Linstow, 1901; *E. lineolatus* Müller, 1777; *E. lophii* Gmelin, 1791; *E. socialis* Leidy, 1851; *E. vancleavei* Golvan, 1969; *E. wachniae* Rudolphi, 1819] (Väinölä et al. 1994 demonstrated strong allozyme divergence between the marine *E. gadi* and the fresh- brakish-water *E. salmonis* supporting the genetic distinction between these two taxa. Wayland et al. 2005 used electrophoresis to detect the existence of two reproductively isolated species, A and B, within the *E. gadi* complex. The two species can be discriminated in graphical and cluster analysis of hook morphometrics. Reproductive isolation was not a function of differential host specifity or seasonal differences in mating time. Sobecka et al. 2012 compared populations of *E. gadi* from the Atlantic cod, *Gadus morhua* Linneaus in the Baltic Sea and the North Atlantic morphometrically and genetically using polymerase chain reaction-restriction fragment length polymorphism and selected PCR products. The molecular analysis showed the nucleotide sequesnces of *E. gadi* rDNA from cod collected from all sites to be identical. Morphometric analysis, however, demonstrated the separation of *E. gadi* into two groups corresponding to the separation of cod into two subspecies, *G. m. morhue* in the Atlantic and *G. m. callarias* in the Baltic.)

E. gomesi Machado Filho, 1948
[syn. *Metechinorhynchus gomesi* (Machado Filho, 1948) Petrochenko, 1956]

E. gracilis Machado Filho, 1948

E. gymnocyprii Liu, Wang et Yang, 1981

E. hexagrammi Beava, 1965

E. indicus Chandra, Hanumantha-Rao et Shyamasundari, 1982

E. jucundus Travassos, 1923
[syn. *Metechinorhynchus jucundum* (Travassos, 1923) Petrochenko, 1956]

E. kushiroensis Fujita, 1921
[syn. *Metechinorhynchus kushiroensis* (Fujita, 1921) Petrochenko, 1956]

E. lageniformis Ekbaum, 1938
[syn. *Metechinorhynchus lageniformis* (Ekbaum,1938) Petrochenko, 1956]

E. laurentianus Ronald, 1957

E. leidyi Van Cleave, 1924
[syn. *Metechinorhynchus leidyi* (Van Cleave, 1924) Golvan, 1969]

E. lenoki Achmerov et Dombrovskaja-Achmerova, 1941
[syn. *Pseudoechinorhynchus lenoki* (Achmerov et Dombrovskaja-Achmerova, 1941) Petrochenko, 1956]

E. lesteri Smales, 2012

E. longiproboscis Rodjuk, 1986

E. lotellae Yamaguti, 1939

E. malacocephali (Parukhin, 1985) **comb. n.**
[syn. *Metechinorhynchus malacocephali* Parukhin, 1985]

E. melanoglaeae Dollfus, 1960

E. monticelli Porta, 1904
[syn. *Pseudoechinorhynchus monticelli* (Porta, 1904) Petrochenko, 1956]

E. muraenolepisi (Rodjuk, 1984) **comb. n.**
[syn. *Metechinorhynchus muraenolepisi* Rodjuk, 1984]

E. oblitus Golvan, 1969

E. orientalis Kaw, 1951

E. paranensis Machado Filho, 1959
[syn. *Metechinorhynchus paranensis* (Machado Filho, 1959) Golvan, 1969]

E. parasiluri Fukui, 1929
[syn. *Pseudoechinorhynchus parasiluri* (Fukui, 1929) Petrochenko, 1956]

E. petrotschenkoi (Rodjuk, 1984) **comb. n.**
[syns. *Metechinorhynchus petrotschenkoi* Rodjuk, 1984; *Echinorhynchus georgianus* (Rodjuk, 1986) Zdzitowiecki, 1989; *E. nototheniae* (Zdzitowiecki, 1986) Zdzitowiecki ,1989]

E. rhenanus (Golvan, 1969) Amin, 1985
[syn. *Metechinorhynchus rhenanus* Golvan, 1969]

E. salmonis Müller, 1784
[syn. *E. alpinus* von Linstow, 1901; *E. coregoni* Linkins in Van Cleave, 1919; *E. murenae* Bosc, 1802; *E. pachysomus* Creplin, 1839; *E. phoenix* Schneider, 1903); *Metechinorhynchus alpinus* (von Linstow, 1901) Petrochenko, 1956; *M. salmonis* (Müller, 1784) Petrochenko, 1956] (This species is apparently not found in British and Irish freshwater fishes. Chubb 2004 examined collections of '*E. salmonis*' from Britan and Ireland deposited in the Natural History Museum, London, and reidentified them as *Acanthocephalus clavula* and *Acanthocephalus lucii*, respectively. The intermediate host, *Pontoporeia affinis*, in northern Europe is absent from the British Isles.)

E. salobrensis Machado Filho, 1948
[syn. *Metechinorhynchus salobrensis* (Machado Filho, 1948) Golvan, 1969]

E. sebastolobi Kovalenko, 1986

E. sevani Dinnik, 1932
[syn. *Echinorhynchus* (*metechinorhynchus*) *sevani* (Dinnik, 1932) Golvan, 1994] (*nec sevangi*)

E. theragrae Dydenko, 1992

E. trachyrinci Wayland, Gibson et Sommerville, 1997

E. truttae Schrank, 1788
[syn. *Metechinorhynchus truttae* (Schrank, 1788) Petrochenko, 1956]

E. vancleavei Golvan, 1969
[syn. *Echinorhynchus* (*Echinorhynchus*) *vancleavei* Golvan, 1969]

E. veli George et Nadakal, 1981 (*nec* 1978)

E. yamagutii Golvan, 1969

GENUS ***Frilloechinorhynchus*** (Gupta et Naqvi, 1986) Bhattacharya, 2007

SPECIES

F. meyeri (Gupta et Naqvi, 1986) Bhattacharya, 2007
[syn. *Echinorhynchoides meyeri* Gupta et Naqvi, 1986]

GENUS ***Pilum*** Williams, 1976

SPECIES

P. pilum Williams, 1976 (**type species**)

GENUS ***Pseudoacanthocephalus*** Petrochenko, 1956

(Amin et al. 2008 discussed and continued to justify the validity of *Pseudoacanthocephalus*, and provided a key to valid species. Tkach et al. 2013 used comparative analysis of nuclear ribosomal rRNA sequences encompassing the 3' end of 18S nuclear rDNA gene, internal transcribed spacer region (ITS1+5.8S+ITS2), and 5' end of the 28S gene to demonstrate significant differences between *P. nickoli* and *P. smalesi* as well as between these two species and closely related species from China and Vietnam.)

SPECIES

P. betsileo Golvan, Houin et Bygoo, 1969

P. bigueti (Houin, Golvan et Bygoo, 1965) Golvan, 1969
[syn. *Acanthocephalus bigueti* Houin, Golvan et Bygoo, 1965]

P. bufonicola (Kostylew, 1941) Petrochenko, 1956
[syn. *Acanthocephalus bufonicola* Kostylew, 1941]
(*nec bufonincola*)

P. bufonis (Shipley, 1903) Petrochenko, 1956 (**type species**)
[syns. *Echinorhynchus bufonis* Shipley, 1903; *Acanthocephalus bufonis* (Shipley, 1903) Southwell et MacFie, 1925 sensu Petrochenko, 1953; *A. breviprostatus* Kennedy, 1982; *A. sinensis* Van Cleave, 1937]

P. caspanensis (Fernández et Ibarra Vidal, 1992) Arredondo et Gil de Pertierra, 2009
[syn. *Acanthocephalus caspanensis* Fernández et Ibarra Vidal, 1992]

P. caucasicus (Petrochenko, 1953) Petrochenko, 1956
[syn. *Acanthocephalus caucasicus* Petrochenko, 1953]

P. elongatus (Van Cleave, 1937) Petrochenko, 1958

P. lutzi (Hamann, 1891) Arredondo et Gil de Pertierra, 2009

[syns. *Echinorhynchus lutzi* Hamann, 1891; *Acanthocephalus lutzi* (Hamann, 1891) Meyer, 1932; *Acanthocephalus saopaulensis* Smales, 2007; *Pseudoacanthocephalus saopaulensis* (Smales, 2007) Arredondo et Gil de Pertierra, 2009]

P. nguyenthileae Amin, Ha et Heckmann, 2008

P. nickoli Tkach, Lisitsyna, Crossley, Binh et Bush, 2013

P. paratiensis Bhattacharya, 2000

P. perthensis Edmonds, 1971

P. rauschi Gupta et Fatma, 1986

P. reesei Bush, Duzynski et Nickol, 2009

P. rhampholeonotos Smales, 2005

P. shillongensis Bhattacharya, 1999

P. smalesi Tkach, Lisitsyna, Crossley, Binh et Bush, 2013

P. xenopeltidis (Shipley, 1903) Golvan, 1969
[syn. *Echinorhynchus xenopeltidis* Shipley, 1903]

FAMILY **Fessisentidae** Van Cleave, 1931

GENUS ***Fessisentis*** Van Cleave, 1931

SPECIES

F. acutulus (Van Cleave, 1931) McAlpine, 1997
[syn. *Acanthocephalus acutulus* Van Cleave, 1931]

F. fessus Van Cleave, 1931 (**type species**)

F. friedi Nickol, 1972
[syn. *Fessisentis vancleavei* sensu Haley et Bullock, 1953]

F. necturorum Nickol, 1967

F. tichiganensis Amin, 1980

F. vancleavei (Hughes et Moore, 1943) Nickol, 1972 (*nec vancleavi*)
[syn. *Acanthocephalus vancleavei* Hughes et Moore, 1943]

FAMILY **Heteracanthocephalidae** Petrochenko, 1956

SUBFAMILY **Aspersentinae** Golvan, 1960

GENUS ***Aspersentis*** Van Cleave, 1929
[syn. *Heteracanthocephalus* Petrochenko, 1956]

SPECIES

A. austrinus Van Cleave, 1929
[syns. *Heteracanthocephalus hureaui* (Dollfus, 1964) Zdzitowiecki, 1986; *Aspersentis megarhynchus* von Linstow, 1892) Golvan, 1960; *A. wheeleri* (Baylis, 1929) Chandler, 1934; *Echinorhynchus megarhynchus* von Linstow, 1892; *Rhadinorhynchus wheeleri* Baylis, 1929]

A. dissosthychi (Parukhin, 1989) **comb. n**.
[syn. *Heteracanthocephalus dissosthychi* Parukhin, 1989]

A. johni (Baylis, 1929) Chandler, 1934
[syn. *Rhadinorhynchus johni* Baylis, 1929]

A. megarhynchus (von Linstow, 1892) Golvan, 1960 (**type species**)
[syn. *Aspersentis wheeleri* (Baylis, 1929) Chandler, 1934]

A. minor Edmonds et Smales, 1991

A. peltorhampi (Baylis, 1944) Pichelin, Smales et Bray, 2002
[syns. *Rhadinorhynchus peltorhampi* Baylis, 1944; *Heteracanthocephalus peltorhampi* (Baylis, 1944) Petrochenko, 1956]

A. zanclorhynchi (Johnston et Best, 1937) Smales, 1996
[syn. *Echinorhynchus zanclorhynchi* Johnston et Best, 1937] (*nec zanchlorhynchi*, *nec zanchlorhynchus*)

SUBFAMILY **Heteracanthocephalinae** Petrochenko, 1956

GENUS ***Bullockrhynchus*** Chandra, Hanumantha Rao et Shyamasundari, 1985

SPECIES

B. indicus Chandra, Hanumantha Rao et Shyamasundari, 1985 (**type species**)

GENUS ***Sachalinorhynchus*** Krotov et Petrochenko in Petrochenko, 1956

SPECIES

S. skrjabini Krotov et Petrochenko, 1956 in Petrochenko, 1956 (**type species**)

FAMILY **Illiosentidae** Golvan, 1960

GENUS ***Brentisentis*** Leotta, Schmidt et Kuntz, 1982

SPECIES

B. chongqingensis Wei, 1998

B. uncinus Leotta, Schmidt et Kuntz, 1982 (**type species**)

B. yangtzensis Yu et Wu, 1989

GENUS ***Dentitruncus*** Sinzar, 1955

SPECIES

D. truttae Sinzar, 1955 (**type species**)

GENUS ***Dollfusentis*** Golvan, 1969

SPECIES

D. bravoae Salgado-Maldonado, 1976

D. chandleri Golvan, 1969
[syns. *Telosentis tenuicornis* (Linton, 1905) Van Cleave, 1947, in part; *Echinorhynchus pristis tenuicornis* sensu Linton, 1905; *Rhadinorhynchus tenuicornis* (Linton, 1905) Van Cleave, 1918; *R. tenuicornis* sensu Chandler, 1934]

D. ctenorhynchus (Cable et Linderoth, 1963) Golvan, 1969
[syn. *Illiosentis ctenorhynchus* Cable et Linderoth, 1963]

D. heteracanthus (Cable et Linderoth, 1963) Golvan, 1969
[syn. *Illiosentis heteracanthus* (Cable et Linderoth, 1963) Monks et Pulido-Flores, 2002]

D. longispinus (Cable et Linderoth, 1963) Golvan, 1969 (**type species**)
[syns. *Telosentis tenuicornis* (Linton, 1892) Van Cleave, 1947*; Rhadinorhynchus tenuicornis* (Linton, 1891) Van Cleave, 1947; *Illiosentis longispinus* Cable et Linderoth, 1963]

