

A Review on Taxonomy of Phylum Kinorhyncha

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Abstract

Kinorhyncha is exclusively marine, holobenthic, free-living, meiofaunal species found in all marine habitats in the world. However, information on geographical distribution and taxonomical distributional status of Kinorhyncha are needed further understanding. This research article presents a compiled, up-to-date checklist of the Phylum Kinorhyncha based on bibliographical survey and revision of taxon names. Present checklist of this phylum comprises 271 species belonging to 30 genera and 13 families. The families are distributed under three orders, Echinorhagata Sørensen *et al.* 2015, Kentrorhagata Sørensen *et al.* 2015, Xenosomata Zelinka, 1907. Among the 271 valid species, in the last five years 82 new species emerged, two new orders and three families were described. It also includes nine new genera. This checklist could serve as a valuable tool to encourage comparison of inter and intra-regional research on Kinorhyncha as well as it can be used as baseline data for future taxonomical revision.

Keywords

Checklist, Kinorhyncha, Meiofauna, Diversity, Distribution

1. Introduction

Kinorhyncha is exclusively marine, holobenthic, free-living, meiofaunal species within a size range of 0.13 - 1.04 mm body length [1]. Their distributions are global, and are found in all marine habitats, often reported to have a high tolerance towards variations in sediment size, salinity and hypoxia levels [2]. The first Kinorhyncha species was described 165 years ago by Dujardin [3]. However, the knowledge of these animals is far from complete due to the fact that very small communities of researchers are interested in this phylum (currently less than few tens of researchers are working in this field, worldwide). Studies of Zelinka [4] [5] [6] [7] [8] focusing on Kinorhynch systematics and his monograph “Mono-

graphie der Echinodera” [9] completely revised the “Systematic Systems” of Reinhard [10] [11], and described 12 species from adult stages (in addition to four species described earlier), 34 species from juvenile stages, and for the first time provided information on all aspects of the morphology and biology of this taxon [9]. 20th century studies of Higgins have been considered to be a major step forward in the taxonomic studies of Kinorhyncha. Studies of Higgins and Co-workers after 1960 described 60 new species, re-described 14 species, and established six new genera [12]-[41]. During the last decade, several new species were described by various researchers [42]-[81]. Further, the existing literature says that Sørensen [82] listed 205 species of Kinorhyncha described from adult specimens, whereas Neuhaus [1] listed 191 species of Kinorhyncha described from adult specimens, and 50 species of juvenile. However, molecular phylogenetic studies by Yamasaki *et al.* [83] and Sørensen *et al.* [84], and description of new species from various geographical location warrant that the periodical revision of the Kinorhyncha classification is essential to make the taxonomical work in a single floor, for the clear-cut discussion. An attempt has been made on this line and their results are discussed herewith.

2. Method

This review was carried out from the existing published results. The observed species are ordered alphabetically and grouped based on the taxonomic status under the following categories.

- 1) A Valid species (described from adult stage).
- 2) Nomina dubia (described only from Juvenile stage).
- 3) Taxon inquirendum (identity is uncertain or disputed by different experts).

A species known only from juvenile stages are generally regarded as nomina dubia, but names are available and valid according to the International Code of Zoological Nomenclature, which states that a new species may be described from any life history stage [85]. All taxon names were revised to employ currently accepted species names following WoRMS database [86].

3. Results

At present the phylum Kinorhyncha comprises of 271 species belonging to 30 genera and 13 families. The families are distributed under three orders, Echinorhagata Sørensen *et al.* 2015, Kentrorhagata Sørensen *et al.* 2015, Xenosomata Zelinka, 1907. Classification and list of species of Kinorhyncha are given below.

4. Classification of Kinorhyncha

Class: Allomalorhagida Sørensen *et al.* 2015

Family: Dracoderidae Higgins & Shirayama, 1990

Genus: *Dracoderes* Higgins & Shirayama, 1990

Family: Franciscideridae Sørensen *et al.* 2015

Genus: *Franciscideres* Zotto *et al.* 2013

Family: Pycnophyidae Zelinka, 1896
Genus: *Pycnophyes* Zelinka, 1907
Genus: *Leiocanthus* Sánchez *et al.* 2016
Genus: *Cristaphyes* Sánchez *et al.* 2016
Genus: *Higginsium* Sánchez *et al.* 2016
Genus: *Krakenella* Sánchez *et al.* 2016
Genus: *Setaphyes* Sánchez *et al.* 2016
Genus: *Fujuriphyes* Sánchez *et al.* 2016
Family: Neocentrophyidae Higgins, 1983
Genus: *Mixtophyes* Sánchez *et al.* 2014
Genus: *Neocentrophyes* Higgins, 1969
Genus: *Paracentrophyes* Higgins, 1983
Class: Cyclorhagida Sørensen *et al.* 2015
Order: Echinorhagata Sørensen *et al.* 2015
Family: Echinoderidae Bütschli, 1876
Genus: *Cephalorhyncha* Adrianov, 1999
Genus: *Echinoderes* Claparède, 1863
Genus: *Fissuroderes* Neuhaus & Blasche, 2006
Genus: *Meristoderes* Herranz *et al.* 2012
Genus: *Polacanthoderes* Sørensen, 2008
Order: Kentrorhagata Sørensen *et al.* 2015
Family: Antygomonidae Adrianov & Malakhov, 1994
Genus: *Antygomonas* Nebelsick, 1990
Family: Cateriidae Gerlach, 1950
Genus: *Cateria* Gerlach, 1956
Family: Centroderidae Zelinka, 1896
Genus: *Centroderes* Zelinka, 1907
Genus: *Condyloderes* Higgins, 1969
Family: Semnoderidae Remane, 1929
Genus: *Semnoderes* Zelinka, 1907
Genus: *Sphenoderes* Higgins, 1969
Genus: *Parasemnoderes* Adrianov & Maiorova 2018
Family: Zelinkaderidae Higgins, 1990
Genus: *Triodontoderes* Sørensen & Rho, 2009
Genus: *Zelinkaderes* Higgins, 1990
Family: incertae sedis
Genus: *Tubulideres* Sørensen *et al.* 2007
Family: incertae sedis
Genus: *Wollunquaderes* Sørensen & Thormar, 2010
Order: Xenosomata Zelinka, 1907
Family: Campyloderidae Remane, 1929
Genus: *Campyloderes* Zelinka, 1907
Genus: *Ryugoderes* Yamasaki, 2016

Based on the literature collected, the present study reports 271 species valid species. Among these species, 82 species were added during the latter period of 2013 and was not included in the WoRMS data base (**Table 1**).

Table 1. List of species identified after the works of 2013 (which are not available currently in WoRMS database).

S.No	Valid new species added after 2013
1.	<i>Antygomonas caeciliae</i> Zotto, 2015
2.	<i>Antygomonas gwenae</i> Herranz et al. 2013
3.	<i>Centroderes barbanigra</i> Neuhaus et al. 2014
4.	<i>Centroderes bonnyae</i> Neuhaus et al. 2014
5.	<i>Centroderes drakei</i> Neuhaus et a. 2014
6.	<i>Centroderes impurus</i> Sørensen et al. 2016
7.	<i>Centroderes readae</i> Neuhaus et al. 2014
8.	<i>Cephalorhyncha flosculosa</i> Yıldız et al. 2016
9.	<i>Condyloderes kurilensis</i> Adrianov & Maiorova, 2016
10.	<i>Cristaphyes dordaidelosensis</i> Sørensen & Grzelak, 2018
11.	<i>Cristaphyes glaurung</i> Sørensen & Grzelak, 2018
12.	<i>Cristaphyes harrisoni</i> Pardos et al. 2016 b
13.	<i>Cristaphyes panamensis</i> Pardos et al. 2016 a
14.	<i>Cristaphyes scathe</i> Sørensen & Grzelak, 2018
15.	<i>Dracoderes nidhug</i> Thomsen, 2013
16.	<i>Dracoderes snufkini</i> Yamasaki, 2015
17.	<i>Dracoderes toyoshioae</i> Yamasaki, 2015
18.	<i>Echinoderes adrianovi</i> Herranz et al. 2013
19.	<i>Echinoderes ajax</i> Sørensen, 2014
20.	<i>Echinoderes annae</i> Sørensen et al. 2016
21.	<i>Echinoderes anniae</i> Sørensen et al. 2018
22.	<i>Echinoderes antalyaensis</i> Yamasaki & Durucan 2018
23.	<i>Echinoderes sylviae</i> Landers & Sørensen, 2018
24.	<i>Echinoderes apex</i> Yamasaki et al. 2018c
25.	<i>Echinoderes astridae</i> Sørensen, 2014
26.	<i>Echinoderes augustae</i> Sørensen & Landers, 2014
27.	<i>Echinoderes bathyalis</i> Yamasaki et al. 2018c
28.	<i>Echinoderes belenae</i> Pardos et al. 2016 b
29.	<i>Echinoderes charlotteae</i> Sørensen et al. 2016
30.	<i>Echinoderes daenerysae</i> Grzelak & Sørensen, 2018
31.	<i>Echinoderes dubiosus</i> Sørensen et al. 2018
32.	<i>Echinoderes drogoni</i> Grzelak & Sørensen, 2018

