Phylum **Nematoda** Cobb 1932[1, 2] (3 classes) [3,4,5,6,7]

Class **Enoplea** Inglis 1983 (3 subclasses) [8]

Subclass **Enoplia** Pearse 1942 (2 superorders)

Superorder **Enoplica** Hodda 2007 (5 orders)[9]

Order **Enoplida** Filipjev 1929 (1 suborder)

Suborder **Enoplina** Chitwood & Chitwood 1937 (3 superfamilies)

Superfamily **Anoplostomatoidea** Gerlach & Riemann 1974 (1 family)[10]

Family **Anoplostomatidae** Gerlach & Riemann 1974 (2 subfamilies, 3 genera, 23 species)[11,12]

Superfamily **Enoploidea** Dujardin 1845 (2 families)

Family **Enoplidae** Dujardin 1845 (1 subfamily, 1 genus, 51 species)[13]

---

1. **BY** Mike Hodda (for full contact address, see **Author name and address** after **References**); the title of this paper should be cited as "Phylum Nematoda Cobb 1932. *In*: Zhang, Z.-Q. (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness". Recent Nematoda includes 3 classes, 31 orders, 267 families, 2829 genera and 24,783 species, with fossil taxa represented in 2 genera by 10 species. There are 7 genera and 7 species known only as fossils.
2. Rudolphi (1808) is most often cited as the author of the accepted name of the phylum, which is Nematoda. The first holophyletic diagnosis at Phylum rank used the name "Nemates" (Cobb 1932). The latter name has never been in wide use, and the competing claims of the two names have been discussed extensively (Chitwood 1957, 1958, Dougherty 1958a, 1958b). Following the principle outlined below, Cobb (1932) is cited as authority because his use is specifically as a phylum.
3. The evolutionary affinities of Nematoda have long been controversial (see discussion in Hodda 2007). The most recent molecular evidence has favoured affinities first with Nematomorpha, then with decreasing relationships to Kinorhyncha, Priapulida and Loricifera within a superphylum Ecdysozoa (Aguinaldo *et al.* 1997, Dunn *et al.* 2008). However, significant unresolved differences between phylogenies hypothesised using different taxa, assumptions, methods and lines of evidence remain.
4. Unless indicated otherwise, the classification follows Hodda (2007). The higher classification of the phylum has been interpreted in many ways, with consequent changes in the hierarchical level of many names (Hodda 2007). Above the level of the genus nematode classification has been—and continues to be—volatile. Particularly, analyses of accumulating molecular data have produced only broadly similar phylogenies, and consequently they implied only broadly similar classifications. In addition to topological differences, there remain substantial differences in the support for many groups, and support for branches are often low. Furthermore, composition and support for the various groups remains dependent on the genes and taxa selected as well as the methods of alignment and analysis (De Ley & Blaxter 2004, Hodda 2007, Holterman *et al.* 2006, Meldal *et al.* 2007, Nadler *et al.* 2007, Smythe *et al.* 2006, Van Megen *et al.* 2009). The present classification continues the tradition of regarding branch points in nematode phylogeny that are ambiguous, unsupported or differ between studies as polytomies (Hodda 2007).
5. For Phylum Nematoda, authorities cited in brackets after the main authority are the first to use a name at a particular level, irrespective of the concept represented by the name, and irrespective of uses at other levels. Current names follow the Pearse (1936) system of endings for higher taxa, as advocated by several authors (Chitwood 1958, Pearse 1936), and in wide use. Earlier authors, and those from the former USSR, used a different system of endings, and have been cited as authorities if clearly indicating the use of the name at the particular rank, irrespective of the ending applied to the stem name. In many cases the lower-level taxa included in a group now differs substantially from those when the name was proposed. Taxa are listed in alphabetical order.
6. The known diversity of Nematoda highly underestimates the estimated diversity, by a factor generally estimated at between 10 and 50, but which may be up to 3000 (Lambshead 1993, Brandt *et al.* 2007). Numbers of species in families generally follow the latest revision or checklist available, supplemented by electronic searches for subsequent descriptions (Anderson *et al.* 1974, Andrassy 1999, 2008, De Coninck 1965, Gerlach & Riemann 1974).
7. Ecologically, the phylum has species occurring in every geographic region on earth, probably has parasitic species in every other animal phylum where the body is significantly larger than the nematodes, has species parasitizing all terrestrial or aquatic and a few marine plants (mostly externally and below ground, but also internally and in stems and seeds), and has free-living species in every habitat on earth where liquid water is ever present (including Antarctica and the Arctic sea ice). Trophically, free-living species consume most other types of small-bodied organisms. Generally, only live organisms are consumed; that is nematodes are not saprobes.
   Trophic categories follow Hodda *et al.* (2009).
8. Enoplea have unique characters of the sperm nuclear envelope being retained in mature spermatozoa (absent in all other nematodes studied), no asymmetry in the dividing germ line (present in other nematodes), and no bilateral symmetry during early embryogenesis (present in other nematodes) (Baccetti *et al.* 1983, Justine 2002, Malakhov 1994, Schierenberg 2005, Voronov *et al.* 1998, Yushin 2003a,b). However, these character states are common in animals outside nematodes, and so they may represent plesiomorphies uninformative for phylogenetic analysis (Aleshin 2004). Oncholaimida have a nuclear envelope present (Yushin *et al.* 2002) as an apomorphy, but have affinities with Enoplia from molecular evidence (Holtermann *et al.* 2006, Meldal *et al.* 2007, Van Megen *et al.* 2009). Spermatogenesis and development also provide evidence for the separation of Enoplia from Dorylaimia and Chromadorea (Yushin & Malakhov 2004, Schierenberg & Lahl 2004).
9. Classification generally follows Lorenzen (1994).
10. Regarded as a superfamily on the basis of molecular evidence (Van Megen *et al.* 2009), as well as morphological differences (Lorenzen 1994) indicating that the clade is on the same level as the Enoploidea.
11. Mostly marine, two species known from freshwater (Smol & Coomans 2006).
12. Some molecular analysis suggests a close affinity to Enoplidae (Pegova *et al.* 2004). On this basis, only a single superfamily Enoploidea has been proposed (Smol & Coomans 2006). However, morphological evidence suggests a separate superfamily: the spacious, toothless buccal cavity surrounded by pharyngeal tissue only in the posterior section, the cephalic capsule lacking mucular insertions, and the constant position of the gonads to the left of the intestine are all apomorphic (Lorenzen 1994). Molecular analyses in broader contexts also suggest Enoplidae and Thoracostomopsidae are a separate clade from Anoplostomatidae (Van Megen *et al.* 2009) or the relationships are unresolved (Meldal *et al.* 2007). Hence a separate superfamily is justified.
13. Marine, microbivorous or predatory.

Family **Thoracostomopsidae** Filipjev 1927 (3 subfamilies, 21 genera, 197 species) [14]

Superfamily **Phanodermatoidea** Schuurmans Stekhoven 1935 (2 families)[15]

Family **Anticomidae** Filipjev 1918 (Hope & Murphy 1972) (1 subfamily, 6 genera, 63 species) [16,17]

Family **Phanodermatidae** Schuurmans Stekhoven 1935 (2 subfamilies, 9 genera, 72 species)[18]

Order **Ironida** Hodda 2007 (4 suborders) [19]

Suborder **Ironina** Siddiqi 1983 (1 superfamily)

Superfamily **Ironoidea** De Man 1876 (3 families)

Family **Ironidae** De Man 1876 (3 subfamilies, 11 genera, 67 species) [20]

Suborder **Oxystominina** Siddiqi 1983 (2 families) [21]

Superfamily **Oxystominoidea** Filipjev 1918 (2 families)

Family **Leptosomatidae** Filipjev 1916 (8 subfamilies, 34 genera, 188 species) [22]

Family **Oxystominidae** Filipjev 1918 (De Coninck & Schuurmans Stekhoven 1933) (3 subfamilies, 12 genera, 171 species) [23,24]

Suborder **Rhabdolaimina** n. rank (1 superfamily) [25]

Superfamily **Rhabdolaimoidea** Chitwood 1951 (n. rank) (2 families) [26]

Family **Andrassyidae** Tchesunov & Gagarin 1999 (2 genera, 3 species) [27,28]

Family **Rhabdolaimidae** Chitwood 1951 (Gerlach & Riemann 1974) (3 subfamilies, 7 genera, 23 species)

Suborder **Campydorina** Jairajpuri 1983 (1 superfamily) [29]

Superfamily **Campydoroidea** Clark 1961 (Jairajpuri *et al.* 1976) (1 family)

Family **Campydoridae** Clark 1961 (1 genus, 2 species) [30]

Order **Tripyloidida** Hodda 2007 (1 superfamily)

Suborder **Tripyloidina** De Coninck 1965 (1 family)

Superfamily **Tripyloidoidea** De Coninck & Schuurmans Stekhoven 1933 (De Coninck 1965)

Family **Tripyloididae** De Coninck & Schuurmans Stekhoven 1933 (1 subfamily, 8 genera, 52 species) [31]

---

14. Mostly marine, three species from freshwater, predatory (Smol & Coomans 2006).
15. Regarded as a superfamily because both molecular and morphological evidence indicates divergence on the same level as Enoploidea and Anoplostomatoidea (Van Megen *et al.* 2009, Lorenzen 1994).
16. Regarded as related to the Phanodermatidae on the basis of similarities in the development of the cephalic region (Lorenzen 1994).
17. Marine, microbivorous.
18. Marine, microbivorous.
19. Classified at order level by Hodda (2007) on the basis of the affinities remaining unresolved (Holterman *et al.* 2006, Meldal *et al.* 2007, Smythe *et al.* 2006).
20. Subfamily Ironinae De Man 1876 occurs in freshwater aquatic and moist terrestrial habitats, while subfamily Thalassironinae Andrassy 1976 is marine.
21. Originally placed in order Alaimida on the basis of general similarities in the thin body shape and the rudimentary buccal cavity, here regarded as a suborder of Ironida on the basis of the oesophageal outline, the position of oesophageal glands, and molecular evidence.
22. Marine, microbivorous.
23. Mostly marine, but nine species are freshwater aquatic (Smol & Coomans 2006); microbivorous.
24. Created as subfamily Oxystomatinae by Filipjev (1918), and Oxystomininae by Chitwood (1935), raised to family by De Coninck & Schuurmans Stekhoven (1933).
25. Placed in Leptolaimoidea (Plectida) by De Ley & Blaxter (2004). Some molecular evidence suggests affinities with some Enoplida, Oncholaimida, and Tripylida (Holterman *et al.* 2006). The position of the genus *Syringolaimus* needs clarification, but if included in the Rhabdolaimidae, then the Rhabdolaimidae fits with Enoplica on molecular evidence (Meldal *et al.* 2007). The Rhabdolaimidae can be placed in Enoplida on the morphological characters of non-sprial and pocket shaped amphids (Lorenzen 1994). Curiously, Lorenzen (1994) excluded *Syringolaimus* from Rhabdolaimidae, placing it instead in Ironidae. Maggenti (1963) included the genus in Rhabdolaimidae. Placed as a suborder of Ironida in the current classification on the basis of the similarity of three anteriorly-placed teeth in an elongate buccal cavity, and an unequivocal placement within Ironida on molecular evidence (Van Megen *et al.* 2009).
26. n. rank.
27. Shares a number of morphological characteristics with Rhabdolaimidae (Tchesunov & Gagarin 1999). Other characters are in an unusual combination. Molecular data is lacking. The family may warrant a separate suborder. More investigation is warranted.
28. Terrestrial, feeding habits unknown.
29. Originally proposed under order Dorylaimida (Jairajpuri 1983), but very soon afterwards proposed independently in the order Enoplida (Siddiqi 1983). Hodda (2007) placed Campydorida as an order under Enoplica, on the basis of molecular evidence (Mullin *et al.* 2003). More recent molecular analyses suggest affinities with Ironina (Van Megen *et al.* 2009), so the group is now placed as a suborder within Ironida. Morphological characters can be interpreted in many ways, so do not provide unambiguous evidence for phylogeny.
30. Terrestrial, omnivorous.
31. Marine, microbivorus.

Superfamily **Trischistomatoidea** Andrassy 2007 (Zhao 2011) (1 family)

Family **Trischistomatidae** Andrassy 2007 (Zhao 2011) (1 subfamily, 2 genera, 17 species) [32]

Order **Alaimida** Siddiqi 1983 (1 suborder) [33]

Suborder **Alaimina** Clark 1961 (1 superfamily)

Superfamily **Alaimoidea** Micoletzky 1922 (1 family)

Family **Alaimidae** Micoletzky 1922 (3 subfamilies, 13 genera, 142 species) [34]

Order **Trefusiida** Lorenzen 1981 (1 suborder) [35]

Suborder **Trefusiina** Siddiqi 1983 (1 superfamily)

Superfamily **Trefusioidea** Gerlach 1966 (4 families) [36]

Family **Lauratonematidae** Gerlach 1953 (1 subfamily, 3 genera, 12 species) [37]

Family **Simpliconematidae** Blome & Schrage 1985 (1 subfamily, 1 genus, 3 species) [38]

Family **Trefusiidae** Gerlach 1966 (1 subfamily, 6 genera, 38 species) [39]

Family **Xenellidae** De Coninck 1965 (2 genera, 5 species) [40]

Superorder **Rhaptothyreica** n. rank (1 order)[41]

Order **Rhaptothyreida** Tchesunov 1997 (1 suborder)

Suborder **Rhaptothyreina** Hodda 2007 (1 superfamily)

Superfamily **Rhaptothyreiodea** Hope & Murphy 1969 (1 family) [42]

Family **Rhaptothyreidae** Hope & Murphy 1969 (1 genus, 2 species) [43]

Subclass **Oncholaimia** Hodda 2007

Superorder **Oncholaimica** Hodda 2007 (1 order) [44]

Order **Oncholaimida** Siddiqi 1983 (1 suborder) [45]

Suborder **Oncholaimina** De Coninck 1965 (1 superfamily)

Superfamily **Oncholaimoidea** Filipjev 1916 (De Coninck 1965) (2 families) [46]

Family **Enchelidiidae** Filipjev 1918 (1 subfamily, 18 genera, 171 species) [47]

Family **Oncholaimidae** Filipjev 1916 (7 subfamilies, 34 genera, 353 species) [48]

Subclass **Triplonchia** Hodda 2007 (1 superorder) [49]

Superorder **Triplonchica** Hodda 2007 (2 orders)

Order **Triplonchida** Cobb 1920 (1 suborder) [50]

---

32. Freshwater aquatic, microbivorous.
33. Alaimidae have been placed in Dorylaimea on the basis of the positions and orifices of the oesophageal glands and the amphidial apertures of some genera, and Enoplea on the basis of other characters. Molecular analyses consistently point to an affinity with Enoplea.
34. Terrestrial, predatory.
35. A very diverse group, paraphyletic on both molecular and morphological evidence (Holterman *et al.* 2006, Lorenzen 1994, Rusin *et al.* 2001), with part in Enoplea and part in Tripylea. Placed provisionally in Enoplica because this is assumed basal. Revision required.
36. Superfamily by Hodda (2007).
37. Marine, microbivorous.
38. Marine, microbivorous.
39. Marine, microbivorous.
40. Marine, microbivorous.
41. Unplaced in Hodda (2007). Placed as a superorder because affinities within Enoplia are still uncertain, but it falls within a broadened definition of the subclass.
42. Superfamily by Hodda (2007).
43. Marine, deep sea, mouthless, so trophic status uncertain, but seem to rely on prokaryotic organisms in their mid-gut (Tchesunov 1997).
44. Predatory, marine.
45. Placed as a separate class by Hodda (2007), on the basis of the morphological apomorphy of the spermatozoa having a nuclear envelope present (Yushin *et al.* 2002). Supported as a distinct clade, but with relationships on molecular evidence either unresolved (Meldal *et al.* 2007) or with affinities to Tripylida (Holterman *et al.* 2006) or Enoplia (Litvaitis *et al.* 2000, Van Megen *et al.* 2009), and on morphological evidence with affinities to both Tripylida and Enoplida.
46. Superfamily by De Coninck (1965).
47. Marine, predatory.
48. Marine, predatory.
49. Triplonchia was placed as the only subclass in Class Tripylea in previous classifications (Hodda 2007), on the basis of ambiguous morphological evidence, and weak (55-66%) or low molecular support for the dichotomous division of Nematoda into Enoplea and Chromadorea (Holterman *et al.* 2006, Meldal *et al.* 2006, Smythe *et al.* 2006), making a polytomy of Enoplea, Chromadorea, Tripylea, and Dorylaimea the only justified assumption. One species—*Tobrilus diversipapillatus*—has a gastrulation pattern highly common in animal kingdom, but uncommon in nematodes (Schierenberg 2005). Information on the patterns of gastrulation in other Triplonchia, Enoplea and Dorylaimea could potentially provide resolution for the early phylogeny of nematodes. In the absence of morphological or developmental evidence, recent molecular analyses show some affinities between the former Tripylea and the former Enoplea (Van Megen *et al.* 2009), so Tripylea is now placed as a subclass with the sole subclass of the former Enoplea in an enlarged class Enoplea.

Suborder **Diphtherophorina** Coomans & Loof 1970 (2 superfamilies)

Superfamily **Diphtherophoroidea** Thorne 1935 (Clark 1961) (1 family)

Family **Diphtherophoridae** Thorne 1935 (3 genera, 50 species) [51]

Superfamily **Trichodoroidea** Clark 1961 (Siddiqi 1974) (1 family)

Family **Trichodoridae** Clark 1961 (5 genera, 99 species) [52]

Order **Tripylida** Siddiqi 1983 (2 suborders)

Suborder **Tripylina** Andrassy 1974 (2 superfamilies) [53]

Superfamily **Tripyloidea** De Man 1876 (Clark 1961) (1 family)

Family **Tripylidae** De Man 1876 (2 subfamilies, 4 genera, 41 species) [54,55]

Superfamily **Tobriloidea** Filipjev 1918 (De Coninck 1965) (4 families)

Family **Pandolaimidae** Belogurov 1980 (1 genus, 5 species) [56]

Family **Rhabdodemaniidae** Filipjev 1934 (1 genus, 17 species) [57]

Family **Tobrilidae** Filipjev 1918 (De Coninck 1965) (3 subfamilies, 10 genera, 162 species) [58]

Family **Triodontolaimidae** De Coninck 1965 (Lorenzen 1978) (1 subfamily, 1 genus, 1 species) [59]

Suborder **Prismatolaimina** n. rank (2 superfamilies) [60]

Superfamily **Onchuloidea** Andrassy 1964 (n. rank) (1 family) [61]

Family **Onchulidae** Andrassy 1964 (2 subfamilies, 8 genera, 20 species) [62,63]

Superfamily **Prismatolaimoidea** Gerlach & Riemann 1974 (Hodda 2007) (3 families)

Family **Bastianiidae** De Coninck 1935 (2 genera, 10 species) [64,65]

Family **Odontolaimidae** Gerlach & Riemann 1974 (Lorenzen 1981) (1 subfamily, 1 genus, 4 species) [66]

Family **Prismatolaimidae** Gerlach & Riemann 1974 (2 genera, 38 species) [67,68]

---

50. Cobb (1920) used the name Triplonchia as an order, but this pre-dates the adoption of uniform endings for the names of higher taxa, so is credited as the authority here. Siddiqi (1983) was the first to propose the name at order level in its current form.
51. Terrestrial, plant-root feeding, but damage not normally economically important.
52. Terrestrial, plant-root feeding. Many species are associated with transmission of viruses. Damage by many species, and their associated viruses, cause economically significant losses to crops.
53. Division of Tripylina into two clades is supported by molecular evidence (Meldal *et al.* 2006).
54. Most species are freshwater aquatic and predatory.
55. Freshwater aquatic, predatory or omnivorous or microbivorous.
56. Marine, omnivorous.
57. Terrestrial, microbivorous.
58. The family Tobrilidae may include the genus *Trischistoma* (Holterman & Holovachov 2007, Zullini 2006), but excluded here (Zhao 2011).
59. Subfamily created by De Coninck (1965).
60. Placed with Tobriloidea by De Ley & Blaxter (2002). Some molecular analyses place the families Prismatolaimidae and Bastianiidae in a separate clade (Holterman *et al.* 2007, Van Megen *et al.* 2009), while others did not resolve their relationships (Meldal *et al.* 2006). None of the molecular analyses resolve the relationship of the families with Tobrilidae or Tripylidae. Morphological evidence has been interpreted as suggesting affinities with a number of different higher taxa. Recent analyses have suggested inclusion in Tripylida on the basis of the structure of the buccal cavity and cephalic sensillae (Hodda *et al.* 2004, Hodda 2007, Holovachov *et al.* 2008).
61. There is a unique structure of the oesophagus with gland cells interspersed with muscle, which defines the superfamily. Morphological similarities in the orifices of the oesophageal glands, cephalic sensillae, amphids and cardia support affinities with Prismatolaimidae (Hodda *et al.* 2004, Hodda 2007, Holovachov *et al.* 2008). Other interpretations include the family being totally unrelated to, closely related to, or a subset of, the Prismatolaimidae, and variously as belonging to the orders Trefusiida, Enoplida, Tripylida and Triplonchida (Goodey 1963, Andrássy 1964, De Coninck 1965, Riemann 1972, Andrássy 1976, Maggenti 1982, Siddiqi 1983, Maggenti 1991, Lorenzen 1994, Andrassy 2001a,b, De Ley & Blaxter 2002). Some authors have considered the evidence for higher systematics in this group inconclusive (Coomans & Raski 1988).
62. Hodda (2007) placed Onchulidae with Prismatolaimidae in Prismatolaimoidea, but with the inclusion of Bastianiidae with Prismatolaimidae in Prismatolaimoidea, continued inclusion of Onchulidae is no longer justified, so Onchulidae is placed in a new superfamily but with Prismatolaimoidea in a new suborder Prismatolaimina.
63. Terrestrial and freshwater aquatic, predatory.
64. Bastianiidae was family *incertae sedis* in the classifications of De Ley *et al.* (2006) and Hodda (2007). It has been included in Enoplida:Oxystominidae (Andrassy 1976), Tripylida:Prismatolaimidae (De Coninck 1935), Araeolaimida (Goodey 1963), and Chromadorida:Leptolaimina (Lorenzen 1994, Ryss 1988). The family was not included in some molecular analyses (Meldal *et al.* 2006, Smythe *et al.* 2006), but was resolved as a clade with Prismatolaimidae when it was included (Holterman *et al.* 2007, Van Megen *et al.* 2009). There are morphological similarities with Prismatolaimidae in the structure of the sensilla, amphid, cardia, supplements, spicules, spicular musculature, gubernaculum and organellum ovale (Coomans & Raski 1988, Holovachov 2006, Tchesunov & Sturhan 2002). The molecular and morphological evidence seems enough to place the family despite some evidence of other affinities.
65. Terrestrial, feeding habits unknown, probably microbivorous.
66. Freshwater aquatic or wet terrestrial habitats, microbivorous or algal feeding.
67. Subfamily created by Micoletzky (1922).
68. Terrestrial, microbivorous.