D. salgadoi Monks, Aleman-Garcia et Pulido-Flores, 2008

GENUS ***Goacanthus*** Gupta et Jain, 1980

SPECIES

G. panajiensis Gupta et Jain, 1980 (**type species**)

GENUS ***Indorhynchus*** Golvan, 1969

SPECIES

I. indicus (Tripathi, 1959) Golvan, 1969 (**type species**)
[syn. *Rhadinorhynchus indicus* Tripathi, 1959]

I. pseudobagri Wang, 1988

GENUS ***Koronacantha*** Monks et Pérez-Ponce de León, 1996

SPECIES

K. mexicana Monks et Pérez-Ponce de León, 1996 (**type species**)

K. pectinarius (Van Cleave, 1940) Monks et Pérez-Ponce de León, 1996
[syn. *Tegorhynchus pectinarius* Van Cleave, 1940]

GENUS ***Metarhadinorhynchus*** Yamaguti, 1959

SPECIES

M. cyprini (Yin, 1961) Wang, 1986
[syns. *Rhadinorhynchus arri* Wang, 1966; *R. cyprini* (Wang, 1966) Wang, 1986]

M. echeneisi Gupta et Sinha, 1991

M. lateolabracis Yamaguti, 1959 (**type species**)

M. thapari Gupta et Gupta, 1975

M. valiyathurae Nadakal, John et Jacob, 1990

GENUS ***Paradentitruncus*** Moravec et Sey, 1989

SPECIES

P. longireceptaculis Moravec et Sey, 1989 (**type species**)

GENUS ***Pseudorhadinorhynchus*** Achmerov et Dombrovskaja-Achmerova, 1941
[syn. *Hemirhadinorhynchus* Krotov et Petrochenko, 1956]

SPECIES

P. cinereus Gupta et Naqvi, 1983

P. cochinensis Gupta et Naqvi, 1983

P. deeghai Saxena, 2003

P. dhari Kumar, 1992

P. dussamicitatum Gupta et Gupta, 1971

P. ernakulensis Gupta et Gupta, 1971

P. guptai Gupta et Sinha, 1993

P. leuciscus (Krotov et Petrochenko, 1956) Golvan, 1969
[syn. *Hemirhadinorhynchus leuciscus* Krotov et Petrochenko, 1956]

P. machidai Kumar, 1992

P. markewitschi Achmerov et Dombrovskaja-Achmerova, 1941 (**type species**) (*nec markewitchi*)

P. mujibi Gupta et Naqvi, 1983

P. nandai Gupta et Sinha, 1993

P. orissai Gupta et Fatma, 1985

P. pseudaspii Achmerov et Dombrovskaja-Achmerova, 1941

P. salmothymi Rukavina et Goric in Cankovic, Delic, Kiškarolj et Rukavina, 1968

P. samegaiensis Nakajima, 1975 (*nec samegainensis*)

P. srivastavai Gupta et Fatma, 1985

P. vietnamensis Moravec et Sey, 1989

GENUS ***Tegorhynchus*** Van Cleave, 1921
[syn. *Illiosentis* Van Cleave et Lincicome, 1939]

SPECIES

T. africanus (Golvan, 1955) Amin, 1985
[syn. *Illiosentis furcatus africanus* Golvan, 1955]

T. brevis Van Cleave, 1921 (**type species**)

T. cetratus (Van Cleave, 1945) Bullock et Mateo, 1970
[syn. *Illiosentis cetratus* Van Cleave, 1945] (*nec centratus*)

T. edmondsi (Golvan, 1960) Amin, 1985
[syn. *Illiosentis edmondsi* Golvan, 1960]

T. furcatus (Van Cleave et Lincicome, 1939) Bullock et Mateo, 1970
[syn. *Illiosentis furcatus* Van Cleave et Lincicome, 1939]

T. holospinosus Amin et Sey, 1996

T. pectinarius Van Cleave, 1940
[syn. *Telosentis pectinarius* Van Cleave, 1940]

GENUS ***Telosentis*** Van Cleave, 1923

SPECIES

T. australiensis Edmonds, 1964

T. exiguus (von Linstow, 1901) Van Cleave, 1923
[syn. *Echinorhynchus exiguus* von Linstow, 1901]

T. lutianusi Gupta et Gupta, 1990

T. mizellei Gupta et Fatma, 1988

T. molini Van Cleave, 1923 (**type species**)
[syns. *Echinorhynchus acanthosoma* Westrumb, 1821; *E. atherinae* Rudolphi, 1819]

FAMILY **Isthmosacanthidae** Smales, 2012

GENUS ***Isthmosacanthus*** Smales, 2012

SPECIES

Isthmosacanthus fitzroyensis Smales, 2012 (**type species**)
(The proposed relegation of the rhadinorhynchid genera *Gorgorhynchoides* Cable et Linderoth, 1963 and *Golvanorhynchus* Noronha, Fabio et Pinto, 1978 to Isthmosacanthidae by Smales 2012 was based on having in common six cement glands and similar shape of the proboscis, the extention of proboscis receptacle, anterior trunk spines, elongate lemnisci, and trunk bulb. Many of these features are also shared by other rhadinorhynchid genera. The reference by Smales 2012 that Rhadinorhynchidae is restricted to genera with only four cement glands is not accurate. Rhadinorhynchidae has 2–8 cement glands, variable proboscis shapes, variable lemniscal and receptacle lengths, and variable trunk spination and swellings – Yamaguti 1963, Amin et al. 2011b. Species of *Rhadinohynchus* that have other than four cement glands include *R. dollfusi* and *R. echeneisi* (with two glands) and *R. capensis* and *R. trivandricus* (with seven or eight glands – Amin et al. 2011b. The Smales 2012 proposal is thus not accommodated.)

FAMILY **Pomphorhynchidae** Yamaguti, 1939
[syn. Spirorhynchidae Harada, 1935]

GENUS ***Longicollum*** Yamaguti, 1935
[syns. *Spiracanthorhynchus* Harada, 1938; *Spirorhynchoides* Strand, 1942; *Spirorhynchus* Harada, 1935]

SPECIES

L. alemniscus (Harada, 1935) Fukui et Morisita, 1938
[syns. *Spirorhynchus alemniscus* Harada, 1935; *Longicollum minor* Fukui et Morisita, 1936; *Spiracanthorhynchus alemniscus* (Harada, 1935) Harada, 1938]

L. cadenati Gupta et Naqvi, 1984

L. chabanaudi Dollfus et Golvan, 1963

L. dattai Saxena, Johri et Gupta, 2008

L. edmondsi Golvan, 1969
[syn. *Longicollum pagrosomi* sensu Johnston et Edmonds, 1951]

L. engraulisi Gupta et Fatma, 1985

L. indicum Gupta et Gupta, 1970

L. lutiani Jain et Gupta, 1980 (*nec lutjani*)

L. noellae Golvan, 1969

L. pagrosomi Yamaguti, 1935 (**type species**) (*nec pagrosoma*)

L. psettodai Gupta et Gupta, 1980 (*nec psettodsai*)

L. quiloni Gupta et Naqvi, 1984

L. riouxi Golvan, 1969

GENUS ***Paralongicollum*** Amin, Bauer et Sidorov, 1991

SPECIES

P. nemacheili Amin, Bauer et Sidorov, 1991 (**type species**)

P. sergenti (Choquette et Gayot, 1952) Amin, 1991
[syns. *Tenuiproboscis sergenti* Choquette et Gayot, 1952; *Longicollum sergenti* (Choquette et Gayot, (1952) Golvan, 1969]

GENUS ***Pomphorhynchus*** Monticelli, 1905

SPECIES

P. bosniacus Kistaroly et Cankovic, 1969

P. bufonis Fotedar, Duda et Raina, 1970

P. bulbocolli Linkins in Van Cleave, 1919

P. bullocki Gupta et Lata, 1968

P. cylindrica Wang et Gue, 1983 (*nec cylinderica*)

P. dubious Kaw, 1941

P. francoisae Golvan, 1969

P. intermedius Engelbrecht, 1957

P. jammuensis Fotedar et Dhar, 1977

P. kashmirensis Kaw, 1941

P. kawi Fotedar, Duda et Raina, 1970

P. kostylewi Petrochenko, 1956

P. laevis (Zoega in Müller, 1776) Van Cleave, 1924 (**type species**)
[syn. *Echinorhynchus proteus* Westrumb, 1821] (*nec leave*)
(Based on isoenzyme analysis, Dudiňák and Šnábel 2001 described genetic differences between the *P. laevis* populations of the Slovak and Czech Republics. Geographical isolation has apparently produced distinct genetic forms irrespective of host species. Perrot-Minnot 2004 demonstrated a high level of sequence divergence at ITS1, ITS2 and cytochrome c oxidase between smooth and wrinkled cystacanths of *P. laevis*, which corresponded with phototactile behavioral differences in gammarid hosts. She speculated that the smooth type corresponds to *P. laevis* and the wrinkled type to *P. tereticollis*, a former synonym of *P. laevis*. O'Mahony et al. 2004 distinguished populations of *P. laevis* from western Ireland and southern England using the position of the stoutest proboscis hook and the ratio of numbers of anterior to posterior hooks. Špakulová et al. 2011 distinguished between *P. laevis* and *P. tereticollis* based on differences in proboscis armature and gene sequencing using ITS1, ITS2 and COI.)

P. lucyi Williams et Rogers, 1984

P. megacanthus Fotedar et Dhar, 1977

P. moyanoi Olmos et Habit, 2007

P. omarsegundoi Arredondo et Gil de Pertierra, 2010

P. oreini Fotedar et Dhar, 1977 (*nec* 1974 *fide* Golvan 1994)

P. orientalis Fotedar et Dhar, 1977 (*nec* 1974 *fide* Golvan 1994)

P. patagonicus Ortubay, Ubeda, Semenas et Kennedy, 1991

P. perforator (von Linstow, 1908) Meyer, 1932

[syn. *Echinorhynchus perforator* von Linstow, 1908]

P. rocci Cordonnier et Ward, 1967

P. sebastichthydis Yamaguti, 1939

P. sphaericus Pertierra, Spatz et Doma, 1996
[syn. *Pomphorhynchus patii* Lunaschi, 1997]

P. spindletruncatus Amin, Abdullah et Mhaisen, 2003

P. tereticollis (Rudolphi, 1809) Meyer, 1932
[syns. *Echinorhynchus tereticollis* Rudolphi, 1809; *E. attenuatus* Müller, 1779; *Pomphorhynchus dobulae* Schrank, 1790; *E. longicollis* Pallas, 1782, in part; *E. piscinus* Zeder, 1900, in part] (*nec tereticolle*)

P. tori Fotedar et Dhar, 1977 (*nec* 1974 *fide* Golvan 1994)

P. yamagutii Schmidt et Higgins, 1973

P. yunnanensis Wang, 1981

GENUS ***Pyriproboscis*** Amin, Abdullah et Mhaisen, 2003

SPECIES

P. heronensis (Pichelin, 1997) Amin, Abdullah et Mhaisen, 2003 (**type species**)
[syn. *Pomphorhynchus heronensis* Pichelin, 1997]

GENUS ***Tenuiproboscis*** Yamaguti, 1935

SPECIES

T. bilqeesae Gupta et Naqvi, 1992

T. clupei Gupta et Gunjan-Sinh, 1992

T. edmondi Gupta et Naqvi, 1992

T. ernakulensis Gupta et Naqvi, 1992

T. guptai Gupta et Sinha, 1989

T. meyeri Saxena et Gupta, 2007

T. misgurni Yamaguti, 1935 (**type species**)

FAMILY **Rhadinorhynchidae** Lühe, 1912

[syns. Gorgorhynchidae Van Cleave et Lincicome, 1940; Micracanthorhynchinidae Yamaguti, 1963; Raorhynchidae Tripathi, 1959]

SUBFAMILY **Golvanacanthinae** Paggi et Orecchia, 1972

GENUS ***Golvanacanthus*** Paggi et Orecchia, 1972

SPECIES

G. blennii Paggi et Orecchia, 1972 (**type species**)
[syn. *Golvanacanthus problematicus* Mordinova et Parukhin, 1978] (*nec* Mordvinova)

SUBFAMILY **Gorgorhynchinae** Van Cleave et Lincicome, 1940

[syn. Leptorhynchoididae Witenberg, 1932]

GENUS ***Australorhynchus*** Lebedev, 1967

SPECIES

A. tetramorphacanthus Lebedev, 1967 (**type species**)

GENUS ***Cleaveius*** Subrahmanian, 1927

[syn. *Mehrarhynchus* Datta, 1940]

SPECIES

C. circumspinifer Subrahmanian, 1927 (**type species**)
(*nec circulspinifer*)

C. clupei **(**Gupta et Sinha, 1992) **comb. n.**
[syn. *Mehrarhynchus clupei* Gupta et Sinha, 1992]

C. durdanae Kumar, 1992

C. fotedari (Gupta et Naqvi, 1980) **comb. n**.
[syn. *Mehrarhynchus fotedari* Gupta et Naqvi, 1980]

C. inglisi (Gupta et Fatma, 1987) Golvan, 1994
[syn. *Mehrarhynchus inglisi* Gupta et Fatma, 1987]

C. leiognathi Jain et Gupta, 1979

C. longirostris Moravec et Sey, 1989

C. mysti (Sahay et Sinha, 1971) Amin, 1985
[syn. *Mehrarhynchus mysti* Sahay et Sinha, 1971]

C. portblairensis Jain et Gupta, 1979

C. prashadi (Datta, 1940) Golvan, 1969
[syn. *Mehrarhynchus prashadi* Datta, 1940]

C. puriensis (Gupta et Sinha, 1992) **comb. n.**
[syn. *Mehrarhynchus puriensis* Gupta et Sinha, 1992]

C. secundus (Tripathi, 1959) Golvan, 1969
[syn. *Mehrarhynchus secundus* Tripathi, 1959]

C. singhai (Gupta et Fatma, 1987) Golvan, 1994
[syn. *Mehrarhynchus singhai* Gupta et Fatma, 1987]

C. thapari (Gupta et Naqvi, 1980) **comb. n.**
[syn. *Mehrarhynchus thapari* Gupta et Naqvi, 1980]

GENUS ***Edmondsacanthus*** Smales, 2009

SPECIES

E. blairi Smales, 2009 (**type species**)

GENUS ***Gorgorhynchoides*** Cable et Linderoth, 1963

(The placement of *Gorgorhynchoides* within the Echinorhynchida and not Polymorphida**,** based on analyses of nuclear 18S rDNA sequences, was questioned by Verweyen et al. 2011.)