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33. *Echinoderes hakaensis* Herranz et al. 2017
34. *Echinoderes hamiltonorum* Sørensen et al. 2018
35. *Echinoderes huiidarum* Sørensen et al. 2018
36. *Echinoderes hwiizaa* Yamasak & Fujimoto, 2014
37. *Echinoderes joyceae* Landers & Sørensen, 2016
38. *Echinoderes juliae* Sørensen et al. 2018
39. *Echinoderes komatsui* Yamasak & Fujimoto, 2014
40. *Echinoderes lupherorum* Sørensen et al. 2018
41. *Echinoderes lusitanicus* Neves et al. 2016
42. *Echinoderes marthae* Sørensen, 2014
43. *Echinoderes meteorensis* Yamasaki et al. 2018c
44. *Echinoderes muricatus* Pardos et al. 2016 b
45. *Echinoderes multiporus* Yamasaki et al. 2018a
46. *Echinoderes orestauri* Pardos et al. 2016 a
47. *Echinoderes pterus* Yamasaki et al. 2018b
48. *Echinoderes reicherti* Neves et al. 2016
49. *Echinoderes regina* Yamasaki, 2016
50. *Echinoderes rhaegali* Grzelak & Sørensen, 2018
51. *Echinoderes riceae* Herranz et al. 2013
52. *Echinoderes rociae* Pardos et al. 2016 a
53. *Echinoderes romanoi* Landers & Sørensen, 2016
54. *Echinoderes serratulus* Yamasaki, 2016
55. *Echinoderes skipperae* Sørensen & Landers, 2014
56. *Echinoderes strii* Pardos et al. 2016 b
57. *Echinoderes unispinosus* Yamasaki et al. 2018a
58. *Echinoderes yamasakii* Sørensen et al. 2018
59. *Fissuroderes sorenseni* Herranz & Pardos, 2013
60. *Franciscideres kalenesos* Zotto et al. 2013
61. *Fujuriphyes longispinosus* Sánchez & Yamasaki, 2016
62. *Leiocanthus nagini* Sørensen et al. 2016
63. *Leiocanthus parapardosi* Sánchez & Yamasaki, 2016
64. *Meristoderes boylei* Herranz & Pardos, 2013
65. *Mixtophyes abyssalis* Sánchez et al. 2014b
66. *Parasemnoderes intermedius* Adrianov & Maiorova, 2018
67. *Pycnophyes alexandroi* Pardos et al. 2016 a
68. *Pycnophyes almansae* Sánchez et al. 2014b
69. *Pycnophyes ancalagon* Sørensen & Grzelak, 2018
70. *Pycnophyes chalgap* Sánchez et al. 2013

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71. *Pycnophyes cristatus* Sánchez et al. 2013
 72. *Pycnophyes farinellii* Sánchez et al. 2014c
 73. *Pycnophyes lageria* Sánchez et al. 2014b
 74. *Pycnophyes norenburgi* Herranz et al. 2013
 75. *Pycnophyes nubilis* Sánchez et al. 2014c
 76. *Pycnophyes pardosi* Sánchez et al. 2013
 77. *Pycnophyes smaug*[?]. Sánchez et al. 2013
 78. *Ryuguderer iesjimaensis* Yamasaki, 2016
 79. *Semnoderes lusca* Sørensen & Landers, 2018
 80. *Setaphyes cimarensis* Sánchez et al. 2018
 81. *Sphenoderes aspidochelone* Sørensen & Landers, 2018
 82. *Zelinkaderes yong* Altenburger et al. 2015
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5. Discussion

Before this study, Nehaus [1] was prepared the checklist for Kinorhyncha which exhibited only 189 species. The present study included another 82 species and designated as a newly described species. Besides, Nehaus [1] classified 4 species (*Echinoderes druxi*, *E. masudai*, *E. steineri* and *Pycnophyes echinoderoides*) as valid, although they are regarded as a nomen dubium. However, these 4 species are also currently classified as taxon inquirendum by WoRMS [86] due to its taxonomical uncertainty and described in the present work. Based on the above consideration, now the Kinorhyncha has 271 species as valid species, 51 species under the category of nomen dubium and 4 species as taxon inquirendum. **Table 2**, exhibited the nomen dubium as discussed by the Nehaus [1] for 50 species and WoRMS [86] described 55 species.

According to WoRMS [86] data base and Nehaus [1], a total of 189 Species and 191 Species were reported, respectively (**Table 3**). *E. druxi* d'Hondt, 1973, *E. masudai* Abe, 1930, *E. steineri* (Chitwood, 1951), *P. calmani* Southern, 1914, *P. echinoderoides* Zelinka, 1928, and *P. oshoroensis* Yamasaki et al. 2012 were named to be valid. However, according to WoRMS [86], out of these 6 species, 4 species namely *E. druxi*, *E. masudai*, *E. steineri* and *P. echinoderoides* were termed as taxon inquirendum. Whereas, the status of *P. calmani* is unaccepted, and *P. oshoroensis* Yamasaki et al. [87], is not recorded.

Based on the data presented in **Table 3** and **Table 4**, species such as *Campyloderes vanhoffeni* var. *kerquelenensis* Zelinka, 1913, *Centroderes eisigii* Zelinka, 1928, *E. augustae* Sørensen & Landers, 2014 and *E. skipperae* Sørensen & Landers, 2014 are valid according to WoRMS [86], however, not added in the works of Nehaus [1]. Of these, 2 species, namely *E. augustae* Sørensen & Landers, 2014, and *E. skipperae* Sørensen & Landers 2014, were identified after 2014, i.e., after the works of Nehaus [1].

Table 2. List of invalid names given according to Nehaus (2013) and WoRMS database for nomendubium and taxon inquirendum.

Nehaus, 2013 (Nomina Dubia)	Synonyms	Worms database	Synonyms
1) <i>Echinoderes arcticus</i> (Steiner, 1919)	<i>Centropsis arcticus</i> Steiner, 1919, emended name <i>Centropsis arctica</i> Zelinka, 1928	<i>Echinoderes arcticus</i> (Steiner, 1919) (nomen dubium)	<i>Centropsis arcticus</i> Steiner, 1919 (original name) <i>Centropsis arctica</i> Zelinka, 1928
2) <i>Echinoderes arcuatus</i> (Zelinka, 1928)	<i>Centropsis arcuata</i> Zelinka, 1928	<i>Echinoderes arcuatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis arcuata</i> Zelinka, 1928 (original name)
3) <i>Echinoderes borealis</i> Greeff, 1869		<i>Echinoderes borealis</i> Greeff, 1869 (nomen dubium) <i>Echinoderes druxi</i> d'Hondt, 1973 (taxon inquirendum)	
4) <i>Echinoderes erinaceus</i> (Zelinka, 1928)	<i>Habrodereserinaceus</i> Zelinka, 1928	<i>Echinoderes erinaceus</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderes erinaceus</i> Zelinka, 1928 (original name)
5) <i>Echinoderes erucus</i> Panceri, 1878	<i>Echinoderes eruca</i> Panceri, 1878 <i>Centropsis eruca</i> comb. nov. Zelinka, 1928	<i>Echinoderes erucus</i> Panceri, 1878 (nomen dubium).	<i>Echinoderes eruca</i> Panceri, 1878 <i>Centropsis eruca</i> (Panceri, 1878)
6) <i>Echinoderes ferox</i> (Zelinka, 1928)	<i>Habroderella ferox</i> Zelinka, 1928	<i>Echinoderes ferox</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderella ferox</i> Zelinka, 1928 (original name)
7) <i>Echinoderes gracilis</i> Zelinka, 1928	<i>Hapaloderesgracilis</i> Zelinka, 1928	<i>Echinoderes gracilis</i> (Zelinka, 1928) (nomen dubium)	<i>Hapaloderes gracilis</i> Zelinka, 1928 (original name)
8) <i>Echinoderes greeffi</i> (Zelinka, 1928)	<i>Hapaloderes gracilis</i> Zelinka, 1928 <i>Echinoderes monocercus</i> of Greeff (1869) and of Metschnikoff (1869)	<i>Echinoderes greeffi</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis greeffi</i> Zelinka, 1928 (original name)
9) <i>Echinoderes hyalinus</i> (Zelinka, 1928)	<i>Habroderellahyalina</i> Zelinka, 1928	<i>Echinoderes hyalinus</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderella hyalina</i> Zelinka, 1928 (original name)
10) <i>Echinoderes incertus</i> Reinhard, 1885	<i>Habroderes incertus</i> comb. nov. Zelinka, 1928	<i>Echinoderes incertus</i> Reinhard, 1885 (nomen dubium)	<i>Habroderes incertus</i> Zelinka, 1928
11) <i>Echinoderes kowalevskii</i> Reinhard, 1885	<i>Hapaloderes Kowalevskii</i> Zelinka, 1928	<i>Echinoderes kowalevskii</i> Reinhard, 1885 (nomen dubium)	<i>Hapaloderes kowalevskii</i> Zelinka, 1928
12) <i>Echinoderes lanuginosus</i> (Greeff, 1869)	<i>Echinoderes lanuginosa</i> Greeff, 1869 <i>Centropsis lanuginosa</i> Zelinka, 1928	<i>Echinoderes lanuginosus</i> (Greeff, 1869) (nomen dubium)	<i>Echinoderes lanuginosa</i> Greeff, 1869 <i>Centropsis lanuginosa</i> (Greeff, 1869)
13) <i>Echinoderes meridionalis</i> Panceri, 1878	<i>Habroderes meridionalis</i> Zelinka, 1928	<i>Echinoderes meridionalis</i> Panceri, 1878 (nomen dubium)	
14) <i>Echinoderes minax</i> (Zelinka, 1928)	<i>Habroderesminax</i> Zelinka, 1928	<i>Echinoderes minax</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderes minax</i> Zelinka, 1928 (original name)
15) <i>Echinoderes minimus</i> (Zelinka, 1928)	<i>Hapaloderesminimus</i> Zelinka, 1928	<i>Echinoderes minimus</i> (Zelinka, 1928) (nomen dubium)	<i>Hapaloderes minimus</i> Zelinka, 1928 (original name)
16) <i>Echinoderes minutus</i> Panceri, 1878	<i>Hapaloderes minutus</i> comb. nov. Zelinka, 1928	<i>Echinoderes minutus</i> Panceri, 1878 (nomen dubium)	<i>Hapaloderes minutus</i> Zelinka, 1928
17) <i>Echinoderes monocercus</i> Claparède, 1863	<i>Centropsismonocerca</i> Claparède, 1863	<i>Echinoderes monocercus</i> Claparède, 1863 (nomen dubium)	
18) <i>Echinoderes orientalis</i> Adrianov, 1989		<i>Echinoderes orientalis</i> Adrianov, 1989 (nomen dubium)	