Class **Dorylaimea** Hodda 2007 (3 subclasses) [69]

Subclass **Bathyodontia** Hodda 2007 (2 superorders)

Superorder **Mononchica** Hodda 2007 (3 orders)

Order **Bathyodontida** Siddiqi 1983 (1 suborder) [70]

Suborder **Bathyodontina** Coomans & Loof 1970 (2 superfamilies)

Superfamily **Cryptonchoidea** Chitwood 1937 (2 families)

Family **Bathyodontidae** Clark 1961 (1 genus, 3 species) [71]

Family **Cryptonchidae** Chitwood 1937 (1 genus, 4 species)

Superfamily **Mononchuloidea** De Coninck 1965 (Coomans & Loof 1970) (1 family)

Family **Mononchulidae** De Coninck 1965 (Coomans & Loof 1970) (1 subfamily, 3 genera, 5 species) [72,73]

Order **Mermithida** Hyman 1951 (2 suborders)

Suborder **Aulolaimina** Hodda 2007 (2 superfamilies) [74]

Superfamily **Aulolaimoidea** Gerlach & Riemann 1973 (Hodda 2007) (1 family) [75]

Family **Aulolaimidae** Gerlach & Riemann 1973 (3 genera, 14 species) [76,77]

Superfamily **Isolaimioidea** Timm 1969 (1 family) [78]

Family **Isolaimiidae** Timm 1969 (1 genus, 11 species) [79]

Suborder **Mermithina** Andrassy 1971 (1 superfamily)

Superfamily **Mermithoidea** Braun 1883 (Wulker 1927) (2 families)

Family **Mermithidae** Braun 1883 (11 subfamilies, 102 genera, 599 species) [80,81]

Family **Tetradonematidae** Cobb 1919b (13 genera, 16 species) [82]

---

69. Regarded as a subset of Enoplia by Lorenzen (1981) on the basis of the presence of primarily non-spiral amphids, the group is unresolved in most molecular phylogenies (Meldal *et al.* 2006, Litvaitis *et al.* 2000, Smythe *et al.* 2006). However, Dorylaimea is clearly a separate branch in the latest molecular analysis (Van Megen *et al.* 2009). This position is compatible with morphological analysis (Lorenzen 1981) if the assumed character polarity is reversed, and non-spiral amphids become plesiomorphic rather than apomorphic. All Orders within Dorylaimea have the morphological apomorphy of oesophageal glands opening behind the nerve ring. The clade has been advanced before on other morphological evidence (Maggenti 1991). Using morphological evidence requiring some assumptions regarding homology, but considering the vertebrate-parasitic Trichocephalida, Dioctophymatida, Muspiceida and Mermithida rather than the free-living members of the groups, Spratt (2011) regarded these groups as having shared characters of onchiostyles with Triplochida within Enoplea, and thus supporting Dorylaimia as a subclass within an expanded Enoplea. He also pointed out the presence of a Demanian system appears limited to Muspiceidae (both species of the genus *Maseria*) and 11 genera of Oncholaimida, suggesting further links between Trichocephalia and Enoplea. The clade of Dorylaimia is also supported by other molecular evidence, although it has been equivocally included within Enoplea (De Ley & Blaxter 2004) or Chromadorea (Holterman *et al.* 2006). Spermatogenesis and development provide further evidence for the separation of Dorylaimea from Enoplea and Chromadorea (Yushin & Malakhov 2004, Schierenberg & Lahl 2004). Herein the relation with Enoplea and Chromadorea is regarded as a polytomy (Aleshin *et al.* 1998, Hodda 2007).
70. Bathyodontida are equal in rank with Mononchida on the morphological grounds of the structure of the head and oesophagus (Coomans & Loof 1970). Molecular evidence also separates Bathyodontida from Mononchida (Holterman *et al.* 2006, Van Megen *et al.* 2009).
71. Terrestrial or freshwater aquatic, microbivorous.
72. Subfamily created by De Coninck (1965).
73. Terrestrial or freshwater aquatic, microbivorous.
74. Isolaimiidae placed with Mermithida on the basis of the tubules around the head, Isolaimiidae and Aulolaimidae are here placed together on the basis of molecular evidence (Van Megen *et al.* 2009). Morphologically, Aulolaimidae has been regarded as a separate family but with no apomorphy to justify any other placements within higher taxonomic ranks (Lorenzen 1981, 1994). Considering all evidence the family has been placed in Plectida (Haliplectoidea) and Plectia (De Ley & Blaxter 2004, Hodda 2007, respectively). Others considered the evidence inconclusive (Holovachov *et al.* 2007). With strong molecular support for affinities of Isolaimiidae and Aulolaimidae, the similarities in the head structure of Isolaimiidae and Mermithidae have added weight and justify placing Isolaimiidae and Aulolaimidae as a suborder within Mermithida.
75. Aulolaimidae has been placed with either Monhysterida or Plectida (Haliplectoidea) on molecular evidence (De Ley & Blaxter 2004, Holterman *et al.* 2006), but is unresolved in the latest molecular analysis (Van Megen *et al.* 2009). The family was placed within Enoplida (Ironoidea) or Plectida (Leptolaimina) on morphological grounds (Andrassy 1976, Lorenzen 1994). A polychotomy with Monhysterida and Plectida was therefore proposed, with consequent rank as a separate Order within the subclass Plectia (Hodda 2007).
76. Created as a subfamily by Jairajpuri & Hooper (1968).
77. Terrestrial, microbivorous.
78. Molecular evidence points to unresolved similarities of Isolaimioidea to Bathyodontia, Dorylaimida and Araeolaimida (De Ley & Blaxter 2004, Meldal *et al.* 2007, Holterman *et al.* 2006). Morphological evidence has been viewed as similarly inconclusive within the same group of phyla (Timm 1961, Theodorides 1965, De Coninck 1965). Isolaimina contains few, poorly-known species. It was regarded as a separate Order (Cobb 1919, Hodda 2007, Timm 1961), based on the apomorphy of 6 tubules around the head. As constituted in the present classification, Aulolaimina and Mermithida can accommodate the family on the basis of similarities in head structure and general body size. However, this placement is provisional and more investigation will be necessary to place the family with any certainty.
79. Terrestrial, microbivorous, rare.
80. Terrestrial, free-living but not feeding as adults and briefly as juveniles, internal parasites of arthropods for the rest of the life cycle. Uniformly fatal to the host.

Order **Mononchida** Jairajpuri 1969 (1 suborder)
Suborder **Mononchina** Kirjanova & Krall 1969 (2 superfamilies)
Superfamily **Anatonchoidea** Jairajpuri 1969 (Jairajpuri 1971) (2 families)
Family **Anatonchidae** Jairajpuri 1969 (2 subfamilies, 9 genera, 180 species) [83]
Family **Iotonchidae** Jairajpuri 1969 (2 subfamilies, 11 genera, 127 species) [84]
Superfamily **Mononchoidea** Filipjev 1934 (Clark 1961) (3 families)
Family **Cobbonchidae** Jairajpuri 1969 (1 subfamily, 4 genera, 36 species) [85]
Family **Mononchidae** Filipjev 1934 (Chitwood 1937) (2 subfamilies, 8 genera, 97 species) [86]
Family **Mylonchulidae** Jairajpuri 1969 (2 subfamilies, 14 genera, 104 species) [87]
Subclass **Dorylaimia** Inglis 1983 (1 superorder)
Superorder **Dorylaimica** Hodda 2007 (1 order)
Order **Dorylaimida** Pearse 1942 (2 suborders) [88]
Suborder **Dorylaimina** Chitwood 1933 (5 superfamilies) [89]
Superfamily **Actinolaimoidea** Thorne 1939 (Thorne 1967) (3 families)
Family **Actinolaimidae** Thorne 1939 (Meyl 1957) (4 subfamilies, 14 genera, 125 species) [90,91]
Family **Carcharolaimidae** Thorne 1967 (2 subfamilies, 6 genera, 35 species) [92 93]
Family **Trachypleurosidae** Thorne 1967 (1 subfamily, 1 genus, 5 species) [94]
Superfamily **Belondiroidea** Thorne 1939 (Thorne 1964) (1 family)
Family **Belondiridae** Thorne 1939 (3 subfamilies, 25 genera, 252 species) [95]
Superfamily **Dorylaimoidea** De Man 1876 (Thorne 1934) (4 families)
Family **Aporcelaimidae** Heyns 1965 (3 subfamilies, 16 genera, 211 species) [96]
Family **Dorylaimidae** De Man 1876 (4 subfamilies, 23 genera, 446 species) [97]
Family **Nordiidae** Siddiqi 1969 (5 subfamilies, 22 genera, 215 species) [98,99]
Family **Qudsianematidae** Jairajpuri 1965a (Siddiqi 1969) (7 subfamilies, 47 genera, 469 species) [100,101]
Superfamily **Longidoroidea** Thorne 1935 (Khan & Ahmad 1975) (2 families)
Family **Longidoridae** Thorne 1935 (Meyl 1961) (2 subfamilies, 7 genera, 222 species) [102,103]
Family **Xiphinematidae** Dalmasso 1969 (Khan & Ahmad 1975) (1 subfamily, 1 genus, 230 species) [104,105]

81. The number of species in this family will vary enormously depending on the concepts of species, and standard of description required (Curran & Hominick 1981). The figure cited here is a maximum (Rubtsov 1978). The actual number of species described may be only one third this estimate, omitting many synonyms or descriptions that are inadequate to ever re-diagnose the species.
82. Terrestrial, internal parasites of arthropods, including as adults.
83. Terrestrial or freshwater aquatic, predatory.
84. Terrestrial or freshwater aquatic, predatory.
85. Terrestrial or freshwater aquatic, predatory, microbivorous or omnivorous.
86. Terrestrial or freshwater aquatic, predatory, microbivorous or omnivorous.
87. Terrestrial or freshwater aquatic, predatory.
88. Classification generally follows Jairajpuri & Ahmad (1992)
89. Created as suborder Dorylaimata by Chitwood (1933), which pre-dates the adoption of uniform endings for higher taxa, hence the authority is Chitwood 1933, although the first to use the name Dorylaimina was Pearse (1936).
90. Created as a subfamily by Thorne (1939).
91. Terrestrial or freshwater aquatic, predatory.
92. Terrestrial or freshwater aquatic, predatory.
93. Placed as a subfamily of Qudsianematidae by Andrassy (1991), but separated as a family in Actinolaimoidea by Jairajpuri & Ahmad (1992). Here placed in Actinolaimoidea because extensive sclerotization, thickening and elaboration of the cheilostome is apomorphic to the superfamily.
94. Terrestrial or freshwater aquatic, predatory.
95. Terrestrial, mostly plant-root feeding, but not economically important.
96. Terrestrial or freshwater aquatic, predatory or omnivorous.
97. Terrestrial or freshwater aquatic, algal-feeding or omnivorous.
98. Created as a subfamily by Jairajpuri & AH Siddiqi (1964).
99. Terrestrial or freshwater aquatic with a very few estuarine species, algal-feeding, omnivorous, microbivorous or predatory.
100. Created as a subfamily by Jairajpuri (1965a).
101. Terrestrial or freshwater aquatic, algal-feeding or omnivorous.
102. Terrestrial, plant-root feeding. Some species are associated with transmission of viruses. Damage by many species, and their associated viruses, cause economically significant losses to crops.
103. Subfamily created by Thorne (1935).
104. Subfamily created by Dalmasso (1969).

Superfamily **Tylencholaimoidea** Filipjev 1934 (Ahmad & Jairajpuri 1983) (4 families) [106]
Family **Aulolaimoididae** Jairajpuri 1964 (4 genera, 15 species) [107]
Family **Leptonchidae** Thorne 1935 (6 subfamilies, 28 genera, 194 species) [108]
Family **Mydonomidae** Thorne 1964 (3 subfamilies, 14 genera, 116 species) [109]
Family **Tylencholaimidae** Filipjev 1934 (Siddiqi 1969) (4 subfamilies, 26 genera, 127 species) [110,111]
Suborder **Nygolaimina** Ahmad & Jairajpuri 1979 (1 superfamily)
Superfamily **Nygolaimoidea** Thorne 1935 (De Coninck 1965) (4 families)
Family **Aetholaimidae** Jairajpuri 1965b (Ahmad & Jairajpuri 1982) (1 genus, 5 species) [112,113]
Family **Nygellidae** Andrassy 1958 (Jairajpuri 1964) (1 subfamily, 1 genus, 5 species) [114]
Family **Nygolaimellidae** Clark 1961 (Heyns 1968) (2 subfamilies, 3 genera, 10 species) [115]
Family **Nygolaimidae** Thorne 1935 (Meyl 1961) (2 subfamilies, 10 genera, 107 species) [116]
Subclass **Trichocephalia** Hodda 2007 (1 superorder)
Superorder **Trichocephalica** Hodda 2007 (4 orders)
Order **Dioctophymatida** Ryzhikov & Sonin 1981 (1 suborder)
Suborder **Dioctophymatina** Chitwood 1933 (1 superfamily) [117]
Superfamily **Dioctophymatoidea** Railliet 1915 (Roman 1965) (2 families)
Family **Dioctophymatidae** Railliet 1915 (4 genera, 27 species) [118]
Family **Soboliphymatidae** Petrov 1930 (1 genus, 10 species) [119]
Order **Marimermithida** Rubtzov 1980 (1 suborder)
Suborder **Marimermithina** Hodda 2007 (1 superfamily)
Superfamily **Marimermithoidea** Rubtzov & Platonova 1974 (Hodda 2007) (1 family)
Family **Marimermithidae** Rubtzov & Platonova 1974 (5 genera, 6 species) [120]
Order **Muspiceida** (1 suborder) [121]
Suborder **Muspiceina** Bain & Chabaud 1968 (1 superfamily)
Superfamily **Muspiceioidea** Brumpt 1920 (Roman 1965) (2 families)
Family **Muspiceidae** Brumpt 1920 (5 genera, 8 species) [122,123]
Family **Robertdollfusiidae** Chabaud & Campana 1950 (4 genera, 6 species) [124]
Order **Trichocephalida** Spasski 1954 (1 suborder)
Suborder **Trichinellina** Hodda 2007 (1 superfamily)
Superfamily **Trichinelloidea** Ward 1907 (Hall 1916) (6 families)
Family **Anatrichosomatidae** Yamaguti 1961 (1 genus, 5 species) [125]
Family **Capillariidae** Railliet 1915 (1 subfamily, 18 genera, 390 species) [126]

---

105. Terrestrial, plant-root feeding. Some species are associated with transmission of viruses. Damage by many species, and their associated viruses, cause economically significant losses to crops.
106. Tylencholaiminae Filipjev 1934 has priority over Leptonchidae Thorne 1935 so is the correct name (Siddiqi 1982).
107. Terrestrial, plant-root feeding or omnivorous.
108. Terrestrial, plant-root feeding or omnivorous.
109. Terrestrial, plant-root feeding or omnivorous.
110. Subfamily created by Filipjev (1934).
111. Terrestrial or freshwater aquatic and one species estaurine, plant-root feeding or omnivorous.
112. Created as a subfamily by Jairajpuri (1965b).
113. Terrestrial, predatory or omnivorous.
114. Terrestrial, predatory or omnivorous.
115. Terrestrial, predatory or omnivorous.
116. Terrestrial or freshwater aquatic, predatory.
117. Created as suborder Dioctophymata (Chitwood 1933), but ante-dating adoption of current uniform endings for names of higher ranks. First to use in current form was Clark (1961).
118. Internal parasites of mammals.
119. Internal parasites of mammals.
120. Immature stages parasitic in body cavity of marine benthic invertebrates, adults free-living but non-feeding.
121. Placed in this superorder on morphological evidence (Anderson & Bain 1982, Spratt & Nicholas 2002).
122. Originally described as a sub-family by Brumpt (1930).
123. Internal parasites of mammals.
124. Internal parsites of birds.
125. Internal parasites of mammals.
126. Internal parasites of mammals.

Family **Cystoopsidae** Skryabin 1923 (2 subfamilies, 2 genera, 7 species) [127]

Family **Trichinellidae** Ward 1907 (4 genera, 16 species) [128]

Family **Trichosomoididae** Hall 1916 (Yorke & Maplestone 1926) (2 subfamilies, 5 genera, 25 species) [129]

Family **Trichuridae** Ransom 1911 (Railliet 1915) (1 subfamily, 6 genera, 107 species) [130]

Class **Chromadorea** Inglis 1983 (2 subclasses) [131]

Subclass **Chromadoria** Adamson 1987 (1 superorder)

Superorder **Chromadorica** Hodda 2007 (3 orders)

Order **Chromadorida** Chitwood 1933 (1 suborder)

Suborder **Chromadorina** Filipjev 1929 (1 superfamily)

Superfamily **Chromadoroidea** Filipjev 1917 (De Coninck & Schuurmans Stekhoven 1933) (5 families)

Family **Achromadoridae** Gerlach & Riemann 1973 (Lorenzen 1981) (2 subfamilies, 3 genera, 26 species) [132]

Family **Chromadoridae** Filipjev 1917 (5 subfamilies, 78 genera, 444 species) [133]

Family **Cyatholaimidae** Filipjev 1918 (De Coninck & Schuurmans Stekhoven 1933) (2 subfamilies, 23 genera, 215 species) [134]

Family **Ethmolaimidae** Lorenzen 1981 (1 subfamily, 4 genera, 84 species) [135]

Family **Neotonchidae** Lorenzen 1981 (1 subfamily, 5 genera, 25 species) [136]

Order **Desmodorida** De Coninck 1965 (1 suborder) [137]

Suborder **Desmodorina** De Coninck 1965 (2 superfamilies)

Superfamily **Desmodoroidea** Filipjev 1922 (Chitwood 1936) (3 families)

Family **Desmodoridae** Filipjev 1922 (Steiner 1927) (6 subfamilies, 35 genera, 318 species) [138]

Family **Draconematidae** Steiner 1930 (2 subfamilies, 15 genera, 82 species) [139,140]

Family **Epsilonematidae** Steiner 1927 (2 subfamilies, 13 genera, 396 species) [141]

Superfamily **Microlaimoidea** De Coninck & Schuurmans Stekhoven 1933 (Lorenzen 1981) (3 families)

Family **Aponchiidae** Gerlach 1963 (2 genera, 12 species) [142]

Family **Microlaimidae** De Coninck & Schuurmans Stekhoven 1933 (11 genera, 101 species) [143]

Family **Monoposthiidae** De Coninck 1965 (4 genera, 33 species) [144]

Order **Desmoscolecida** Filipjev 1929 (1 suborder) [145]

Suborder **Desmoscolecina** De Coninck 1965 (1 superfamily) [146]

---

127. Internal or external parasites of fish or reptiles.
128. Internal parasites of mammals.
129. Internal parasites of mammals.
130. Internal parasites of mammals.
131. Spermatogenesis and development provide evidence for the separation of Chromadorea from Dorylaimia and Enoplea (Yushin & Malakhov 2004, Schierenberg & Lahl 2004).
132. Terrestrial or freshwater aquatic, microbivorous.
133. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
134. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
135. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
136. Marine, microbivorous.
137. On all available evidence, regarded as a separate order (DeLey & Blaxter 2004, De Ley *et al.* 2006, Decraemer & Smol 2006, Hodda 2007), although molecular evidence has the group as a subset of Chromadorida (Van Megen *et al.* 2009) or grouped with Desmoscolecida (Litvaitis *et al.* 2000) or split among other groups (Holterman *et al.* 2006). Morphologically, it has been classified as a subset of Chromadorida (Lorenzen 1994), but this is compatible with the current classification if the Chromadorida of Lorenzen (1994) is here equivalent to superorder Chromadorica.
138. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
139. Created as subfamily Draconematini by Filipjev (1918).
140. Marine, microbivorous.
141. Marine, microbivorous.
142. Marine, microbivorous.
143. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
144. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
145. Originally named order Desmoscolecata (Filipjev 1929) prior to adoption of current system of uniform endings of higher-ranked taxon names. First used in current form by De Coninck (1965).

Superfamily **Desmoscolecoidea** Shipley 1896 (Chitwood 1937) (3 families)

Family **Cyartonematidae** Tchesunov 1990 (1 subfamily, 9 genera, 35 species) [147]

Family **Desmoscolecidae** Shipley 1896 (2 subfamilies, 10 genera, 136 species) [148]

Family **Meyliidae** De Coninck 1965 (2 subfamilies, 15 genera, 157 species) [149]

Order **Selachinematida** n. rank (1 suborder)

Suborder **Selachinematina** n. rank (1 superfamily)

Superfamily **Selachinematoidea** De Coninck 1965 (Hodda 2007) (4 families) [150]

Family **Choanolaimidae** De Coninck 1965 (6 genera, 46 species) [151,152]

Family **Choniolaimidae** De Coninck & Schuurmans Stekhoven 1933 (1 genus, 5 species) [153,154]

Family **Richtersiidae** Kreis 1929 (De Coninck 1965) (2 genera, 21 species) [155,156]

Family **Selachinematidae** De Coninck 1965 (7 genera, 38 species) [157,158]

Subclass **Plectia** Hodda 2007 (4 superorders) [159]

Superorder **Monhysterica** Hodda 2007 (1 order)

Order **Monhysterida** Filipjev 1929 (3 suborders) [160]

Suborder **Araeolaimina** De Coninck 1965 (1 superfamily)

Superfamily **Axonolaimoidea** De Coninck & Schuurmans Stekhoven 1933 (Chitwood 1937) (5 families)

Family **Axonolaimidae** De Coninck & Schuurmans Stekhoven 1933 (13 genera, 2 subgenera, 124 species) [161]

Family **Bodonematidae** Jensen 1991 (1 genus, 1 species)

Family **Comesomatidae** Filipjev 1918 (De Coninck & Schuurmans Stekhoven 1933) (3 subfamilies, 23 genera, 173 species) [162,163]

Family **Coninckiidae** Lorenzen 1981 (1 genus, 5 species) [164]

---

146. Originally named suborder Desmoscoleata (Chitwood 1933) prior to adoption of current system of uniform endings of higher-ranked taxon names. First used in current form by De Coninck (1965).
147. Marine, microbivorous.
148. Overwhelmingly marine but with a few freshwater aquatic species, microbivorous.
149. Marine, microbivorous.
150. In molecular phylogenies, this group is either not represented (Meldal *et al.* 2007), unresolved (Holterman *et al.* 2006, Van Megen *et al*. 2009) or placed within Chromadorina (De Ley & Blaxter 2004). In morphological phylogenies, the group is either within the Chromadorina (Filipjev 1934, Lorenzen 1994), a sister group to Chromadorina within an expanded Chromadorida (Maggenti 1991), or within the Desmodorida (Chitwood & Chitwood 1950, De Coninck 1965, Gerlach & Riemann 1973, 1974). There are a number of seemingly unique morphological features in the group, such as the structure of the buccal cavity, the staining characteristics of the cuticle, the jointed structure of cephalic setae, and large intestinal cells (Filipjev 1934, Gerlach 1964, Lorenzen 1994). These morphological features, combined with the unresolved position in molecular analyses (Holterman *et al.* 2006, Van Megen *et al.* 2009), imply that the relationships with Chromadorida and Desmodorida must be viewed currently as a polytomy. Hence the group is afforded Order status equivalent to Chromadorida and Desmodorida.
151. Although the families Selachinematidae, Richtersiidae, Choniolaimidae and Choanolaimidae have been synonymized (Gerlach 1964, Lorenzen 1981), there remain many significant differences (Gerlach 1964). Given the possible nature of the Selachinematida as a distinct clade, these differences seem to justify regarding the differences as justifying family status. A revision of the entire Selachinematida is needed.
152. Marine or estuarine, predatory.
153. Although the families Selachinematidae, Richtersiidae, Choniolaimidae and Choanolaimidae have been synonymized (Gerlach 1964, Lorenzen 1981), there remain many significant differences (Gerlach 1964). Given the possible nature of the Selachinematida as a distinct clade, these differences seem to justify regarding the differences as justifying family status. A revision of the entire Selachinematida is needed.
154. Marine or estuarine, predatory.
155. Although the families Selachinematidae, Richtersiidae, Choniolaimidae and Choanolaimidae have been synonymized (Gerlach 1964, Lorenzen 1981), there remain many significant differences (Gerlach 1964). Given the possible nature of the Selachinematida as a distinct clade, these differences seem to justify regarding the differences as justifying family status. A revision of the entire Selachinematida is needed.
156. Marine or estuarine, microbivorous.
157. Although the families Selachinematidae, Richtersiidae, Choniolaimidae and Choanolaimidae have been synonymized (Gerlach 1964, Lorenzen 1981), there remain many significant differences (Gerlach 1964). Given the possible nature of the Selachinematida as a distinct clade, these differences seem to justify regarding the differences as justifying family status. A revision of the entire Selachinematida is needed.
158. Marine, microbivorous or predatory.
159. Plectia are separated from Chromadoria on the basis of spermatogenesis (Yushin & Malakhov 2004).
160. Filipjev (1929) used the name Monhysterata as an order, but this pre-dates the adoption of uniform endings for the names of higher taxa, so is credited as the authority here. De Coninck (1965) was the first to propose the name at order level in its current form.
161. Marine, microbivorous.
162. Originally cited as Family Comesomidae (De Coninck & Schuurmans Stekhoven 1933). Placed here on the basis of molecular evidence from 2 genes and several analyses (Holterman *et al.* 2006, Meldal *et al.* 2007, Litvaitis *et al.* 2000, Van Megen *et al.* 2009). There is morphological evidence for inclusion in Monhysterida, and monophyly of the family, but not subfamily or superfamily placement (Lorenzen 1994).
163. Marine, microbivorous.
164. Marine, microbivorous.