SPECIES

G. bullocki Cable et Mafarachisi, 1970

G. cablei (Gupta et Fatma, 1987) Bhattacharya, 2007
[syn. *Neogorgorhynchoides cablei* Gupta et Fatma, 1987]

G. elongatus Cable et Linderoth, 1963 (**type species**)

G. epinepheli Wang, 1986

G. golvani (Chandra, Hanumantha et Shyamasundari, 1984) Bhattacharya, 2007
[syn. *Paracanthocephaloides golvani* Chandra, Hanumantha et Shyamasundari, 1984]

G. indicus Bhattacharya et Banerjee, 2003

G. lintoni Cable et Mafarachisi, 1970

G. orientalis Wang, 1986
[syn. *Sphaerirostris orientalis fide* Wang 1986]

GENUS ***Gorgorhynchus*** Chandler, 1934

[syn. *Neoacanthorhynchus* Morisita, 1937]

G. celebensis (Yamaguti, 1954) Golvan, 1969
[syn. *Rhadinorhynchus celebensis* Yamaguti, 1954]

G. clavatus Van Cleave, 1940
[syn. *Gorgorhynchus cablei* Golvan, 1969]

G. lepidus Van Cleave, 1940

G. medius (Linton, 1908) Chandler, 1934 (**type species**)
[syns. *Echinorhynchus medius* Linton, 1907; *Rhadinorhynchus medius* (Linton, 1908) Van Cleave, 1918; *Gorgorhynchus gibber* Chandler, 1934]

G. nemipteri Parukhin, 1973

G. ophiocephali Furtado et Lau, 1971

G. polymixiae Kovalenko, 1981

G. robertdollfusi Golvan, 1956

G. satoi (Morisita, 1937) Yamaguti, 1963
[syns. *Neoacanthorhynchus satoi* Morisita, 1937; *Gorgorhynchoides satoi* (Morisita, 1937) Wang, 1966]

G. tonkinensis Amin et Ha, 2011

G. trachinotus Noronha, Vicente, Pinto et Fabio, 1986

G. valiyanthurae (Anthony et al., 1990) Bhattacharya, 2007 [syn. *Metarhadinorhynchus valiyanthurae* Anthony et al., 1990; another species with the same name was described by Nadakal, John et Jacob also in 1990]

GENUS ***Leptorhynchoides*** Kostylew, 1924

[syn. *Pleurorhynchus* Nau, 1787]

(The monophyly of Rhadinorhynchidae was challenged by molecular and morphological phylogenies. García-Varela and González-Oliver 2008 placed *Leptorhynchoides* and *Pseudoleptorhynchoides* in Illiosentidae based on nuclear ribosomal DNA and mitochondrial cytochrome c oxidase gene.)

SPECIES

L. aphredoderi Buckner et Buckner, 1976

L. polycristatus Amin, Heckmann, Halajian et El-Naggar, 2013

L. plagicephalus (Westrumb, 1821) Kostylew, 1924 (**type species**)

[syns. *Echinorhynchus plagicephalus* Westrumb, 1821; *E. husonis* Rudolphi, 1819; *E. acipenseris rutheni* Rudolphi, 1819]

L. thecatus (Linton, 1891) Kostylew, 1924
[syn. *Echinorhynchus thecatus* Linton, 1891]
(Steinauer and Nickol 2007 detected cryptic speciation within populations of *Leptorhynchoides thecatus* based on sequences of the *cox 1* gene and the internal transcribed spacer region, host use patterns and alternate transmission pathways.)

GENUS ***Metacanthocephaloides*** Yamaguti, 1959

SPECIES

M. zebrini Yamaguti, 1959 (**type species**)

GENUS ***Metacanthocephalus*** Yamaguti, 1959

SPECIES

M. campbelli (Leiper et Atkinson, 1914) Golvan, 1969
[syns. *Leptorhynchoides campbelli* (Leiper et Atkinson, 1914) Johnston et Best, 1937 in part; *Echinorhynchus campbelli* Leiper et Atkinson, 1914; *E. rennicki* Leiper et Atkinson, 1914; *Metechinorhynchus campbelli* (Leiper et Atkinson, 1914) Petrochenko, 1956]

M. dalmori Zdzitowiecki, 1983

M. johnstoni Zdzitowiecki, 1983
[syn. *Leptorhynchoides campbelli* (Leiper et Atkinson, 1914 sensu Johnston et Best, 1937, in part]

M. ovicephalus (Zhukov, 1963) Golvan, 1969
[syn. *Leptorhynchoides ovicephalus* (Zhukov, 1963) Golvan, 1969]

M. pleuronichthydis Yamaguti, 1959 (**type species**)

M. rennicki (Leiper et Atkinson, 1914)
[syns. *Echinorhynchus rennicki* Leiper et Atkinson, 1914; *E. debenhami* Leiper et Atkinson, 1914; *Leptorhynchoides debenhami* Leiper et Atkinson, 1914 sensu Johnston et Best, 1937]

GENUS ***Micracanthorhynchina*** Strand, 1936
[syns. *Bolbosentis* Belous, 1952; *Micracanthocephalus* Harada, 1938; *Micracanthorhynchus* Harada, 1935]

SPECIES

M. chandrai Bhattacharya, 2007
[syn. *Hanumantharaorhynchus hemirhamphi* Chandra, 1983]

M. cynoglossi Wang, 1980

M. dakusuiensis (Harada, 1938) Ward, 1951

M. golvani Gupta et Gunjan-Sinha, 1992

M. hemiculturus Demshin, 1965 (*nec hemicultrus*)

M. hemirhamphi (Baylis, 1944) Ward 1951
[syn. *Micracanthocephalus hemirhamphi* Baylis, 1944]

M. indica Farooqi, 1980

M. kuwaitensis Amin et Sey, 1996

M. lateolabracis Wang, 1980

M. motomurai (Harada, 1935) Ward, 1951 (**type species**)
[syn. *Micracanthorhynchus motomurai* Harada, 1935]

M. sajori (Belous, 1952) Golvan, 1969
[syn. *Bolbosentis sajori* Belous, 1952]

GENUS ***Paracanthorhynchus*** Edmonds, 1967

SPECIES

P. galaxiasus Edmonds, 1967 (**type species**)

GENUS ***Pseudauchen*** Yamaguti, 1963

SPECIES

P. epinepheli (Yamaguti, 1939) Yamaguti, 1963 (**type species**)
[syns. *Rhadinorhynchus epinepheli* Yamaguti, 1939; *Gorgorhynchus epinephali* (Yamaguti, 1939) Golvan, 1960] (*nec epinephali*)

GENUS ***Pseudoleptorhynchoides*** Salgado-Maldonado, 1976

SPECIES

P. lamothei Salgado-Maldonado, 1976 (**type species**)

GENUS ***Sclerocollum*** Schmidt et Paperna, 1978

(We regard as untenable the proposal by Pichelin and Cribb 2001 to synonymies *Sclerocollum* and *Neorhadinorhynchus* with *Diplosentis* under Cavisomidae based on variable, inconsistent or questionable cement gland patterns and/or texture of the tegument. This proposal necessitated another synonymy of Diplosentidae with Cavisomidae causing confused disposition of the other genera of Diplosentidae and other uncertain or questionable relegations. Other authors, e.g. Hassanine 2006, recognized the validity of *Sclerocollum*.)

SPECIES

S. robustum (Edmonds, 1964) Schmidt et Paperna 1978
[syns. *Neogorgorhynchus robustus* Edmonds, 1964; *Neorhadinorhynchus robustus* (Edmonds, 1964) Johnston et Edmonds, 1964]

S. rubrimaris Schmidt et Paperna, 1978 (**type species**)

S. saudi Al-Jahdali, 2010

SUBFAMILY **Rhadinorhynchinae** Lühe, 1912

GENUS ***Cathayacanthus*** Golvan, 1969

SPECIES

C. bagarii Moravec et Sey, 1989

C. exilis (Van Cleave, 1928) Golvan, 1969 (**type species**)
[syn. *Rhadinorhynchus exilis* Van Cleave, 1928]

GENUS ***Corynosomoides*** Wang et Zhang, 1987

SPECIES

C. hemibargi Wang et Zhang, 1987 (**type species**)

GENUS ***Megistacantha*** Golvan, 1960

SPECIES

M. horridum (Lühe, 1912) Golvan, 1960 (**type species**)
[syn. *Rhadinorhynchus horridus* Lühe, 1912]

GENUS ***Neogorgorhynchoides*** Gupta et Fatma, 1987

SPECIES

N. cablei Gupta et Fatma, 1987 (**type species**)

GENUS ***Paragorgorhynchus*** Golvan, 1957

SPECIES

P. albertianus Golvan, 1957 (**type species**)

P. chariensis Troncy, 1970

GENUS ***Pseudogorgorhynchus*** Moravec, Wolter et Körting, 2000

SPECIES

P. arii Moravec, Wolter et Körting, 2000 (**type species**)

GENUS ***Raorhynchus*** Tripathi, 1959

(*Raorhynchus* and *Rhadinorhynchus* are primarily separated based on differences in trunk spination and the position of the female gonopore. Amin et al. 2011b described two new species of *Rhadinorhynchus* and their revision of that genus exposed extreme degrees of variability in these two traits sufficient to show that the lines of separation between these two genera are now sufficiently blurred to reconsider the present distinct status of each of these two genera. Based on these differences alone, *Raorhynchus* should be considered as a junior synonym to *Rhadinorhynchus* pending a revision of the species of *Raorhynchus*. That revision remains wanting.)

SPECIES

R. cadenati Gupta et Gunjan-Sinh, 1992

R. guptai Gupta et Kumar, 1987

R. inexspectatus Golvan, 1969 (*nec inexpectatus*)

R. megalaspisi Wang, Wang et Wu, 1993

R. meyeri (Heinze, 1934) Golvan, 1969
[syn. *Rhadinorhynchus meyeri* Heinze, 1934]

R. polynemi Tripathi, 1959

R. schmidti George et Nadakal, 1978

R. terebra (Rudolphi, 1819) Tripathi, 1959 (**type species**)
[syns. *Echinorhynchus terebra* Rudolphi, 1819; *Rhadinorhynchus terebra* (Rudolphi, 1819) Lühe, 1911]

R. thapari Gupta et Fatma, 1981

GENUS ***Rhadinorhynchus*** Lühe, 1911
[syns. *Echinosoma* Porta, 1907; *Nipporhynchus* Chandler, 1934; *Protorhadinorhynchus* Petrochenko, 1956]

(Amin et al. 2011b revised *Rhadinorhynchus*, provided a list of 30 invalid species and a key to the 38 valid species based initially on the distribution of trunk spines.)

SPECIES

R. africanus (Golvan, Houin et Deltour, 1963) Golvan, 1969
[syn. *Nipporhynchus africanus* Golvan, Houin et Deltour, 1963]

R. atheri (Farooqui, 1981) Amin, 1985
[syn. *Nipporhynchus atheri* Farooqui, 1981]

R. bicircumspinis Hooper, 1983

R. cadenati (Golvan et Houin, 1964) Golvan, 1969
[syn. *Nipporhynchus cadenati* Golvan et Houin, 1964]

R. camerounensis Golvan, 1969

R. capensis Bray, 1974

R. carangis Yamaguti, 1939

R. chongmingnensis Huang, Zheng, Deng Fan et Ni, 1988

R. cololabis Laurs et McCauley, 1964

R. decapteri Parukhin et Kovalenko, 1976

R. ditrematis (Yamaguti, 1939) **comb. n.**
[syns. *Nipporhynchus ditrematis* (Yamaguti, 1939) Ward, 1951; *Protorhadinorhynchus ditrematis* (Yamaguti, 1939) Ward, 1951]

R. dollfusi Gupta et Fatma, 1987

R. dorsoventrospinosus Amin, Heckmann et Ha, 2011
(*Rhadinorhynchus dorsoventrospinosus* sensu Al Ghamdi, 2013 is another species.)