Continued

19) <i>Echinoderes pagenstecheri</i> (Reinhard, 1885)	<i>Centropsis pagenstecheri</i> comb. nov. Zelinka, 1928	<i>Echinoderes pagenstecheri</i> (Reinhard, 1885) (nomen dubium)	<i>Centropsis pagenstecheri</i> Zelinka, 1928
20) <i>Echinoderes pallidus</i> (Zelinka, 1928)	<i>Centropsispallida</i> Zelinka, 1928	<i>Echinoderes pallidus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis pallida</i> Zelinka, 1928 (original name)
21) <i>Echinoderes parallelus</i> (Zelinka, 1928)	<i>Centropsisparallela</i> Zelinka, 1928	<i>Echinoderes parallelus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis parallela</i> Zelinka, 1928 (original name)
22) <i>Echinoderes pulchellus</i> (Zelinka, 1928)	<i>Centropsispulchella</i> Zelinka, 1928	<i>Echinoderes pulchellus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis pulchella</i> Zelinka, 1928 (original name)
23) <i>Echinoderes pusillus</i> (Zelinka, 1928)	<i>Centropsispusilla</i> Zelinka, 1928	<i>Echinoderes pusillus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis pusilla</i> Zelinka, 1928 (original name)
24) <i>Echinoderes rosaceus</i> (Zelinka, 1928)	<i>Centropsis rosacea</i> Zelinka, 1928	<i>Echinoderes rosaceus</i> (Zelinka, 1928) (nomen dubium)	<i>Centropsis rosacea</i> Zelinka, 1928 (original name)
25) <i>Echinoderes spinosus</i> Panceri, 1878	<i>Centropsis spinosus</i> comb. nov. Steiner, 1919	<i>Echinoderes spinosus</i> Panceri, 1878 (nomen dubium)	
26) <i>Echinoderes splendid</i> (Zelinka, 1928)	<i>Habroderessplendidus</i> Zelinka, 1928	<i>Echinoderes splendidus</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderes splendidus</i> Zelinka, 1928 (original name)
		<i>Echinoderes steineri</i> (Chitwood, 1951) (taxon inquirendum)	<i>Echinoderella steineri</i> Chitwood, 1951 (original name)
27) <i>Echinoderes trispinosus</i> (Zelinka, 1928)	<i>Habroderellatrispinosa</i> Zelinka, 1928	<i>Echinoderes trispinosus</i> (Zelinka, 1928) (nomen dubium)	<i>Habroderella trispinosa</i> Zelinka, 1928 (original name)
	<i>Echinoderes acercus</i> Reinhard, 1885		<i>Echinoderes acercus</i> Reinhard, 1885 (original name)
	<i>Leptodemus acercus</i> comb. nov. Zelinka, 1928		<i>Leptodemus acercus</i> Zelinka, 1928
28) <i>Kinorhynchus acercus</i> (Reinhard, 1885)	<i>Echinoderes acerca</i> Schepotieff, 1907	<i>Kinorhynchus acercus</i> (Reinhard, 1885) (nomen dubium)	<i>Echinoderes acerca</i> Schepotieff, 1907
	<i>Pycnophyes acercus</i> Bacescu, 1968		<i>Pycnophyes acercus</i> Bacescu, 1968
	<i>Echinoderes dubius</i> Reinhard, 1885		<i>Echinoderes dubius</i> Reinhard, 1885 (original name)
	<i>Leptodemus dubius</i> comb. nov. Zelinka, 1928		<i>Leptodemus dubius</i> (Reinhard, 1885)
29) <i>Kinorhynchus dubius</i> (Reinhard, 1885)	<i>Pycnophyes dubius</i> comb. nov. Bacescu, 1968	<i>Kinorhynchus dubius</i> (Reinhard, 1885) (nomen dubium)	<i>Pycnophyes dubius</i> (Reinhard, 1885)
30) <i>Kinorhynchus forceps</i> (Zelinka, 1928)	<i>Leptodemus forceps</i> Zelinka, 1928	<i>Kinorhynchus forceps</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus forceps</i> Zelinka, 1928 (original name)
31) <i>Kinorhynchus forficulus</i> (Zelinka, 1928)	<i>Leptodemusforficula</i> Zelinka, 1928	<i>Kinorhynchus forficulus</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus forficula</i> Zelinka, 1928 (original name)
	<i>Echinoderes metschnikowii</i> Reinhard, 1885		<i>Echinoderes metschnikowii</i> Reinhard, 1885 (original name)
32) <i>Kinorhynchus metschnikowii</i> (Reinhard, 1885) (nomen dubium)	<i>Leptodemus metschnikoffii</i> comb. nov. Zelinka, 1928	<i>Kinorhynchus metschnikowii</i> (Reinhard, 1885) (nomen dubium)	<i>Leptodemus metschnikoffii</i> (Reinhard, 1885)
			<i>Pycnophyes metschnikoffi</i> (Reinhard, 1885)
	<i>Echinoderes parvulus</i> Reinhard, 1881		<i>Echinoderes parvulus</i> Reinhard, 1881 (original name)
33) <i>Kinorhynchus parvulus</i> (Reinhard, 1881)	<i>Leptodemusparvulus</i> comb. nov. Zelinka, 1928	<i>Kinorhynchus parvulus</i> (Reinhard, 1881) (nomen dubium)	<i>Leptodemus parvulus</i> (Reinhard, 1881)
	<i>Pycnophyesparvulus</i> comb. nov. Bacescu, 1968		<i>Pycnophyes parvulus</i> (Reinhard, 1881)