Family **Diplopeltidae** Filipjev 1918 (De Coninck & Schuurmans Stekhoven 1933) (2 subfamilies, 15 genera, 118 species)

Suborder **Linhomoeina** Andrassy 1974 (1 superfamily)

Superfamily **Siphonolaimoidea** Chitwood 1937 (De Coninck 1965) (3 families)

Family **Fusivermidae** Tchesunov 1996 (1 genus, 1 species) [165]

Family **Linhomoeidae** Filipjev 1922 (Filipjev 1934) (3 subfamilies, 27 genera, 2 subgenera, 216 species) [166]

Family **Siphonolaimidae** Chitwood 1937 (2 subfamilies, 4 genera, 29 species) [167]

Suborder **Monhysterina** De Coninck & Schuurmans Stekhoven 1933 (2 superfamilies)

Superfamily **Monhysteroidea** De Man 1876 (De Coninck 1965) (1 family)

Family **Monhysteridae** De Man 1876 (17 genera, 244 species) [168]

Superfamily **Sphaerolaimoidea** Filipjev 1918 (De Coninck 1965) (2 families)

Family **Sphaerolaimidae** Filipjev 1918 (De Coninck & Schuurmans Stekhoven 1933) (2 subfamilies, 6 genera, 61 species) [169]

Family **Xyalidae** Chitwood 1951 (Lorenzen 1977) (3 subfamilies, 48 genera, 5 subgenera, 467 species) [170]

Superorder **Plectica** Hodda 2007 (3 orders)

Order **Benthimermithida** Tchesunov 1997 (1 suborder) [171]

Suborder **Benthimermithina** Hodda 2007 (1 superfamily)

Superfamily **Benthimermithoidea** Petter 1980 (Hodda 2007) (1 family)

Family **Benthimermithidae** Petter 1980 (3 genera, 33 species) [172]

Order **Leptolaimida** Hodda 2007 (1 suborder)

Suborder **Leptolaimina** Lorenzen 1981 (2 superfamilies)

Superfamily **Ceramonematoidea** Cobb 1933 (De Coninck 1965) (3 families)

Family **Ceramonematidae** Cobb 1933 (Schuurmans Stekhoven 1942) (2 subfamilies, 8 genera, 58 species) [173,174]

Family **Tarvaiidae** Lorenzen 1981 (1 subfamily, 1 genus, 8 species) [175]

Family **Tubolaimoididae** Lorenzen 1981 (1 subfamily, 2 genera, 4 species) [176]

Superfamily **Leptolaimoidea** Oerley 1880 (De Coninck 1965) (8 families)

Family **Aegialoalaimidae** Lorenzen 1981 (1 subfamily, 2 genera, 11 species) [177]

Family **Aphanolaimidae** Chitwood 1936 (Holovachov *et al.* 2002) (2 subfamilies, 4 genera, 67 species)

Family **Diplopeltoididae** Tchesunov 1990 (1 subfamily, 1 genus, 5 species) [178]

Family **Leptolaimidae** Oerley 1880 (3 subfamilies, 15 genera, 82 species) [179]

Family **Ohridiidae** Lorenzen 1981 (1 subfamily, 2 genera, 9 species) [180]

Family **Paramicrolaimidae** Lorenzen 1981 (1 subfamily, 1 genus, 5 species) [181]

---

165. Marine, microbivorous.
166. Overwhelmingly marine or estuarine but with a few freshwater aquatic species, microbivorous.
167. Marine or estuarine, microbivorous.
168. Mostly marine with many species in freshwater aquatic habitats and a few terrestrial species, microbivorous. Three genera living in gill chambers of freshwater aquatic or terrestrial crustaceans.
169. Freshwater aquatic or brackish waters, microbivorous.
170. Mostly marine but with some freshwater aquatic species, microbivorous.
171. Benthimermithida was unplaced in previous classifications (De Ley & Blaxter 2004, De Ley *et al.* 2006, Hodda 2007). Morphological evidence of phylogeny is unclear. Molecular evidence is lacking. Provisionally placed in Plectica on the basis of some similarity to Camacolaimus (Tchesunov 1997, Miljutin 2006).
172. Immature stages parasitic in body cavity of marine benthic invertebrates (*nematodes*, *polychaetes*, *priapulids*, *crustacea* and *holothuroids*), adults free-living but non-feeding.
173. Morphological affinities with Tarvaiidae and Diplopeltoididae (Tchesunov & Miljutina 2002). Created as a subfamily by Cobb (1933).
174. Marine, microbivorous.
175. Marine, microbivorous.
176. Marine, microbivorous.
177. Marine, microbivorous.
178. Marine, microbivorous.
179. Mostly marine but some freshwater aquatic and terrestrial species, microbivorous.
180. Marine, freshwater aquatic and terrestrial, free-living microbivorous or parasitic in terrestrial oligochaetes, benthic invertebrates and foraminifera (Holovachov & De Ley 2006, Hope & Tchesunov 1999, Miljutin 2006).

Family **Rhadinematidae** Lorenzen 1981 (1 subfamily, 1 genus, 1 species) [182]

Order **Plectida** Malakhov *et al.* 1982 (1 suborder)

Superfamily **Haliplectoidea** De Coninck 1965 (Andrassy 1974) (2 families)

Superfamily **Plectoidea** Oerley 1880 **(**Chitwood 1937) (4 families)

Family **Haliplectidae** Chitwood 1951 (De Coninck 1965) (3 genera, 24 species) [183,184]

Family **Peresianidae** Vitiello & De Coninck 1968 (Lorenzen 1981) (1 genus, 3 species) [185,186]

Suborder **Plectina** Malakhov *et al.* 1982 (2 superfamilies)

Family **Camacolaimidae** De Coninck & Schuurmans Stekhoven 1933 (14 genera, 65 species) [187,188]

Family **Chronogasteridae** Gagarin 1975 (4 genera, 50 species) [189,190]

Family **Metateratocephalidae** Eroshenko 1973 (2 genera, 9 species) [191,192]

Family **Plectidae** Oerley 1880 (3 subfamilies, 12 genera, 140 species) [193]

Superorder **Rhabditica** Hodda 2007 (5 orders)

Order **Diplogasterida** Inglis 1983 (4 suborders)

Suborder **Chambersiellina** Hodda 2007 (1 superfamily) [194]

Superfamily **Chambersielloidea** Thorne 1937 (Hodda 2007) (1 family)

Family **Chambersiellidae** Thorne 1937 (Sanwal 1957) (2 subfamilies, 7 genera, 16 species) [195]

Suborder **Diplogasterina** Paramonov 1952 (2 superfamilies) [196]

Superfamily **Cylindrocorporoidea** T. Goodey 1939 (Andrassy 1976) (1 family)

Family **Cylindrocorporidae** T. Goodey 1939 (3 genera, 22 species) [197] [198]

Family **Odontopharyngidae** Micoletzky 1922 (1 genus, 2 species)

Superfamily **Diplogasteroidea** Micoletzky 1922 (Goodey 1963) (6 families)

Family **Cephalobiidae** Travassos & Kloss 1960a (2 subfamilies, 6 genera, 30 species) [199]

Family **Diplogasteridae** Micoletzky 1922 (Steiner 1929) (1 subfamily, 15 genera, 239 species) [200,201]

---

181. Marine, microbivorous.
182. Marine, microbivorous.
183. Subfamily created by Chitwood (1951).
184. Marine, microbivorous.
185. Subfamily created by Vitiello & De Coninck (1968).
186. Marine, microbivorous.
187. Camacolaiminae was regarded as a subfamily of Leptolaimidae by Lorenzen (1994), but there was no morphological apomorphy to justify this placement. Molecular evidence suggests affinities with Plecoitoidea, so it is placed there (Van Megen *et al.* 2009).
188. Marine or freshwater aquatic or moist terrestrial habitats, microbivorous.
189. There is ongoing controversy over the rendering of names ending in "gaster" with a suffix. See note Suborder Diplogasterina Paramonov 1952 (2 superfamilies) : cited as either Chronogastridae (Siddiqi 2003, Holovachov 2004, Mountport 2005, Holovachov & De Ley 2006), or Chronogasteridae (Ettema *et al.* 2000, Gagarin 1993, Gagarin *et al*. 2003, Hodda 2003, 2007, Lorenzen 1981, Poinar & Sarbu 1994, Zullini *et al*. 2002).
190. Freshwater aquatic or terrestrial, microbivorous.
191. Metateratocephalidae (including the genera *Metateratocephalus* and *Euteratocephalus*) have been included in Teratocephalidae on morphological grounds (Lorenzen 1981, 1994). Other morphological evidence (Bostrom 1989) and molecular studies (Holtermann *et al.* 2006, Van Megen *et al.* 2009) have indicated separate evolutionary paths.
192. Freshwater aquatic or moist terrestrial habitats, microbivorous.
193. Terrestrial or freshwater aquatic or marine, microbivorous. Some species associated with arthropods as commensals.
194. On morphological evidence the family has been placed as unresolved in Rhabditia (Lorenzen 1994). On molecular evidence, the family has been unresolved within Diplogasterida (De Ley & Blaxter 2004). More research is clearly needed to place the few species in the family, superfamily and suborder into anything other than a separate suborder under Diplogasterida, equivalent in rank to Myolaimina (Goodey 1963).
195. Terrestrial, microbivorous.
196. There is controversy over the correct rendering of names based on the genus name *Diplogaster*, resting on formation of Latin adjectives and the form of nouns (Sudhaus & von Lieven 2003). The original use as a suborder was the form Diplogasterata n. subord (Paramonov 1952). Here, the most frequently used form is adopted. The position of the (well-defined) suborder was unresolved within Rhabditica on molecular evidence (Holterman *et al.* 2006, Meldal *et al.* 2007, Van Megen *et al.* 2009), but sometimes placed within Rhabditida (De Ley & Blaxter 2004). A separate clade of equal rank to Rhabditina and Tylenchina on morphological evidence (Lorenzen 1994).
197. Included in Rhabditida by Hodda (2007), placed in Diplogasterida on molecular evidence (Van Megen *et al.* 2009), the evidence for morphological placement has long been in doubt.
198. Terrestrial, microbivores or fungivores. Associated with insects. or rarely in mammal or reptile.
199. Internal parasites of insects.
200. Created as a subfamily by Micoletzky (1922).
201. Terrestrial, microbivorous or omnivorous or predatory. Often associated with invertebrates, and may be parasitic internally with value as biocontrol agents.

Family **Diplogasteroididae** Paramonov 1952 (3 genera, 40 species) [202]

Family **Neodiplogasteridae** Paramonov 1952 (Andrassy 1984) (1 subfamily, 2 genera, 10 species) [203,204]

Family **Pseudodiplogasteroididae** De Ley & Blaxter 2002 (1 genus, 2 species) [205,206]

Family **Tylopharyngidae** Filipjev 1918 (n. rank.) (1 subfamily, 2 genera, 3 species)

Suborder **Myolaimina** Inglis 1983 (2 superfamilies) [207]

Superfamily **Carabonematoidea** Stammer & Wachek 1952 (Hodda 2007) (1 family)

Family **Carabonematidae** Stammer & Wachek 1952 (1 genus, 1 species) [208,209]

Superfamily **Myolaimoidea** Goodey 1963 (Hodda 2007) (1 family)

Family **Myolaimidae** Goodey 1963 (4 genera, 22 species) [210]

Order **Drilonematida** n. rank (1 suborder)

Suborder **Drilonematina** n. rank (1 superfamily)

Superfamily **Drilonematoidea** Pierantoni 1916 (Chitwood 1950) (5 families)

Family **Creagrocercidae** Baylis 1943 (1 genus, 1 species) [211]

Family **Drilonematidae** Pierantoni 1916 (6 subfamilies, 16 genera, 56 species) [212,213]

Family **Homungellidae** Timm 1966 (2 genera, 12 species) [214]

Family **Mesidionematidae** Poinar 1978 (2 genera, 6 species) [215]

Family **Pharyngonematidae** Chitwood 1950 (Timm 1959) (1 subfamily, 3 genera, 4 species) [216,217]

Family **Scolecophilidae** Baylis 1943 (1 genus, 3 species) [218]

Family **Ungellidae** Chitwood 1950 (2 subfamilies, 13 genera, 69 species) [219]

Order **Panagrolaimida** Hodda 2007 (4 suborders) [220]

Suborder **Aphelenchina** Geraert 1966 (3 superfamilies) [221]

Superfamily **Aphelenchoidea** Fuchs 1937 (Thorne 1949) (1 family)

---

202. Terrestrial, microbivorous or omnivorous or predatory. Often associated with arthropods.
203. Created as a subfamily by Paramonov (1952).
204. Terrestrial, microbivorous or predatory.
205. Created as a subfamily by Koerner (1954).
206. Terrestrial, microbivorous or omnivorous. Associated with beetles, but not parasitic.
207. Affinities with Diplogasterida were suggested by most molecular analyses (De Ley & Blaxter 2004, Holterman *et al.* 2006, Meldal *et al.* 2007), except where Myolaimidae was unresolved in the latest molecular analysis (Baerman *et al.* 2009, Van Megen *et al.* 2009). Morphologically, affinities with Rhabditida have been suggested also (Goodey 1963).
208. Molecular evidence of phylogeny of Carabonematidae is lacking (De Ley & Blaxter 2004, Van Megen *et al.* 2009). The position of the family is either unresolved within Rhabditina on morphological evidence (Stammer & Wachek 1952) or within Myolaimina (Inglis 1983). The family contains few, poorly-known species, and more investigation is required.
209. Parasites of beetles.
210. Terrestrial, microbivorous.
211. Internal parasites of terrestrial annelids.
212. Created as family Drilonemidae by Pierantoni (1916).
213. Internal parasites of terrestrial annelids.
214. Internal parasites of terrestrial annelids.
215. Internal parasites of terrestrial annelids.
216. Created as a subfamily by Chitwood 1950.
217. Internal parasites of terrestrial annelids.
218. Internal parasites of terrestrial annelids.
219. Internal parasites of terrestrial annelids.
220. Spermatogenesis and development provide evidence for the separation of Spirurida, Rhabditida and Panagrolaimida (Yushin & Malakhov 2004, Schierenberg & Lahl 2004).
221. Hodda (2007) considered the Superfamilies Aphelenchoioidea and Aphelenchoidea as belonging to the different suborders Panagrolaimina and Tylenchina, respectively, because of consistent differentiation with support on molecular evidence (De Ley & Blaxter 2004, Holterman *et al.* 2006, Meldal *et al.* 2006, Smythe *et al.* 2006). The most recent molecular evidence resolved the superfamilies into different clades with statistical support, but did not show closer affinities to either Panagrolaimina or Tylenchina (Van Megen *et al.* 2009). De Ley & Blaxter (2002), and De Ley *et al.* (2006), despite the clear molecular evidence, as well as morphological differences, consnsidered the morphological similarities most important and put the two groups together (as families Aphelenchidae and Aphelenchoididae) in infraorder Tylenchomorpha (= suborder Tylenchina in the current classification). Here the superfamilies are regarded as separate, based on both the molecular evidence and morphology. Morphological differences include most notably the development of the posterior oesophagus, the presence or absence of bursae and gubernacula, as well as other features. The present classification reflects the morphological differences as being apomorphies within Aphelenchina defining the superfamilies. but the superfamilies are together regarded as a suborder on the basis of the long-noticed morphological apomorphies, most prominently the form of the median oesophageal bulb and the position of the oesophageal gland orifices (Hunt 1993, Geraert 1966, Thorne 1949). The suborder reflects the differentiation of both superfamilies from Panagrolaimina and Tylenchina.

Family **Aphelenchidae** Fuchs 1937 (Steiner 1949) (1 subfamily, 1 genus, 27 species) [222,223]

Superfamily **Aphelenchoidoidea** Skarbilovich 1947 (Siddiqi 1980) (7 families)

Family **Acugutturidae** Hunt 1980 (Hunt 1993) (2 subfamilies, 3 genera, 5 species) [224]

Family **Aphelenchoididae** Skarbilovich 1947 (Paramonov 1953) (2 subfamilies, 10 genera, 213 species) [225,226]

Family **Berntsenidae** Hodda 2003 (1 genus, 2 species) [227]

Family **Ektaphelenchidae** Paramonov 1964 (1 subfamily, 4 genera, 57 species) [228]

Family **Entaphelenchidae** Nickle 1970 (1 subfamily, 4 genera, 10 species) [229]

Family **Parasitaphelenchidae** Ruehm 1956 (Siddiqi 1980) (2 subfamilies, 3 genera, 113 species) [230,231]

Family **Seinuridae** Husain & Khan 1967a (Baranovskaya 1981) (1 subfamily, 4 genera, 52 species) [232,233]

Superfamily **Paraphelenchoidea** T. Goodey 1951 (Hodda 2007) (1 family)

Family **Paraphelenchidae** T. Goodey 1951 (J.B. Goodey 1960) (1 subfamily, 1 genus, 24 species) [234,235]

Suborder **Cephalobina** Andrassy 1974 (1 superfamily) [236,237]

Superfamily **Cephaloboidea** Filipjev 1934 (Fuchs 1934) (6 families)

Family **Alirhabditidae** Suryawanshi 1971 (1 genus, 2 species) [238]

Family **Bicirronematidae** Andrassy 1978 (Holovachov *et al.* 2003) (1 subfamily, 2 genera, 5 species) [239,240]

Family **Cephalobidae** Filipjev 1934 (Chitwood & MacIntosh 1934) (2 subfamilies, 32 genera, 3 subgenera, 227 species) [241,242]

Family **Elaphonematidae** Heyns 1962a (Paramonov 1964) (1 subfamily, 3 genera, 9 species)[243]

Family **Metacrobelidae** Andrassy 1974 (1 genus, 3 species) [244,245]

---

222. Created as a subfamily by Fuchs (1937).
223. Terrestrial, fungivorous. Sometimes associated with plant damage.
224. External parasites of arthropods.
225. Created as a subfamily by Skarbilovich (1947).
226. Terrestrial, fungivores or plant-feeding above or below ground or predators. Some plant-feeding species cause economically significant damage. Some species are internal parasites of insects.
227. Associated externally with beetles.
228. External parasites of arthropods.
229. Internal parasites of arthropods
230. Created as a subfamily by Ruehm (1956).
231. Terrestrial, fungivores or plant-feeding above or below ground. Some species cause economically significant damage. Some species are associated with insects as vectors.
232. Created as a subfamily by Husain & Khan (1967a).
233. Terrestrial, predatory.
234. Created as a subfamily by T Goodey (1951). Paraphelenchidae are different from Aphelechidae in many of the same features used to separate Aphelenchoidoididae from Aphelenchidae. Hence the differences may reflect a deep divergence. Paraphelenchidae share a number of features with Tylenchidae, such as an oesophageal isthmus with nerve ring around it, oesophageal glands enclosed in a bulb, vulva a transverse slit, and cephalated spicules. Paraphelenchidae differ from Tylenchidae in the major characters: location of oesophageal gland orifices, development of median oesophageal bulb, formation of stylet, genital papillae and the presence of a bursa, plus others. Thus Paraphelenchidae differ from Aphelenchidae in similar features as those differentiating other superfamilies within Tylenchina. Hence Paraphelenchoidea may represent a unique line of evolution within Tylenchina, and it is afforded superfamily status, even though some molecular data show Paraphelenchidae form a clade with Aphelenchidae (Van Megen *et al.* 2009).
235. Terrestrial, fungivorous.
236. Cephalobina and Rhabditina have been traditionally placed together in an Order Rhabditida. Molecular evidence consistently places the Cephalobina with Panagrolaimina (De Ley & Blaxter 2004, Holterman *et al.* 2006, Meldal *et al.* 2007, Van Megen *et al.* 2009). In addition, it appears that the origin of nerve cells in the oesophagus may be different in Rhabditidae to that in Cephalobidae and Panagrolaimidae (Borgonie *et al*. 2000). Early development is also different in *Caenorhabditis elegans* (Rhabditida) and *Acrobeloides nanus* (Cephalobina) (Schierenberg 2000). The monophyly of the Cephalobina is supported on molecular evidence (Nadler *et al.* 2006).
237. Created as an Infraorder by De Ley & Blaxter 2002
238. Terrestrial, microbivorous.
239. Created as a subfamily by Andrassy (1978).
240. Terrestrial, microbivorous.
241. Created as subfamily by Artigas (1929) in a thesis, and Filipjev (1934).
242. Terrestrial, microbivorous.
243. Associates of terrestrial annelids.
244. Created as a subfamily by Paramonov (1964).
245. Terrestrial, microbivorous.

Family **Osstellidae** Heyns 1962b (Andrassy 1984) (4 genera, 13 species) [246,247]

Suborder **Panagrolaimina** Hodda 2007 (5 superfamilies)

Superfamily **Alloionematoidea** Chitwood & MacIntosh 1934 (Andrassy 1983) (1 family)

Family **Alloionematidae** Chitwood & MacIntosh 1934 (Poinar 1977) (1 subfamily, 4 genera, 6 species) [248,249]

Superfamily **Myenchoidea** Pereira 1931 (Poinar 1977) (1 family)

Family **Myenchidae** Pereira 1931 (Poinar 1977) (1 subfamily, 2 genera, 3 species) [250,251]

Superfamily **Panagrolaimoidea** Thorne 1937 (Andrassy 1976) (1 family)

Family **Panagrolaimidae** Thorne 1937 (Paramonov 1956) (4 subfamilies, 16 genera, 1 subgenus, 54 species) [252,253]

Superfamily **Steinernematoidea** Chitwood & Chitwood 1937 (Hodda 2007) (1 family)

Family **Steinernematidae** Chitwood & Chitwood 1937 (2 genera, 78 species) [254]

Superfamily **Strongyloidoidea** Chitwood & MacIntosh 1934 (De Ley & Blaxter 2002) (2 families)

Family **Strongyloididae** Chitwood & MacIntosh 1934 (3 genera, 70 species) [255]

Family **Rhabdiasidae** Railliet 1916 (6 genera, 76 species) [256]

Suborder **Tylenchina** Chitwood 1950 (4 superfamilies)

Superfamily **Anguinoidea** Nicoll 1935 (2 families) [257,258]

Family **Anguinidae** Nicoll 1935 (Siddiqi 1971) (2 subfamilies, 14 genera, 187 species) [259]

Family **Sychnotylenchidae** Paramonov 1967 (Golden 1971) (1 subfamily, 2 genera, 30 species) [260,261]

Superfamily **Criconematoidea** Taylor 1936 (Geraert 1966) (5 families)

Family **Criconematidae** Taylor 1936 (Thorne 1949) (5 subfamilies, 16 genera, 9 subgenera, 426 species) [262,263,264]

Family **Hemicycliophoridae** Skarbilovich 1959 (Geraert 1966) (1 subfamily, 2 tribes, 6 genera, 155 species) [265,266]

Family **Paratylenchidae** Thorne 1949 (Raski 1962) (1 subfamily, 3 genera, 2 subgenera, 131 species) [267,268]

---

246. Subfamily Osstellinae created by Heyns (1962a), and used as a family by De Ley & Coomans (1990), but Drilocephalobidae was used first at family level (Ali, Suryawanshi & Chisti, 1973).
247. Terrestrial, microbivorous.
248. Created as a subfamily by Chitwood & MacIntosh (1934).
249. Terrestrial, microbivorous, may be associated with invertebrates as internal or external parasites.
250. Created as a subfamily by Pereira (1931).
251. Internal parasites of hirudoid annelids or frogs.
252. Created as a subfamily by Thorne (1937).
253. Terrestrial, microbivorous, may be associated with invertebrates as internal or external parasites.
254. Terrestrial, microbivorous, internal parasites of arthropods used as biocontrol agents.
255. Internal parasites of vertebrates.
256. Internal parasites of amphibians or reptiles.
257. Whether the Anguinoidea have closer affinities to Tylenchoidea or Sphaerulariodea has been discussed for some time based on morphological and life history evidence (Siddiqi 1986, 2000). Molecular evidence does not resolve the issue unequivocally (Meldal *et al.* 2007, Holterman *et al.* 2006, Van Megen *et al.* 2009). A polytomy is assumed here.
258. Originally constituted as Family Anguillulinidae by Baylis & Daubney 1926, with the type genus *Anguillulina* Gervais & Van Beneden 1859, which was regarded as a senior synonym of the genus *Tylenchus* Bastian 1865. Chitwood (1935) re-established *Anguina* Scopoli 1777 and designated *Vibrio tritici* Steinbuch 1799 as type species by subsequent designation (syn *Rhabditis tritici* (Steinbuch 1799) Dujardin 1845, *Anguillula tritici* (Steinbuch 1799) Grube 1849, *Anguillulina tritici* (Steinbuch 1799) Gervais & Van Beneden 1859, *Tylenchus tritici* (Steinbuch 1799) Bastian 1865). The genus *Vibrio* refers to bacteria and Protozoa. The genus *Rhabditis* refers to a different genus. Thus, the oldest name is *Anguillulina tritici* (Steinbuch 1799) Gervais & Van Beneden 1859. This, however, was rejected as invalid by ICZN in rulings 329 & 341 (1958). After Chitwood's (1935) publication, Nicoll (in Zoological Record) proposed the replacement names Anguinidae and Anguinoidea, to replace the names Anguillulinidae and Anguillulinoidea (and, coincidentally, Tylenchidae as well).
Paramonov (1962) proposed Anguininae, which was raised to Family rank by Siddiqi (1971).
259. Terrestrial, plant-root or seed feeding. Some species cause economic damage. Some species associated with bacteria toxic to mammals.
260. External associates of beetles.
261. Originally created as a subfamily by Paramonov (1967).
262. Created as a subfamily by Taylor (1936).
263. Terrestrial, plant-root feeding. Some species cause economic damage.
264. Classification of Criconematidae follows Geraert 2010.
265. Created as a subfamily by Skarbilovich (1959), and as a superfamily by Siddiqi (2000).
266. Terrestrial, plant-root feeding. Some species cause economic damage.
267. Created as a subfamily by Thorne (1949).