R. dujardini Golvan, 1969
[syn. *Rhadinorhynchus pristis* sensu Cable et Linderoth, 1963]

R. echeneisi Gupta et Gupta, 1980

R. erumeii (Gupta et Fatima, 1981) Amin 1985
[syn. *Nipporhynchus erumeii* Gupta et Fatima, 1981]

R. ganapatii Chandra, Hanumantha-Rao et Shyamasundari, 1985

R. hiansi Soota et Bhattacharya, 1981

R. japonicus Fujita, 1920 (*nec japonicum*)

R. johnstoni Golvan, 1969
[syn. *Rhadinorhynchus pristis* sensu Johnston et Edmonds, 1947]

R. keralensis Gupta et Fatma, 1987

R. laterospinosus Amin, Heckmann et Ha, 2011

R. lintoni Cable et Linderoth, 1963
[syn. *Rhadinorhynchus pristis* sensu Lühe, 1911]

R. ornatus Van Cleave, 1918
[syns. *Rhadinorhynchus pristis* sensu Linton, 1891; *R. katsuwonis* (Harada, 1928) Chandler 1934]

R. pelamysi Gupta et Gupta, 1980

R. plagioscionis Thatcher, 1980

R. plotosi Parukhin, 1985

R. polynemi Gupta et Lata, 1967

R. pristis (Rudolphi, 1802) (**type species**)
[syns. *Echinorhynchus pristis* Rudolphi, 1802; *E. alosae* Hermann, 1782; *Rhadinorhynchus selkirki* Van Cleave, 1921; *R. subulatus* Zeder, 1803]

R. salatrix Troncy et Vassiliades, 1973

R. selkirki Van Cleave, 1921
[syn. *Rhadinorhynchus pristis* sensu Chandler, 1934]

R. seriolae (Yamaguti, 1963) Golvan 1969
[syns. *Nipporhynchus seriolae* Yamaguti, 1963; *Rhadinorhynchus pristis* sensu Fukui et Morisita, 1937]

R. stunkardi Gupta et Fatma, 1987 (*nec stunkardii*)

R. trachuri (Harada, 1935) **comb. n.**
[syns. *Nipporhynchus trachuri* (Harada, 1935) Van Cleave et Lincicome, 1940; *Rhadinorhynchus japonicus* Fujita, 1920; *R. selkirki* Van Cleave, 1920 (*fide* Yamaguti 1939)]

R. trivandricus George et Nadakal, 1978

R. vancleavei Golvan, 1969

R. zhukovi Golvan, 1969
[syn. *Rhadinorhynchus pristis* sensu Zhukov, 1960]

GENUS ***Slendrorhynchus*** Amin et Sey, 1996
(moved from *Diplosentidae*)

SPECIES

S. breviclaviproboscis Amin et Sey, 1996 (**type species**)

SUBFAMILY **Serrasentinae** Petrochenko, 1956

GENUS ***Serrasentis*** Van Cleave, 1923
[syns. *Echinorhynchus* Müller, 1776, in part; *Echinogaster* Monticelli, 1905; *Echinosoma* Porta, 1907, in part; *Lepidosoma* Porta, 1908] (*nec Serracentis*)
(The placement of *Serrasentis* within the Echinorhynchida and not Polymorphida, based on analyses of nuclear 18S rDNA sequences, was questioned by Verweyen et al. 2011.)

SPECIES

S. chauhani Datta, 1953

S. engraulisi Gupta et Gupta, 1980

S. fotedari Gupta et Fatma, 1980

S. golvani Gupta et Kumar, 1987

S. lamelliger (Diesing, 1854) Van Cleave 1923
[syns. *Echinorhynchus lamelliger* Diesing, 1854; *Lepidosoma lamelliger* (Diesing, 1854) Porta, 1908]

S. manazo Bilqees et Khan, 2005

S. mujibi Bilqees, 1972

S. nadakali George et Nadakal, 1978

S. niger Kahatoon et Bilqees, 2007

S. psenesi Gupta et Gupta, 1980

S. sagittifer (Linton, 1889) Van Cleave 1923 (**type species**)
[syns. *Echinorhynchus sagittifer* Linton, 1889; *Echinogaster sagittifer* (Linton, 1889) Porta, 1908; *Serrasentis socialis* (Leidy, 1851 *nec* 1858) Van Cleave, 1924; *S. chauhani* Datta, 1954; *S. longa* Tripathi, 1959; *S. longiformis* Bilqees, 1971; *S. giganticus* Bilqees, 1972; *S. scomberomori* Wang, 1981]

S. sauridae Surekha et Vijayalakshmi, 2006

S. sciaenus Bilqees, 1972 (*nec scianis*)

S. sidaroszakaio Tadros, Iskandar et Wassef, 1979

SUBFAMILY **Serrasentoidinae** Parukhin, 1982

GENUS ***Serrasentoides*** Parukhin, 1971

SPECIES

S. fistulariae Parukhin, 1971 (**type species**)

FAMILY **Transvenidae** Pichelin et Cribb, 2001
(The inclusion of species of *Pararhadinorhynchus*, or species relegated to this genus, to Transvenidae by Pichelin and Cribb 2001 is not accepted; see note under *Sclerocollum* above.)

GENUS ***Trajectura*** Pichelin et Cribb, 2001

SPECIES

T. ikedai (Machida, 1992) Pichelin et Cribb, 2001
[syn. *Diplosentis ikedai* Machida, 1992]

T. perinsolens Pichelin et Cribb, 2001 (**type species**)

GENUS ***Transvena*** Pichelin et Cribb, 2001

SPECIES

T. annulospinosa Pichelin et Cribb, 2001 (**type species**)

FAMILY **Sauracanthorhynchidae** Bursey, Goldberg et Kraus, 2007

GENUS ***Sauracanthorhynchus*** Bursey, Goldberg et Kraus, 2007

SPECIES

S. sphenomorphicola Bursey, Goldberg et Kraus, 2007
(**type species**)

ORDER **HETERAMORPHIDA** Amin et Ha, 2008

FAMILY **Pyrirhynchidae** Amin et Ha, 2008

GENUS ***Pyrirhynchus*** Amin et Ha, 2008

SPECIES

P. heterospinus Amin et Ha, 2008 (**type species**)

ORDER **POLYMORPHIDA** Petrochenko, 1956

FAMILY **Centrorhynchidae** Van Cleave, 1916 (Golvan 1960)

GENUS ***Centrorhynchus*** Lühe, 1911

[syns. *Echinorhynchus* Zoega in Müller, 1780, in part; *Paradoxites* Lindemann, 1865, preoccupied; *Chentrosoma* Porta, 1906, in part; *Chentrorhynchus* Neiva, Cunha et Travassos, 1914; *Gordiorhynchus* Meyer, 1931; *Travassosina* Witenberg, 1932]

(Golvan 1965 created the subgenus *Maglacanthus*, without formal diagnosis, for three species of *Centrorhynchus* in Madagascar, *C. brumpti*, *C. brygooi* – type species, and *C. grassei*, based on males with two cement glands and an additional double penile sphincter. A fourth species *C. atheni* Gupta et Fatma, 1983 was also described from India. We consider those two male traits as odd variations that do not deserve a special taxonomic recognition. Species of *Centrorhynchus* normally have 3–6 cement glands. Similarly, no subgeneric status was given to *Neoechinorhynchus didelphis* Amin, 2001, which has two uterine bells and unusual complex uterine system.)

SPECIES

C. acanthotrias (von Linstow, 1883) Petrochenko, 1958

C. albensis Rengaraju et Das, 1975

C. albidus Meyer, 1932

C. aluconis (Müller, 1780) Lühe 1911 (**type species**)
[syns. *Echinorhynchus aluconis* Müller, 1780; *E. otidis* Schrank, 1788; *E. inequalis* Rudolphi, 1808; *E. appendiculatus* Westrumb, 1821; *E. soricis* Rudolphi, 1819; *Centrorhynchus appendiculatum* Westrumb, 1821; *C. olssoni* Lundström, 1942]

C. amini Khan, Muti-ur-Rahman, Bilqees et Khatoon, 2010

C. amphibius Das, 1950

C. appendiculatus (Westrumb, 1821) Joyeux et Baer, 1937
(*nec appendiculatum*)

C. asturinus (Johnston, 1912) Johnston 1918
[syn. *Gigantorhynchus asturinus* Johnston, 1912]

C. atheni Gupta et Fatma, 1983

C. bancrofti (Johston et Best, 1943) Golvan (1956) 1958
[syn. *Gordiorhynchus bancrofti* Johston et Best, 1943]

C. batrachus Das, 1952
[syn. *Centrorhynchus splendi* Gupta et Gupta, 1970]

C. bazaleticus Kuraschvili, 1955

C. bengalensis Datta et Soota, 1954 (a *Mediorhynchus*?)
(*fide* Nama and Rothore 1984)

C. bethaniae George et Nadakal, 1987

C. bilqeesae Ghazi Khan et Noorun-Nisa, 2005

C. brama Rengaraju et Das, 1980 (*nec bramae*)

C. brevicaudatus Das, 1950

C. brumpti Golvan, 1965

C. brygooi Golvan, 1965

C. bubonis Yamaguti, 1939

C. buckleyi Gupta et Fatma, 1983

C. buteonis (Schrank, 1788) Kostylew, 1914
[syns. *Echinorhynchus buteonis* Schrank, 1788; *E. caudatus* Zeder, 1803; *E. polyacanthoides* Creplin, 1825; *Centrorhynchus polyacanthus* (Schrank, 1788) Kostylew, 1914; *C. wedli* (Sonsino, 1896) Porta, 1909 (*fide* Porta 1909 but valid *fide* Dollfus 1951); *Centrosoma buteonis* in Porta 1910]

C. californicus Millzner, 1924

C. chabaudi Golvan, 1958

C. clitorideus (Meyer, 1931) Golvan 1958
[syn. *Gordiorhynchus clitorideus* Meyer, 1931] (*nec clitorideum*)

C. conspectus Van Cleave et Pratt, 1940
[syn. *C. wardae* Holloway, 1958]

C. crotophagicola Schmidt et Neiland, 1966

C. dimorphocephalus (Westrumb, 1821) Meyer 1932
[syns. *Echinorhynchus dimorphocephalus* Westrumb, 1821; *Prosthorhynchus dimorphocephalus* Westrumb, 1821]

C. dipsadis (von Linstow, 1888) Golvan, 1956
[syn. *Echinorhynchus dipsadis* von Linstow, 1888]

C. elongatus Yamaguti, 1935

C. falconis (Johnston et Best, 1943) Golvan, 1956
[syn. *Gordiorhynchus falconis* Johnston et Best, 1943]

C. fasciatus (Westrumb, 1821) Travassos, 1926
[syns. *Echinorhynchus fasciatus* Westrumb, 1821; *E. motacillae atricapillae* Rudolphi, 1819]

C. fisheri Bhattacharya, 1999

C. freundi (Hartwich, 1953) Golvan, 1956
[syn. *Gordiorhynchus freundi* Hartwich, 1953] (*nec* Hartwick)

C. fukiensis Wang, 1966

C. galliardi Golvan, 1956

C. gendrei (Golvan, 1957) Golvan, 1960
[syn. *Gordiorhynchus gendrei* Golvan, 1957]

C. gibsoni Khan, Ghazi et Bilqees, 2002

C. giganteus Travassos, 1921 (*nec* 1919)

C. glaucidii Wang, 1966

C. globocaudatus (Zeder, 1800) Lühe, 1911
[syns. *Echinorhynchus globocaudatus* Zeder, 1800; *E. tuba* Rudolphi, 1802, in part]

C. golvani Anantaraman et Anantaraman, 1969

C. grassei Golvan, 1965

C. guira Lunaschi et Drago, 2010

C. guptai Golvan, 1969
[syn. *Pomphorhynchus indicus* Gupta et Lata, 1967 *vide* Amin et al. 2003; *Centrorhynchus latai* Golvan, 1994]

C. hagiangensis (Petrochenko et Fan, 1969) Amin 1985
[syn. *Gordiorhynchus hagiangensis* Petrochenko et Fan, 1969]

C. halcyonicola Smales, 2011

C. hartwichi Golvan, 1994
[syn. *Centrorhynchus conspectus* sensu Hartwich, 1956]

C. horridus (von Linstow, 1897) Meyer, 1932
[syns. *Echinorhynchus horridus* von Linstow, 1897; *Prosthorhynchus horridus* (von Linstow, 1897) Travassos, 1926]

C. indicus Golvan, 1956
[syn. *Centrorhynchus falconis* Das 1950]

C. insularis Tubangui, 1933

C. itatsinis Fukui, 1929
[syns. *Centrorhynchus miyanojyo* Kanda, 1957; *C. crocidurus* Das, 1950: juvenile of *C. itatsinis* Fukui, 1929 (*fide* Yamaguti 1963)]

C. javanicus Rengaraju et Das, 1975 (*nec javanicans*)

C. knowlesi Datta et Soota, 1955

C. kuntzi Schmidt et Neiland, 1966

C. latai Golvan, 1994
[syn. *Centrorhynchus indicus* (Gupta et Lata, 1966) Gupta et Fatma, 1983]

C. leptorhynchus Meyer, 1932

C. lobianchii (Monticelli, 1887) Meyer, 1932
[syn. *Sphaerirostris*?] (*fide* Golvan 1994)

C. longicephalus Das, 1950

C. lukiensis Wang, 1966

C. lucknowensis Gupta et Fatma, 1983

C. mabuiae (von Linstow, 1908) Golvan, 1956
[syn. *Echinorhynchus mabuiae* von Linstow, 1908]

C. macrorchis Das, 1949

C. madagascariensis (Golvan, 1957) Golvan, 1960
[syn. *Gordiorhynchus madagascariensis* Golvan, 1957]

C. magnus Fukui, 1929
[syn. *Centrorhynchus microchis* Fukui, 1929]

C. mariauxi Smales, 2011

C. merulae Dollfus et Golvan, 1961

C. microcephalus (Bravo-Hollis, 1947) Golvan, 1956
[syn. *Gordiorhynchus microcephalus* Bravo-Hollis, 1947]

C. migrans Zuberi et Farooqi, 1974 (*nec* Farooq)

C. milvus Ward, 1956

C. mysentri Gupta et Fatma, 1983

C. narcissae Florescu, 1942

C. nicaraguensis Schmidt et Neiland, 1966

C. nickoli Khan, Bilqees et Ghazi, 2001

C. ninnii (Stossich, 1891) Meyer, 1932
[syn. *Echinorhynchus ninnii* Stossich, 1891; *Chentrosoma ninnii* Porta, 1908] (*nec ninni*)