Continued

34) <i>Kinorhynchus perlatus</i> (Zelinka, 1928)	<i>Leptodemus perlatus</i> Zelinka, 1928	<i>Kinorhynchus perlatus</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus perlatus</i> Zelinka, 1928 (original name)
35) <i>Kinorhynchus serratus</i> (Zelinka, 1928)	<i>Leptodemusserratus</i> Zelinka, 1928	<i>Kinorhynchus serratus</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus serratus</i> Zelinka, 1928 (original name)
36) <i>Kinorhynchus vitreus</i> (Zelinka, 1928)	<i>Leptodemusvitreus</i> Zelinka, 1928 <i>Kinorhynchusvitreus</i> comb. nov. Higgins, 1983	<i>Kinorhynchus vitreus</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus vitreus</i> Zelinka, 1928 (original name)
		<i>Pycnophyes carinata</i> Zelinka, 1912 (nomen nudum)	
37) <i>Pycnophyes biserratus</i> (Zelinka, 1928)	<i>Centrophyesbiserratus</i> Zelinka, 1928	<i>Pycnophyes biserratus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes biserratus</i> Zelinka, 1928 (original name)
38) <i>Pycnophyes conspicuus</i> (Zelinka, 1928)	<i>Hyalophyesconspicuus</i> Zelinka, 1928	<i>Pycnophyes conspicuus</i> (Zelinka, 1928) (nomen dubium)	<i>Hyalophyes conspicuus</i> Zelinka, 1928 (original name)
39) <i>Pycnophyes curvatus</i> (Zelinka, 1928)	<i>Centroderescurvatus</i> Zelinka, 1928	<i>Pycnophyes curvatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centroderes curvatus</i> Zelinka, 1928 (original name)
40) <i>Pycnophyes denticulatus</i> (Zelinka, 1928)	<i>Centrophyesdenticulatus</i> Zelinka, 1928	<i>Pycnophyes denticulatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes denticulatus</i> Zelinka, 1928 (original name)
41) <i>Pycnophyes diffusus</i> (Zelinka, 1928)	<i>Centrophyesdiffusus</i> Zelinka, 1928	<i>Pycnophyes diffusus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes diffusus</i> Zelinka, 1928 (original name)
42) <i>Pycnophyes longihastatus</i> (Zelinka, 1928)	<i>Centrophyeslongihastatus</i> Zelinka, 1928	<i>Pycnophyes longihastatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes longihastatus</i> Zelinka, 1928 (original name)
		<i>Pycnophyes echinoderoides</i> Zelinka, 1928 (taxon inquirendum)	<i>Hyalophyes echinoderoides</i> Zelinka, 1928 (juvenile stage)
43) <i>Pycnophyes longisetosus</i> (Zelinka, 1928)	<i>Hyalophyeslongisetosus</i> Zelinka, 1928	<i>Pycnophyes longisetosus</i> (Zelinka, 1928) (nomen dubium)	<i>Hyalophyes longisetosus</i> Zelinka, 1928 (original name)
44) <i>Pycnophyes moderatus</i> (Zelinka, 1928)	<i>Centrophyesmoderatus</i> Zelinka, 1928	<i>Pycnophyes moderatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes moderatus</i> Zelinka, 1928 (original name)
45) <i>Pycnophyes naviculus</i> (Zelinka, 1928)	<i>Leptodemusnavicula</i> Zelinka, 1928	<i>Pycnophyes naviculus</i> (Zelinka, 1928) (nomen dubium)	<i>Leptodemus navicula</i> Zelinka, 1928 (original name)
46) <i>Pycnophyes rectilineatus</i> (Zelinka, 1928)	<i>Centrophyesrectilineatus</i> Zelinka, 1928	<i>Pycnophyes rectilineatus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes rectilineatus</i> Zelinka, 1928 (original name)
47) <i>Pycnophyes solidus</i> (Zelinka, 1928)	<i>Hyalophyes solidus</i> Zelinka, 1928	<i>Pycnophyes solidus</i> (Zelinka, 1928) (nomen dubium)	<i>Hyalophyes solidus</i> Zelinka, 1928 (original name)
48) <i>Pycnophyes tenuis</i> (Zelinka, 1928)	<i>Centrophyestenuis</i> Zelinka, 1928	<i>Pycnophyes tenuis</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes tenuis</i> Zelinka, 1928 (original name)
49) <i>Pycnophyes validus</i> (Zelinka, 1928)	<i>Centrophyesvalidus</i> Zelinka, 1928	<i>Pycnophyes validus</i> (Zelinka, 1928) (nomen dubium)	<i>Centrophyes validus</i> Zelinka, 1928 (original name)
50) <i>Semnoderes armatus</i> (Zelinka, 1928)	<i>Hapaloderesarmatus</i> Zelinka 1928 <i>Echinoderes armatus</i> comb. nov. Higgins, 1983	<i>Semnoderes armatus</i> (Zelinka, 1928) (nomen dubium)	<i>Hapaloderesarmatus</i> Zelinka, 1928 (original name) <i>Echinoderes armatus</i> (Zelinka, 1928)

Table 3. Consolidated lists of the Kinorhynch species (valid and invalid) identified across the globe.

Order	Family	Genus	Valid Species	Synonyms	Invalid Species
Cyclorhagida	Dracoderidae Higgins & Shirayama, 1990	<i>Dracoderes</i> Higgins & Shirayama, 1990	<i>Dracoderes abei</i> Higgins & Shirayama, 1990		
			<i>Dracoderesgallaicus</i> Sørensen, Herranz, Rho, et al. 2012		

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		<i>Dracoderes orientalis</i> Adrianov, 1999 in Adrianov & Malakhov, 1999	
		<i>Dracoderes nidhug</i> Thomsen, 2013	
		<i>Dracoderes snufkini</i> Yamasaki, 2015	
		<i>Dracoderes toyoshioae</i> Yamasaki, 2015	
Franciscideridae Fam. nov. Sørensen et al. 2015	<i>Franciscideres</i> Dal Zotto et al., 2013	<i>Franciscideres kalenesos</i> Zotto, 2013	
		<i>Pycnophyes apotomus</i> comb. nov. (Higgins, 1983)	<i>Kinorhynchus apotomus</i> Higgins, 1983
		<i>Pycnophyes ancalagon</i> Sørensen & Grzelak, 2018	
		<i>Pycnophyes alexandroi</i> Pardos et al. 2016 a	
		<i>Pycnophyes stenopygus</i> Higgins, 1983	<i>Kinorhynchus stenopygus</i> Higgins, 1983
		<i>Pycnophyes giganteus</i> comb. nov. (Zelinka, 1908)	<i>Kinorhynchus giganteus</i> (Zelinka, 1908)
		<i>Pycnophyes ilyocryptus</i> Higgins, 1961	<i>Kinorhynchus ilyocryptus</i> (Higgins, 1961)
		<i>Pycnophyes paraneapolitanus</i> comb. nov. (Sheremetevskij, 1974)	<i>Kinorhynchus paraneapolitanus</i> Sheremetevskij, 1974
		<i>Pycnophyes tubuliferus</i> Adrianov, 1989	<i>Pycnophyes tubuliferus</i> Adrianov, 1989
		<i>Pycnophyes aulacodes</i> Sánchez et al. 2011	<i>Pycnophyes aulacodes</i> Sánchez et al. 2011
Pycnophyidae Zelinka, 1896	<i>Pycnophyes</i> (Zelinka 1907)	<i>Pycnophyes communis</i> Zelinka, 1908	
		<i>Pycnophyes frequens</i> Blake, 1930	
		<i>Pycnophyes sanjuanensis</i> Higgins, 1961	
		<i>Pycnophyes zelinkaei</i> Southern, 1914	
		<i>Pycnophyes beaufortensis</i> Higgins, 1964	
		<i>Pycnophyes robustus</i> Zelinka, 1928	
		<i>Pycnophyes egyptensis</i> Higgins, 1966	
		<i>Pycnophyes neuhausi</i> Martorelli & Higgins, 2004	
		<i>Pycnophyes newzealandensis</i> Adrianov, 1999 in Adrianov & Malakhov, 1999	
		<i>Pycnophyes parasanjuanensis</i> Adrianov & Higgins, 1996	

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	<i>Pycnophyes newguiniensis</i> Adrianov, 1999 in Adrianov & Malakhov, 1999	
	<i>Pycnophyes schornikovi</i> Adrianov, 1999 in Adrianov and Malakhov, 1999	
	<i>Pycnophyes almansae</i> Sánchez et al. 2014	
	<i>Pycnophyes norenburgi</i> Herranz et al. 2014	
	<i>Pycnophyes sp.</i> 2012 a	
	<i>Pycnophyes sp.</i> 2012 b	
	<i>Leiocanthus mainensis</i> comb. nov. (Blake, 1930)	<i>Kinorhynchus mainensis</i> (Blake, 1930)
	<i>Leiocanthus langi</i> comb. nov. (Higgins, 1964)	<i>Kinorhynchus langi</i> (Higgins, 1964)
	<i>Leiocanthus fimbriatus</i> comb. nov. (Higgins, 1982)	<i>Kinorhynchus fimbriatus</i> Higgins, 1982
	<i>Leiocanthus sculptus</i> comb. nov. (Lang, 1949)	<i>Pycnophyes sculptus</i> Lang, 1949
	<i>Leiocanthus emarginatus</i> (Higgins, 1983)	<i>Pycnophyes emarginatus</i> Higgins, 1983
	<i>Leiocanthus corrugates</i> (Higgins, 1983)	<i>Pycnophyes corrugatus</i> Higgins, 1983
<i>Leiocanthus gen.</i> nov. Sánchez et al. 2016	<i>Leiocanthus ecphantor</i> (Higgins, 1983)	<i>Pycnophyes ecphantor</i> Hig- gins, 1983
	<i>Leiocanthus faveolus</i> (Brown, 1999 in Adrianov and Malakhov, 1999)	<i>Pycnophyes faveolus</i> Brown, 1999 in Adrianov & Malakhov, 1999
	<i>Leiocanthus chalgap</i> comb. nov. (Sánchez et al., 2013)	<i>Pycnophyes chalgap</i> Sánchez et al. 2013
	<i>Leiocanthus lageria</i> comb. nov. (Sánchez et al. 2014)	<i>Pycnophyes lageria</i> Sánchez et al. 2014
	<i>Leiocanthus pardosi</i> comb. nov. (Sánchez et al., 2013)	<i>Pycnophyes pardosi</i> Sánchez et al. 2013
	<i>Leiocanthus parapardosi</i> Sánchez & Yamasaki, 2016	
	<i>Leiocanthus sp. nov.</i>	
	<i>Cristaphyes belizensis</i> comb. nov. (Higgins, 1983)	
	<i>Cristaphyes dordaidelosensis</i> Grzelak & Sørensen, 2018	<i>Kinorhynchus belizensis</i> Higgins, 1983
<i>Cristaphyes gen.</i> nov. Sánchez et al. 2016	<i>Cristaphyes glaurung</i> Grzelak & Sørensen, 2018	
	<i>Cristaphyes harrisoni</i> Pardos et al. 2016 b	
	<i>Cristaphyes panamensis</i> Pardos et al. 2016 a	