Family **Sphaeronematidae** Raski & Sher 1952 (Geraert 1966) (2 subfamilies, 4 genera, 12 species) [269,270]

Family **Tylenchulidae** Skarbilovich 1947 (Kirjanova 1955) (1 subfamily, 3 genera, 17 species) [271,272]

Superfamily **Sphaerularioidea** Poinar 1975 (5 families)

Family **Allantonematidae** Pereira 1931 (Chitwood & Chitwood 1937) (2 subfamilies, 18 genera, 148 species)

Family **Iotonchiidae** Goodey 1953 (Skarbilovich 1959) (1 subfamily, 4 genera, 20 species) [273,274]

Family **Neotylenchidae** Thorne 1941 (Thorne 1949) (5 subfamilies, 14 genera, 89 species) [275]

Family **Parasitylenchidae** Siddiqi 1986 (5 subfamilies, 12 genera, 50 species) [276]

Family **Sphaerulariidae** Lubbock 1861 (Skarbilovich 1947) (1 subfamily, 3 genera, 28 species) [277,278]

Superfamily **Tylenchoidea** Oerley 1880 (Chitwood & Chitwood 1937) (14 families) [279]

Family **Atylenchidae** Skarbilovich 1959 (2 subfamilies, 2 genera, 7 species) [280]

Family **Belonolaimidae** Whitehead 1959 (Golden 1971) (1 subfamily, 4 genera, 19 species) [281,282]

Family **Boleodoridae** Khan 1964 (Brzeski & Sauer 1983) (2 subfamilies, 6 genera, 97 species)

Family **Dolichodoridae** Chitwood & Chitwood 1950 (Skarbilovich 1959) (2 subfamilies, 3 genera, 30 species) [283,284]

Family **Ecphyadophoridae** Skarbilovich 1959 (2 subfamilies, 8 genera, 25 species) [285]

Family **Heteroderidae** Filipjev 1934 (Skarbilovich 1947) (3 subfamilies, 15 genera, 148 species) [286,287]

Family **Hoplolaimidae** Filipjev 1934 (Weiser 1953) (3 subfamilies, 11 genera, 455 species) [288,289]

Family **Meloidogynidae** Skarbilovich 1959 (Wouts 1973) (2 subfamilies, 6 genera, 106 species) [290,291]

---

268. Terrestrial, plant-root feeding. Some species cause economic damage.
269. Created as a subfamily by Raski & Sher (1952).
270. Terrestrial, plant-root feeding. Some species cause economic damage.
271. Created as a subfamily by Skarbilovich (1947).
272. Terrestrial, plant-root feeding. Some species cause economic damage.
273. Created as a subfamily by Goodey (1953).
274. Alternating generations of internal parasites of insects and free-living fungivorous or plant-root feeding nematodes.
275. Alternating generations of internal parasites of insects and free-living fungivorous or plant-root feeding nematodes.
276. Alternating generations of internal parasites of insects and free-living fungivorous or plant-root feeding or rarely non-feeding nematodes.
277. Created as subfamily Spherulariaceae by Lubbock (1861).
278. Internal parasites of insects.
279. The arrangement of the families Tylenchidae, Boleodoridae, Ecphyadophoridae, Atylenchidae, Tylodoridae and Psilenchidae differs markedly among different analyses of relationships using both morphological and molecular evidence. Siddiqi (2000) regarded Tylenchidae, Ecphyadophoridae, Atylenchidae, Tylodoridae and Psilenchidae as separate families, but with Boleodorinae as subfamily of Tylenchidae (along with several others) and Psilenchidae in a separate suborder. Geraert (2008) regarded Atylenchinae, Boleodorinae, Ecphyadophorinae, Tylenchinae and Tylodorinae as subfamilies of a greater Tylenchidae and did not recognise Psilenchidae because it was embedded within Tylenchinae. Holterman *et al.* (2006, 2008) and Bert *et al.* (2008) identified Tylodoridae as divergent from the other families and Ecdyaphoridae as unresolved. Van Megen *et al.* (2009) resolved Tylenchidae into at least two different resolved clades (Tylenchinae and Duosulciinae), and Ecphyadophoridae was resolved from both, with the relationships of the other families unresolved. In view of this conflicting evidence, all the clades clearly identifiable by either molecular or morphological analyses are regarded as separate families arising separately from a polytomy. Only extensive analyses of many species from each of these clades, analysed using multiple genetic and morphological characters, are likely to satisfactorily resolve this situation.
280. Terrestrial or freshwater aquatic habitats, feed externally on plant roots. Not known to cause economic damage to plants.
281. Created as a subfamily by Whitehead (1959).
282. Terrestrial, feed externally on plant roots. Some cause economic damage, but some are not regarded as economic pests.
283. Created as a subfamily by Chitwood (1950).
284. Terrestrial, feed mostly externally on plant roots. Some cause economic damage, but some are not regarded as economic pests.
285. Terrestrial or freshwater aquatic habitats, feed externally on plant roots. Not known to cause economic damage to plants.
286. Created as a subfamily by Filipjev (1934).
287. Terrestrial or very rarely estuarine, feed mostly internally on plant roots. Many cause economic damage, but some are not regarded as economic pests.
288. Created as a subfamily by Filipjev (1934).
289. Terrestrial or rarely freshwater aquatic, feed mostly externally on plant roots but may partially enter the root. Many cause economic damage, but some are not regarded as economic pests.

Family **Psilenchidae** Paramonov 1967 (Khan 1969) (2 subfamilies, 3 genera, 26 species) [292,293]

Family **Pratylenchidae** Thorne 1949 (Siddiqi 1963) (4 subfamilies, 12 genera, 233 species) [294,295]

Family **Rotylenchulidae** Husain & Khan 1967b (Fotedar & Handoo 1975) (3 subfamilies, 5 genera, 18 species) [296,297]

Family **Telotylenchidae** Siddiqi 1960 (Loof 1987) (4 subfamilies, 19 genera, 391 species) [298,299]

Family **Tylenchidae** Oerley 1880 (Marcinowski 1909) (3 subfamilies, 22 genera, 282 species) [300,301]

Family **Tylodoridae** Allen & Sher 1967 (Siddiqi 1976) (3 subfamilies, 7 genera, 29 species) [302,303]

Order **Rhabditida** Chitwood 1933 (7 suborders) [304]

Suborder **Ablechroiulina** Hodda 2007 (1 superfamily) [305]

Superfamily **Ablechroiuloidea** Hodda 2007 (1 family)

Family **Ablechroiulidae** Andrassy 1976 (Hodda 2007) (1 genus, 14 species) [306,307]

Suborder **Agfina** Hodda 2007 (1 superfamily) [308]

Superfamily **Agfoidea** Dougherty 1955 (Hodda 2007) (1 family)

Family **Agfidae** Dougherty 1955 (1 genus, 3 species) [309]

Suborder **Angiostomatina** n. rank

Superfamily **Angiostomatoidea** R. Blanchard 1895 (n. rank)

Family **Angiostomatidae** R. Blanchard 1895 (3 genera, 17 species)

---

290. Created as a subfamily by Skarbilovich (1959).
291. Terrestrial, feed mostly internally on plant roots. Many cause economic damage, but some are not regarded as economic pests.
292. Created as a subfamily by Paramonov (1967).
293. Terrestrial, feed externally on plant roots. Some cause economic damage, but many are not regarded as economic pests.
294. Created as a subfamily by Thorne (1949).
295. Terrestrial, feed externally or internally on plant roots. Many cause economic damage, but some are not regarded as economic pests.
296. Created as a subfamily by Husain & Khan (1967b).
297. Terrestrial, feed mostly externally on plant roots but may partially enter the root. Some cause economic damage, but some are not regarded as economic pests.
298. Created as a subfamily by Siddiqi (1960). Telotylenchidae first used at family level by Loof (1987) when transferring the genus *Telotylenchus* to the family Tylenchorhynchidae Eliava 1964.
299. Terrestrial, feed externally on plant roots. Some cause economic damage, but some are not regarded as economic pests.
300. Created as a subfamily by Oerley (1880).
301. Mostly terrestrial or less frequently freshwater aquatic or very rarely estuarine or marine, plant-root or algal feeders. A few cause economic damage, but most are not regarded as economic pests.
302. Created as a subfamily by Paramonov (1967).
303. Terrestrial or rarely freshwater aquatic, feed externally on plant roots. Some cause economic damage, but many are not regarded as economic pests.
304. Spermatogenesis and development provide evidence for the separation of Spirurida, Rhabditida and Panagrolaimida (Yushin & Malakhov 2004, Schierenberg & Lahl 2004).
305. A separate suborder pending resolution of affinities, which are currently unresolved on morphological or molecular evidence (Andrassy 1974, Meldal *et al.* 2007). Includes the genus *Rhabditoides* (Andrassy 1976), and clearly within Rhabditida (Andrassy 1976, De Ley *et al.* 2006, Hodda 2007).
306. Andrássy (1976) originally proposed subfamily Ablechroiulinae to include the genera *Ablechroiulus* and *Rhabditoides* Goodey 1929, both genera having in common the possession of bundles of cirri–like bristles on lip region, among other features. Sudhaus & Fitch (2001) provided an updated classification of Rhabditidae Örley 1980 but maintained on the basis of morphological and molecular data that *Ablechroiulus* was a junior synonym of *Rhabditis* (*Rhabditis*), one of the 15 subgenera in which Sudhaus (1976) subdivided the genus. Andrássy (1976, 1983, 1984, 2005) did not accept Sudhaus' scheme. Molecular trees showed that one species of *Ablechroiulus* (*A. dudichi* or *Choriorhabditis dudichi* Sudhaus scheme), is not distinctly clustered with other representatives of the subgenus *Rhabditis*. This result was also obtained by Holterman *et al.* (2006). Kiontke & Fitch (2005) included three *Ablechroiulus* species in their molecular study (*brassicae*, *cristatus* and *dudichi*): *A. brassicae* clustered with *Rhabditis* species and the other two formed a clade at the base of the Eurhabditis group. The genus was re-examined by Abolafia & Pena Santaigo (2009, 2011), who briefly discussed the identity of *Ablechroiulus*, and characterized it mainly on the base of the presence of short labial setae, classifying it under the subfamily Rhabditinae Örley, 1880, and regarding Ablechroiulinae Andrássy, 1976 as a junior synonym of that taxon. In view of the highly unresolved position of the group, either morphologically or molecularly, it is here regarded as a separate clade. The cirri-like bristles are a unique apomorphy.
307. Terrestrial, microbivorous.
308. Placed with moderate support in Peloderidae on molecular evidence (Ross *et al.* 2010), but other molecular evidence is lacking (De Ley & Blaxter 2004). The position of Agfidae is unresolved on morphological evidence (Ribas & Casanova 2002, Inglis 1983), and it has been placed within Cylindrocorporoidea, Myolaimidae and Rhabditomorpha. There are only 3 species of the family, which are all parasites of slugs. All have an unusual combination of characters, some of which may be plesiomorphic for Rhabditina, and some of which may be apomorphic hence its current placement as a suborder. More investigation is required.
309. Terrestrial, microbivorous, internal parasites of molluscs.

Suborder **Brevibuccina** Hodda 2007 (1 superfamily) [310]

Superfamily **Brevibuccoidea** Paramonov 1956 (Hodda 2007) (1 family)

Family **Brevibuccidae** Paramonov 1956 (Goodey 1963) (1 subfamily, 2 genera, 4 species) [311,312]

Suborder **Bunonematina** Siddiqi 1980 (2 superfamilies) [313]

Superfamily **Bunonematoidea** Paramonov 1956 (Andrassy 1971) (2 families)

Family **Bunonematidae** Paramonov 1956 (10 genera, 2 subgenera, 42 species) [314,315]

Family **Pterygorhabditidae** Goodey 1963 (Andrassy 1971) (1 genus, 4 species) [316,317]

Superfamily **Odontopharyngoidea** Micoletzky 1922 (1 family)

Family **Odontopharyngidae** Micoletzky 1922 (1 genus, 2 species) [318,319]

Suborder **Peloderina** Hodda 2007 (1 superfamily)

Superfamily **Mesorhabditoidea** Andrassy 1976 (De Ley & Blaxter 2002) (3 families)

Family **Mesorhabditidae** Andrassy 1976 (De Ley & Blaxter 2002) (1 subfamily, 3 genera, 29 species) [320,321]

Family **Parasitorhabditidae** Lazarevskaya 1965 (Hodda 2007) (1 subfamily, 1 genus, 43 species) [322,323]

Family **Peloderidae** Andrassy 1976 (De Ley & Blaxter 2002) (1 subfamily, 4 genera, 32 species) [324,325]

Suborder **Rhabditina** Chitwood 1933 (3 superfamilies)

Superfamily **Heterorhabditoidea** Poinar 1975 (n. rank) (2 families) [326]

Family **Heterorhabditidae** Poinar 1975 (1 genus, 15 species) [327]

Family **Syrphonematidae** Laumond & Lyon 1971 (1 genus, 1 species)

Superfamily **Rhabditoidea** Oerley 1880 (Travassos 1920) (2 families)

Family **Diploscapteridae** Micoletzky 1922 (Andrassy 1983) (1 subfamily, 2 genera, 9 species) [328,329]

Family **Rhabditidae** Oerley 1880 (5 subfamilies, 38 genera, 11 subgenera, 229 species) [330]

Superfamily **Strongyloidea** Baird 1853 (Railliet & Henry 1913) (4 families) [331]

Family **Ancylostomatidae** Looss 1905 (Looss 1911) (2 subfamilies, 2 tribes, 6 subtribes, 20 genera, 144 species) [332,333]

---

310. On morphological evidence the family has been placed as unresolved in Rhabditida (Lorenzen 1994). On molecular evidence, the family has been unresolved within Rhabditida (De Ley & Blaxter 2004, Holterman *et al.* 2006, Meldal *et al.* 2007, Van Megen *et al.* 2009). In all cases a resolution between Rhabditina and Diplogasterina has not been possible.
311. Created as a subfamily by Paramonov (1956).
312. Terrestrial, microbivorous.
313. Diplogastrina [*sic*] and *Bunonema* have been regarded as closely related on the basis of five morphological synapomorphies: mainly related to fine structure of buccal cavity, but also genital papillae (Von Lieven & Sudhaus 2000). It is unclear what group(s) these characters are synapomorphies of: potentially they could be synapomorphies of Rhabditica, in which case these characters would not conflict with the molecular evidence placing *Bunonema* in Rhabditida (Holterman *et al.* 2006), but the affinities of Bunonematidae are unresolved in other analyses (Van Megen *et al.* 2009). Placed in Rhabditida on the basis of morphological similarity (De Ley *et al.* 2006, Goodey 1963, Hodda 2007), but as a separate suborder.
314. Created as a subfamily by Micoletzky (1922).
315. Terrestrial, microbivorous.
316. Created as a subfamily created by Goodey (1963).
317. Terrestrial, microbivorous.
318. Created as a subfamily by Filipjev & Schuurmans Stekhoven (1941).
319. Terrestrial, microbivorous or predatory.
320. Created as a subfamily by Andrassy (1976).
321. Terrestrial, microbivorous.
322. The genus *Parasitorhabditis* was previously placed in Rhabditidae, but it is unambiguously a separate clade associated with Peloderina on molecular evidence (Holterman *et al.* 2006, Meldal *et al.* 2007).
323. Terrestrial, microbivorous, associated with arthropods.
324. Created as a subfamily by Andrassy (1976).
325. Terrestrial, microbivorous, but includes a species living on wood mice hair follicles and the conjunctiva of mice, voles or lemmings.
326. A separate clade according to the molecular analysis of Chilton *et al.* (2006)
327. Terrestrial, microbivorous, internal associates of arthropods which are vectors of pathogenic bacteria and are used as biocontrol agents.
328. Created as a subfamily by Chitwood & Chitwood (1937).
329. Terrestrial, microbivorous.
330. Terrestrial, microbivorous, often associated with invertebrates, occasionally internally.
331. The authorities of supra generic taxa in this group have been discussed extensively (Dougherty 1944).
332. Created as a subfamily by Looss (1905).

Family **Metastrongylidae** Leiper 1912 (8 subfamilies, 4 tribes, 65 genera, 10 subgenera, 289 species) [334,335]

Family **Strongylidae** Baird 1853 (4 subfamilies, 9 tribes, 17 subtribes, 115 genera, 14 subgenera, 661 species) [336]

Family **Trichostrongylidae** Lieper 1908 (Leiper 1912) (3 subfamilies, 15 tribes, 29 subtribes, 224 genera, 6 subgenera, 1321 species) [337,338 339,340]

Order **Spirurida** Railliet 1914 (6 suborders) [341]

Suborder **Ascaridina** Inglis 1983 (5 superfamilies)

Superfamily **Ascaridoidea** Baird 1853 (Skryabin 1915) (5 families)

Family **Anisakidae** Railliet & Henry 1912b (Skryabin & Karokhin 1945) (4 subfamilies, 2 tribes, 18 genera, 224 species) [342,343]

Family **Ascaridae** Baird 1853 (4 subfamilies, 4 tribes, 34 genera, 402 species) [344]

Family **Crossophoridae** Baylis 1920 (Hartwich 1957) (1 subfamily, 2 genera, 2 species)

Family **Heterocheilidae** Railliet & Henry 1915 (1 genus, 2 species) [345,346]

Family **Raphidascarididae** Hartwich 1954 (Fagerholm 1990) (4 subfamilies, 1 tribe, 9 genera, 193 species) [347,348]

Superfamily **Cosmocercoidea** Skryabin & Shikhobalova 1951 (3 families)

Family **Atractidae** Railliet 1917 (Travassos 1920) (21 genera, 65 species) [349,350]

Family **Cosmocercidae** Railliet 1916 (Travassos 1925) (3 subfamilies, 23 genera, 187 species) [351,352]

Family **Kathlaniidae** Lane 1914 (Travassos 1918) (3 subfamilies, 19 genera, 158 species) [353,354]

Superfamily **Heterakoidea** Railliet & Henry 1912b (Chabaud 1957) (3 families)

Family **Ascarididae** Travassos 1920 (1 genus, 33 species) [355]

Family **Aspidoderidae** Skryabin & Shikhobalova 1947 (Freitas 1956) (2 subfamilies, 7 genera, 26 species) [356]

Family **Heterakidae** Railliet & Henry 1912b (3 subfamilies, 16 genera, 132 species) [357]

Superfamily **Seuratoidea** Hall 1916 (Chabaud *et al.* 1959) (5 families)

Family **Chitwoodchabaudiidae** Puylaert 1970 (1 genus, 1 species) [358]

Family **Cucullanidae** Cobbold 1864 (2 subfamilies, 5 genera, 5 subgenera, 219 species) [359]

Family **Quimperiidae** Gendre 1928 (Baylis 1930) (2 subfamilies, 18 genera, 79 species) [360,361]

---

333. Internal parasites of mammals.
334. Created as a subfamily by Lieper (1908).
335. Internal parasites of mammals.
336. Internal parasites of mammals or occasionally birds or reptiles.
337. Attributed also to Witenberg (1925) by De Ley & Blaxter (2002).
338. Internal parasites of amphibians, reptiles, birds or mammals.
339. Classification follows Durette-Desset Spratt & Beveridge (2012 Handbuch fuer Zoologie), and Durette Desset *et al.* (1999) except generally 1 full taxonomic rank lower
340. Ichthyostrongylidae Yamaguti 1961 of doubtful validity as a group and included here (Beveridge *et al.* 2010).
341. Spermatogenesis and development provide evidence for the separation of Spirurida, Rhabditida and Panagrolaimida (Yushin & Malakhov 2004, Schierenberg & Lahl 2004).
342. Created as a subfamily by Railiet & Henry (1912).
343. Internal parasites of vertebrates.
344. Internal parasites of amphibians, reptiles, birds or mammals, rarely of fish.
345. Subfamily created by Railliet & Henry (1912).
346. Internal parasites of marine mammals.
347. Created as a subfamily by Hartwich (1954).
348. Internal parasites of fish.
349. Created as a subfamily by Railliet (1917).
350. Internal parasites of vertebrates.
351. Created as a subfamily by Railiet (1916).
352. Internal parasites of amphibians  or rarely of reptiles.
353. Created as a subfamily by Lane (1914).
354. Internal parasites of vertebrates.
355. Internal parasites of birds or rarely mammals.
356. Internal parasites of mammals.
357. Internal parasites of amphibians or reptiles or birds or mammals.
358. Internal parasites of amphibians.
359. Internal parasites of fish or rarely aquatic reptiles.