C. olssoni Lundström, 1942

C. opimus Travassos, 1919

C. owli Bhattacharya, 1999

C. paramaryasis **nom. nov.**
[syn. *Centrorhynchus maryasis* sensu Gupta et Lata, 1967]

C. petrotschenkoi Kuraschvilli, 1955 (*nec petrochenkoi*)

C. polemaeti Troncy, 1970

C. polymorphus Travassos, 1926
(*Centrorhynchus polymorphus* sensu Hartwich, 1956 is another species *fide* Golvan 1994)

C. ptyasus Gupta, 1950

C. pycnonoti Wang, 1986

C. renardi (Lindemann, 1865) Van Cleave 1923
[syn. *Paradoxites renardi* Lindemann, 1865]

C. robustus Richardson et Nickol, 1995

C. sharmai (Gupta et Lata, 1966) Gupta et Fatma, 1983

C. sholapurensis Rengaraju et Das, 1975

C. sikkimensis Bhattacharya, 2003

C. simplex Meyer, 1932

C. sindhensis Khan, Khatoon et Bilqees, 2002

C. sinicus Wang, 1966

C. smyrnensis Bhattacharya, 2007

C. spilornae Schmidt et Kuntz, 1969
[syn. *Centrorhynchus andamanensis* Soota et Kansal, 1972) (*fide* Zafar and Farooqi 1981)]

C. spinosus (Kaiser, 1893) Van Cleave 1924
[syns. *Echinorhynchus spinosus* Kaiser, 1893; *Centrorhynchus spinosus* Van Cleave,1916]

C. tumidulus (Rudolphi, 1819) Neiva da Cunha et Travassos, 1914
[syns. *Echinorhynchus tumidulus* Rudolphi, 1819; *E. caudatus* Rudolphi, 1819; *E. megacephalus* Westrumb, 1821; *Centrorhynchus microcervicanthus* Das, 1950 [a juvenile of *C. tumidulus*]
(*fide* Yamaguti 1963) (*nec microcerviacanthus*); *C. tumidulus* Neiva da Cuhna et Travassos, 1914; *Polyacanthorhynchus megalocephalus* (Westrumb, 1821) Travassos, 1921] (*nec tumidulum*)

C. tyotensis Rengaraju et Das, 1977

C. undulatus Dollfus, 1950

GENUS ***Neolacunisoma*** Amin et Canaris, 1997

SPECIES

N. geraldschmidti Amin et Canaris, 1997 (**type species**)

GENUS ***Sphaerirostris*** Golvan, 1956

SPECIES

S. areolatus (Rudolphi, 1819) Golvan, 1956
[syns. *Echinorhynchus areolatus* Rudolphi, 1819; *E. orioli* Rudolphi, 1819; *E. sigmoides* Westrumb, 1821; *Centrorhynchus areolatus* (Rudolphi, 1819) Golvan, 1956]

S. batrachus (Das, 1952) **comb. n.**
[syns. *Centrorhynchus batrachus* Das, 1952; *C. splendi* (Gupta et Gupta, 1970) Golvan, 1994]

S. bipartitus (Soloviev, 1912) Golvan, 1956
[syn. *Centrorhynchus bipartitus* (Soloviev, 1912) Golvan, 1956]

S. cinctus (Rudolphi, 1819) Golvan, 1956
[syn. *Centrorhynchus cinctus* (Rudolphi, 1819) Meyer, 1932]

S. corvi (Fukui, 1929) Golvan, 1956
[syns. *Centrorhynchus corvi* (Fukui. 1929) Golvan, 1956; *C. hargisi* Gupta et Fatma, 1983]

S. dollfusi Golvan, 1994
[syn. *Centrorhynchus picae* sensu Dollfus, 1953]

S. embae Cholodkowski et Kostylew, 1916) Golvan, 1956
[syn. *Centrorhynchus embae* Cholodkowski et Kostylew, 1916]

S. erraticus (Chandler, 1925) Golvan, 1956
[syn. *Centrorhynchus erraticus* Chandler, 1925]

S. globuli (Nama et Rathore, 1984) Golvan, 1994
[syn. *Centrorhynchus globuli* Nama et Rathore, 1984]

S. lancea (Westrumb, 1821) Golvan, 1956
[syns. *Echinorhynchus lancea* Westrumb, 1821; *E. vanelli* Goeze, 1782; *Centrorhynchus lancea* (Westrumb, 1821) Skrjabin, 1913; *C. cinctus* (Rudolphi, 1819) Meyer, 1932; *C. embae* Kholodkowski et Kostylew, 1916; *C. scanensis* Lundström, 1942 *fide* Van Cleave and Williams 1951]

S. lanceoides (Petrochenko, 1949) Golvan, 1956
[syn. *Centrorhynchus lanceoides* Petrochenko, 1949]

S. leguminosus (Soloviev, 1912) Golvan, 1956
[syn. *Centrorhynchus leguminosus* Soloviev, 1912]

S. lesiniformis (Molin, 1859) Golvan, 1994
[syns. *Echinorhynchus lesiniformis* Molin, 1859; *Centrorhynchus lesiniformis* (Molin, 1859) Meyer, 1932]

S. maryasis (Datta, 1933) Golvan 1956
[syn. *Centrorhynchus maryasis* Datta, 1933]

S. opimus (Travassos, 1919) Golvan, 1956
[syn. *Centrorhynchus opimus* Travassos, 1919]

S. physocoracis (Porta, 1913) Golvan 1956
[syns. *Echinorhynchus physocoracis* Porta, 1913; *Centrorhynchus physocoracis* Porta, 1913]

S. picae (Rudolphi, 1819) Golvan, 1958 (**type species**)
[syns. *Echinorynchus picae* Rudolphi, 1819; *E. lobianchii* Monticelli, 1887; *E. teres* Westrumb, 1821; *Centrorhynchus picae* (Rudolphi, 1819) Meyer, 1932]
(Two regions, 18S and 28S of nuclear ribosomal DNA, of *S. picae* were sequenced by Radwan 2012. The resulting phylogenetic trees suggest a paraphyletic arrangement of the two Palaeacanthocephala orders Echinorhynchida and Polymorphida.)

S. pinguis (Van Cleave, 1918) Golvan, 1956
[syns. *Centrorhynchus pinguis* Van Cleave, 1918; *C. bipartitus* Soloviev, 1912*; C. corvi* Fukui, 1929; *C. skrjabini* Petrochenko, 1949; *Travassosina pinguis* (Fukui, 1929) Witenberg, 1932]

S. reptans (Bhalerao, 1931) Golvan, 1956
[syn. *Centrorhynchus reptans* Bhalerao, 1931]

S. robustus (Datta, 1928) Golvan, 1994
[syn. *Echinorhynchus robustus* Datta, 1928]

S. saxicoloides (Nama et Rathore, 1984) Golvan, 1994
[syn. *Centrorhynchus saxicoloides* Nama et Rathore, 1984]

S. scanensis (Lundström, 1941–1942) Golvan, 1956
[syn. *Centrorhynchus scanensis* Lundström, 1942]

S. serpenticola (von Linstow, 1908) Golvan, 1956
[syn. *Echinorhynchus serpenticola* von Linstow, 1908]

S. skrjabini (Petrochenko, 1949) Golvan, 1956
[syns. *Centrorhynchus corvi* (Fukui, 1929) Golvan, 1956; *C. skrjabini* Petrochenko, 1949]

S. tenuicaudatus (Marotel, 1889) Amin, 1985
[syn. *Echinorhynchus tenuicaudatus* Marotel, 1889; *Centrorhynchus tenuicaudatus* (Marotel, 1889) Lühe, 1911]

S. turdi (Yamaguti, 1939) Golvan, 1956
[syns. *Centrorhynchus turdi* Yamaguti, 1939; *Gordiorhynchus turdi* (Yamaguti, 1939) Kamegai, 1963]

S. wertheimae Schmidt, 1975

FAMILY **Plagiorhynchidae** Golvan, 1960

SUBFAMILY **Plagiorhynchinae** Meyer, 1931

GENUS ***Paralueheia*** Saxena et Gupta, 2008

SPECIES

P. guptai Saxena et Gupta, 2008 (**type species**)

GENUS ***Plagiorhynchus*** Lühe, 1911

(The taxonomy of the genus *Plagiorhynchus* is based on the admittance of the subgeneric status outlined below as proposed by Schmidt and Kuntz 1966 and Amin et al. 1999.)

SUBGENUS ***Plagiorhynchus*** Lühe, 1911

SPECIES

P.* (*P.*) *allisonae Smales, 2002

P.* (*P.*) *charadrii (Yamaguti, 1939) Van Cleave, 1951
[syn. *Prosthorhynchus charadrii* Yamaguti, 1939]
(*nec* Golvan, 1956)

P.* (*P.*) *charadriicola (Dollfus, 1953) Golvan, 1956

[syn. *Prosthorhynchus charadriicola* Dollfus, 1953]

P.* (*P.*) *crassicollis (Villot, 1875) Lühe, 1911 (**type species**)
[syns. *Echinorhynchus crassicollis* Villot, 1875; *Plagiorhynchus inflatus* Creplin, 1829; *P. lanceolatus* (von Linstow, 1876) Lühe, 1911]

P.* (*P.*) *freitasi Vicente, 1977

P.* (*P.*) *karachiensis Muti-Ur-Rahman, Khan, Khatoon et Bilqees, 2008

P.* (*P.*) *lemnisalis Belopolskaya, 1958 (*nec lemniscalis*)

P.* (*P.*) *limnobaeni (Tubangui, 1933) Golvan, 1956

P.* (*P.*) *linearis (Westrumb, 1821) Golvan, 1956
[syns. *Echinorhynchus linearis* Westrumb, 1821 (*nec lineare*); *Plagiorhynchus sternae* Rudolphi, 1819; *Prosthorhynchus linearis* (Westrumb, 1821) Meyer, 1932]

P.* (*P.*) *menurae (Johnston, 1912) Golvan, 1956
[syn. *Prosthorhynchus menurae* Johnston, 1912]

P.* (*P.*) *odhneri Lundström, 1942

P.* (*P.*) *paulus Van Cleave et Williams, (1950) 1951 (*nec paulum*)
[syn. *Prosthorhynchus paulus* Van Cleave et Williams, 1951]

P.* (*P.*) *pigmentatum (de Marval, 1902) Meyer, 1933
[syn. *Centrorhynchus cylindraceum* of de Marval 1905]

P.* (*P.*) *pittarum Tubangui, 1935

P.* (*P.*) *ponticus Lisitsyna, 1992

P.* (*P.*) *rectus (Linton, 1892) Van Cleave, 1918 (*nec* Sprehn, 1942)
[syn. *Prosthorhynchus rectus* (Linton, 1892) Travassos, 1926]

P.* (*P.*) *reticulatus (Westrumb, 1821) Golvan, 1956 (*nec reticulatum*)
[syn. *Prosthorhynchus reticulatus* (Westrumb, 1821) Travassos, 1926]

P.* (*P.*) *rosai (Porta, 1910) Golvan, 1956
[syns. *Echinorhynchus brumpti* Blanc et Cauchemez, 1911; *Plagiorhynchus brumpti* Blanc et Cauchemez, 1911]

P.* (*P.*) *spiralis (Rudolphi, 1809) Golvan, 1956
[syn. *Echinorhynchus spiralis* Rudolphi, 1809]

P.* (*P.*) *totani (Porta, 1910) Golvan, 1956
[syns. *Echinorhynchus totani* Porta, 1910; *Prosthorhynchus totani* (Porta, 1910) Meyer, 1932] Plagiorhynchinae *incertae sedis*

P.* (*P.*) *rostratus (de Marval, 1902) (*incertae sedis fide* Golvan, 1994) (*nec rostratum*)

P.* (*P.*) *urichi (Cameron, 1936) Golvan, 1956

SUBGENUS ***Prosthorhynchus*** Kostylew, 1915

SPECIES

P.* (*Pr.*) *angrensis (Travassos, 1926) Schmidt et Kuntz, 1966
[syn. *Prosthorhynchus angrense* Travassos, 1928] (*nec angrense*)

P.* (*Pr.*) *asturi (Gupta et Lata, 1967) **comb. n.**
[syns. *Rhadinorhynchus asturi* Gupta et Lata, 1967; *Prosthorhynchus asturi* (Gupta et Lata, 1967) Golvan, 1994]

P.* (*Pr.*) *asymmetricus (Belopolskaya, 1983) **comb. n**.
[syn. *Prosthorhynchus asymmetricus* Belopolskaya, 1983]