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<i>Cristaphyes spinosus</i> comb. nov. (Lang, 1949)	<i>Kinorhynchus spinosus</i> (Lang, 1949)
<i>Cristaphyes anomalus</i> comb. nov. (Lang, 1953)	<i>Kinorhynchus anomalus</i> (Lang, 1953)
<i>Cristaphyes phyllotropis</i> (Brown and Higgins, 1983)	<i>Kinorhynchus phyllotropis</i> Brown & Higgins, 1983
<i>Cristaphyes rabaulensis</i> (Adrianov, 1999 in Adrianov and Malakhov, 1999)	<i>Kinorhynchus rabaulensis</i> Adrianov, 1999 in Adrianov & Malakhov, 1999
<i>Cristaphyesscatha</i> Sørensen & Grzelak, 2018	
<i>Cristaphyes yushini</i> comb. nov. (Adrianov, 1989)	<i>Kinorhynchus yushini</i> Adrianov, 1989
<i>Cristaphyes carinatus</i> comb. nov. (Zelinka, 1928)	<i>Pycnophyes carinatus</i> Zelinka, 1928
<i>Cristaphyes odhneri</i> comb. nov. (Lang, 1949)	<i>Pycnophyes odhneri</i> Lang, 1949
<i>Cristaphyes chilensis</i> comb. nov. (Lang, 1953)	<i>Pycnophyes chilensis</i> Lang, 1953
<i>Cristaphyes cryopygus</i> (Higgins and Kristensen, 1988)	<i>Pycnophyes cryopygus</i> Higgins & Kristensen, 1988
<i>Cristaphyes longicornis</i> (Higgins, 1983)	<i>Pycnophyes longicornis</i> Higgins, 1983
<i>Cristaphyes arctous</i> (Adrianov, 1999 in Adrianov and Malakhov, 1999)	<i>Pycnophyes arctous</i> Adrianov, 1999 in Adrianov & Malakhov, 1999
<i>Cristaphyes chukchiensis</i> comb. nov. (Higgins, 1991)	<i>Pycnophyes chukchiensis</i> Higgins, 1991
<i>Cristaphyes furugelmi</i> (Adrianov, 1999 in Adrianov and Malakhov, 1999)	<i>Pycnophyes furugelmi</i> Adrianov, 1999 in Adrianov & Malakhov, 1999
<i>Cristaphyes nubilis</i> comb. nov. (Sánchez et al., 2014)	<i>Pycnophyes nubilis</i> Sánchez et al. 2014
<i>Cristaphyes cristatus</i> comb. nov. (Sánchez et al. 2013)	<i>Pycnophyes cristatus</i> Sánchez et al. 2013
<i>Cristaphyes abyssorum</i> comb. nov. (Adrianov and Maiorova, 2015)	<i>Pycnophyes abyssorum</i> Adrianov and Maiorova, 2015
<i>Higginsium erismatum</i> comb. nov. (Higgins, 1983)	<i>Kinorhynchus erismatus</i> Higgins, 1983
<i>Higginsium trisetosum</i> comb. nov. (Higgins, 1983)	<i>Kinorhynchus trisetosus</i> Higgins, 1983
<i>Higginsium</i> gen. nov. Sánchez et al. 2016	
<i>Higginsium cataphractum</i> comb. nov. (Higgins, 1961)	<i>Kinorhynchus cataphractus</i> (Higgins, 1961)
<i>Higginsium dolichurum</i> comb. nov. (Sánchez et al. 2010)	<i>Pycnophyes dolichurus</i> Sánchez et al. 2011

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	<i>Krakenella maxima</i> (Reimer, 1963)	<i>Pycnophyes maximus</i> Reimer, 1963
	<i>Krakenella greenlandica</i> (Higgins and Kristensen, 1988)	<i>Pycnophyes greenlandicus</i> Higgins & Kristensen, 1988
	<i>Krakenella argentinensis</i> (Martorelli and Higgins, 2004)	<i>Pycnophyes argentinensis</i> Martorelli & Higgins, 2004
	<i>Krakenella barentsi</i> (Adrianov, 1999 in Adrianov and Malakhov, 1999)	<i>Pycnophyes barentsi</i> Adrianov, 1999 in Adrianov & Malakhov, 1999
	<i>Krakenella canadensis</i> (Higgins and Korczynski, 1989)	<i>Pycnophyes canadensis</i> Higgins & Korczynski, 1989
<i>Krakenella</i> gen. nov. Sánchez et al. 2016	<i>Krakenella borealis</i> (Higgins and Korczynski, 1989)	<i>Pycnophyes borealis</i> Higgins & Korczynski, 1989
	<i>Krakenella galtsovae</i> (Adrianov, 1999 in Adrianov and Malakhov, 1999)	<i>Pycnophyes galtsovae</i> Adrianov, 1999 in Adrianov & Malakhov, 1999
	<i>Krakenella mokievskii</i> (Adrianov, 1995)	<i>Pycnophyes mokievskii</i> Adrianov, 1995
	<i>Krakenella spitsbergensis</i> comb. nov. (Adrianov, 1995)	<i>Pycnophyes spitsbergensis</i> Adrianov, 1995
	<i>Krakenella farinellii</i> comb. nov. (Sánchez et al. 2014)	<i>Pycnophyes farinellii</i> Sánchez et al. 2014
	<i>Krakenella smaug</i> comb. nov. (Sánchez et al., 2013)	<i>Pycnophyes smaug</i> Sánchez et al. 2013
	<i>Setaphyes dentatus</i> comb. nov. (Reinhard, 1881)	<i>Pycnophyes dentatus</i> (Reinhard, 1881)
	<i>Setaphyes iniorhaptus</i> (Higgins, 1983)	<i>Pycnophyes iniorhaptus</i> Higgins, 1983
	<i>Setaphyes flaveolatus</i> comb. nov. (Zelinka, 1928)	<i>Pycnophyes flaveolatus</i> Zelinka, 1928
<i>Setaphyes</i> gen. nov. Sánchez et al. 2016	<i>Setaphyes kielensis</i> comb. nov. (Zelinka, 1928)	<i>Pycnophyes kielensis</i> Zelinka, 1928
	<i>Setaphyes australensis</i> (Lemburg, 2002)	<i>Pycnophyes australensis</i> Lemburg, 2002
	<i>Setaphyes cimarensis</i> Sánchez et al. 2018	
	<i>Fujuriphyes deirophorus</i> comb. nov. (Higgins, 1983)	<i>Kinorhynchus deirophorus</i> Higgins, 1983
	<i>Fujuriphyes distentus</i> comb. nov. (Higgins, 1983)	<i>Kinorhynchus distentus</i> Higgins, 1983
<i>Fujuriphyes</i> gen. nov. Sánchez et al. 2016	<i>Fujuriphyes ponticus</i> comb. nov. (Zelinka, 1928)	<i>Pycnophyes ponticus</i> (Reinhard, 1881)
	<i>Fujuriphyes rugosus</i> comb. nov. (Zelinka, 1928)	<i>Pycnophyes rugosus</i> Zelinka, 1928
	<i>Fujuriphyes longispinosus</i> Sánchez & Yamasaki, 2016	
	<i>Fujuriphyes</i> sp. nov.	

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		Mixtophyes Sánchez et al., 2014	<i>Mixtophyes abyssalis</i> Sánchez <i>et al.</i> 2014	
		Neocentrophyes Higgins, 1969	<i>Neocentrophyes intermedius</i> Higgins, 1969 <i>Neocentrophyes satyai</i> Higgins, 1969	
	Neocentrophyidae Higgins, 1983	Paracentrophyes Higgins, 1983	<i>Paracentrophyes praedictus</i> Higgins, 1983 <i>Paracentrophyes anurus</i> Sørensen <i>et al.</i> 2010	<i>Paracentrophyes flagellatus</i> (Zelinka, 1928) (junior synonym) <i>Pycnophyes flagellatus</i> Zelinka, 1928 <i>Pycnophyes quadridentatus</i> Zelinka, 1928 (original name)
		Cephalorhyncha Adrianov, 1999	<i>Cephalorhyncha liticola</i> (Sørensen, 2008) <i>Cephalorhyncha asiatica</i> (Adrianov, 1989) <i>Cephalorhyncha nybakkeni</i> (Higgins, 1986) <i>Cephalorhyncha flosculosa</i> Yıldız <i>et al.</i> 2016	<i>Echinoderes asiaticus</i> Adrianov, 1989 (original name) <i>Echinoderes nybakkeni</i> Higgins, 1986 (original name)
Echinorhagata nom. nov. Sørensen et al. 2015	Echinoderidae Bütschli, 1876	Echinoderes Claparède, 1863	<i>Echinoderes rex</i> Lundbye, Rho & Sørensen, 2011 <i>Echinoderes apex</i> Yamasaki <i>et al.</i> 2018c <i>Echinoderes anniae</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes dubiosus</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes hamiltonorum</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes huiidarum</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes juliae</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes lupherorum</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes yamasakii</i> Sørensen <i>et al.</i> 2018 <i>Echinoderes bathyalis</i> Yamasaki <i>et al.</i> 2018c <i>Echinoderes belenae</i> Pardos <i>et al.</i> 2016 b	<i>Echinoderes druxi</i> d'Hondt, 1973 (Taxon inq) <i>Echinoderes arcticus</i> (Steiner, 1919) (nomen dubium) <i>Echinoderes arcuatus</i> (Zelinka, 1928) (nomen dubium) <i>Echinoderes borealis</i> Greeff, 1869 (nomen dubium) <i>Echinoderes druxi</i> d'Hondt, 1973 (taxon inquirendum) <i>Echinoderes erinaceus</i> (Zelinka, 1928) (nomen dubium)