Family **Schneidernematidae** Freitas 1956 (2 subfamilies, 5 genera, 7 species) [362]
Family **Seuratidae** Hall 1916 (Railliet 1906) (3 subfamilies, 13 genera, 44 species) [363]
Superfamily **Subuluroidea** Travassos 1914 (Travassos 1930) (2 families)
Family **Maupasinidae** Inglis 1960 (1 genus, 2 species) [364]
Family **Subuluridae** Travassos 1914 (Yorke & Maplestone 1926) (5 subfamilies, 13 genera, 5 subgenera, 107 species) [365,366]
Suborder **Dracunculina** Hodda 2007 (2 superfamilies) [367]
Superfamily **Anguillicoloidea** Yamaguti 1935 (Moravec 2006) (1 family)
Family **Anguillicolidae** Yamaguti 1935 (2 genera, 5 species) [368]
Superfamily **Dracunculoidea** Stiles 1907 (Lieper 1912) (8 families)
Family **Daniconematidae** Moravec & Koie 1987 (3 genera, 4 species) [369]
Family **Dracunculidae** Stiles 1907 (Lieper 1912) (3 genera, 16 species) [370,371]
Family **Guyanemidae** Petter 1974 (2 subgenera, 6 genera, 15 species) [372]
Family **Micropleuridae** Baylis & Daubney 1926 (Travassos 1960) (2 subfamilies, 6 genera, 15 species) [373]
Family **Philometridae** Baylis & Daubney 1926 (3 sub families, 11 genera, 117 species) [374]
Family **Phlyctainophoridae** Roman 1965 (1 genus, 3 species) [375]
Family **Skrjabillanidae** Shigin & Shigina 1958 (2 subfamilies, 4 genera, 7 species) [376]
Family **Tetanonematidae** Skryabin & Shikhobalova 1948 (1 genus, 1 species)
Suborder **Gnathostomatina** Skryabin & Ivaschkin 1973 (1 superfamily) [377]
Superfamily **Gnathostomatoidea** Railliet 1895 (Ivaschkin 1960) (1 family)
Family **Gnathostomatidae** Railliet 1895 (3 subfamilies, 5 genera, 61 species) [378]
Suborder **Oxyurina** Railliet 1916 (2 superfamilies)
Superfamily **Oxyuroidea** Cobbold 1864 (3 families)
Family **Heteroxynematidae** Skryabin & Shikhobalova 1948 (2 subfamilies, 13 genera, 59 species) [379]
Family **Oxyuridae** Cobbold 1864 (54 genera, 23 subgenera, 257 species) [380]
Family **Pharyngodonidae** Travassos 1920 (13 genera, 6 subgenera, 359 species) [381]
Superfamily **Thelastomatoidea** Travassos 1929 (5 families)
Family **Hystrignathidae** Travassos 1929 (29 genera, 104 species) [382]
Family **Protrelloididae** Chitwood 1932 (Adamson & Van Waerebeke 1992) (1 subfamily, 5 genera, 27 species) [383,384]

---

360. Created as a subfamily by Gendre (1928).
361. Internal parasites of freshwater fish or amphibians.
362. Internal parasites of birds or mammals.
363. Internal parasites of amphibians or reptiles or birds or mammals.
364. Created as a subfamily by Lopez-Neyra (1945), but a synonym of Dubioxuridae Ortlepp 1937 which has not been used because the type genus *Duboxuris* Ortlepp 1937 has been synonymized with *Maupasina* Seurat 1913.
365. Internal parasites of birds or mammals.
366. Internal parasites of mammals.
367. The affinities of Dracunculoidea have long been with Spirurida on morphological grounds (Chabaud 1974), and were unresolved in early molecular analyses (Holterman *et al.* 2006, De Ley & Blaxter 2004), then clear molecular evidence was presented for affinities with Spirurida (Van Megen *et al.* 2009).
368. Internal parasites of fish.
369. Internal parasites of fish
370. Created as a subfamily by Stiles (1907).
371. Internal parasites of reptiles or birds or mammals.
372. Internal parasites of fish.
373. Internal parasites of reptiles.
374. Internal parasites of fish.
375. Internal parasites of selachian fish.
376. Internal parasites of freshwater fish.
377. Created as order Gnathostomatata.
378. Internal parasites of fish or amphibians or reptiles or mammals.
379. Internal parasites of birds or mammals (rodents or lagomorphs).
380. Internal parasites of mammals.
381. Internal parasites of fish or amphibians or reptiles, rarely of mammals.
382. Internal parasites of terrestrial insects.

Family **Pseudonymidae** Adamson & Buck 1990 (1 subfamily, 5 genera, 28 species) [385,386]

Family **Thelastomatidae** Travassos 1929 (39 genera, 242 species) [387]

Family **Travassosinematidae** Rao 1958 (10 genera, 46 species) [388]

Suborder **Rhigonematina** Inglis 1983 (2 superfamilies)

Superfamily **Ransomnematoidea** Travassos 1930 (3 families)

Family **Carnoyidae** Filipjev 1934 (Travassos & Kloss 1960) (1 subfamily, 14 genera, 54 species) [389]

Family **Hethidae** Skryabin & Shikhobalova 1951 (Travassos & Kloss 1960) (1 subfamily, 2 genera, 39 species) [390]

Family **Ransomnematidae** Travassos 1930 (3 genera, 16 species) [391]

Superfamily **Rhigonematoidea** Artigas 1930 (Kloss 1960) (3 families)

Family **Ichthyocephalidae** Travassos & Kloss 1958 (4 genera, 23 species) [392]

Family **Rhigonematidae** Artigas 1930 (3 genera, 60 species) [393]

Family **Xustromatidae** Hunt 2002 (4 genera, 13 species) [394]

Suborder **Spirurina** Railliet & Henry 1915 (10 superfamilies) [395]

Superfamily **Acuarioidea** Railliet Henry & Sissoff 1912 (Sobolev 1949) (1 family)

Family **Acuariidae** Railliet Henry & Sissoff 1912 (Chabaud 1975) (3 subfamilies, 39 genera, 2 subgenera, 299 species) [396,397]

Superfamily **Aproctoidea** Yorke & Maplestone 1926 (Chabaud 1975) (2 families)

Family **Aproctidae** Yorke & Maplestone 1926 (Skryabin & Shikhobalova 1945) (2 subfamilies, 6 genera, 59 species) [398,399]

Family **Desmidocercidae** Cramm 1927 (1 subfamily, 4 genera, 8 species) [400]

Superfamily **Camallanoidea** Railliet & Henry 1915 (Travassos 1920) (2 families)

Family **Camallanidae** Railliet & Henry 1915 (10 genera, 347 species) [401]

Family **Physalopteridae** Railliet 1893 (Lieper 1908) (3 subfamilies, 16 genera, 4 subgenera, 290 species) [402,403]

Superfamily **Diplotriaenoidea** Skryabin 1916 (Anderson 1958) (1 family) [404]

Family **Diplotriaenidae** Skryabin 1916 (Anderson 1958) (2 subfamilies, 13 genera, 107 species) [405]

Superfamily **Filarioidea** Weinland 1858 (Chabaud & Anderson 1959) (2 families)

Family **Filariidae** Weinland 1858 (Cobbold 1879) (2 subfamilies, 13 genera, 72 species) [406,407]

---

383. Created as a subfamily by Chitwood (1932).
384. Internal parasites of insects.
385. First subfamily Gyoeryiinae Kloss (1958), but with genus synonymization of genus *Gyoeryia* Kloss 1958 with *Pseudonymus* Diesing 1857 by Adamson & Van Waerebeke (1992), the first name used as a family was Pseudonymidae Adamson & Van Waerebeke 1992.
386. Internal parasites of terrestrial insects.
387. Parasites of invertebrates.
388. Parasites of diplopods and insects.
389. Internal parasites of diplopods or rarely myriapods.
390. Internal parasites of diplopods or rarely myriapods.
391. Internal parasites of diplopods or rarely myriapods.
392. Internal parasites of diplopods.
393. Internal parasites of diplopods or myriapods.
394. Parasites of diplopods or rarely myriapods.
395. Originally named suborder Spirurata (Railliet & Henry 1915) prior to adoption of current system of uniform endings of higher-ranked taxon names. First used in current form by Chitwood (1937).
396. Created as a subfamily by Railliet, Henry & Sisoff (1912).
397. Internal parasites of birds or rarely mammals.
398. Created as a subfamily by Yorke & Maplestone (1926).
399. Internal parasites of birds.
400. Internal parasites of birds.
401. Internal parasites of fish, amphibians and reptiles.
402. Created as a subfamily by Railliet (1893).
403. Internal parasites of fish, amphibians, reptiles and occasionally birds and mammals.
404. Created as a subfamily by Skryabin (1916).
405. Internal parasites of reptiles or birds.
406. Created as a subfamily by Weinland (1858).
407. Internal parasites of amphibians, reptiles, birds and mammals.

Family **Onchocercidae** Lieper 1911 (Chabaud & Anderson 1959) (6 subfamilies, 87 genera, 668 species) [408,409]

Superfamily **Habronematoidea** Chitwood & Wehr 1932 (Anderson *et al.* 1974) (4 families) [410]

Family **Cystidicolidae** Skryabin *et al.* 1949 (22 genera, 178 species) [411,412]

Family **Habronematidae** Chitwood & Wehr 1932 (Ivashkin 1961) (3 subfamilies, 21 genera, 5 subgenera, 131 species) [413,414]

Family **Hedruridae** Petter 1971 (1 genus, 12 species) [415]

Family **Tetrameridae** Travassos 1914 (3 subfamilies, 6 genera, 111 species) [416]

Superfamily **Lucionematoidea** Moravec *et al.* 1998 (n. rank) [417]

Family **Lucionematidae** Moravec *et al.* 1998 (1 genus, 1 species) [418]

Superfamily **Rictularioidea** Railliet 1916 (Anderson *et al.* 1974) (1 family)

Family **Rictulariidae** Railliet 1916 (5 genera, 5 subgenera, 91 species) [419,420]

Superfamily **Spiruroidea** Oerley 1885 (Railliet & Henry 1915) (5 families)

Family **Gongylonematidae** Sobolev 1949 (1 genus, 3 subgenera, 36 species) [421,422]

Family **Hartertiidae** Chabaud 1975 (2 genera, 11 species) [423,424]

Family **Spirocercidae** Chitwood & Wehr 1932 (Chabaud 1975) (3 subfamilies, 21 genera, 3 subgenera, 77 species) [425,426]

Family **Spiruridae** Oerley 1885 (11 genera, 58 species) [427]

Family **Tricheilidae** Wang & Wang 1991 (1 genus, 1 species) [428]

Superfamily **Thelazioidea** Railliet 1910 (Sobolev 1949) (3 families)

Family **Pneumospiruridae** Wu & Hu 1938 (3 genera, 10 species) [429]

Family **Rhabdochonidae** Skryabin 1946 (11 genera, 4 subgenera, 174 species) [430,431]

Family **Thelaziidae** Railliet 1910 (2 subfamilies, 7 genera, 8 subgenera, 82 species) [432]

Superorder **Teratocephalica** Hodda 2007 (1 order) [433]

Order **Teratocephalida** Goodey 1963 (1 suborder)

Suborder **Teratocephalina** Andrassy 1974 (1 superfamily)

Superfamily **Teratocephaloidea** Andrassy 1958 (Andrassy 1974) (1 family)

Family **Teratocephalidae** Andrassy 1958 (2 genera, 20 species) [434]

---

408. Created as a subfamily by Lieper (1911). Onchocercidae is preferred to Dipelonematidae Wehr 1935 because the former is in wide use and the latter is not.
409. Internal parasites of amphibians, reptiles, birds or mammals.
410. This superfamily should be designated Tetrameroidea because the family Tetrameridae Travassos 1914 has priority over Hedrurinae Railliet 1916, and Histiocephalinae Gendre 1922, and Habronematinae Chitwood & Wehr 1932 (Chabaud 1974). However, to preserve stability and because the other families are unusual for the group, Habronematoidea was chosen as the name for the group (Chabaud 1974).
411. Created as a subfamily by Skryabin (1946).
412. Internal parasites of fishes.
413. Habronematidae (originally created as a subfamily by Chitwood & Wehr (1932)) is used in preference to Histiocephalidae (derived from a subfamily created by Gendre (1922) because the former is in wide use and the latter has not been used (Chabaud 1975).
414. Internal parasites of birds and mammals.
415. Internal parasites of amphibians and reptiles.
416. Internal parasites of birds or marine mammals.
417. The sole species in the family Lucionematidae has an unusual suite of characters for Spirurida (Moravec *et al.* 1998), so is placed in a separate superfamily.
418. Parasites of freshwater fish.
419. Created as a subfamily by Hall (1916).
420. Internal parasites of mammals.
421. Created as a subfamily by Hall (1916).
422. Internal parasites of birds or mammals.
423. Created as a subfamily by Quentin (1970).
424. Internal parasites of birds.
425. Created as a subfamily by Chitwood & Wehr (1932).
426. Internal parasites of birds and mammals.
427. Internal parasites of vertebrates.
428. Parasites of reptiles.
429. Parasites of the lungs of mammals.
430. Created as a subfamily by Travassos *et al.* (1928).
431. Mostly internal parasites of fish, occasionally of other vertebrates.
432. Mostly parasites of bird or mammal eyes.

References


Abolafia, J. & Pena-Santiago, R. (2009) Nematodes of the order Rhabditida from Andalucia, Spain. The family Mesorhabditidae, with description of *Mesorhabditis carmenae* sp n. *Journal of Nematode Morphology and Systematics*, 12, 41–64.

Abolafia, J. & Pena-Santiago, R. (2011) *Ablechroiulus spelaeus* sp n. and *A. dudichi* Andrassy, 1970 from Andalucia Oriental, Spain, with a discussion of the taxonomy of the genus *Ablechroiulus* Andrassy, 1966 (Nematoda, Rhabditida, Rhabditidae). *Zootaxa,* 2922, 1–14.

Adamson, M.L. (1987) Phylogenetic analysis of the higher classification of the nematodes. *Canadian Journal Of Zoology*, 65, 1478–1482.

Adamson, M.L. & Buck, A. (1990) Pinworms from water scavenger beetles (Coleoptera, Hydrophilidae) with a description of a new species, *Zonothrix columbianus* sp.n. (Oxyurida, Pseudonymidae), from western Canada. *Journal of the Helminthological Society of Washington*, 57, 21–25.

Adamson, M.L. & Van Waerebeke, D. (1992) Revision of the Thelastomatoidea, Oxyurida of invertebrate hosts 3. Hystrignathidae. *Systematic Parasitology*, 21, 169–188.

Aguinaldo, A.M.A., Turbeville, J.M., Linford, L.S., Rivera, M.C., Garey, J.R., Raff, R.A. & Lake, J.A. (1997) Evidence for a clade of nematodes, arthropods and other moulting animals. *Nature*, 387, 489–493.

Ahmad, M. & Jairajpuri, M.S. (1979) Nygolaimina of India. *Proceedings of the Second National Congress of Parasitology Varanasi* 1979, 29.

Ahmad, M. & Jairajpuri, M.S. (1982) Nygolaimina of India. *Records of the Zoological Survey of India Occasional Paper* 1982, 1–71.

Ahmad, W. & Jairajpuri, M.S. (1983) 3 new species of Tylencholaimoidea (Nematoda, Dorylaimida) from India. *Nematologica*, 29, 367–374.

Aleshin, V.V. (2004) Whether variable cleavage of Enoplida (Nematoda) is primitive? Notes to D.A. Voronov article "Comparative embryology of Nematoda and the law of embryonic similarity". *Zhurnal Obshchei Biologii*, 65, 74–80.

Aleshin, V.V., Kedrova, O.S. & Miljutina, I.A. (1998) Relationships among nematodes based on the analysis of 18S rRNA gene sequences: molecular evidence for monophyly of chromadorian and secernentian nematodes. *Russian Journal of Nematology*, 6, 175–184.

Ali, M.S., Suryawanshi, M.V. & Chitty, K.Z. (1973) Two new species of *Drilocephalobus* Coomans & Goodey, 1965 (Nematoda: Drilocephalobidae n.fam.) from Marathwada, India with a revised classification of the superfamily Cephaloboidea (Paramonov, 1956) Paramonov, 1962. *Nematologica*, 19, 308–317.

Allen, M.W. & Sher, S.A. (1967) Taxonomic problems concerning the phytoparasitic nematodes. *Annual Review of Phytopathology*, 5, 247–264.

Anderson, R.C. (1958) On the classification of the Filarioidea with special reference to the Filariidae and the Stephanofilariidae. *Bulletin de la Societe zoologique de France*, 83, 144–157.

Anderson, R.C. & Bain, O. (1982) Keys to genera of the superfamilies Rhabditoidea, Dioctophymatoidea, Trichinelloidea and Muspiceoidea. In: Anderson, R.C., Chabaud, A.G. & Willmott S. (Eds) *CIH Keys to the Nematode Parasites of Vertebrates*. Commonwealth Institute of Helminthology, Farnham Royal, Supplement 9, pp1–26.

Anderson, R.C., Chabaud, A.G., Wilmott, S. (1974) General introduction. Glossary of terms. Keys to subclasses, orders and superfamilies. In: Anderson, R.C., Chabaud, A.G. & Willmott S. (Eds) *CIH Keys to the Nematode Parasites of Vertebrates*. Commonwealth Institute of Helminthology, Farnham Royal, 1, 1–17.

Andrassy, I. (1958) Erd u Susswassernematoden aus Bulgarien. *Acta zoologica Budapest*, 4, 1–88.

Andrassy, I. (1964) Onchulidae, a new family of the order Enoplida (Nematoda). *Opuscula Zoologica*, 5, 25–42.

Andrassy I. (1971) Two new species of the family Bunonematidae Nematoda. *Zoologischer Anzeiger*, 187, 257–265.

Andrassy, I. (1974) The evolution and classification of nematodes. *Magyar Tudomanyos Akademia Biologiai Tudmanyok Osztalyanak Kozlemenyei*, 17, 13–58.

Andrassy, I. (1976) *Evolution as a basis for the systematization of nematodes.* Pitman, London, pp288.

Andrassy, I. (1978) *Bicirronema caledoniense* new genus new species and *Amphidirhabditis longipapillata* new genus new species (Secernentia Rhabditida), two remarkable soil nematodes from New Caledonia southwestern Pacific Ocean. *Revue de Nematologie*, 1, 257–264.

Andrassy, I. (1983) *A taxonomic review of the suborder Rhabditina (Nematoda: Secernentia).* ORSTOM, Paris, pp 241.

Andrassy, I. (1984) *Klasse Nematoda (Ordnungen Monhysterida, Desmoscolecida, Araeolaimida, Chromadorida, Rhabdita).* Bestimmungsbuecher zur Bodenfauna Europas, Gustav Fischer Verlag, Stuttgart. pp 1–509.

Andrassy, I. (1991) The superfamily Dorylaimoidea (Nematoda) - a review. Family Qudsianematidae, 2. *Opuscula Zoologica (Budapest)*, 24, 3–55.

Andrassy, I. (1999) A census of genera and subgenera of free-living nematodes. *Journal of Nematode Morphology and Systematics* 2,


433. After a long period of uncertainty regarding phylogeny, Teratocephalidae was placed in a separate order on morphological evidence (Goodey 1963). Other interpretations have placed the family in Leptolaimina or Rhabditida (Lorenzen 1994, Andrassy 1976) or as unresolved (Zhang & Baldwin 2001, Blaxter *et al.* 2000). Molecular evidence suggests either a suborder within Rhabditida or Plectida (Holterman *et al.* 2006, Meldal *et al.* 2007) or an unresolved position (De Ley & Blaxter 2004). As a result of the conflicting evidence, an unresolved polytomy was suggested (Hodda 2007). The most recent molecular analysis placed the family as a separate, resolved clade equivalent with Rhabditica (Van Megen *et al.* 2009), hence confirming status as a superorder, but now resolved. Several authors have commented on the apparently very different phylogeny of this group, and speculated that such a high taxonomic level is not justified (eg Goodey 1963). However, current evidence means that this is the only viable status, and the Teratocephalidae is well supported molecularly (Van Megen *et al.* 2009).

434. Terrestrial, microbivorous.

45–68.
Andrassy, I. (2001a) Some species of curious genera of the class Penetrantia (Nematoda). *International Journal of Nematology*, 11, 43–57.
Andrassy, I. (2001b) On two uncommon structures in nematodes. *Opuscula Zoologica*, 33, 133–137.
Andrassy, I. (2005) Free-living nematodes of Hungary (Nematoda errantia). Volume I. *Pedozoologica Hungarica* 3, 1–518.
Andrassy, I. (2007) Free living nematodes of Hungary (Nematoda errantia): volume II. *Pedozoologica Hungarica* 4, 1-496.
Andrassy, I. (2008) Addenda to "A census of genera and subgenera of free-living nematodes". *Journal of Nematode Morphology and Systematics*, 12, 177–182.
Artigas, P. (1929) *Systematica dos nomatoideos dos arthropodos*. Thesis de Dout, Sao Paulo, unpaginated.
Artigas, P. (1930) Nematoides dos generos *Rhigonema* Cobb,1898 e *Dudekemia* n. gn. (Nematoda, Rhigonemidae n. n.). *Memorias de Instituto Oswaldo Cruz*, 24, 19–30.
Baccetti, B., Dallai, R., Dezio, S.G. & Marinari, A. (1983) The evolution of the nematode spermatozoon. *Gamete Research*, 8, 309–323.
Baermann, E.V., von Lieven, A.F. & Sudhaus, W. (2009) Revision and phylogeny of *Myolaimus* Cobb, 1920 (Secernentea, Nematoda) with the description of four new species. *Journal of Nematode Morphology and Systematics*, 12, 145–168.
Bain, O. & Chabaud, A.G. (1968) Description de *Riouxgolvinia rhinolophi* n. g., n. sp., Nematode parasite de Rhinolophe, montrant les affinites entre Muspiceoidea et Mermithoidea. *Annales de Parasitologie Humaine et Comparee* 43, 45–50.
Baird, W. (1853) Catalogue of the entozoan, or intestinal worms, contained in the collection of the British Museum. British Museum, London, 132pp.
Baranovskaya, I.A. (1981) Plant and soil nematodes (Aphelenchoididae and Seinuridae) *Nematody rastenii i pochv (afelenkhoididy i seinuridy)*. Nauka, Moscow, 234 pp.
Bastian, H.C. (1865) Monograph on the Anguillutidae, or Free Nematoids, marine, land, and freshwater, with descriptions of 100 new species. *Transactions of the Linnean Society*, 25, 73–180.
Baylis, H.A. (1920) On the Classification of the Ascaridae. I. The systematic value of certain characters of the alimentary canal. *Parasitology Cambridge*, 12, 253-264.
Baylis, H.A. (1930) Mission Saharienne Augieras Draper, 1927–1928. Parasitic Nematodes. *Bulletin du Museum Histoire Naturelle Paris*, 2, 117–130.
Baylis, H.A. (1943) Some nematode parasites of earthworms from the Indo-Malay region. *Parasitology*, 35, 112–127.
Baylis, H.A. & Daubney, R. (1926) *A synopsis of the families and genera of Nematoda.* British Museum (Natural History), London, 277pp.
Belogurov, O.I. (1980) Pandolaimidae Fam n (Nematoda, Enoplida) and comments on morphology and taxonomic status of *Pandolaimus ponticus*. *Zoologichesky Zhurnal*, 59, 1566–1568.
Bert, W., Leliaert, F., Vierstraete, A.R., Vanfleteren, J.R., Borgonie, G. (2008) Molecular phylogeny of the Tylenchina and evolution of the female gonoduct (Nematoda : Rhabditida). *Molecular Phylogenetics and Evolution* 48, 728–744.
Beveridge, I., Spratt, D.M. & Johnson, P.M. (2010) Diversity and distribution of helminth parasites in macropodoid marsupials. In: Coulson, G. & Eldridge, M. (Eds) Macropods: the biology of kangaroos, wallabies and rat-kangaroos. University of Melbourne, Melbourne, p231–242.
Blanchard, E. (1895) Maladies parasitaires, parasites animaux, parasites vegetaux a l'exclusion des Bacteries. In Bouchard, C.T. (Ed) *Traité de pathologie générale* 2. Anon., Paris, 960pp.
Blaxter, M., Dorris, M. & De Ley, P. (2000) Patterns and processes in the evolution of animal parasitic nematodes. *Nematology*, 2, 43–55.
Blome D. & Schrage, M. (1985) Free-living nematodes from Antarctica with a description of Simpliconematidae new family (Trefusiida) and a revision of *Filipjeva* (Monhysterida, Xyalidae). *Veroeffentlichungen des Instituts fuer Meeresforschung in Bremerhaven*, 21, 71–96.
Borgonie, G., Jacobsen, K. & Coomans, A. (2000) Embryonic lineage evolution in nematodes. *Nematology*, 2, 65–69.
Bostrom, S. (1989) The taxonomic position of some teratocephalid nematodes: a scanning electron microscope study. *Revue de Nematologie*, 12, 181–190.
Brandt, A., De Broyer, C., De Mesel, I., Ellingsen, K.E., Gooday, A.J., Hilbig, B., Linse, K., Thomson, M.R.A. & Tyler, P.A. (2007) The biodiversity of the deep Southern Ocean benthos. *Philosophical Transactions of the Royal Society B-Biological Sciences* 362, 39–66.
Braun, M. (1883) Die thierisher Parasiten des Menchen nebst einer Anleitung zur praktischen Beschaeftigung mit der Helminthologie fuer Stadierende und Aertze. Anon, Wurzburg, 233pp.
Brumpt, E. (1930) *Muspicea borreli* Sambon, 1925 et cancers des souris. *Annales de Parasitologie Paris*, 8, 309–343.
Brzeski, M.W. & Sauer, M.R. (1983) Scanning electron micrography of some Tylenchidae and Boleodoridae and reappraisal of the Boleodoridae. *Nematologica*, 28, 437–446.
Cameron, T.W.M. (1934) The Internal Parasites of Domestic Animals. A Manual for Veterinary surgeons. Anon., London, 292pp.
Chabaud, A.G. & Choquet, M.T. (1953) Nouveau essai de classification des filaires (superfamille des Filarioidea). *Annales de Parasitologie Humaine et Comparee*, 28, 172–192.
Chabaud, A.G. (1957) Sur la systematique des nematodes du sousordre des Ascaridina parasites des vertebres. *Bulletin de la Societe zoologique de France*, 82, 243–253.
Chabaud, A.G. (1974) Class Nematoda. Keys to subclasses, orders and superfamilies. In: Anderson, R.C., Chabaud, A.G. & Willmott S. (Eds) *CIH Keys to the Nematode Parasites of Vertebrates*. Commonwealth Institute of Helminthology, Farnham Royal, No. 1, 6–17.
Chabaud, A.G. (1975) Keys to genera of the order Spirurida. Part 2. Spiruroidea, Habronematoidea and Acuarioidea. In: Anderson,

R.C., Chabaud, A.G. & Willmott S. (Eds) *CIH Keys to the Nematode Parasites of Vertebrates*. Commonwealth Institute of Helminthology, Farnham Royal, No 3, 29–58

Chabaud, A.G. & Anderson, R.C. (1959) New attempt at classification of filaria (Superfamily Filarioidea). *Annales de Parasitologie Humaine et Comparee*, 34, 64–87.