P.* (*Pr.*) *bullocki Schmidt et Kuntz, 1966

P.* (*Pr.*) *cossyphicola Smales, 2010

P.* (*Pr.*) *cylindraceus (Goeze, 1782) Schmidt et Kuntz, 1966 (**type species**)
[syns. *Echinorhynchus cylindraceus* Goeze, 1782; *E. pici* Gmelin, 1791 *fide* Florescu and Ienistea 1984; *E. merulae* Gmelin, 1791 *fide* Florescu and Ienistea 1984; *E. transversus* (Rudolphi, 1819) Travassos 1926; *E. obliquus* Dujardin, 1845 *fide* Florescu and Ienistea 1984; *Centrorhynchus cylindraceus* (Goeze 1782) Kostylew, 1914*; C. fasciatus* (Westrumb, 1821) Travassos, 1926 *fide* de Marval 1905; *C. rostratus* de Marval, 1902 *fide* Florescu and Ienistea 1984; *Prosthorhynchus rosai* (Porta, 1910) Meyer, 1932; *Prosthorhynchus rostratus* (de Marval, 1902) Meyer, 1932; *Plagiorhynchus formosus* Van Cleave, 1918 *fide* Amin et al. 1999; *Plagiorhynchus taiwanensis* Schmidt et Kuntz, 1966 *fide* Amin et al. 1999]

P.* (*Pr.*) *deysarkari Bhattacharya, 2002

P.* (*Pr.*) *digiticephalus Amin, Ha et Heckmann, 2008

P.* (*Pr.*) *gallinagi (Schachtachtinskaja, 1953) Schmidt et Kuntz, 1966
[syn. *Prosthorhynchus gallinagi* Schachtachtinskaja, 1953]

P.* (*Pr.*) *genitopapillatus (Lundström, 1942) Amin, 1985
[syn. *Prosthorhynchus genitopapillatus* Lundström, 1942]

P.* (*Pr.*) *golvani Schmidt et Kuntz, 1966

P.* (*Pr.*) *gracilis (Petrochenko, 1958) Schmidt et Kuntz, 1966

P.* (*Pr.*) *kuntzi (Gupta et Fatma, 1988) Bhattacharya, 2007

P.* (*Pr.*) *limnobaeni (Tubangui, 1933) Golvan, 1956
[syn. *Prosthorhynchus limnobaeni* Tubangui, 1933]

P.* (*Pr.*) *longirostris (Travassos, 1926) Amin 1985
[syn. *Prosthorhynchus longirostris* Travassos, 1926]

P.* (*Pr.*) *luehei (Travassos, 1916) **comb. n.**
[syn. *Prosthorhynchus luehei* Travassos, 1916]

P.* (*Pr.*) *malayensis (Tubangui, 1935) Schmidt et Kuntz, 1966 (*nec malayense*)
[syn. *Oligoterorhynchus malayensis* Tubangui, 1935]

P.* (*Pr.*) *megareceptaclis Amin, Ha et Heckmann, 2008

P.* (*Pr.*) *nicobarensis (Soota et Kansal, 1970) Zafar et Farooqui, 1981
[syn. *Prosthorhynchus nicobarensis* Soota et Kansal, 1970]

P.* (*Pr.*) *ogatai (Fukui et Morisita, 1936) Schmidt et Kuntz, 1966
[syn. *Porrochis ogatai* Fukui et Morisita, 1936]

P.* (*Pr.*) *pittarum (Tubangui, 1935) Schmidt et Kuntz, 1966
[syn. *Prosthorhynchus pittarum* Tubangui, 1935]

P.* (*Pr.*) *reticulatus (Westrumb, 1821) Golvan, 1956
[syn. *Echinorhynchus reticulatus* Westrumb, 1821]

P.* (*Pr.*) *rheae (de Marval, 1902) Schmidt et Kuntz, 1966
[syn. *Echinorhynchus rheae* de Marval, 1902; *E. rostratum* de Marval, 1902]

P.* (*Pr.*) *rossicus (Kostylew, 1915) Schmidt et Kuntz, 1966

P.* (*Pr.*) *russelli (Tadros, 1970) Golvan 1994
[syn. *Plagiorhynchus russelli* Tadros, 1970]

P.* (*Pr.*) *schmidti Golvan, 1994
[syns. *Echinorhynchus rectus* Linton, 1892; *Prosthorhynchus rectus* Sprehn, 1942 (*nec* Linton, 1892)]

P.* (*Pr.*) *scolopacidis (Kostylew, 1915) Schmidt et Kuntz, 1966
[syn. *Prosthorhynchus scolopacidis* Kostylew, 1915]

P.* (*Pr.*) *transversus (Rudolphi, 1819) Travassos, 1926

P.* (*Pr.*) *varispinus (Wang, 1966) **comb. n.**
[syn. *Prosthorhynchus varispinus* Wang, 1966]

SUBFAMILY **Porrorchinae** Golvan, 1956

GENUS ***Lueheia*** Travassos, 1919
[syn. *Furcata* Werby, 1938]

SPECIES

L. adlueheia (Werby, 1938) Van Cleave, 1942
[syn. *Furcata adlueheia* Werby, 1938]

L. cajabambensis Machado Filho et Ibanez, 1967

L. inscripta (Westrumb, 1821) Travassos, 1920
[syn. *Echinorhynchus inscripta* Westrumb, 1821]

L. karachiensis Khan, Bilqees et Muti-ur-Rahman, 2005

L. lueheia Travassos, 1919 (**type species**) (*nec luehei*)

GENUS ***Oligoterorhynchus*** Monticelli, 1914

SPECIES

O. campylurus (Nitzsch, 1857) Monticelli, 1914 (**type species**)
[syn. *Echinorhynchus campylurus* Nitzsch, 1857]

GENUS ***Owilfordia*** Schmidt et Kuntz, 1967

SPECIES

O. olseni Schmidt et Kuntz, 1967 (**type species**)

O. schmidti Gupta et Fatma, 1988

O. teliger (Van Cleave, 1949) Schmidt et Kuntz, 1967
[syn. *Porrochis teliger* Van Cleave, 1949]

GENUS ***Porrorchis*** Fukui, 1929
[syn. *Pseudoporrochis* Joyeux et Baer, 1935]

SPECIES

P. aruensis Smales, 2010

P. bazae (Southwell et Macfie, 1925) Schmidt et Kuntz, 1967
[syns. *Echinorhynchus bazae* Southwell et Macfie, 1925; *Prosthorhynchus bazae* (Southwell et Macfie, 1925) Travassos, 1926; *Pseudoporrorchis bazae* (Southwell et Macfie, 1925) Petrochenko, 1958]

P. brevicanthus (Das, 1949) Golvan, 1994
[syn. *Centrorhynchus brevicanthus* Das, 1949–1950]

P. centropi (Porta, 1910) Schmidt et Kuntz, 1967

[syns. *Echinorhynchus centropi* Porta, 1910; *E. centropi* (Porta, 1910) Joyeux et Baer, 1935]

P. chauhani Gupta et Fatma, 1986

P. crocidurai Gupta et Fatma, 1986

P. elongatus Fukui, 1929 (**type species**)

P. heckmanni Bilqees, Khan, Khatoon et Khatoon, 2007

P. herpistis Bhattacharya, 2007

P. houdemeri (Joyeux et Baer, 1935) Schmidt et Kuntz, 1967
[syn. *Pseudoporrochis houdemeri* Joyeux et Baer, 1935]

P. hydromuris (Edmonds, 1957) Schmidt et Kuntz, 1967
[syn. *Pseudoporrochis hydromuris* Edmonds, 1957]

P. hylae (Johnston, 1914) Schmidt et Kuntz, 1967
[syns. *Echinorhynchus hylae* Johnston, 1914; *E. bulbocaudata* Southwell et McFie, 1925; *E. centropusi* (Tubangui, 1933) Petrochenko, 1958; *Gordiorhynchus hylae* (Johnston, 1914) Johnston et Edmonds, 1948; *Prosthorhynchus bulbocaudatus* (Southwell et McFie, 1925) Travassos, 1926; *Pseudoporrorchis bulbocaudatus* (Southwell et MacFie, 1925) Joyeux et Baer, 1935; *P. centropusi* (Tubangui, 1933) Joyeux et Baer, 1935; *Centrorhynchus hylae* (Johnston, 1914) Schmidt et Kuntz, 1967]

P. indicus (Das, 1957) Schmidt et Kuntz, 1967
[syn. *Pseudoporrochis indicus* Das, 1957]

P. jonesae Muti-ur-Rahman, Khan, Khatoon et Bilqees, 2010

P. keralensis George et Nadakal, 1984

P. kinsellai Lisitsyna, Tkach et Bush, 2012

P. leibyi Schmidt et Kuntz, 1967

P. maxvachoni (Golvan et Brygoo, 1965) Schmidt et Kuntz, 1967
[syn. *Pseudoporrochis maxvachoni* Golvan et Brygoo, 1965]

P. nickoli Salgado-Maldonado et Cruz-Reyes, 2002

P. oti Yamaguti, 1939 (*nec goti*)

P. rotundatus (von Linstow, 1897) Schmidt et Kuntz, 1967
[syns. *Echinorhynchus rotundatus* von Linstow, 1897; *Pseudoporrorchis rotundatus* (von Linstow, 1897) Joyeux et Baer, 1935] (*nec rotundus*)

P. tyto Amin, Ha et Heckmann, 2008

GENUS ***Pseudogordiorhynchus*** Golvan, 1957

SPECIES

P. antonmeyeri Golvan, 1957 (**type species**)

GENUS ***Pseudolueheia*** Schmidt et Kuntz, 1967

SPECIES

P. arunachalensis Bhattacharya, 2007

P. boreotis (Van Cleave et Williams, 1951) Schmidt et Kuntz, 1967
[syn. *Lueheia boreotis* Van Cleave et Williams, 1951]

P. korathai Gupta et Fatma, 1988

P. pittae Schmidt et Kuntz, 1967 (**type species**)

P. tongsoni Salcedo et Celis, 2007

SUBFAMILY **Sphaerechinorhynchinae** Golvan, 1956

GENUS ***Sphaerechinorhynchus*** Johnston, 1929

SPECIES

S. macropisthospinus Amin, Wongsawad, Marayong, Saehoong, Suwattanacoupt et Sey, 1998

S. maximesospinus Amin, Ha et Heckmann, 2008

S. ophiograndis Bolette, 1997

S. rotundocapitatus (Johnston, 1912) Johnston et Deland, 1929 (**type species**)
[syn. *Echinorhynchus rotundocapitatus* Johnston, 1912]

S. serpenticola Schmidt et Kuntz, 1966

FAMILY **Polymorphidae** Meyer, 1931
[syn. Filicollidae Petrochenko, 1956]

GENUS ***Andracantha*** Schmidt, 1975

SPECIES

A. baylisi (Zdzitowiecki, 1986) Zdzitowiecki, 1989
[syn. *Corynosoma baylisi* Zdzitowiecki, 1986]

A. clavata (Goss, 1941) Zdzitowiecki 1989
[syn. *Corynosoma clavatum* Goss, 1941]

A. gravida (Alegret, 1941) Schmidt 1975 (**type species**)
[syn. *Corynosoma gravida* Alegret, 1941]

A. mergi (Lundström, 1941) Schmidt, 1975
[syns. *Corynosoma mergi* Lundström, 1941; *Hemiechinosoma mergi* (Lundström, 1941) Petrochenko et Smogorjevskaya, 1962]

A. phalacrocoracis (Yamaguti, 1939) Schmidt, 1975
[syn. *Corynosoma phalacrocoracis* Yamaguti, 1939]

A. tandemtesticulata Monteiro, Amato et Amato, 2006

A. tunitae (Weiss, 1914) Zdzitowiecki 1989
[syn. *Corynosoma tunitae* Weiss, 1914]

GENUS ***Ardeirhynchus*** Dimitrova et Georgiev, 1994

SPECIES

A. spiralis (Rudolphi, 1809) Dimitrova et Georgiev, 1994 (**type species**)
[syns. *Echinorhynchus spiralis* Rudolphi, 1809; *Prosthorhynchus spiralis* (Rudolphi, 1809) Meyer, 1932; *Plagiorhynchus spiralis* (Rudolphi, 1809) Golvan, 1956]

GENUS ***Arhythmorhynchus*** Lühe, 1911
[syn. *Skrjabinorhynchus* Petrochenko, 1956]

SPECIES

A. capellae (Yamaguti, 1935) Schmidt 1973
[syns. *Polymorphus capellae* Yamaguti, 1935; *Skrjabinorhynchus capellae* (Yamaguti, 1935) Van Cleave et Rausch, 1950] (*nec* Schmidt, 1973)

A. comptus Van Cleave et Rausch, 1950

A. distinctus Baer, 1956

A. eroliae (Yamaguti, 1939) Schmidt, 1973
[syns. *Polymorphus eroliae* Yamaguti, 1939; *Skrjabinorhynchus eriolae* (Yamaguti, 1939) Petrochenko, 1956]

A. frassoni (Molin, 1858) Lühe, 1911 (**type species**)
[syns. *Echinorhynchus frassoni* Molin, 1858; *E. roseus* Molin, 1858; *E. rubicundus* Molin, 1858; *Arhythmorhynchus macrourus* (Bremser in Westrumb, 1921) (*fide* Meyer 1932) or species inquirenda *fide* Khokhlova 1975; *A. roseus* (Molin, 1858) Meyer, 1932 (*fide* Golvan 1956, *fide* Petrochenko 1958); *A. globicollis* Creplin, 1829; *A. rubicundus* (Molin, 1859) Meyer, 1932 juvenile (*fide* Golvan 1956)]