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<i>Echinoderes charlotteae</i> Sørensen et al. 2016		<i>Echinoderes minutus</i> Panceri, 1878 (nomen dubium)
<i>Echinoderes daenerysae</i> Grzelak & Sørensen, 2018		
<i>Echinoderes drogoni</i> Grzelak & Sørensen, 2018		
<i>Echinoderes komatsui</i> Yamasak & Fujimoto, 2014		<i>Echinoderes ferox</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes hwiizaa</i> Yamasak & Fujimoto, 2014		
<i>Echinoderes coulli</i> Higgins, 1977		
<i>Echinoderesaugustae</i> Sørensen & Landers, 2014		<i>Echinoderes gracilis</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes skipperae</i> Sørensen & Landers, 2014		
<i>Echinoderes isabelae</i> G ^o Ordóñez, Pardos & Benito, 2008		<i>Echinoderes greeffi</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes neospinosus</i> G ^o Ordóñez, Pardos & Benito, 2008		
<i>Echinoderes parrai</i> G ^o Ordóñez, Pardos & Benito, 2008		<i>Echinoderes hyalinus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes adrianovi</i> Herranz, 2013		
<i>Echinoderes riceae</i> Herranz, 2013		
<i>Echinoderes sensibilis</i> Adrianov, Murakami & Shirayama, 2002		<i>Echinoderes incertus</i> Reinhard, 1885 (nomen dubium)
<i>Echinoderes teretis</i> Brown, 1999 in Adrianov & Malakhov, 1999		
<i>Echinoderes maxwelli</i> (Omer-Cooper, 1957)	<i>Echinoderella maxwelli</i> Omer-Cooper, 1957.	<i>Echinoderes kowalewskii</i> Reinhard, 1885 (nomen dubium)
<i>Echinoderes ohtsukaii</i> Yamasaki & Kajihara, 2012		
<i>Echinoderes applicitus</i> Ostmann, Nordhaus & Sørensen, 2012		<i>Echinoderes lanuginosus</i> (Greeff, 1869) (nomen dubium)
<i>Echinoderes marthae</i> Sørensen 2013		
<i>Echinoderes horni</i> Higgins, 1983		<i>Echinoderes masudai</i> Abe, 1930 (taxon inquirendum)
<i>Echinoderes capitatus</i> (Zelinka, 1928)	<i>Echinoderella capitata</i> Zelinka, 1928 (original name) <i>Echinoderes capitata</i> (Zelinka, 1928) <i>Habroderella capitata</i> Zelinka, 1928 (juvenil stage)	
<i>Echinoderes andamanensis</i> Higgins & Rao, 1979		

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<i>Echinoderes caribiensis</i> Kirsteuer, 1964	<i>Habroderella orientalis</i> Kirsteuer, 1964 (juvenil stage)	<i>Echinoderes meridionalis</i> Panceri, 1878 (nomen dubium)
	<i>Habroderes manglaris</i> Kirsteuer, 1964 (juvenil stage)	
<i>Echinoderes bengalensis</i> (Timm, 1958)	<i>Echinoderella bengalensis</i> Timm, 1958 (original name)	<i>Echinoderes minax</i> (Zelinka, 1928) (nomen dubium)
	<i>Echinoderella sonadiae</i> Timm, 1958 (original name)	
	<i>Echinoderes sonadiae</i> (Timm, 1958) (juvenile stage)	
<i>Echinoderes citrinus</i> Zelinka, 1928		
<i>Echinoderes bispinosus</i> Higgins, 1982		<i>Echinoderes minimus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes setiger</i> (Greeff, 1869)	<i>Echinoderella setigera</i> Zelinka, 1928	
	<i>Echinoderes setigera</i> Greeff, 1869 (original name)	
<i>Echinoderes bermudensis</i> Higgins, 1982		<i>Echinoderes minutus</i> Panceri, 1878 (nomen dubium)
<i>Echinoderes arlis</i> Higgins, 1966		
<i>Echinoderes newcaledoniensis</i> Higgins, 1967		
<i>Echinoderes peterseni</i> Higgins & Kristensen, 1988		<i>Echinoderes monocercus</i> Claparède, 1863 (no-men du-bium)
<i>Echinoderes abbreviatus</i> Higgins, 1983		
<i>Echinoderes higginsi</i> Huys & Coomans, 1989		
<i>Echinoderes wallaceae</i> Higgins, 1983		<i>Echinoderes orientalis</i> Adrianov, 1989 (nomen dubium)
<i>Echinoderes riedli</i> Higgins, 1966		
<i>Echinoderes kristenseni</i> Higgins, 1985		
<i>Echinoderes truncatus</i> Higgins, 1983		
<i>Echinoderes bookhouti</i> Higgins, 1964		<i>Echinoderes pagenstecheri</i> (Reinhard, 1885) (nomen dubium)
<i>Echinoderes elongatus</i> (Nyholm, 1947)	<i>Echinoderella elongata</i> Nyholm, 1947 (original name)	
	<i>Echinoderes elongata</i> (Nyholm, 1947)	
<i>Echinoderes eximus</i> Higgins & Kristensen, 1988		<i>Echinoderes pallidus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes remanei</i> (Blake, 1930)	<i>Echinoderella remanei</i> Blake, 1930	
<i>Echinoderes tubilak</i> Higgins & Kristensen, 1988		
<i>Echinoderes aquilonius</i> Higgins & & Kristensen, 1988		<i>Echinoderes parallelus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes angustus</i> Higgins & Kristensen, 1988		

Continued

<i>Echinoderes pennaki</i> Higgins, 1960		
<i>Echinoderes gerardi</i> Higgins, 1978		
<i>Echinoderes dujardini</i> Claparède, 1863		
<i>Echinoderes brevicaudatus</i> Higgins, 1977	<i>Echinoderes brevispinosus</i> Higgins, 1966	
<i>Echinoderes imperforatus</i> Higgins, 1983		
<i>Echinoderes worthingi</i> Southern, 1914	<i>Echinoderes worthingii</i> Southern, 1914	<i>Echinoderes pulchellus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes pacificus</i> Schmidt, 1974		
<i>Echinoderes ferrugineus</i> Zelinka, 1928		
<i>Echinoderes levanderi</i> Karling, 1955		<i>Echinoderes pusillus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes sublicarum</i> Higgins, 1977		
<i>Echinoderes krishnaswamyi</i> Higgins, 1985		
<i>Echinoderes pilosus</i> Lang, 1949		
<i>Echinoderes ehlersi</i> Zelinka, 1913		<i>Echinoderes rosaceus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes kozloffii</i> Higgins, 1977		
<i>Echinoderes tchefouensis</i> Lou, 1934		<i>Echinoderes spinosus</i> Panceri, 1878 (nomen dubium)
<i>Echinoderes canariensis</i> Greeff, 1869		
<i>Echinoderes agigens</i> Bacescu, 1968		<i>Echinoderes splendidus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes aspinosus</i> Sørensen, Rho, Min, Kim & Chang, 2012		
<i>Echinoderes lusitanicus</i> Neves et al. 2016		<i>Echinoderes steineri</i> (Chitwood, 1951) (taxon inquirendum)
<i>Echinoderes meteorensis</i> Yamasaki et al. 2018c		
<i>Echinoderes multiporus</i> Yamasaki et al. 2018b		
<i>Echinoderes muricatus</i> Pardos et al. 2016 b		<i>Echinoderes trispinosus</i> (Zelinka, 1928) (nomen dubium)
<i>Echinoderes orestauri</i> Pardos et al. 2016 a		
<i>Echinoderes reicherti</i> Neves et al. 2016		

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Echinoderes rhaegali
Grzelak & Sørensen, 2018

Echinoderes rociae
Pardos et al. 2016 a

Echinoderes strii
Pardos et al. 2016 b

Echinoderes cernunnos
Sørensen, Rho, Min, Kim &
Chang, 2012

Echinoderes microaperturus
Sørensen, Rho, Min, Kim
& Chang, 2012

Echinoderes obtuspinosus
Sørensen, Rho, Min, Kim &
Chang, 2012

Echinoderes aureus Adrianov,
Murakami & Shirayama, 2002

Echinoderes cantabricus Pardos,
Higgins & Benito, 1998

Echinoderes cavernus Sørensen,
Jørgensen & Boesgaard, 2000

Echinoderes filispinosus
Adrianov, 1989

Echinoderes gizoensis Thormar
& Sørensen, 2010

Echinoderes hispanicus Pardos,
Higgins & Benito, 1998

Echinoderes intermedius
Sørensen, 2006

Echinodereskoreanus
Adrianov, 1999 in Adrianov &
Malakhov, 1999

Echinoderes kanni Thormar &
Sørensen, 2010

Echinoderes lanceolatus Chang
& Song, 2002

Echinoderes malakhovi
Adrianov, 1999 in Adrianov &
Malakhov, 1999

Echinoderes multisetosus
Adrianov, 1989

Echinoderes spinifurca
Sørensen, Heiner
& Ziemer, 2005

Echinoderes stockmani
Adrianov, 1999 in Adrianov &
Malakhov, 1999

Echinoderes subfuscus
Zelinka, 1928

Habroderes subfuscus
Zelinka, 1928 (juvenil stage)