Chabaud, A.G. & Campana, Y. (1950) Nouveau parasite remarquable par l'atrophie de ses organes: *Robertdollfusa paradoxa* (Nematoda, incertae sedis). *Annales de Parasitologie Humaine et Comparee*, 25, 325–334.

Chabaud, A.G., Campana-Rouget, Y & Brygoo, E.R. (1959) Les nematodes Seuratoidea nov sup fam et l'origine des Spirurida. *Comptes Rendus hebdomadaires des seances de l'academie des sciences*, 248, 1449–1451.

Chilton, N.B., Hruby-Chilton, F. Gasserk, R.B. & Beveridge, I (2006) The evolutionary origins of nematodes within the order Strongylida are related to predilection sites within hosts. *Molecular Phylogenetics and Evolution* 40, 118–128.

Chitwood, B.G. (1932) A synopsis of the Nematodes parasitic in insects of the family Blattidae. *Zeitschrift fuer Parasitenkunde*, 5, 14–50.

Chitwood, B.G. (1933) A revised classification of the Nematoda. *Journal of Parasitology Urbana*, 20, 131.

Chitwood, B.G. (1935) Nomenclatorial notes, l. *Proceedings of the Helminthological Society of Washington,* 2, 51–54.

Chitwood, B.G. (1936) Some marine nematodes from North Carolina. *Proceedings of the Helminthological Society of Washington,* 8, 1–16.

Chitwood, B.G. (1937) *A revised classification of the Nematoda*. In: Anon (Ed) *Skrjabin Jubilee Volume*. Nauka, Moscow, pp 69–80.

Chitwood, B.G. (1951) North American marine nematodes. *Texas Journal of Science*, 3, 627–672.

Chitwood, B.G. (1957) The english word "nema" revised. *Systematic Zoology,* 6, 184–186.

Chitwood, B.G. (1958) The designation of official names for higher taxa of invertebrates. *Bulletin of Zoological Nomenclature*, 15, 860–895.

Chitwood, B.G. & Chitwood, M.B. (1937) *An introduction to nematology. Volume 1*. Monumental Printing Co., Baltimore, 372 pp.

Chitwood, B.G. & Chitwood, M.B. (1950) *An introduction to nematology. Section I. Anatomy.* B.G. Chitwood, Washington DC, 213 pp.

Chitwood, B.G. & McIntosh, A. (1934) A new variety of *Alloionema* (Nematoda: Diplogasteridae), with a note on the genus. *Proceedings of the Helminthological Society of Washington,* 1, 37–38.

Chitwood, B.G. & Wehr, E.E. (1932) The value of head characters in Nematode taxonomy and relationships. *Journal of Parasitology Urbana*, 19, 167–168.

Clark, W.C. (1961) A revised classification of the order Enoplida (Nematoda). *New Zealand Journal of Science*, 4, 123–150.

Cobb, N.A. (1919a) *The orders and classes of Nemas. Contributions to a science of Nematology, No. VIII.* Waverley Press, Baltimore, pp 213–216.

Cobb, N.A. (1919b) *Tetradonema plicans* nov. gen. et spec., representing a new family, Tetradonematidae, as now found parasitic in larvae of the midge insect, *Sciara coprophila* Lintner. *Journal of Parasitology Urbana*, 5, 176–185.

Cobb, N.A. (1920) *One hundred new Nemas (type-species of 100 new genera). Contributions to a science of Nematology, No. IX.* Waverley Press, Baltimore, pp 217–343.

Cobb, N.A. (1932) The english word “nema”. *Journal of the American Medical Association*, 98, 75.

Cobbold, T. S. (1864) *Parasites*. Anon., London, 508pp.

Cobbold. (1879) *Parasites, a treatise on the entozoan of man and animals, including some account of the ectozoa*. Anon., London, unpaginated.

Coomans, A.V. & Raski, D.J. (1988) Two new species of *Prismatolaimus* De Man, 1880 (Nemata, Prismatolaimidae) in southern Chile. *Journal of Nematology,* 20, 288–303.

Coomans, A. & Loof, P.A.A. (1970) Morphology and taxonomy of Bathyodontina (Dorylaimida). *Nematologica*, 16, 180–196.

Cram, E.B. (1927) Bird parasites of the Nematode suborders Strongylata, Ascaridata, and Spirurata. *Bulletin of the U.S. National Museum, Washington*, 140, 1–465.

Curran, J. & Hominick, W.M. (1981) Description of *Gastromermis metae* sp n (Nematoda, Mermithidae) with an assessment of some diagnostic characters and species in *Gastromermis*. *Nematologica*, 27, 258–273.

Dalmasso, A. (1969) Anatomical and taxonomical study of the genera *Xiphinema*, *Longidorus* and *Paralongidorus* (Nematoda, Dorylaimidae). *Memoires du Museum National d'Histoire Naturelle Serie A Zoologie*, 61, 33–82.

De Coninck, L.A. (1935) Contribution a la connaissance des Nematodes libres du Congo Belge I. Les Nematodes libres des marais de la Nyamuamba (Ruwenzori) et des sources chaudes du Mont Banze. *Revue Zoologique et de Botanique Africaines, Tervueren*, 26, 211–232.

De Coninck, L. (1965) Systematiques des nematodes. Sousclasse des Adenophorea. Infra-classe des Chromadoria. Infra-classe des Enoplia. In: Grasse, P.P. (Ed) *Traite de Zoologie.* Masson, Paris, pp 601–608.

De Coninck, L.A.P & Schuurmans Stekhoven, J.H. (1933) Freeliving marine nemas of the Belgian coast. ii. With general remarks on the structure and the system of nemas. *Memoires du Museum de Histoire naturelle Belgique*, 58, 1–163.

Decraemer, W. & Smol, N. (2006) Orders Chromadorida, Desmodorida and Desmoscolecida. In: Eyualem A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp 497–573.

De Ley, P. & Blaxter, M. (2002) Systematic position and phylogeny. In: Lee, D.L. (Ed) *The biology of nematodes*. Taylor & Francis, London, pp 1–30.

De Ley, P. & Blaxter, M.L. (2004) A new system for Nematoda: combining morphological characters with molecular trees, and translating clades into ranks and taxa. *Nematology Monographs and Perspectives*, 2, 633–653.

De Ley, P. & Coomans, A. (1990) Terrestrial nematodes of the Galapagos Archipelago 1: Three rhabditida from Isla Fernandina. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique Biologie*, 60, 5–22.

De Ley, P., Decraemer, W., Eyualem, A. (2006) Introduction: summary of present knowledge and research addressing the ecology and taxonomy of freshwater nematodes. In: Eyualem A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp 3–30.

De Man, J.G. (1876) Onderzoekingen over vrij in de aarde levende Nematoden. *Tijdschrift Nederlandsche voor de Dierkunde Vereen*, 2, 78–196.

Diesing, K.M. (1857) *Denkschriften Akademie Wissenschaftliche, Wien*, 13, 10.

Dougherty, E.C. (1944) The genus *Metastrongylus* Molin, 1861 (Nematoda: Metastrongylidae). *Proceedings of the Helminthological Society of Washington,* 11, 66–73.

Dougherty, E.C. (1955) The genera and species of the subfamily Rhabditinae Micoletzky, 1922 (Nematoda) : a nomenclatorial analysis-including an addendum on the composition of the family Rhabditidae Orley, 1880. *Journal of Helminthology*, 29, 105–152.

Dougherty, E.C. (1958a) Questions arising in connection with the naming of orders and taxa of higher rank. *Bulletin of Zoological Nomenclature*, 15, 523–539.

Dougherty, E.C. (1958b) Notes on the naming of higher taxa, with special reference to the phylum (or class) Nematoda. *Bulletin of Zoological Nomenclature*, 15, 896–906.

Dujardin, F. (1845) *Histoire naturelle des helminthes ou vers intestinaux*. Libre Encycopedidique de Roret (Suites a Buffon), Paris, 652 pp.

Dunn, C.W., Hejnol, A., Matus, D.Q., Pang K., Browne, W.E., Smith, S.A., Seaver, E., Rouse, G.W., Obst, M., Edgecombe, G.D., Sorensen, M.V., Haddock, S.H.D., Schmidt-Rhaesa, A., Okusu, A., Kristensen, R.M., Wheeler, W.C., Martindale, M.Q. & Giribet, G. (2008) Broad phylogenomic sampling improves resolution of the animal tree of life. *Nature*, 452, 745–749.

Durette-Desset, M.C. & Chabaud, A.G. (1977) Tentative classification of nematodes-Trichostrongyloidea. *Annales de parasitologie humaine et compare*, 52, 539–558.

Durette-Desset, M.C., Hugot, J.P., Darlu, P. & Chabaud, A.G. (1999) A cladistic analysis of the Trichostrongyloidea (Nematoda). *International Journal for Parasitology,* 29, 1065–1086.

Eliava, I.Y. (1964) The position of the genus *Tylenchorhynchus* within the Tylenchoidea (Nematoda: Tylenchida). *Soobshcheniya Akademii Nauk Gruzinskol SSR.*, 34, 669–673.

Eroshenko, A.S. (1973) New data on taxonomy of the family Teratocephalidae Nematoda. *Zoologicheskii Zhurnal*, 52, 1768–1776.

Ettema, C.H., Rathbun, S.L. & Coleman, D.C. (2000) On spatiotemporal patchiness and the coexistence of five species of *Chronogaster* (Nematoda: Chronogasteridae) in a riparian wetland. *Oecologia*, 125, 444–452.

Fagerholm, H.P. (1990) Systematic position and delimitation of ascaridoid nematode parasites of the genus *Contracaecum* with a note on the superfamily Ascaridoidea. *Acta academiae aboensis ser b mathematica et physica*, 50, 1–27.

Farooqui, M.N. (1967) On a new family Mehdinematidae fam. nov. from *Gryllus domesticus*. *Zoologischer Anzeiger,* 178, 322–326.

Filipjev, I. (1916) Les nematodes libres contenus dans les collections du musee Zoologique de l'Academie Imperiale des Sciences de Petrograd. *Annales du Museum Zoologique de Academie des Sciences, Petrograd*, 21, 59–116.

Filipjev, I. (1917) Un Nematode libre nouveau de la mer Caspienue, *Chromadorissa* gen. nov. (Chromadoridae). *Revue de Zooogie Russe, Moscow*, 2, 29–30.

Filipjev, I.N. (1918) Free-living marine Nematodes from the vicinity of Sevastopol. Pt. I. *Trudy Osoboi Zoologicheskoi Laboratorii Sebastopolskoi Stantsii Rossiikoi series, 2*, 4, 1–614.

Filipjev, I.N. (1922) Encore sur les Nematodes libres de la Mer Noire. *Acta Instituti Agronomomici Stavropol (Zool),* 1, 83–184.

Filipjev, I.N. (1927) Les Nematodes libres des mers septentrionales appartenant a la famille des Enoplidae. *Archiv fuer Naturgeschicht, Berlin*, 91, 1–216.

Filipjev, I.N. (1929) Classification of free-living Nematoda and relations to parasitic forms. *Journal of Parasitology Urbana*, 15, 281–282.

Filipjev, I.N. (1934) The classification of the free-living nematodes and their relation to the parasitic nematodes. *Smithsonian Miscellaneous Collections*, 89, 1–63.

Filipjev, I.N. & Schuurmans Stekhoven, J.H. (1941) *A manual of agricultural helminthology.* Brill, Leiden, 878 pp.

Fotedar, D.N. & Handoo, Z.A. (1975) A revised scheme of classification to order Tylenchida Thorne, 1949 (Nematoda). *Journal of Science, University of Kashmir*, 3, 55–82.

Freitas, J.F.T.de (1956) Notas sobre Heterakidae Railliet & Henrv 1914 (Nematoda, Subuluroidea). *Revista Brasileira de Biologia*, 16, 461–482.

Fuchs, A.G. (1937) Neue parasitische und halbparasitische Nematoden bei Borkenkafern und einige andere Nematoden. *Zoologisher Jahrbuch Jena (Syst.)*, 70, 291–380.

Gagarin, J.G. (1975) A contribution to the taxonomy and phylogeny of the superfamily Plectoidea (Nematoda). *Zoologicheskii Zhurnal*, 54, 503–509.

Gagarin, V.G. (1992) *Svobodnozhivushchie nematody presnykh vod SSSR.* Nauka, Moscow, 1–152.

Gagarin, V.G. (1993) *Svobodnozhivushchie nematody presnykh vod Rossii i sopredel'nykh stran: (otryady Monhysterida, Araeolaimida, Chromadorida, Enoplida, Mononchida).* Nauka, Moscow, 1–352.

Gagarin, V.G. & Nguyen, V.T. (2003) New species of the genera *Chronogaster* (Araeolaimida: Chronogasteridae) and *Dorylaimellus* (Dorylaimida: Belondiridae) from Vietnam (Nematoda). *Zoosystematica Rossica*, 12, 145–149.

Gendre, E. (1922) Sur deux especes d'*Hadjelia*. *Proces Verbaux de la Societe Linnean Bordeaux,* 74, 26–32.

Gendre, E. (1928) Sur un Nematode nouveau, parasite des Poissons. *Bulletin de la Societe de pathologie exotique*, 19, 798–802.

Geraert, E. (1966) Systematic position of families Tylenchulidae and Criconematidae. *Nematologica*, 12, 362–368.

Geraert, E. (2008) *The Tylenchidae of the world: identification of the family Tylenchidae*. Academia Press, Gent, 540 pp.

Geraert, E. (2010) *The Criconematidae of the world: identification of the family Criconematidae*. Academia Press, Gent, 615 pp.

Gerlach, S.A. (1953) *Lauratonema* nov. gen.. Vertreter einer neuen Familie mariner Nematoden aus dem Kustengrundwasser. *Zoologisher Anzeiger*, 151, 43–52.

Gerlach, S.A. (1963) *Aponchium* Cobb, 1920, Typus einer neuen Familie freilebender Meeres-Nematoden. *Abhandlungen des Naturwissenschaftlichen vereins in Hamburg N.F.*, 7, 157–166.

Gerlach, S.A. (1964) Revision der Choniolaiminae und Selachinematinae (Freilebende Meeres-Nematoden). *Mitteilungen aus dem Hamburgischen zoologischen Museum und Instit*, 61, 23–50.

Gerlach, S.A. (1966) Bemerkungen zur Phylogenie der Nematoden. *Mitteilungen aus der Biologischen Bundesanstalt fur Land- and Forstwirtschaft*, 118, 25–39.

Gerlach, S.A. & Riemann, F. (1973) The Bremerhaven checklist of aquatic nematodes. A catalogue of Nematoda Adenophorea excluding the Dorylaimida. Part I. *Veroffentlichungen des Instituts fur Meeresforschung in Bremerhaven. Supplement 4, Heft 1.*, 1–404.

Gerlach, S.A. & Riemann, F. (1974) The Bremerhaven checklist of aquatic nematodes. A catalogue of Nematoda Adenophorea, excluding the Doryaimida. Part 2. *Veroffentlichungen des Instituts fur Meeresforschung in Bremerhaven. Supplement 4, Heft 2.*, 405–734.

Gervais, P. & Van Benedon, P.M. (1859) *Zoologie medicale. Expose methodique du regne animal, base sur l'anatomie, l'embryologie, et lapaleontologie; comprenant las description des especes employees en medicine, de celles qui sont venimeuses et de celles qui sont parasites de l'homme et des animaux*. Anon, Paris, 504pp.

Golden, A.M. (1971) Classification of the genera and higher categories of the order Tylenchida (Nematoda).In: Zuckerman, B.M., Mai, W.F. & Rohde, R.A. (Eds). *Plant parasitic nematodes. Volume I. Morphology, anatomy, taxonomy, and ecology.* Academic, New York, pp 191–232.

Goodey, J.B. (1960) The classification of the Aphelenchoidea Fuchs, 1937. *Nematologica*, 5, 111–126.

Goodey, J.B. (1963) *Soil and freshwater nematodes.* Methuen, London, 544 pp.

Goodey, T. (1929) On some new and little-known free-living Nematodes. *Journal of Helminthology*, 7, 27–62.

Goodey, T. (1939) *Cylindrocorpus* nom. nov. for *Cylindrogaster* Goodey, 1927 (Nematoda). *Journal of Helminthology London*, 17, 149–150.

Goodey, T. (1951) *Soil and freshwater nematodes. A monograph.* Methuen, London, 390 pp.

Goodey, T. (1953) On certain eelworms, including Butschli's *Tylenchus fungorum*, obtained from toadstools. *Journal of Helminthology*, 27, 81–94.

Grube, A.E. (1849) Ueber einige Anguillulen und die Entwicklung von *Gordius aquaticus*. *Archiv fuer Naturgeschichte Berlin Abteilung 15J*, 1, 358–375.

Hall, M.C. (1916) Nematode parasites of mammals of the orders Rodentia, Lagomorpha and Hyracoidea. *Proceedings of the U.S. National Museum*, 50, 1–247.

Hartwich, G. (1954) Zur Kenntnis der Gattung *Hamatospiculum* Skrjabin,1916 und *Parhamatospiculum* Skrjabin und Petrov, 1928 (Nematoda, Filarioidea). *Wissenschaftliche Zeitschrift der Martin-Luther-Universitat Halle Wittenberg*, 3, 659–663.

Hartwich, G. (1957) Zur Systematik der Nematoden-Superfamilie Ascaridoidea. *Zoologische Jahrbuecher (Systematik)*, 85, 211–252.

Heyns, J. (1962a) *Elaphonema mirabile* n. gen., n. sp. (Rhabditida), a remarkable new nematode from south Africa. *Proceedings of the Helminthological Society of Washington*, 29, 128–130.

Heyns, J. (1962b) *Osstella hamata* n. gen., n. sp., *Zeldia serrata* n. sp. and *Acrobeles thornei* n. sp., three new nematodes from South Africa (Rhabditida: Cephalobidae). *Nematologica*, 8, 301–306.

Heyns, J. (1965) On the morphology and taxonomy of the Aporcelaimidae, a new family of dorylaimoid nematodes. *Entomology Memoirs. Department of Agriculture and Forestry, Union of South Africa*, 10, 1–51.

Heyns, J. (1968) A monographic study of the nematode families Nygolaimidae and Nygolaimellidae. *Entomology Memoirs. Department of Agriculture and Forestry, Union of South Africa*, 19, 1–144.

Hodda M (2003) *A checklist of Aphelenchida*. CSIRO, Canberra, 138pp. Available from: http://www.ento.csiro.au/science/nematodes/checklist_dec2003.rtf (30 May 2010).

Hodda, M. (2007) Phylum Nematoda. *Zootaxa*, 1668, 265–293.

Hodda, M., Bloemers, G. & Wanless, F.R. (2004) The family Onchulidae: establishment of monophyly, rediagnosis, review and keys, with descriptions of three new species from tropical forests in Cameroon. *Journal of Nematode Morphology and Systematics*, 7, 131–151.

Hodda, M., Peters, L. & Traunspurger, W. (2009) Nematode biodiversity: terrestrial, marine & freshwater. In: Wilson, M. & Kakouli Duarte, T. (Eds) *Biomonitoring with nematodes*. CABI, Wallingford UK, pp 45–93.

Holovachov, O. (2004) Morphology, phylogeny and evolution of the superfamily Plectoidea Orley, 1880 (Nematoda : Plectida). *Annales Zoologici*, 54, 631–672.

Holovachov, O. (2006) *Morphology and systematics of the order Plectida Malakhov, 1982 (Nematoda).* Thesis, University of Wageningen, Wageningen, 244 pp.

Holovachov, O., Bostrom, S. & Susulovsky, A. (2007) Description of *Aulolaimus multipapillatus* sp n. and *A. nannocephalus* Andrassy, 1972 with notes on taxonomy and phylogeny of the genus (Nematoda : Aulolaimidae). *Nematology*, 9, 201–214.

Holovachov, O. & De Ley, P. (2006) Order Plectida. In: Eyualem A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp. 611–647.

Holovachov, O, Esquivel, A. & Bongers, T. (2003) Free-living nematodes from nature reserves in Costa Rica. 4. Cephalobina. *Nematology*, 5, 1–15.

Holovachov, O., Winiszewska, G., Sturhan, D., Esquivel, A. & Wu, J. (2008) New genus, three new and two known species of the family Onchulidae Andrassy, 1964 with notes on systematics and biology of the family. *Journal of Nematode Morphology and Systematics*, 11, 1–30.

Holovachov, O., Zullini, A., Loof, P.A.A. & Bongers, T. (2002) Morphology and systematics of the genus *Anonchus* Cobb, 1913 (Nematoda : Leptolaimina) and reappraisal of the family Aphanolaimidae Chitwood, 1936 n. rank. *Nematology*, 4, 725–757.