A. frontospinosus (Tubangui, 1935) Yamaguti, 1963
[syn. *Polymorphus frontospinosus* Tubangui, 1935]

A. jeffreyi Schmidt, 1973
[syn. *Arhythmorhynchus capellae* Schmidt, 1963]

A. johnstoni Golvan, 1960
[syn. *Arhythmorhynchus frassoni* sensu Johnston et Edmonds, 1951]

A. limosae Edmonds, 1971

A. longicollis (Villot, 1875) Lühe, 1912
[syns. *Echinorhynchis longicollis* Villot, 1875; *E. invaginabilis* von Linstow, 1902; *E. macrourus* Bremser, 1821; *Arhythmorhynchus anser* Florescu, 1941; *A. invaginabilis* (von Linstow, 1902) Lühe, 1912 (*fide* Golvan 1956, Khokhlova 1975) (*nec invaginavilis*); *A. roseus* (Molin, 1858) Meyer, 1932 (*fide* Golvan 1956, *fide* Petrochenko 1958)]

A. petrotchenkoi (Schmidt, 1969) Atrashkevich, 1979
[syn. *Polymorphus petrochenkoi* Schmidt, 1969] (*nec petroschenkoi*)

A. plicatus (von Linstow, 1883) Meyer, 1932
[syn. *Echinorhynchus plicatus* von Linstow,1883]

A. pumiliorostris Van Cleave, 1916
(*nec plumirostris, nec pumilliorostris*)

A. roseus (Molin, 1858) Meyer, 1932 (valid *fide* Khokhlova 1975)

A. rubicundus (Molin, 1859) Meyer, 1932
(valid *fide* Khokhlova 1975)

A. siluricola Dollfus, 1929
[syn. *Echinorhynchus* sensu lato] (*fide* Golvan 1969)

A. suecicus Lundström, 1942

A. teres Van Cleave, 1920
[syn. *Arhythmorhynchus sachalinense* Krotov et Petrochenko, 1958] (*fide* Khokhlova 1975)

A. tigrinus Moghe et Das, 1953

A. trichocephalus (Leuckart, 1876) Lühe, 1912
[syn. *Echinorhynchus trichocephalus* Leuckart, 1876]

A. tringi Gubanov, 1952

A. turbidus (Van Cleave, 1937) Golvan, 1994
[syn. *Corynosoma turbidum* Van Cleave, 1937]

A. uncinatus (Kaiser, 1893) Lühe, 1912
[syn. *Echinorhynchus uncinatus* Kaiser, 1893]

A. villoti Golvan, 1994
[syn. *Echinorhynchus longicollis* Villot, 1875]

A. xeni Atrashkevich, 1978

GENUS ***Bolbosoma*** Porta, 1908
[syns. *Echinorhynchus* Zoega in Müller, 1776, in part; *Bolborhynchus* Porta, 1906]

SPECIES

B. australis Skrjabin, 1972

B. balaenae (Gmelin, 1790) Porta, 1908
[syns. *Echinorhynchus balaenae* Gmelin, 1790; *E. lendix* Phipps, 1774; *E. porrigens* (Rudolphi, 1814) Porta, 1908; *Bolbosoma porrigens* (Rudolphi, 1814) Porta, 1908] (*fide* Van Cleave 1953)

B. brevicolle (Malm, 1867) Porta, 1908
[syns. *Echinorhynchus brevicollis* Malm, 1867; *Bolborhynchus brevicolle* (Malm, 1867) Porta, 1906]

B. caenoforme (Heitz, 1920) Meyer, 1932 (*nec* Heitz, 1917)
(may be *Corynosoma fide* Golvan 1960, *fide* Yamaguti 1963)

B. capitatum (von Linstow, 1880) Porta, 1908
[syns. *Echinorhynchus capitatum* von Linstow, 1880; *Bolbosoma physeteris* Gubanov, 1952 (*fide* Amin and Margolis 1998)]

B. hamiltoni Baylis, 1929

B. heteracanthe (Heitz, 1920) Meyer, 1932

B. nipponicum Yamaguti, 1939
[syn. *B. bobrovoi* Krotov et Delyamure, 1952 (*nec bobrovi*, *nec* Delamure, *nec* Delamare)]

B. scomberomori Wang, 1980

B. tuberculata Skrjabin, 1970

B. turbinella (Diesing, 1851) Porta 1908 (**type species**)
[syns. *Echinorhynchus turbinella* Diesing, 1851; *Bolborhynchus turbinella* (Diesing, 1851) Porta, 1906; *Bolbosoma balaenocephalus* Owen, 1803; *B. ruber* Collet, 1886] (*B. turbinella* sensu Leiper et Atkinson, 1915 is another species) (*fide* Meyer 1932)

B. vasculosum (Rudolphi, 1819) Porta, 1908
[syns. *Echinorhynchus vasculosum* Rudolphi, 1819; *Bolbosoma annulatus* Molin, 1858; *B. aurantiacus* Risso, 1826; *B. pellucidus* Leukart, 1828; *B. serrani* Linton, 1888; *B. thunni* Harada, 1935 (*fide* Petrochenko 1958)]

GENUS ***Corynosoma*** Lühe, 1904 (*fide* Van Cleave 1945)
[syns. *Chentrosoma* Monticelli, 1905; *Centrosoma* Lühe 1912; *Coryusoma* Railliet et Henry, 1907 (misprint); *Echinosoma* Porta, 1907]

(Aznar et al. 2006 split *Corynosoma* to two genera, *Corynosoma* for marine species and *Pseudocorynosoma* for freshwater species, based on anatomical, ecological and phylogenetic divergences. This arrangement is accepted herein. García-Varela et al. 2009 further demonstrated that *Pseudocorynosoma* is an independent lineage that does not share a common ancestry with *Corynosoma* or *Andracantha*.)

SPECIES

(marine species – see note above)

C. alaskensis Golvan, 1959 (*nec alaskaensis*)

C. australe Johnston, 1937
[syn. *Corynosoma otariae* Morini et Boero, 1961]

C. baylisi Zdzitowiecki, 1986

C. bullosum (von Linstow, 1892) Railliet et Henry, 1907
[syns. *Echinorhynchus bullosum* von Linstow, 1892; *Corynosoma arctocephali* Zdzitowiecki, 1984; *C. mirabilis* Skrjabin, 1966 (*fide* Zdzitowiecki 1986); *C. singularis* Skrjabin et Nikolski, 1971, in part]

C. cameroni Van Cleave, 1953
[syn. *Corynosoma strumosum* sensu Lyster, 1940]

C. caspicum Golvan et Mokhayer, 1973

C. cetaceum (Johnston et Best, 1942) Aznar, Bush et Raga, 2002
[syns. *Corynosoma semerme* sensu Cordero, 1933? (*fide* Schmidt and Dailey 1971); *Polymorphus cetaceum* (Johnston et Best, 1942) Schmidt et Dailey 1971; *P. arctocephali* Smales, 1986 (*nec arctocephalus*)]

C. constrictum Van Cleave, 1918
[syn. *Corynosoma bipallatum* Schmidt, 1965]

C. curilensis Gubanov, 1942 (*nec kurilense*, *nec curiliensis*)]

C. enhydri Morozov, 1940
[syns. *Corynosoma enhydris* Afanasev, 1941; *C. macrosomum* Neiland, 1962] (*fide* Jellison and Neiland 1965)

C. eperlani (von Linstow, 1884) Petrochenko, 1958

C. erignathi Stryukov, 2000

C. evae Zdzitowiecki, 1984

C. falcatum Van Cleave, 1953

C. gibsoni Zdzitowiecki, 1986

C. hadweni Van Cleave, 1953 (*nec hadveni*)
[syn. *Corynosoma semerme* sensu Lyster, 1940, in part] (*fide* Van Cleave 1953)

C. hamanni (von Linstow, 1892) Railliet et Henry, 1907 (*nec* Leiper et Atkinson, 1915)
[syns. *Echinorhynchus hamanni* von Linstow, 1892; *E. antarcticum* Rennie, (1906) 1907; *Corynosoma antarticum* (Rennie, 1906) Johnston et Best, 1937 (*nec* Leiper et Atkinson, 1918); *C. pacifica* Nikolskii, 1974; *C. sipho* Railliet et Henry, 1907]

C. hannae Zdzitowiecki, 1984

C. longilemniscatus Machado Filho, 1961
[syn. *Corynosoma peposacae* sensu Travassos, 1925]

C. macrosomum Neiland, 1962

C. magdaleni Montreuil, 1958 (*nec magdaleini*)

C. mandarinca Oschmarin, 1963

C. obtuscens Lincicome, 1943

C. osmeri Fujita, 1921
[syn. *Corynosoma ambispierinum* Harada, 1935]

C. otariae Morini et Boero, 1960
[syn. *Corynosoma australe* Johnston, 1937] (*fide* Zdzitowiecki 1989)

C. pseudohamanni Zdzitowiecki, 1984

C. pyriforme (Bremse, 1824) Meyer, 1932
[syn. *Echinorhynchus pyriforme* Bremser, 1824]
(may be a *Polymorphus* (*fide* Machalska 1981)

C. rauschi Golvan, 1959

C. reductum (von Linstow, 1905) Railliet et Henry, 1907
[syn. *Echinorhynchus reductus* von Linstow, 1905]

C. semerme (Forssell, 1904) Lühe, 1905 (*nec* Frossell)
[syns. *Echinorhynchus semermis* Forssell, 1904; *Corynosoma gibber* (Olsson, 1894) Lühe, 1911] (*C. semerme* sensu Fukui, 1929)

C. septentrionalis Treshchev, 1966

C. seropedicus Machado Filho, 1970
[syn. *C. clemente* Giovannoni et Fernandes, 1965 – see Amin 1985] (*nec clementi*)

C. shackletoni Zdzitowiecki, 1978

C. similis Neiland, 1962

C. stanleyi Smales, 1986

C. strumosum (Rudolphi, 1802) Lühe, 1904 (**type species**)
[syns. *Echinorhynchus strumosum* Rudolphi, 1802; *Corynosoma ambispinigerum* Harada, 1935; *C. carchariae* Linton, 1891; *C. gibber* Olsson, 1893; *C. gibbosus* Rudolphi, 1809, in part; *C. hystrix* Bremser, 1824; *C. incrassatus* Linton, 1891; *C. osmeri* Fujita, 1921; *C. striatus* Villot, 1875; *C. ventricosus* Rudolphi, 1809] (*Corynosoma strumosum* sensu Dogiel et Bychowsky, 1938, Hartwich, 1956, and Dollfus, 1962 are other species, *fide* Golvan 1994)

C. sudsuche Belopolskaya, 1958

C. tunita Weiss, 1914
[syn. *Corynosoma hystrix tunitae* Weiss, 1914]

C. turbidum Van Cleave, 1937

C. validum Van Cleave, 1953
[syn. *Corynosoma semerme* sensu Lyster, 1940, in part (*fide* Van Cleave 1953)]

C. ventronudum Skrjabin, 1959

C. villosum Van Cleave, 1953 (*nec viliosum*)

C. wegeneri Heinze, 1934
[syn. *Corynosoma hadweni* Van Cleave, 1953] (*nec hadveni*) (*fide* Margolis 1955)]

GENUS ***Diplospinifer*** Fukui, 1929

SPECIES

D. serpenticola Fukui, 1929 (**type species**)

GENUS ***Filicollis*** Lühe, 1911

SPECIES

F. anatis (Schank, 1788) Lühe 1911 (**type species**)
[syns. *Echinorhynchus anatis* Schank, 1788; *E. filicollis* Rudolphi, 1809; *E. laevis* von Linstow, 1905; *E. polymorphus* Bremser, 1824]

F. trophimenkoi Atrashkevich, 1982

GENUS ***Ibirhynchus*** García-Valera, Pérez-Ponce de León, Aznar et Nadler, 2011

SPECIES

I. dimorpha (Schmidt, 1973) García-Valera, Pérez-Ponce de León, Aznar et Nadler, 2011 (**type species**)
[syn. *Southwellina dimorpha* Schmidt, 1973]
(The erection of *Ibirhynchus* by García-Valera et al. 2011 was based on analyses of sequences of two nuclear genes.)

GENUS ***Polymorphus*** Lühe, 1911

[syns. *Hexaglandula* Petrochenko, 1950 (*fide* Amin 1992); *Subcorynosoma* Khokhlova, 1967 (*fide* Amin 1992); *Subfilicollis* Khokhlova, 1967]
(Amin's 1992 revision of *Polymorphus* recognised two subgenera, *Polymorphus* Lühe, 1911 and *Profilicollis* Meyer, 1931. The elevation of these two subgenera to the generic level has been controversial, e.g. Nickol et al. 1999 supports it based on intermediate host affinities but García-Varela and Pérez-Ponce de León (2008) disagree based on sequences of the *cox 1* gene. The elevation to generic level is provisionally admitted herein. The above synonymies, however, stand even though the synonymy of Hexaglandula and *Polymorphus* remains controversial; see Nickol et al. 1999 and García-Varela and Pérez-Ponce de León 2008.)

SPECIES

P. actuganensis Petrochenko, 1949

P. acutis Van Cleave et Starrett, 1940

P. arctocephali Smales, 1986 (*nec arctocephalus*)

P. ariusus (Bilqees, 1971) **comb. n.**
[syn. *Hexaglandula ariusus* Bilqees, 1971]

P. biziurae Johnston et Edmonds, 1948

P. boschadis (Schrank, 1788) Railliet, 1919 (**type species** *fide* Yamaguti 1963)
[syn. *Polymorphus phippsi* Kostylew, 1922]

P. brevis (Van Cleave, 1916)
[syn. *Arhythmorhynchus brevis* Van Cleave, 1916 (*fide* Amin 1992)]
(Using sequences of the *cox 1* and rRNA genes and morphometric analysis, Alcántar-Escalera et al. 2013 established that cystacanths from freshwater fishes in Central Mexico and adults from fish-eating birds belong to *P. brevis*.)