Continued

Echinoderes svetlanae
Adrianov, 1999 in Adrianov
& Malakhov, 1999

Echinoderes ulsanensis
Adrianov, 1999 in Adrianov &
Malakhov, 1999

Echinoderes ajax Sørensen, 2013

Echinoderes astridae
Sørensen, 2013

Echinoderes collinae
Sørensen, 2006

Echinoderes joyceae
Landers & Sørensen, 2016

Echinoderes romanoi
Landers & Sørensen, 2016

Echinoderes regina
Yamasaki, 2016

Echinoderes serratulus
Yamasaki, 2016

Echinoderes annae
Sørensen et al., 2016

Echinoderes unispinosus
Yamasaki et al. 2018a

Echinoderes hakaensis
Herranz et al., 2017

Echinoderes Sylviae
Landers & Sørensen 2018

Echinoderes pterus
Yamasaki et al., 2018b

Echinoderes antalyaensis
Yamasaki & Durucan 2018

Fissuroderes higginsii
Neuhaus, 2006 in Neuhaus
& Blasche, 2006

Fissuroderes novaezealandia
Neuhaus, 2006 in Neuhaus
& Blasche, 2006

Fissuroderes
Neuhaus & Blasche,
2006

Fissuroderes papai Neuhaus,
2006 in Neuhaus & Blasche,
2006

Fissuroderes rangi Neuhaus,
2006 in Neuhaus & Blasche,
2006

Fissuroderes thermoi
Neuhaus & Blasche, 2006

Fissuroderes sorenseni
Herranz, 2014

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			<i>Meristoderes herranzae</i> Sørensen, Rho, Min, Kim & Chang, 2012	
			<i>Meristoderes imugi</i> Sørensen, Rho, Min, Kim & Chang, 2012	
			<i>Meristoderes elleae</i> Sørensen, Rho, Min, Kim & Chang, 2012	
	Meristoderes Herranz et al., 2012		<i>Meristoderes glaber</i> Sørensen, Rho, Min, Kim & Chang, 2012	
			<i>Meristoderes galathea</i> Herranz, Thormar, Benito, Sánchez & Pardos, 2012	
			<i>Meristoderes macracanthus</i> Herranz, Thormar, Benito, Sánchez & Pardos, 2012	
			<i>Meristoderes boylei</i> Herranz M, 2014	
	Polacanthoderes Sørensen, 2008		<i>Polacanthoderes martinezi</i> Sørensen, 2008	
			<i>Antygomonas incommitata</i> Nebelsick, 1990	<i>Antygomonas incommitata</i> Nebelsick, 1990 (synonym)
	Antygomonidae Adrianov & Malakhov, 1994	Antygomonas Nebelsick, 1990	<i>Antygomonas oreas</i> Bauer-Nebelsick, 1996	
			<i>Antygomonas paulae</i> Sørensen, 2007	
			<i>Antygomonas caeciliae</i> Zotto, 2015	
			<i>Antygomonas gwenae</i> Herranz, 2013	
	Cateriidae Gerlach, 1956	Cateria Gerlach, 1956	<i>Cateria styx</i> Gerlach, 1956	
			<i>Cateria gerlachi</i> Higgins, 1968	
Kentrorhagata Sánchez et al. 2016				<i>Campyloderes adherens</i> Nyholm, 1947
				<i>Centroderes agigensis</i> Bacescu, 1963
				<i>Echinoderes spinosus</i> Reinhard, 1881 (original name)
				<i>Reinhardella euxinica</i> Sheremetevskij, 1974
	Centroderidae Zelinka, 1896	Centroderes Zelinka, 1907	<i>Centroderes spinosus</i> (Reinhard, 1881)	<i>R. spinosa</i> Sheremetevskij, 1974
				<i>Z. adunca</i> Sheremetevskij, 1974
				<i>Z. agigensis</i> Sheremetevskij, 1974
				<i>Z. euxinica</i> Sheremetevskij, 1974
				<i>Z. pseudospinosa</i> Sheremetevskij, 1974
				<i>Z. spinosa</i> Sheremetevskij, 1974
			<i>Centroderes eisigii</i> Zelinka, 1928	

Continued

		<i>Centroderes drakei</i> Neuhaus et al. 2014	
		<i>Centroderes bonnyae</i> Neuhaus et al. 2014	
		<i>Centroderes barbanigra</i> Neuhaus et al. 2014	
		<i>Centroderes readae</i> Neuhaus et al. 2014	
		<i>Centroderes impurus</i> Sørensen et al. 2016	
		<i>Condyloderes paradoxus</i> Higgins, 1969	
		<i>Condyloderes megastigma</i> Sørensen, Rho & Kim, 2010	
		<i>Condyloderes setoensis</i> Adrianov, Murakami & Shirayama, 2002	
	Condyloderes Higgins, 1969	<i>Condyloderes storchi</i> Higgins, 2004, in Martorelli & Higgins, 2004	
		<i>Condyloderes multispinosus</i> (McIntyre, 1962)	<i>Centroderes multispinosus</i> McIntyre, 1962 (original name)
		<i>Condyloderes kurilensis</i> Adrianov A.V & Maiorova A.S, 2016	
		<i>Semnoderes armiger</i> Zelinka, 1928	
	Semnoderes Zelinka, 1907	<i>Semnoderes lusca</i> Sørensen & Landers, 2018	
		<i>Semnoderes pacificus</i> Higgins, 1967	
		<i>Semnoderes ponticus</i> Bacescu & Bacescu, 1956	
Semnoderidae Remane, 1929		<i>Sphenoderes indicus</i> Higgins, 1969	<i>Semnoderes armatus</i> (Zelinka, 1928) (nomen dubium)
	Sphenoderes Higgins, 1969	<i>Sphenoderes aspidochelone</i> Sørensen & Landers, 2018	
		<i>Sphenoderes poseidon</i> Sørensen, Rho & Kim, 2010	
	Parasemnoderes Adrianov & Maiorova 2018	<i>Parasemnoderes intermedius</i> Adrianov & Maiorova 2018	
	Triodontoderes Sørensen & Rho, 2009	<i>Triodontoderes anulap</i> Sørensen & Rho, 2009	
Zelinkaderidae Higgins, 1990	Zelinkaderes Higgins, 1990	<i>Zelinkaderes klepali</i> Bauer-Nebelsick, 1995	
		<i>Zelinkaderes floridensis</i> Higgins, 1990	

Continued

		<i>Zelinkaderes submersus</i> (Gerlach, 1969)	<i>Cateria submersa</i> Gerlach, 1969 (original name)
		<i>Zelinkaderes brightae</i> Sørensen, Heiner, Ziemer & Neuhaus, 2007	
		<i>Zelinkaderes yong</i> Altenburger et al. 2015	
incertae sedis	<i>Tubulideres</i> Sørensen et al., 2007	<i>Tubulideres seminoli</i> Sørensen, Heiner, Ziemer & Neuhaus, 2007	
incertae sedis	<i>Wollunquaderes</i> Sørensen & Thormar, 2010	<i>Wollunquaderes majkenae</i> Sørensen & Thormar, 2010	
Xenosomata Zelinka, 1907	Campyloderidae Remane, 1929	<i>Campyloderes macquariae</i> Johnston, 1938	
		<i>Campyloderes vanhoeffeni</i> var. <i>keruelensis</i> Zelinka, 1913	<i>Campyloderes kerguelensis</i> (Zelinka, 1913) Johnston, 1938
		<i>Campyloderes vanhoeffeni</i> Zelinka, 1913	
	<i>Ryugoderes</i> Yamasaki, 2016	<i>Ryugoderes iejimaensis</i> Yamasaki, 2016	

Table 4. List of species present in India.

S. No	Species Name	Synonyms
01	<i>Echinoderes bengalensis</i> (Timm, 1958)	<i>Echinoderella bengalensis</i> Timm, 1958 (original name) <i>Echinoderella sonadiae</i> Timm, 1958 (original name) <i>Echinoderes sonadiae</i> (Timm, 1958) (juvenile stage)
02	<i>Condyloderes paradoxus</i> Higgins, 1969	
03	<i>Cateria styx</i> Gerlach, 1956	
04	<i>Cateria gerlachi</i> Higgins, 1968	
05	<i>Neocentrophyes satyai</i> Higgins, 1969	
06	<i>Echinoderes andamanensis</i> Higgins & Rao, 1979	
07	<i>Echinoderes ehlersi</i> Zelinka, 1913	
08	<i>Sphenoderes indicus</i> Higgins, 1969	
09	Pycnophyes sp	
10	<i>Echinoderes setiger</i> (Greeff, 1869)	<i>Echinoderella setigera</i> Zelinka, 1928 <i>Echinoderes setigera</i> Greeff, 1869 (original name)
11	<i>Echinoderes capitatus</i> (Zelinka, 1928)	<i>Echinoderella capitata</i> Zelinka, 1928 (original name) <i>Echinoderes capitata</i> (Zelinka, 1928) <i>Habroderella capitata</i> Zelinka, 1928 (juvenil stage)
12	<i>Echinoderes peterseni</i> Higgins & Kristensen, 1988	
13	<i>Echinoderes horni</i> Higgins, 1983	
14	<i>Echinoderes remanei</i> (Blake, 1930)	<i>Echinoderella remanei</i> Blake, 1930
15	<i>Echinoderes truncatus</i> Higgins, 1983	
16	<i>Echinoderes druxi</i> d'Hondt, 1973	

5.1. *Echinoderes druxi* and *Echinoderes steineri*

Higgins [26] states that common errors that occur in the taxonomic interpretation of *Echinoderes* are related to the lateral spines. Huys and Coomans [88] states their doubt about the spine formula for *E. steineri* Chitwood, 1951, and *E. druxi* d'Hondt, 1973. Moreover, the latter one is also proved to be a poorly described species [45].