Holterman, M. & Holovachov, O. (2007) Phylogeny and biogeography of Triplonchida. *Phytopathology*, 97, 132–133.
Holterman, M., Holovachov, O., van den Elsen, S., van Megen, H., Bongers, T., Bakker, J. & Helder, J. (2008) Small subunit ribosomal DNA-based phylogeny of basal Chromadoria (Nematoda) suggests that transitions from marine to terrestrial habitats (and vice versa) require relatively simple adaptations. *Molecular Phylogenetics and Evolution*, 48, 758–763.
Holterman, M., van der Wurff, A., van den Elsen, S., van Megen, H., Bongers, T., Holovachov, O., Bakker, J. & Helder, J. (2006) Phylum-wide analysis of SSU rDNA reveals deep phylogenetic relationships among nematodes and accelerated evolution toward crown clades. *Molecular Biology and Evolution*, 23, 1792–1800.
Hope, W.D. & Murphy, D.G. (1969) *Rhaptothyreus typicus* new genus new species, an abyssal marine nematode representing a new family of uncertain taxonomic position. *Proceedings of the Biological Society of Washington*, 82, 81–92.
Hope, W.D. & Murphy, D.G. (1972) A taxonomic hierarchy and checklist of the genera and higher taxa of marine nematodes. *Smithsonian Contributions to Zoology*, 137, 1–101.
Hope, W.D. & Tchesunov, A.V. (1999) *Smithsoninema inaequale* n.g. and n.sp (Nematoda, Leptolaimidae) inhabiting the test of a foraminiferan. *Invertebrate Biology*, 118, 95–108.
Hunt, D.J. (1980) *Acugutturus parasiticus*, new genus new species, a remarkable ecto-parasitic aphelenchoid nematode from *Periplaneta americana*, with proposal of Acugutturinae new subfamily. *Systematic Parasitology*, 1, 167–170.
Hunt, D.J. (1993) *Aphelenchida, Longidoridae and Trichodoridae: their systematics and bionomics*. CABI, Wallingford, 352 pp.
Hunt, D.J. (2002) The African Rhigonematoidea (Nematoda : Rhigonematida). 1. *Trachyglossus quintus* gen. n., sp n. (Xustrostomatidae fam. n.) with redescription of *Rhigonema multipapillatum* (Skrjabin, 1916) and designation of a neotype. *Nematology*, 4, 671–686.
Husain, S.I. & Khan, A.M. (1967a) On status of genera of superfamily Aphelenchoidea (Fuchs 1937) Thorne 1949 with descriptions of 6 new species of nematodes from India. *Proceedings of the Helminthological Society of WashingtonI*, 34, 167–174.
Husain, S.I. & Khan, A.M. (1967b). A new subfamily a new subgenus and 8 new species of nematodes from India belonging to superfamily Tylenchoidea. *Proceedings of the Helminthological Society of Washington*, 34, 175–186.
Hyman, L.H. (1951) *The invertebrates : Acanthocephala, Aschelminthes, and Entoprocta , the pseudocoelomate Bilateria.* McGraw-Hill, New York, 573 pp.
Inglis, W.G. (1960) Les nematodes de la famille des Maupasinidae. *Annales de Parasitologie Humaine et Comparee*, 35, 190–191.
Inglis, W.G. (1983) An outline classification of the phylum Nematoda. *Australian Journal of Zoology*, 31, 243–255.
Ivashkin, V.M. (1960) Nematodes of the subfamily Parabronematinae Skryabin, 1941 in the light of morphology and systematics. *Trudi Gelmintologicheskoi Laboratorii, Akademiya Nauk SSSR*, 10, 94–108.
Ivashkin, V.M. (1961) Classification of the subclass Phasmidia Chitwood & Chitwood, 1933. *Trudi Gelmintologicheskoi Laboratorii, Akademiya Nauk SSSR*, 11, 115–117.
Jairajpuri, M.S. (1964) Studies on Campydoridae and Leptonchidae (Nematoda - Dorylaimoidea ) with description of *Basirotyleptus basiri* n gen , n sp , from India. *Proceedings of the Helminthological Society of Washington*, 31, 59–64.
Jairajpuri, M.S. (1965a) *Qudsianema amabilis* n gen n sp (Nematoda - Dorylaimoidea ) from India. *Proceedings of the Helminthological Society of Washington*, 32, 72–78.
Jairajpuri, M.S. (1965b) Three new species of Dorylaimoidea (Nematoda) from India. *Proceedings of the Helminthological Society of Washington*, 32, 78–81.
Jairajpuri, M.S. (1969) Studies on Mononchida of India .1. Genera *Hadronchus*, *Iotonchus*, and *Miconchus* and a revised classification of Mononchida, new order. *Nematologica*, 15, 557–581.
Jairajpuri, M.S. (1971) On the synonymy of *Telotylenchus* Siddiqi, 1960 with *Trichotylenchus* Whitehead, 1959 (Nematoda: Tylenchida). *Indian Journal of Nematology*, 1, 3–6.
Jairajpuri, M.S. (1983) Observations on *Campydora* (Nematoda: Dorylaimida). *Nematologia Mediterranea*, 11, 33–42.
Jairajpuri, M.S. & Ahmad, W. (1992) *Dorylaimida - Free-living, predaceous and plant-parasitic nematodes.* Brill, Leiden, 458 pp.
Jairajpuri, M.S., Ahmad, M. & Bajaj, H.K. (1976) On the morphology and systematic position of *Campydora* Cobb, 1920 (Nematoda, Dorylaimida). In: Anon (Ed) *First National Convention of Indian Helminthology.* IARI, New Delhi, pp25–26.
Jairajpuri, M.S. & Hooper, D.J. (1968) A review of the genus *Aulolaimus* (Axonolaimidae Aulolaiminae new subfamily) with notes on the synonymy of the genus *Pandurinema*. *Journal of Helminthology*, 42, 41–52.
Jairajpuri, M.S. & Siddiqi, A.H. (1964) On new nematode genus *Nordia* (Dorylaimoidea - Nordianae n. subfam.) with remarks on genus *Longidorella* Thorne 1939. *Proceedings of the Helminthological Society of Washington*, 31,1–9.
Jensen, P. (1991) Bodonematidae Fam n (Nematoda, Monhysterida) accommodating *Bodonema vossi* gen et sp n from the deep-sea benthos of the Norwegian Sea. *Sarsia*, 76, 11–15.
Justine, J-L. (2002) Male and female gametes and fertilisation. In: Lee, D.L. (Ed) *The biology of nematodes*. Taylor & Francis, London, pp 73–119.
Khan, E. (1964) *Boleodorus mirus* n.sp. (Tylenchidae: Boleodorinae N. Sub-family) from Kufri, Simla (H.P.), India, with a key to the species of the genus *Boleodorus* Thorne, 1941. *Zoologischer Anzeiger*, 173, 336-341.
Khan, E. (1969) On the classification of Tylenchoidea. In: Anon (Ed) *First National Convention of Indian Helminthology.* IARI, New Delhi, p 26.
Khan, S.H. & Ahmad, S. (1975) Longidoroidea (Thorne, 1935) n. rank. (Nematoda: Dorylaimina) with description of *Xiphinema neoamericanum* n. sp. from India and proposal of a new name for *X. americanum* sensu Carvalho (1956) non Cobb, 1913. *Nematologia Mediterranea*, 3, 23–28.
Kiontke, K. & Fitch, D.H.A. (2005) The phylogenetic relationships of *Caenorhabditis* and other rhabditids. In: Girard, L.R. (Ed.) WormBook, The *C. elegans* Research Community, WormBook, pp. 1–11.
Kirjanova, E.S. (1955) *Kruglie chervil (nematode) paraziti rastenie.* Akademia Nauka SSR, Leningrad, 157pp.
Kirjanova, E.S. & Krall, E.L. (1969) *Parasitic nematodes of plants and their control measures. Volume I.* Nauka, Leningrad 447pp

Kloss, G.R. (1958) Nematodeos parasitos de Hydrophilidae (Col.). *Atas de la Sociedade do Biologia de Rio de Janeiro*, 2, 21–23.
Kloss, G.R. (1960) Organizacao filogenetica dos nematoides parasites intestinais de artropodos. (Nota previa). *Atas de la Sociedade do Biologia de Rio de Janeiro*, 4, 51–55.
Koerner, H. (1954) Die Nematodefauna des vergehenden Holzes und ihre Beziehungen zu den Insekten. *Zoologishe Jahrbucher Abteilung Systematik*, 82, 245–253.
Kreis, H.A. (1929) Freilebende marine Nematoden von der Nordwestkueste, Frankreichs (Trebeurden : Cotes du Nord). *Capita Zoologica* 2, 1–98.
Lambshead, P.J.D. (1993). Recent developments in marine benthic biodiversity research. *Recent developments in benthology,* 19, 5–24.
Lane, C. (1914) Bursate Nematodes from the Indian elephant. *Indian Journal of Medical Research Calcutta*, 2, 380–398.
Laumond, C. & Lyon, J.P. (1971) Le parasitisme de *Syrphonema intestinalis* n.g., n.sp., aux depens des syrphides (insectes dipteres) et la nouvelle famille des Syrphonematidae (Nematoda: Rhabditida). *Comptes Rendus Hebdomadaires des Seances de l' Academie Des Sciences Serie D* 272, 1789–1792.
Lazarevskaya, S.L. (1965) Nematodes of insects harmful to forests. I. Biological characteristics of nematodes belonging to the genus *Parasitorhabditis* Fuchs1937 (Rhabditidae, Parasitorhabditinae). *Trudy Gelmintologicheskoi Laboratorii,* 15, 93–102.
Leiper, R.T. (1908) An account of some Helminths contained in Dr. C.M. Wenyon's Collection from the Soudan. *Reports of the Wellcome Research Laboratory Khartoum*, 3, 186–199.
Leiper, R.T. (1911) Check-List of Helminthes parasitic in Equines. *Journal of the London School of Tropical Medicine*, 1, 22–26.
Leiper, R.T. (1912) Check-List of Helminthes parasitic in cattle. *Journal of the London School of Tropical Medicine*, 1, 115–122.
Litvaitis, M.K., Bates, J.W., Hope, W.D. & Moens, T. (2000) Inferring a classification of the Adenophorea (Nematoda) from nucleotide sequences of the D3 expansion segment (26/28S rDNA). *Canadian Journal of Zoology,* 78, 911–922.
Loof, P.A.A. (1987) Tylenchorhynchidae Eliava, 1964 a junior synonym of Telotylenchidae Siddiqi, 1960 (Nematoda: Tylenchoidea). *Revue de Nematologie*, 10, 123–124.
Looss, A. (1905) Notizen zur Helminthologie Aegyptens. vi. Das Genus *Trichostrongylus* n.g., mit zwei neuen gelegentlichen Parasiten des Menschen. *Centralblatt fuer Bakteriologie, Parasitenkunde und Infektionskrankheiten, Jena (i)*, 39, 408–422.
Looss, A. (1911) The anatomy and life history of *Ancylostoma duodenale* Dub. ii. Development in the free state. *Cairo Records of the Egyptian Government School of Medicine*, 4, 167–607.
Lopez-Neyra, C.R. (1945) Estudios y revision de la familia Subuluridae, con descripcion de especies nuevas. *Row Iberica Parasitica Granada*, 5, 271–329.
Lorenzen, S. (1977) Revision of the Xyalidae free living nematodes based on a critical analysis of 56 species from the North Sea and Baltic. *Veroeffentlichungen des Instituts fuer Meeresforschung in Bremerhaven*, 16, 197–262.
Lorenzen S. (1978) Triodontolaimidae free living nematodes rediscovery of the only species after 85 years. *Veroeffentlichungen des Instituts fuer Meeresforschung in Bremerhaven*, 17, 87–94.
Lorenzen, S. (1981) Entwurf eines phylogenetischen Systems der freilebenden Nematoden. *Veroeffentlichungen des Instituts fuer Meeresforschung in Bremerhaven Supplement*, 7, 1–472.
Lorenzen, S. (1994) *The phylogenetic systematics of freeliving nematodes*. Ray Society Publications No 162, London, 383pp.
Lubbock, J. (1861) On *Sphaerularia bombi*. *Natural History Review,* 1, 44–57.
Maggenti, A.R. (1963) Comparative morphology in nemic phylogeny. In: Dougherty, E.C., Brown, Z.N., Hanson, E.D. & Hartman, W.D. (Eds) *The lower Metazoa: comparative biology and phylogeny.* University of California Press, Berkeley, 273–282 pp
Maggenti, A.R., 1982. Nemata. In: Parker, S.P. (Ed) *Synopsis and classification of living organisims Volume 1.* McGraw-Hill, New York, pp 879–929.
Maggenti, A.R. (1991) Nemata: higher classification. In: Nickle, W.R. (Ed) *Manual of agricultural nematology.* Marcel Dekker, New York, pp 147–187.
Malakhov, V.V. (1994) *Nematodes: structure, development, classification, and phylogeny.* Smithsonian Institution Press, Washington, 286pp.
Malakhov, V.V., Ryzhikov, K.M. & Sonin, M.D. (1982) The system of large taxa of nematodes - subclasses, orders, suborders. *Zoologichesky Zhurnal*, 61, 1125–1134.
Malakhov, V.V. & Hope, W.D. (1994) *Nematodes: structure, development, classification, and phylogeny.* Smithsonian Institute Press, Washington DC, pp 1–286.
Marcinowski, K. (1909) Parasitisch und semiparasitisch an Pflanzen lebende Nematoden. *Arbeiten ueber biologie Anstalten Berlin*, 7, 1–192.
Mehdi A.S., Suryawanshi, M.V. & Chitty, K.Z. (1973) Two new species of *Drilocephalobus* Coomans & Goodey, 1965 (Nematoda: Drilocephalobidae n.fam.) from Marathwada, India with a revised classification of the superfamily Cephaloboidea (Paramonov, 1956) Paramonov, 1962. *Nematologica*, 19, 308–317.
Meldal, B.H.M., Debenham, N.J., De Ley, P., De Ley, I.T., Vanfleteren, J.R., Vierstraete, A.R., Bert, W., Borgonie, G., Moens, T., Tyler, P.A., Austen, M.C., Blaxter, M.L., Rogers, A.D. & Lambshead, P.J.D. (2007) An improved molecular phylogeny of the Nematoda with special emphasis on marine taxa. *Molecular Phylogenetics and Evolution*, 42, 622–636.
Meyl, A.H. (1957) Freeliving nematodes. *Resultats Scientifiques de l'Exploration Hydrobiologique du Lac Tanganika (1946–1947)*, 3, 27–51.
Meyl, A.H. (1961) Die freilebenden Erd- und Susswassernematoden (Fadenwurmer). *Die Tierwelt Mitteleuropas*, 1 (5a), 1–164.
Micoletzky, H. (1922) Die freilebenden Erd-Nematoden mit besonderer Berucksichtigung der Steiermark und der Bukowina, zugleich mit einer Revision samtlicher, nicht mariner, freilebender Nematoden in Form von Genus-Beschreibungen und Bestimmungsschlusseln. *Archiv fuer Naturgeschichte Berlin Abteilung A*, 87, 1–649.
Miljutin, D.M. (2006) The genus *Trophomera* Rubtsov & Platonova, 1974 with description of *T. litoralis* sp n. (Nematoda : Benthime-

rmithidae) from the tidal zone of the Kuril Archipelago and proposal of *Benthimermis* Petter, 1980 as a junior synonym. *Nematology*, 8, 411–423.
Miljutin, D.M. & Tchesunov, A.V. (2001) On the histological anatomy of *Benthimermis megala* Petter, 1987, a giant nematode from the Norwegian deep-sea (Nematoda : Benthimermithidae). *Nematology*, 3, 491–502.
Moravec, F. (2006) *Dracunculoid and anguillicoloid nematodes parasitic in vertebrates*. Academia, Praha, 634pp.
Moravec, F. & Koie, M. (1987) *Daniconema anguillae* gen et sp n, a new nematode of a new family Daniconematidae fam n parasitic in European eels. *Folia parasitological*, 34, 335–340.
Moravec, F., Molnar, K. & Szekely, C. (1998) *Lucionema balatonense* gen. et sp. n., a new nematode of a new family Lucionematidae fam. n. (Dracunculoidea) from the swimbladder of the European pikeperch, *Stizostedion lucioperca* (Pisces). *Folia Parasitologica*, 45, 57–61.
Mounport, D. (2005) *Chronogaster tessellata* n. sp (Nematoda : Chronogastridae) from Senegal. *Nematology*, 7, 53–57.
Mullin, P.G., Harris, T.S. & Powers, T.O. (2003) Systematic status of *Campydora* Cobb, 1920 (Nematoda : Campydorina). *Nematology*, 5, 699–711.
Nadler, S.A., De Ley, P., Mundo-Ocampo, M., Smythe, A.B., Stock, S.P., Bumbarger, D., Adams, B.J., De Ley, I.T., Holovachov, O. & Baldwin, J.G. (2006) Phylogeny of Cephalobina (Nematoda): Molecular evidence for recurrent evolution of probolae and incongruence with traditional classifications. *Molecular Phylogenetics and Evolution*, 40, 696–711.
Nadler, S.A., Carreno, R.A., Mejia-Madrid, H., Ullberg, J., Pagan, C., Houston, R. & Hugot, J.P. (2007) Molecular phylogeny of clade III nematodes reveals multiple origins of tissue parasitism. *Parasitology*, 134, 1421–1442.
Nickle, W.R. (1970) A taxonomic review of the Aphelenchoidea (Nematoda, Tylenchida). *Journal of Parasitology*, 56, 249.
Nicoll, W. (1935) Vermes. *Zoological Record*, 71, 123.
Oerley, L. (1880) Az anguillulidak maganrajza. A kir. m. termeszettudom. tarsulat altal a bugatdijjal jutalmazott palyamu. *Termeszettudom Fuzeetek*, 4, 16–150.
Oerley, L. (1885) A rhabditisek maganrajza orvosi es termeszetrajjsi szempontbol. Hat rajzlappal. *Mathematik es Termeszettudom Kozlemenyek, Magyar Tudoman Akademi Budapest*, 21, 1–134.
Ortlepp, R.J. (1937) Some undescribed species of the nematode genus *Physaloptera* Rud., together with a key to the sufficiently known forms. *Onderstepoort Journal Pretoria*, 9, 71–84.
Paramonov, A.A. (1952) Ecological classification of Phyto-nematodes. *Trudi Gelmintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 6, 338–369.
Paramonov, A.A. (1953) Revision of superfamily Aphelenchoidea Fuchs, 1937 (Nematoda : Tylenchata). In: Anon. (Ed) *K. I. Skrjabin Anniversary Volume*, Nauka, Moscow, pp 488–496.
Paramonov, A.A. (1956) To a revision of the Rhabditata, parasites of plants. *Trudi Gelmintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 8, 85–111.
Paramonov, A.A. (1962) *Principles of phytonematology. Vol. I. The origin of nematodes. Ecological and morphological characteristics of phytonematodes. General principles of taxonomy.* Izdatelstvo Akademil Nauk SSSR, Moscow, 480 pp.
Paramonov, A.A. (1964) *Principles of phytonematology. Vol. II. Taxonomy of phytonematodes.* Izdatelstvo Akademil Nauk SSSR, Moscow, 446 pp.
Paramonov, A.A. (1967) A critical review of the suborder Tylenchina (Filipjev, 1934) Nematoda: Secernentea). *Trudi Gelmintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 18, 78–101.
Pearse, A.S. (1936) Parasites from Yucatan. *Publications of the Carnegie Institution Washington*, 457, 45–50.
Pearse, A.S. (1942) *Introduction to parasitology.* Bailliere, Tindall & Cox, London, 357 pp.
Pegova, A.N., Krasnova, E.D., Aleshin, V.V. (2004) Evidence from the small and large ribosomal RNA structure suggests that *Anoplostoma rectospiculum* Gal'tsova, 1976 (Nematoda : Anoplostomatidae) is a member of the superfamily Enoploidea, not Oncholaimoidea. *Nematology* 6, 413–421.
Periera, C. (1931) *Myenchus boteloi* n. sp. curioso nematoide parasite de *Limnobella brasiliensis* Pinto (Hirudinea). Thesis, Sao Paolo, 29 pp.
Petrov, A.M. (1930) Zur Charakteristik des Nematoden aus Kamtschatkaer Zobeln *Soboliphyme baturini* nov. gen., nov. sp.. *Zoologisher Anzeiger Leipzig*, 86, 265–271.
Petter, A.J. (1971) Re-description of *Hedruris androphora* (Nematoda Hedruridae) and study of its development in the intermediate host. *Annales de Parasitologie Humaine et Comparee*, 46, 479–495.
Petter, A.J. (1974) Deux nouvelles especes de nematodes camallanine parasites de *Haploerythrinus unitaenictus* (Characidae, Cypriniformes) en Guyane, creation d'une nouvelle famille: les Guyanemidae (Dracunculoidea). *Bulletin du Museum nationale de Histoire naturelle Paris (Zoologie)*, 156, 803–812.
Petter, A.J. (1980) A new family of nematodes parasites of marine-invertebrates, the Benthimermithidae. *Annales de parasitologie humaine et compare*, 55, 209–224.
Pierantoni, U. (1916) I nematodi parassiti degli Oligocheti. *Napoli Boletin Societe Naturale* 28, 139–175.
Poinar, G.O. (1975) Description and biology of a new insect parasitic rhabditoid, *Heterorhabditis bacteriophora* n.gen., n.sp. (Rhabditida, Heterorhabditidae n.fam.). *Nematologica*, 21, 463–470.
Poinar, G.O. (1977) *CIH key to the groups and genera of nematode parasites of invertebrates.* Commonwealth Institute of Helminthology, Farnham Royal, 43 pp.
Poinar, G.O. (1978) *Mesidionema praecomasculatis* gen et sp n - Mesidionematidae fam n (Drilonematoidea, Rhabditida), a nematode parasite of earthworms. *Proceedings of the Helminthological Society of Washington*, 45, 97–102.
Poinar, G.O & Sarbu, S.M. (1994) *Chronogaster troglodytes* sp n (Nemata, Chronogasteridae) from Mobile cave, with a review of cavernicolous nematodes. *Fundamental and Applied Nematology*, 17, 231–237.
Puylaert, J.A. (1970) Description de *Chitwoodchabaudia skryabini* g. n., sp. n., (Chitwoodchabaudiidae fam. nov.), parasite de *Xeno-*

*pus laevis victorianus* Ahl. (Cosmocercoidea, Nematoda, Vermes). *Revue de Zoologie et de Botanique Africaines*, 81, 369–381.
Quentin, J-C. (1970) Larval morphogenesis of the Spirurid *Mastophorus muris*. *Annales de Parasitologie Humaine et Comparee*, 45, 839–855.
Railliet, A. (1893) *Traite de Zoologie medicale et agricole*. Anon., Paris, 442pp.
Railliet, A. (1895) Nematodes. In: Railliet A. (Ed.) *Traite de zoologie medicale et agricole. 2me ed.* Anon., Paris, pp 388–562.
Railliet, A. (1906) *Untitled*. Museum de Histoire naturelle, Paris, 269 pp.
Railliet, A. (1910) La famille des Thelaziidae. *Journal of Parasitology Urbana*, 2, 99–105.
Railliet, A. (1915) L'emploi des medicaments dans le traitement des maladies causees par des Nematodes. *Recueil de Medecine Veterinaire Paris*, 91, 490–513.
Railliet, A. (1916) Nematodes parasites des rongeurs par M. C. Hall. *Recueil de Medecine Veterinaire Paris*, 92, 517–521.
Railliet, A. & Henry, A. (1912) Observations sur les Strongylides du genre Nematodirus. *Bulletin de la Societe de pathologie exotique*, 5, 35–39.
Railliet, A. & Henry, A. (1912) Quelques Nematodes parasites des Reptiles. *Bulletin de la Societe de pathologie exotique*, 5, 251–259.
Railliet, A. & Henry, A. (1913) Observations sur les Nematodes parasites du genre *Aapidodera*, Railliet et Henry, 1912. *Bulletins de Museum Paris*, 1913, 93–99.
Railliet, A., Henry, A. (1915a) Sur les Nematodes du genre *Goezia* Zeder. *Bulletin de la Societe de pathologie exotique*, 8, 270–275.
Railliet, A. & Henry, A. (1915b) Sur les Nematodes du genre *Camallanus* Raill. et Henry1915 (*Cucullanus* Auct. non Mueller 1777). *Bulletin de la Societe de pathologie exotique*, 8, 446–452.
Railliet, A., Henry, A. & Sisoff, P. (1912) The affinity of Dispharagae (Acuaria Bremser), parasitical nematodes of birds. *Comptes Rendus des Seances de la Societe de Biologie et de ses Filiales*, 73, 622–624.
Ransom, B.H. (1911) The nematodes parasitic in the alimentary tract of cattle, sheep, and other ruminants. *U S Department of Agriculture Bureau Animal Industries Bulletin*, 127, 1–132.
Rao, P.N. (1958) Studies on the nematode parasites of insects and other arthropods. *Arquivos Museo Nacione Rio De Janeiro*, 46, 33–84.
Raski, D.J. (1962) Paratylenchidae n fam with descriptions of five new species of *Gracilacus* ng and an emendation of *Cacopaurus* Thorne, 1943, *Paratylenchus* Micoletzky, 1922 and Criconematidae Thorne, 1943. *Proceedings of the Helminthological Society of Washington*, 29, 189–207.
Raski, D.J. & Sher, S.A. (1952) *Sphaeronema californicum*, nov. gen., nov. spec. (Criconematidae: Sphaeronematinae, nov. subfam.) an endoparasite of the roots of certain plants. *Proceedings of the Helminthological Society of Washington*, 19, 77–80.
Ribas, A. & Casanova, J.C. (2002) *Agfa morandi* sp n. (Rhabditida, Agfidae) a parasite of *Limax* sp (Gastropoda, Limacidae). *Parasitology Research*, 88, 745–747.
Riemann, F. (1972) *Kinonchulus sattleri* n.g. n. sp. (Enoplida, Tripyloidea), an aberrant freeliving nematode from the lower Amazonas. *Veroffentlichungen des Instituts fuer Meeresforchungen in Bremerhaven*, 13, 317–326.
Roman, E. (1965) Systematique des nematodes. Sous-classe des Adenophorea. Ordre des Enoplides. Super-families des trichuroides, dioctophymatoides et muspiceoides. In: Grasse, P.P. (Ed) *Traite de Zoologie.* Masson, Paris, pp 705–726.
Ross, J.L., Ivanova, E.S., Spiridonov, S.E., Waeyenberge, L., Moens, M., Nicol, G.W. & Wilson, M.J. (2010) Molecular phylogeny of slug-parasitic nematodes inferred from 18S rRNA gene sequences. *Molecular Phylogenetics and Evolution*, 55, 738–743.
Rubtsov, I.A. (1978) *Mermitidy: klassifikatsiya, znachenie, ispol'zovanie*. Nauka, Moscow, 207 pp.
Rubtzov, I.A. (1980) The new marine parasitic nematode, *Abos bathycola*, from Priapulids and a taxonomic position of the family Marimermithidae in the class Nematoda. *Parazitologiya*, 14, 177–181.
Rubtsov, I.A. & Platonova, T.A. (1974) A new family of marine parasitic nematodes. *Zoologicheskii Zhurnal*, 53, 1445–1458.
Rudolphi, C.A. (1808) *Entozoorum sive vermium intestinalium historia naturalis.* Anon., Amsterdam, unpaginated.
Ruehm, W. (1956) Die Nematoden der Ipiden. *Parasitologische Schriftenreihe*, 6, 1–437.
Rusin, L.Y., Aleshin, V.V., Vladychenskaya, N.S., Miljutina, I.A., Kedrova, O.S. & Petrov, N.B. (2001) Trefusiidae are a subtaxon of marine enoplida (Nematoda): Evidence from primary structure of hairpin 35 and 48 loops of SSU rRNA gene. *Molecular Biology*, 35, 778–784.
Ryss, A.Y. (1988) Review of the genus *Prismatolaimus* (Araeolaimida). *Trudy Zoologicheskogo Instituta*, 180, 82–95.
Ryzhikov, K.M., Sonin, M.D. (1981) A system of nematodes - parasites of vertebrate animals. *Parazitologiya*, 15, 510–518.
Sanwal, K.C. (1957) Chambersiellidae n. fam. (Nematoda) with emended diagnosis of the genus *Chambersiella* Cobb, 1920, description of *C. bakeri* n. sp., and discussion of taxonomic position. *Canadian Journal of Zoology*, 35, 615–621.
Schierenberg, E. (2000) New approaches to a better understanding of nematode phylogeny: molecular and developmental studies. *Journal of Zoological Systematics and Evolutionary Research*, 38, 129–132.
Schierenberg, E. (2005) Unusual cleavage and gastrulation in a freshwater nematode: developmental and phylogenetic implications. *Development Genes and Evolution*, 215, 103–108.
Schierenberg, E. & Lahl, V. (2004) Embryology and phylogeny of nematodes. *Nematology Monographs and Perspectives*, 2, 667–679.
Schuurmans Stekhoven, J.H.S. (1935) Nematoda: Systematischer Teil, Nematoda errantia. In: Grimpe, G. & Wagler, E. (Eds) *Die Tierwelt der Nord- und Ostsee*. Anon., Leipzig, 173pp.
Schuurmans Stekhoven, J.H.S. (1942) The free living nematodes of the Mediterranean. III. The Balearic Islands. *Zooligishe Mededelingen (Leiden)*, 23, 229–262.
Scopoli, G.A. (1777) *Introductio ad historiam naturalem sistens genera lapidum, plantarum, et animalium hactenus detecta, caracteribus essentialibus donata, in tribus divisa, subinde ad leges naturae*. Gerle, Prague, 506pp.
Seurat, L.G. (1913) Sur quelques Nematodes du sud Tunisien. *Alger Bulletin de societe de histoire naturelle*, 4, 126–130.
Shigin, A.A. & Shigina, N.G. (1958) *Skrjabillanus tincae* gen. nov. spec. nov. (Nematoda : Camallanata) parasite of tench. In: Anon. (Ed) *Papers on Helminthology presented to K. I. Skrjabin on his 80th Birthday.* Nauka, Moscow, pp 395–399.