P. chongqingensis Liu, Zhang et Zhang, 1990

P. cincli Belopolskaya, 1959

P. contortus (Bremser, 1821) Travassos, 1926
[syns. *Echinorhynchus contortus* Bremser, 1821; *E. collurionis* Rudolphi, 1819]
(may not be *Polymorphus*, *fide* Golvan 1994)

P. corynoides (Skrjabin, 1913) **comb. n.**
[syn. *Subcorynosoma corynoides* Skrjanin, 1913]

P. corynosoma (Travassos, 1915) **comb. n.**
[syn. *Hexaglandula corynosoma* (Travassos, 1915) Petrochenko, 1958]

P. crassus Van Cleave, 1924

P. cucullatus Van Cleave et Starret, 1940

P. diploinflatus Lundström, 1942

P. fatimaae Khan, Dharejo, Birmani et Bilqees, 2008

P. fulicai Birmani, Dharejo et Khan, 2011

P. gavii (Kokhlova, 1965) **comb. n.**
[syn. *Subfilicollis gavii* Khokhlova, 1965]

P. inermis (Travassos, 1923) **comb. n.**
[syn. *Hexaglandula inermis* (Travassos, 1923) Petrochenko, 1958]

P. karachiensis (Bilqees, 1971) **comb. n.**
[syn. *Hexaglandula karachiensis* Bilqees, 1971]

P. kostylewi Petrochenko, 1949

P. magnus Skrjabin, 1913

P. marchii (Porta, 1910) Meyer, 1932
[syn. *Corynosoma marchii*, Porta, 1910 (*fid*e Meyer 1932)]

P. marilis Van Cleave, 1939

P. mathevossianae Petrochenko, 1949 (*nec mathevossiaenae*)

P. meyeri Lundström, 1942

P. miniatus (von Linstow, 1896) Travassos, 1926
[syn. *Echinorhynchus miniatus* von Linstow, 1896]

P. minutus (Goeze, 1782) Lühe, 1911 (**type species**)
[syns. *Echinorhynchus minutus* Goeze, 1782; *E. boschadis* Schrank, 1788; *E. anatis* Gmelin, 1791; *E. collaris* Schrank, 1792; *Polymorphus boschadis* (Schrank, 1788) Railliet, 1919; *P. magnus* Skrjabin, 1913] (*fide* Amin 1992)

P. mohiuddini Muti ur-Rahman, Khan, Bilqees et Khatoon, 2008

P. mutabilis (Rudolphi, 1819) Petrochenko, 1950
[syn. *Echinorhynchus mutabilis* Rudolphi, 1819; *Hexaglandula mutabilis* Rudolphi, 1819]

P. nickoli Khan et Bilqees, 1998

P. obtusus Van Cleave, 1918

P. paradoxus Connel et Corner, 1957

P. paucihamatus (Heinze, 1936) **comb. n.** (*nec paucihamata*)
[syn. *Hexaglandula paucihamatus* (Heinze, 1938) Petrochenko, 1958]

P. phippsi (Kostylew, 1922) **comb. n.**
[syns. *Echinorhynchus borealis* Gmelin, 1791; *E. mollissimae* Rudolphi, 1809; *Subfilicollis phippsi* (Kostylew, 1922) Khokhlova, 1967; *Polymorphus boschadis* Ralliet, 1919, *fide* Van Cleave and Rausch 1951]

P. piriformis (Bremser, 1811 in Rudolphi, 1819) Machalska, 1981

P. pupa (von Linstow, 1905) Kostylew, 1922
(*fide* Khokhlova 1986; *fide* Amin 1992) (*species inquirenda fide* Van Cleave and Rausch 1951, *fide* Yamaguti 1963)
[syn. *Echinorhynchus pupa* von Linstow, 1905; *Filicollis pupa* (von Linstow, 1905) Travassos, 1926; *Plagiorhynchus* (*Prosthorhynchus*) *pupa* (von Linstow, 1905) Meyer, 1931]

P. sichuanensis Wang et Zhang, 1987

P. sindensis Khan, Ghazi et Bilqees, 2002

P. spindlatus Amin et Heckmann, 1991

P. striatus (Goeze, 1782) Lühe, 1911
[syns. *Echinorhynchus striatus* Goeze, 1782; *E. ardeae* Gmelin, 1789]

P. strumosoides (Lundström, 1942) **comb. n.**
[syn. *Subcorynosoma strumosoides* Lundström, 1942]

P. swartzi Schmidt, 1965

P. trochus Van Cleave, 1945

GENUS ***Profilicollis*** Meyer, 1931

[syns. *Falsifilicollis* Webster, 1948; *Profilicollis* Petrochenko, 1956]

SPECIES

P. altmani (Perry, 1942) Van Cleave, 1947
[syns. *Filcollis altmani* Perry, 1942; *Parafilicollis altmani* (Perry, 1942) Petrochenko, 1956; *Polymorphus bullocki* Mateo, Cordova et Guzman, 1982; *Profilicollis kenti* (Van Cleave, 1947) Khokhlova, 1974; *Polymorphus kenti* Van Cleave, 1947; *Parafilicollis kenti* (Van Cleave, 1947) Petrochenko, 1956; *Falsificollis kenti* (Van Cleave, 1947) Yamaguti, 1963 *fide* Nickol et al. 2002; *Filicollis sphaerocephalus* sensu Harrington et Pillbury, 1938 *fide* Tantaleán et al. 2005; *Profilicollis texensis* (Webster, 1948) Khokhlova, 1974; *Polymorphus* (*Falsificollis*) *texensis* (Webster, 1948) Yamaguti, 1963 *fide* Nickol et al. 2002]

P. antarcticus Zdzitowiecki, 1985

P. arcticus (Van Cleave, 1920) Meyer, 1932
[syn. *Filcollis arcticus* Van Cleave, 1920]

P. botulus (Van Cleave, 1916) Witenberg, 1932 (**type species**)
[syn. *Filicollis botulus* Van Cleave, 1916]

P. chasmagnathi (Holcman-Spector, Mane-Garzon et Dei-Cas, 1978) Amin, 1992
[syn. *Falsifilicollis chasmagnathi* Holcman-Spector, Mane-Garzon et Dei-Cas, 1978]

P. formosus (Schmidt et Kuntz, 1967) Khokhlova, 1974

[syn. *Polymorphus formosus* Schmidt et Kuntz, 1967]

P. major (Lundström, 1942) Khokhlova, 1974
[syns. *Polymorphus major* Lundström, 1942; *Parafilicollis major* (Lundström, 1942) Petrochenko, 1956; *Filicollis major* Lundström,1942; *Falsificollis major* (Lundström, 1942) Yamaguti, 1963]

P. novaezelandensis Brockerhoff et Smales, 2002

P. sphaerocephalus (Bremser in Rudolphi, 1819) Van Cleave, 1947
[syns. *Echinorhynchus sphaerocephalus* Bremser in Rudolphi, 1819; *Filicollis sphaerocephalus* (Bremser in Rudolphi, 1819) Travassos, 1928; *Parafilicollis sphaerocephalus* (Bremser in Rudolphi, 1819) Petrochenko, 1956; *Falsifilicollis sphaerocephalus* (Bremser in Rudolphi, 1819) Yamaguti, 1963]

GENUS ***Pseudocorynosoma*** Aznar, Pérez-Ponce de León et Raga, 2006

(freshwater species of former species of *Corynosoma*)

SPECIES

P. anatarium (Van Cleave, 1945) Aznar, Pérez-Ponce de León et Raga, 2006
[syn. *Corynosoma anatarium* Van Cleave, 1945]

P. constrictum (Van Cleave, 1918) Aznar, Pérez-Ponce de León et Raga, 2006 (**type species**)
[syns. *Echinorhynchus striatus* Goeze sensu Linton, 1892; *Corynosoma constrictum* Van Cleave, 1918; *C. bipapillum* Schmidt, 1965]

P. enrietti (Molfie et Freitas-Fernandes, 1953) Aznar, Pérez-Ponce de León et Raga, 2006
[syns. *Corynosoma enrietti* Molfie et Freitas-Fernandes, 1953; *C. molfifernandesi* Machado Filho, 1962 *fide* Golvan 1994]

P. iheringi (Machado Filho, 1961) Aznar, Pérez-Ponce de León et Raga, 2006
[syn. *Corynosoma iheringi* Machado Filho, 1961]

P. peposacae (Porta, 1914) Aznar, Pérez-Ponce de León et Raga, 2006
[syns. *Echinosoma peposacae* Porta, 1914; *E. peposacae* (Porta, 1914) Travassos 1926; *Corynosoma peposacae* (Porta, 1914) Travassos, 1924]

GENUS ***Southwellina*** Witenberg, 1932

[syn. *Hemiechinosoma* Petrochenko et Smogorjevskaya, 1962]

SPECIES

S. hispida (Van Cleave, 1925) Witenberg, 1932 (**type species**)
[syns. *Arhythmorhynchus duocinctus* Chandler, 1935; *A. fuscus* Harada, 1929; *A. hispidus* Van Cleave, 1925; *A. quadrivirgata* Yamaguti, 1935; *Polymorphus ardeae* Belopolskaya, 1958; *Hemiechinosoma ardeae* (Belopolskaya, 1958) Petrochenko et. Smogorjevskaya,1962; *H. ponticum* Petrochenko et Smogorjevskaya, 1962; *Southwellina ardeae* (Belopolskaya, 1958) Golvan, 1994]

S. macracanthus (Ward et Winter, 1952) Schmidt, 1973
[syn. *Arhythmorhynchus macracanthus* Ward et Winter, 1952]

S. sacra Bhattacharya, Pande et Srivastava, 2002,

CLASS **POLYACANTHOCEPHALA** Amin, 1987

(The validity of this class was supported by ribosomal RNA gene sequence studies by García-Varela et al. 2002.)

ORDER **POLYACANTHORHYNCHIDA** Amin, 1987

FAMILY **Polyacanthorhynchidae** Golvan, 1956

(previously in Rhadinorhynchidae)

GENUS ***Polyacanthorhynchus*** Travassos, 1920

(*nec* 1926)

SPECIES

P. caballeroi Diaz-Ungria et Rodrigo, 1960

P. kenyensis Schmidt et Canaris, 1967

P. macrorhynchus (Diesing, 1851) Travassos, 1920
(*nec* Baylis, 1927) (**type species**)
[syns. *Echinorhynchus macrorhynchus* Diesing, 1856; *Polyacanthorhynchus arcuatum* (Diesing, 1851) Travassos, 1920]

P. rhopalorhynchus (Diesing, 1851) Travassos, 1920
[syn. *Echinorhynchus rhopalorhynchus* Diesing, 1851]

APPENDIX I

Fossil acanthocephalan taxa reported from China.

FAMILY **Zhijinitidae** Qian, 1978 [Fossil]

GENUS ***Cambroclavus*** Mambetov in Mambetov et Repina, 1979

SPECIES

C. paradoxus Yi et Yin, 1984

GENUS ***Parazhijinites*** Yi et Yin, 1984

SPECIES

P. quizhouensis Yi et Yin, 1984

GENUS ***Zhijinites*** Yi, 1978

SPECIES

Z. cordiformis Yi et Yin, 1984
Z. panduriformis Yi et Yin, 1984
Z. triangularis Yi et Yin, 1984

APPENDIX II

Acanthocephalan genera *incertae sedis* assigned to *Echinorhynchus* sensu lato.

E. acanthotrias von Linstow, 1883
E. alcedinis Westrumb, 1882
E. amphipacus Westrumb, 1821
E. astacifluviatilis Diesing, 1851
E. bipennis Kaiser, 1893
E. blenni Rudolphi, 1810
E. corrugatus Sars, 1885
E. dendrocopi Westrumb, 1821
E. depressus Diesing, 1851
E. diffluens Zenker, 1832
E. eperlani von Linstow, 1884
E. galbulae Diesing, 1851
E. garzae Zeder, 1803
E. gazae Gmelin, 1790
E. hexacanthus Dujardin, 1845
E. hominis Leuckart, 1876
E. inflexus Cobbold, 1861
E. labri Rudolphi, 1819
E. lateralis Leidy, 1851
E. lendix (Phipps, 1774) de Marval, 1905
[syn. *Sipunculus lendix* Phipps, 1774]
E. magretti Parona, 1885
E. nardoi Molin, 1859
E. nitzschi Giebel, 1866
E. orestiae Neveu-Lamaire, 1905
E. pachyacanthus Sonsino, 1889
E. pardi Huxley in Ihering, 1902
E. pari Rudolphi, 1819
E. peleci Grimm, 1870
E. platessae Rudolphi, 1809
E. platessoides Gmelin, 1790
E. pleuronectis Gmelin, 1790
E. pleuronectisplatessoides Viborg, 1795
E. praetextus Molin, 1858
E. pupa von Linstow, 1905
E. putorii Molin, 1858
E. rhytidodes Monticelli, 1905
E. robustus Datta 1928
E. pseudosegmentatus Knupffer, 1888

[syn. *Moniliformis pseudosegmentatus* Knupffer, 1888]
E. sciaenae Rudolphi, 1819
E. scopis Gmelin, 1790
E. scorpeanae Rudolphi, 1819
E. serpenulus Grimm, 1870
E. sipunculus Schrank, 1788
E. solitarium Molin, 1858
E. stridulae Goeze, 1782
E. striges Gmelin, 1782
E. taeniaeforme von Linstow, 1890
E. tardae Rudolphi, 1809
E. tenuicollis Froelich, 1802
E. urniger Dujardin, 1845

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