5.2. *E. masudai*

E. masudai Abe, 1930 is a cyclorhagid Kinorhynch found on the Gogoshima Island near Hiroshima [89]. The description of the species was however too poor to do comparisons practically and *E. masudai* is considered as a “species indeterminata” [26] [90] and similarly it is currently designated as a taxon inquirendum.

5.3. *Pycnophyes echinoderoides*

Higgins [26] described species from juvenile stages, and mentioned it as species indeterminatum adding that it was uncertain to be matched with an adult of the same species. According to statement of Nehaus [1], *E. druxi*, and *E. steineri*, *E. masudai*, *Pycnophyes echinoderoides* are only considered as a not valid or poorly described species and indeterminate based on an inadequate description of the adult.

5.4. *P. calmani*

The first species assigned to this genus was *P. communis* Zelinka, 1908. Although this species was not described by Zelinka until 1928, these rules for “indication” were satisfied with the earlier paper. Later, Sánchez [91] stated that no available data exists for *P. calmani*, hence the character was coded as missing data. According to WoRMS [86] *P. communis* has become the accepted name for *P. calmani*.

5.5. *C. eisigii*

Echinoderes kowalewskii Reinhard [10] was considered as a nomen dubium, which was later identified as *C. eisigii* (Zelinka, 1928). This species differs from *C. spinosus* only by the lack of spines in segment 10 and by its smaller size. Unfortunately, Zelinka [9] included not only species known from adult life stages in the family Centroderidae, it has given clear information regarding *C. eisigii* and *C. spinosus* [41]. WoRMS [86] is accepted the current status of *C. eisigii*.

5.6. *Campyloderes vanhoeffeni* var. *kerquelensis*

Campyloderes vanhoeffeni var. *kerquelensis* is considered as a variety species. As a result, Nehaus [1], might not have included this species in his paper. It is accepted as a variety species in WoRMS [86]. Three species, namely *P. oshoroensis* Yamasaki et al. 2012, *E. augustae* Sørensen & Landers, 2014, *E. skipperae* Søren-

sen & Landers, 2014 were published after the submission of list by Nehaus [1], hence this species were not added in his article. Remaining 82 species are described after 2013 and it is not updated as valid Species in WoRMS [86]. Similarly, the species *Pycnophyes carinata* Zelinka, 1912 (nomen nudum) is also not included in Nehaus [1].

5.7. *Pycnophyes carinata*

It is a poorly described species due to lack of identifying characters [8] and uncertain taxonomic significance. *P. carinata* is known from juvenile stage and according to Nehaus [1] it is a synonym name. As a result of this, it is considered as nomen dubium by WoRMS [86].

The present study has discussed almost 271 valid species under 30 genera. Among the 271 valid species, in the last three years 82 new species emerged along with two new Orders (Echinorhagata Sørensen *et al.*, 2015, Kentrorhagata Sørensen *et al.* 2015,) and three Families (Franciscideridae Sørensen *et al.*, 2015, incertae sedis and incertae sedis.) were described. It also includes nine new genera [(Mixtophyes Sánchez *et al.*, 2014b; Francisderes Zotto *et al.*, 2013; Leioanthus Sánchez *et al.*, 2016; Cristaphyes Sánchez *et al.*, 2016; Higginsium Sánchez *et al.*, 2016; Krakenella Sánchez *et al.*, 2016; Setaphyes Sánchez *et al.*, 2016; and Fujuriphyes Sánchez *et al.*, 2016; Ryuguderes Yamasaki, 2016). The meiobenthic invertebrate group Kinorhyncha can be found in the oceans throughout the world, though these animals have been known for more than 150 years, only around 271 species are described till today.

6. Recent Scenario of Kinorhyncha—World Wide

Despite the fact that the distribution of Kinorhyncha is widespread across the globe, research activities (more precisely taxonomy) are exclusively limited to few countries. Only few literatures are available from tropical shallow-water ecosystems. Though taxonomical studies have started long ago, it has received the attention of the researchers in the past two decades only. Here are a few of the notable taxonomical works given that are done across the globe.

Both Murakami *et al.* [89] and Adrianov *et al.* [92] have identified one species, each from Japan, which was followed by several other authors later, Yamasaki and Fujimoto [66] - (2Sp.); Yamasaki *et al.* [93] - (2 Sp.); Yamasaki [67] - (2Sp.), Yamasaki [73] - (1Sp.) and Sánchez and Yamasaki [94] - (2 Sp.). When compared to other countries, Korea adds to the species count with a total of 16 species in the recent years and proves to be active in the study of Kinorhyncha. Several authors have contributed to the identification of Kynorynchs like Thomsen *et al.* [61] - (1Sp.), Sørensen *et al.* [95] - (4Sp.), Sánchez *et al.* [60] - (4Sp.), Sørensen *et al.* [52] [96] - (4Sp.), Sørensen *et al.* [48] - (1Sp.), Sørensen *et al.* [47] - (1Sp.) and Altenburger *et al.* [68] - (1Sp.).

Spain has 8 species to its title Herranz *et al.* [55] - (1Sp.), Sørensen *et al.* [96] - (2Sp.) Sánchez *et al.* [53] - (2Sp.) and GaOrdóñez *et al.* [45] - (3Sp.). Australia,

Lemburg [97] - (1Sp.), Sørensen and Thormar [51] - (1Sp.) and in Brazil, Zotto *et al.* [57] - (1Sp.), Sørensen and Landers [98] - (3Sp.) equally share 4 species each to his account.

Florida also has a near similar number of species identified such that of Spain, Herranz *et al.* [56] - (4Sp.), Sørensen *et al.* [43] - (2Sp.). Italy has the highest species identified across the globe, Zotto [69] - (1Sp.), Zotto and Todaro [99] - (36Sp.). Followed by Italy, the Iberian Peninsula has the highest Kinorhynchs identified in the last two decades. Of this, the works of Sánchez *et al.* [53] - (1Sp.), Sánchez *et al.* [54] - (30Sp.), Sánchez *et al.* [62] [63] - (2Sp.) proves to be efficient with 33 identified species. Four species were identified in New Zealand by Neuhaus and Blasche [42]. Denmark has the least number of Kinorhynch identified with a single species by Lundbye *et al.* [100].

The Panama sea exhibited 8 species [101] [102], followed by Mexico, Sørensen *et al.* [103] - (1Sp.); Sørensen and Landers [78] - (2Sp.) and Portugal [104] - (2Sp.).

7. Indian Scenario

Kinorhyncha is available from the intertidal zone to abyssal depths and from polar to tropical regions [1] [56] [95] [98] [105]. Still only a few dozen of literature is available from tropical shallow-water ecosystems. As far as India is concerned, works on Kinorhyncha remains scanty. The meiobenthic invertebrate group *Cateria styx* species has been reported from the east coast of India by Rao and Ganapati [106]. Ganapati and Rao [107] have identified species of Kinorhyncha present in Waltair coast situated in Andhra Pradesh. *Cateriagerlachi* sp., were identified by Higgins [19] reported from the east coast of India. *Pycnophyes* sp., were collected from west coast of India by Dovgal *et al.* [108]. The specimen of Kinorhyncha family *Pycnophyes* sp., was collected from the west coast of India [108]. Although earlier work was carried out by Higgins [2] [21] in the Indian Ocean, the continuity of research was found to be negligible. According Vekatraman *et al.* [109] only nine species were reported in India till 1979. After 37 years, according to Jeeva and Mohan [110], works on Kinorhyncha in India has taken a new shape with a first report of *Echinoderes setiger* (Greeff, 1869) from Andaman Islands (India). Thus, currently there are only 16 species (Table 4) that are identified in Indian waters.

Supplementary references where the species records are available given in [111]-[127].

8. Conclusion

The above list has a detailed status of all the species regarding the acceptance, non acceptance of species names and their acceptance as nomen dubium and taxon inquirendum in the last five years (*i.e.*, after 2013), based on WoRMS [86] database and Nehaus [1]. This checklist record includes a total of 271 identified species out of which almost 82 species were published in articles. This research

article could be useful for both present and future studies of Kinorhyncha, especially for controversial species status. Since, there is not much work on Kinorhyncha in India, this work could help initiate further research.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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