Shipley, A.E. (1896) Nemathelminthes. In: Harmer, S.F. & Shipley, A.E. (Eds) *The Cambridge Natural History.* Weldon u. Wesley, Cambridge, pp. 123–185.

Siddiqi, M.R. (1960) *Telotylenchus*, a new nematode genus from North India (Tylenchida: Telotylenchinae n. sub-fam.). *Nematologica*, 5, 73–77.

Siddiqi, M.R. (1963) On the classification of the Pratylenchidae (Thorne, 1949) nov. grad. (Nematoda : Tylenchida) with a description of *Zygotylenchus browni* nov. gen. et nov. sp.. *Zeitschrift fuer Parasitenkunde*, 23, 390–396.

Siddiqi, M.R. (1968) Five new species of Belondiroidea (Nematoda) from Sibsagar India with a revised classification of superfamily. *Proceedings of the Helminthological Society of Washington*, 35,248–258.

Siddiqi, M.R. (1969) *Crateronema* n gen (Crateronematidae n fam), *Poronemella* n gen (Lordellonematinae n sub-fam) and *Chrysonemoides* n gen (Chrysonematidae n fam) with a revised classification of Dorylaimoidea (Nematoda). *Nematologica*, 15, 81–100.

Siddiqi, M.R. (1971) Structure of the oesophagus in the classification of the superfamily Tylenchoidea (Nematoda). *Indian Journal of Nematology*, 1, 25–43.

Siddiqi, M.R. (1974) Systematics of the genus *Trichodorus* Cobb, 1913 (Nematoda, Dorlaimida), with descriptions of three new species. *Nematologica*, 19, 259–278.

Siddiqi, M.R. (1976) New plant nematode genera *Plesiodorus* (Dolichodorinae), *Meiodorus* (Meiodorinae subfam n), *Amplimerlinius* (Merliniinae) and *Gracilancea* (Tylodoridae grad n). *Nematologica*, 22, 390–416.

Siddiqi, M.R. (1980) The origin and phylogeny of the nematode orders Tylenchida Thorne, 1949 and Aphelenchida N. Ord. *Helminthological Abstracts, Series B.*, 49, 143–170.

Siddiqi, M.R. (1982) Seven new genera of dorylaimid nematodes from Colombian rain-forest. *Systematic Parasitology*, 4, 69–87.

Siddiqi, M.R. (1983) Phylogenetic relationships of the soil nematode orders Dorylaimida, Mononchida, Triplonchida and Alaimida, with a revised classification of the subclass Enoplia. *Pakistan Journal of Nematology*, 1, 79–110.

Siddiqi, M.R. (1986) *Tylenchida. Parasites of plants and insects*. CAB, Farnham Royal, 645 pp.

Siddiqi, M.R. (2000) *Tylenchida: parasites of plants and insects (2nd Ed.)*. CABI, New York, 833 pp

Siddiqi, M.R. (2003) *Keralanema spinicorpus* (Maggenti *et al*., 1983) gen. n., comb. n. (Nematoda: Chronogastridae). *International Journal of Nematology*, 13, 236.

Skarbilovich, T.S. (1947) On the reorganisation of the systematics of the nematodes belonging to the family Anguillulinidae Baylis and Daubney, 1926. *Doklady Akademi Nauk SSR New Series*, 57, 307–308.

Skarbilovich, T.S. (1959) On the structure of systematics of nematodes, order Tylenchida Thore, 1949. *Acta Parasitologia Polonica*, 7, 117–132.

Skryabin, K.I. (1915) *Vestnik obshest veterinarija, Petrograd*, 133, 1–10.

Skryabin, K.I. (1916) Parasitic trematodes and nematodes collected by the expedition of Prof. V. Dogiel and I. Sokolov in British East Africa. *Scientific results of the zoological expedition to British East Africa and Uganda by Prof. V. Dogiel and I. Sokolov in 1914*, 1(4), 1–157.

Skryabin, K.I. (1923) *Hastospiculum varani* n. gen, n. sp. Eine neue Filaria der reptilian. *Russki I Zhurnal Tropichesko i Medi t Siny*, 1, 40–44.

Skryabin, K.I. (1946) A new revision of the taxonomy of the nematodes Spirurata parasitizing in fishes. *Doklady Akademii nauk SSSR*, 54, 751–752.

Skryabin, K.I. & Karokhin, V.I. (1945) On the re-arrangement of nematodes of the order Ascaridata Skrjabin, 1915. *Doklady Akademii nauk SSSR*, 48, 297–299.

Skryabin, K.I. & Ivashkin, V.M. (1973) On the composition of the superfamily Gnathostomatoides Skryabin et Ivaschkin, 1968 and its elevation to the rank of suborder. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 23, 144–148.

Skrjabin, K.I. & Shikhobalova, N.P. (1945) A new rearrangement of the taxonomy of the nematodes belonging to the family Filariidae Cobbold, 1864. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 49, 690–692.

Skryabin, K.I. & Shikhobalova, N.P. (1947) Revision of the systematics of the nematode family Heterakidae. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 58, 719–721.

Skryabin, K.I. & Shikhobalova, N.P. (1948) Systematic revision of the family Subuluridae. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 60, 189–192.

Skryabin, K.I. & Shikhobalova, N.P. (1951) A reconstruction of the classification of nematodes of the suborder Oxyurata Skryabin, 1933. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 65, 5–8.

Skryabin, K.I., Shikhobalova, N.P. & Sobolev, A.A. (1949) *Descriptive catalogue of parasitic nematodes. Vol. I. Spirurata and Filariata*. Nauka, Moscow, 519 pp.

Skryabin, K.I. & Shults, R.E.S. (1937) *Helminth parasites of cattle.* Nauka, Moscow, 723 pp.

Smol, N. & Coomans, A. (2006) Order Enoplida. In: Eyualem, A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp 225–292.

Smythe, A.B., Sanderson, M.J. & Nadler, S.A. (2006) Nematode small subunit phylogeny correlates with alignment parameters. *Systematic Biology*, 55, 972–992.

Sobolev, A.A. (1949) Nematode classification. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 63, 273–277.

Spasski, A.A. (1954) On the occurrence of neonate forms among phasmidian nematodes. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 7 192–195.

Spasski, A.A. (1954) On the systematics of aphasmidian nematodes. *Trudy Gel'mintologicheskoi Laboratorii. Akademiya Nauk SSSR*, 8, 159–164.

Spratt, D.M. & Nicholas, W.L. (2002) Morphological evidence for the systematic position of the Order Muspiceida (Nematoda). *Transactions of the Royal Society of South Australia*, 126, 51–62.

Stammer, H.J. & Wachek, F. (1952) Ein neuer insektenparasitischer Nematode, *Carabonema hasei* n.g., n.sp. (Carabonematidae n. fam.). *Zoologischer Anzeiger*, 148, 185–193.

Steinbuch, J.G. (1799) Das Grasalchen, *Vibrio agrostis*. *Der Naturforscher*, 28, 233–259.

Steiner, G. (1927) A new nemic family Epsilonematidae. *Journal of Parasitology Urbana*, 14, 65–66.

Steiner, G. (1929) *Diplogaster entomophaga* n.sp., a new *Diplogaster* (Diplogasteridae, Nematodes) found on a *Pamphilus stellatus* (Christ) (Tenthredinidae, Hymenoptera). *Zoologischer Anzeiger*, 80, 143–145.

Steiner, G. (1930) Die Nematoden der Deutschen Sudpolar-Expedition 1901-1903. *Deutsche Sudpolar Expedition 1901-03,* 20, 167–216.

Steiner, G. (1949) Plant nematodes the grower should know. *Proceedings. Soil Science Society of Florida*, 4B, 72–117.

Stiles, C.W. (1907) The zoological characters of the roundworm genus *Filaria* Mueller, 1787, with a list of the threadworms reported for man. *Treasury Department, Public Health & Marine Hospital Service, Hygiene Laboratory, Bulletin*, 34, 31–51.

Sudhaus, W. (1967) Comparative studies on the phylogeny, systematics, ecology, biology and ethology of the Rhabditidae (Nematoda). *Zoologica (Stuttgart)*, 43, 1–29.

Sudhaus, W. & Fitch, D. (2001) Comparative studies on the phylogeny and systematics of the Rhabditidae (Nematoda). *Journal of Nematology*, 33, 1–70.

Sudhaus, W. & von Lieven, A.F. (2003) A phylogenetic classification and catalogue of the Diplogastridae (Secernentea, Nematoda). *Journal of Nematode Morphology and Systematics*, 6, 43–89.

Suryawanshi, M.V. (1971) *Alirhabditis indica* n.gen., n.sp. (Rhabditida: Alirhabditidae n.fam), *Tawdenema indicum* n.gen., n.sp. and *Syedella aurangabadensis* n.gen., n.sp. (Diplogasteridae) from Marathwada, India. *Nematologica*, 17, 542–552.

Taylor, A.L. (1936) The genera and species of the Criconematinae, sub-family of the Anguillulinidae (Nematoda). *Transactions of the American Microscopical Society*, 55, 391–421.

Tchesunov, A.V. (1990) A critical analysis of the family Aegialoalaimidae (Nematoda, Chromadoria), trends in evolutionary development of marine nematode pharynx and a proposal of two new families. *Zoologicheskii Zhurnal*, 69, 5–18.

Tchesunov, A.V. (1996) A new nematode family Fusivermidae fam n (Monhysterida) for *Fusivermis fertilis* gen n, sp n from the White Sea. *Nematologica*, 42, 35–41.

Tchesunov, A.V. (1997) Marimermithid nematodes: Anatomy, position in the nematode system, phylogeny. *Zoologichesky Zhurnal*, 76, 1283–1299.

Tchesunov, A.V & Gagarin, V.G. (1999) Descriptions of *Andrassya tundrovi* Gagarin, 1993 and *Malakhovia chernobyli* gen. n., sp n. (Nematoda : Andrassyidae fam. n.). *Nematology*, 1, 141–148.

Tchesunov, A.V. & Miljutina, M.A. (2002) A review of the family Ceramonematidae (marine free-living nematodes), with descriptions of nine species from the White Sea. *Zoosystematica Rossica*, 11, 3–39.

Tchesunov, A.V. & Sturhan, D. (2002) Redescription of *Dintheria tenuissima* de Man, 1921 (Nematoda : Bastianidae). *Russian Journal of Nematology*, 10, 37–42.

Theodorides, J. (1965) Systematique des nematodes. Sousclasse des Adenophorea. Ordre des Enoplides. Superfamille des Mermithoidea. In: Grasse, P.P. (Ed) *Traite de Zoologie*. Masson, Paris, pp 681–704.

Thorne, G. (1934) The classification of the higher groups of dorylaims. *Proceedings of the Helminthological Society of Washington*, 1, 19.

Thorne, G. (1935) Notes on free-living and plant-parasitic nematodes I. *Proceedings of the Helminthological Society of Washington*, 2, 46–47.

Thorne, G. (1937) A revision of the nematode family Cephalobidae Chitwood and Chitwood 1934. *Proceedings of the Helminthological Society of Washington*, 4, 1–16.

Thorne, G. (1939) A monograph of the nematodes of the superfamily Dorylaimoidea. *Capita Zoology*, 8, 1–261.

Thorne, G. (1941) Some nematodes of the family Tylenchidae which do not possess a valvular median esophageal bulb. *Great Basin Naturalist*, 37–85.

Thorne, G. (1949) On the classification of the Tylenchida, new order (Nematoda, Phasmidia). *Proceedings of the Helminthological Society of Washington*,16, 37–73.

Thorne, G. (1964) Nematodes of Puerto Rico: Belondiroidea new superfamily, Leptonchidae, Thorne, 1935 and Belonenchidae new family (Nemata, Adenophorea, Dorylaimida). *Technical Paper Agricultural Experiment Station Puerto Rico* 1, 1–51

Thorne, G. (1967) Nematodes of Puerto Rico: Actinolaimoidea new superfamily with a revision of its genera and species with addenda to Belondiroidea (Nemata, Adenophorea, Dorylaimida). *Technical Paper Agricultural Experiment Station Puerto Rico* 2, 1–48.

Timm, R.W. (1959) A new species of *Pharyngonema* (Nematoda: Pharyngonematidae) from the body cavity of earthworms. *Pakistan Journal of Biology and Agricultural Science*, 2, 42–46.

Timm, R.W. (1961) The systematic position of *Isolaimium* Cobb, 1920 (Nematoda), with a description of a new species. *Journal of the Bombay Natural History Society*, 58, 300–303.

Timm, R.W. (1966) Nematode parasites of the coelomic cavity of earthworms. III. *Homungella* new genus (Drilonematoidea: Homungellidae new family). *Biologia (Pakistan)*, 12, 1–5.

Timm, R.W. (1969) Genus *Isolaimium* Cobb 1920 (Order Isolaimida Isolaimiidae new family). *Journal of Nematology*, 1, 97–106.

Travassos, L. (1914) Contribuicoes para o conhecimento da fauna helmintologica brazileira. III. Sobre as especies brazileiras do genero *Tetrameres* Creplin 1846. *Memorias de Instituto. Oswaldo Cruz*, 6, 150–162.

Travassos, L. (1918) Informacoes sobre a farmilia Kathlanidae, n. nom. *Revista brasileira, Rio de Janeiro*, 2, 83–88.

Travassos, L. (1920) Esboco de uma chave geral dos Nematodes parasitos. *Revista veterinaria y zootechnica*, 10, 59–71.

Travassos, L. (1925) Contribuicoes para o conhecimento da Fauna Helmintolojica dos Batraquios do Brasil. Nematódeos intestinais. *Sciencia Medica*, 3, 673–687.

Travassos, L. (1929) Contribuicao preliminar a systematica dos nematodeos dos arthropodos. *Memorias de Instituto. Oswaldo Cruz,*

19 supplement, 19–25.
Travassos, L. (1930) Pesquizas helminthologicas realisados em Hamburgo. VIII. Informacoes sobre o genero *Pleurogenes* Loose, 1896. *Memorias de Instituto. Oswaldo Cruz*, 24, 251–256.
Travassos, L. (1960) Concerning nematodes of the body cavity of fish from Rio Amazonas. *Atas do Sociedad Biologicos de Rio de Janeiro*, 4, 15–20.
Travassos, L. & Kloss, G.R. (1958) Itchthyocephalidae, new family. *Boletin do Museo Paraense Emilio Goeldi Zoologi*, 17, 1–19.
Travassos, L. & Kloss, G.R. (1960a) Cephalobiidae, new family (Nematoda). *Atas do Sociedad Biologico de Rio de Janeiro*, 4, 50–51.
Travassos, L. & Kloss, G.R. (1960b) Sobore o genero *Rondonema* Artigas, 1926 (Nematoda). In: Anon. (Ed) *Libro homenaje al Dr. Eduardo Gaballero y Caballero, Jubileo 1930–1960*. Anon., Rio de Janiero, pp 511–519.
Travassos, L., Pereira, P.A. & Pereira, C. (1928) Fauna helminthologica dos peixes de aqua doce do Brasil. *Archivos Instituto Biologico, Sao Paulo*, 1, 5–68.
Van Megen, H., van den Elsen, S., Holterman, M., Karssen, G., Mooyman, P., Bongers, T., Holovachov, O., Bakker, J. & Helder, J. (2009) A phylogenetic tree of nematodes based on about 1200 full-length small subunit ribosomal DNA sequences. *Nematology*, 11, 927–950.
Vitiello, P. & De Coninck, L. (1968) *Peresiana annulata* n. gen., n. sp., type interessant de Desmoscolecida. *Rapports, Commission Internationale pour l'Exploration Scientifique de la Mer Mediterrane*, 19, 201–204.
von Lieven, AF. & Sudhaus, W. (2000) Comparative and functional morphology of the buccal cavity of Diplogastrina (Nematoda) and a first outline of the phylogeny of this taxon. *Journal of Zoological Systematics and Evolutionary Research*, 38, 37–63.
Voronov, D.A., Panchin, Y.V. & Spiridonov, S.E. (1998) Nematode phylogeny and embryology. *Nature*, 395, 28.
Wang, P. & Wang, Y. (1991) A study of nematode parasites of Amphibians and reptiles from Fujian, China, with descriptions of 1 new family, 1 new genus and 2 new species. *Wuyi Science Journal*, 8, 139–148.
Ward, H.B. (1907) Iconographia parasitorum hominis. *Studies from the Zoological Laboratory Nebraska, Lincoln*, 70, 1–24.
Wehr, E.E. (1935) A revised classification of the nematode superfamily Filarioidea. *Proceedings of the Helminthological Society of Washington*, 2, 84–88.
Weinland, D.F. (1858) *Systematic Catalogue of all Helminths found in Man. Appendix to: Human Cestoides: an essay on the Tapeworms of Man*. Metcalf & Co., Cambridge, pp83–90 of 93pp.
Weiser, W. (1953) Reports of the Lund University Chile Expedition 1948–1949. 10. Free-living nematodes. I. Enoploidea. *Lunds Universitets Arsskrift*, 49, 1–155.
Whitehead, A.G. (1959) *Trichotylenchus falciformis* n. g., n. sp. (Belonolaiminae n. subfam., Tylenchida Thorne, 1949) an associate of grass roots (*Hyparrhenia* sp.) in Southern Tanganyika. *Nematologica*, 4, 279–285.
Witenberg, G. (1925). Remarks on the Anatomical Structure and Systematic Position of the Stork's Lung-Filaria. *Journal of Helminthology, London*, 3, 203–208.
Wouts, W.M. (1973) A revision of the family Heteroderidae (Nematoda: Tylenchoidea). The family Heteroderidae and its subfamilies. *Nematologica*, 18, 439–446.
Wu, H.W. & Hu, Y.T. (1938) Parasitic nematodes from Hainan. *Sinensia*, 9, 275–297.
Wulker, G. (1927) Nematodes. In: Schulz, P. (Ed) *Biologic der Tiere Deutschlands*. Borntraeger, Berlin, Teil 3 No 64 pp 25.
Yamaguti, S. (1935). Studies on the Helminth Fauna of Japan. Part 9. *Japanese Journal of Zoology*, 6, 337–386.
Yamaguti, S. (1961) *Systema helminthum. Vol. Ill, pts. I-II. The Nematodes of Vertebrates*. Interscience Publishers, New York, 1261pp.
Yamaguti, S. & Hayama, S. (1961) A redescription of *Edesonfilaria malayensis* Yeh, 1960, with remarks on its systematic position. *Proceedings of the Helminthological Society of Washington*, 28, 83–86.
Yorke, W. & Maplestone, P.A. (1926) *The Nematode Parasites of Vertebrates*. J. & A. Churchill, London, 536 pp.
Yushin, V.V. (2003a) Ultrastructure of spermatogenesis in the free-living marine nematode *Anticoma possjetica* (Enoplida: Anticomidae). *Nematology*, 5, 777–788.
Yushin, V.V. (2003b) Ultrastructure of spermatozoa in the free-living marine nematode of the family Selachinematidae (Chromadorida: Cyatholaimina). *Russian Journal of Nematology*, 11, 81–90.
Yushin, V.V., Coomans, A. & Malakhov, V.V. (2002) Ultrastructure of spermatogenesis in the free-living marine nematode *Pontonema vulgare* (Enoplida, Oncholaimidae). *Canadian Journal of Zoology*, 80, 1371–1382.
Yushin, V.V. & Malakhov, V.V. (2004) Spermatogenesis and nematode phylogeny. *Nematology Monographs and Perspectives*, 2, 655–665.
Zhang, Y.C. & Baldwin, J.G. (2001). Ultrastructure of the postcorpus of the esophagus of *Teratocephalus lirellus* (Teratocephalida) and its use for interpreting character evolution in Secernentea (Nematoda). *Canadian Journal of Zoology*, 79, 16–25.
Zhao, (2011) A review of the genus *Trischistoma* Cobb, 1913 (Nematoda: Enoplida), with descriptions of four new species from New Zealand. *Zootaxa*, 3045, 1–25.
Zullini, A. (2006) Order Triplonchida. In: Eyualem, A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp 293–325.
Zullini, A., Loof, P.A.A. & Bongers, T. (2002) Free-living nematodes from nature reserves in Costa Rica. 3. Araeolaimida. *Nematology*, 4, 709–724.
Zullini, A. & Peneva, V. (2006) Order Mononchida. In: Eyualem, A., Andrassy, I. & Traunspurger, W. (Eds) *Freshwater nematodes: ecology and taxonomy.* CABI, Wallingford, pp 468–496.

## Author name & address

Mike Hodda, CSIRO Ecosystem Sciences, GPO Box 1700, Canberra, ACT 2601, Australia; mike.hodda@csiro.au