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Checklist of Fishes of the Family Echeneidae

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Abstract: The status of the nominal species of the marine fish family Echeneidae have been revisited. The checklist includes 69 nominal species belonging to eight valid species grouped in three genera. Two species combination are invalid, being preoccupied. They are *Echeneis vittata* Lowe, 1839 and *Echeneis pallida* Temminck and Schlegel, 1850 and the following replacing names *Echeneis quinquevittata* and *Remora adtenuata*, respectively, are proposed. *Echeneis veterum* Costa, 1840 and *Echeneis caudabifurca* Olafsen and Povelsen, 1775 are new synonyms of *Remora remora* (Linnaeus, 1758). *Echeneis loevis* Castelnau, 1861 is a new synonym of *R. brachyptera* (Lowe, 1839).

Keywords: *Echeneis*, Remoras, New synonyms, New names, Fishes, Checklist

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Introduction

Echeneidae commonly known as sucker fishes or remoras is a small family of Teleostean fishes with an elongate, fusiform body characterized by the presence of a first dorsal fin modified into a sucking disk located on the top of the head. The disk is constituted by pairs of wall-like transverse plates, called laminae, whose number varying from 9 to 28 is useful for species identification. The skull is depressed in order to support the disk; the jaws are broad, the lower projecting well beyond the upper. Opercle without spines; second dorsal fin and anal fin long based with 18-45 and 18-41 soft rays, respectively. Pectoral fins quite large, set high on the body with 18-32 rays; pelvic fin with 1 spine and 5 soft rays. Scales cycloid. Remoras accompany a wide variety of marine animals such as sharks, turtles, mantas, whales

and porpoises, barracudas, trunk fishes and parrot fishes.

Materials and Methods

Species are arranged alphabetically according to the genus and species. New synonym are named those nominal species that have no status in the Eschmeyer's Catalog of Fishes. The status is based on examination of the original description and type material if available. New names are registered as urn:lsid:zoobank.org:pub:C8256064-04BA-43AC-974B-4755D439751E.

Results and Discussion

Family Echeneidae Rafinesque 1810:

Genus *Echeneis* Linnaeus, 1758:

Echeneis Linnaeus, 1758: 260. Feminine. Type species *Echeneis naucrates* Linnaeus, 1758. Type designated by the ICZN under plenary powers. On Official List (Opinions 92 and 242).

Leptecheneis Gill, 1864: 60. Feminine. Type species *Echeneis naucrates* Linnaeus, 1758. Type by original designation (also monotypic).

***Echeneis naucrates* Linnaeus, 1758:**

Echeneis naucrates Linnaeus, 1758: 261 (type locality, Indian Ocean). Syntypes: ?NRM 3688 (1), ZMUU Linn. Coll. 82 (1).

Echeneis albicauda Mitchill, 1818: 244 (type locality, New York Bay, New York). Holotype (unique): whereabouts unknown.

Echeneis lunata Bancroft, 1831: 134 (type locality, Kingston, Jamaica). No types known. Also appeared as new in Bancroft, 1835 (413, Pl. 18).

Echeneis vittata Rüppell, 1838: 82 (type locality, Red Sea). Lectotype: SMF 1424. Paralectotypes: SMF 2713 (1, dry), 2731 (1, dry), 15862-63 (2), 17524 (1, skeleton). Lectotype established by Dor (1984:121).

Echeneis vittata Lowe, 1839: 89 (type locality, off Madeira). Holotype: whereabouts unknown. Objectively invalid; preoccupied by *Echeneis vittata* Rüppell, 1838.

Echeneis fasciata Gronow in Gray, 1854: 92 (type locality, Mediterranean Sea). No types known.

Echeneis fusca Gronow in Gray, 1854: 92 (type locality, American Ocean). Syntypes: BMNH 1853.11.12.117 Gronovius coll. (1, skin). Type catalog: Wheeler (1958:244) but as holotype.

Echeneis alveolata Guichenot in Duméril, 1858: 377 (type locality, Brazil). No types known.

Echeneis balteata Valenciennes in Duméril, 1858: 377 (type locality, Red Sea). No types known.

Echeneis belangerii Duméril, 1858: 377 (type locality, Malabar and Pondicherry). No types known.

Echeneis chiromacer Guichenot in Duméril, 1858: 377 (type locality, Réunion). No types known.

Echeneis coronata Guichenot in Duméril, 1858: 377 (type locality, Bourou, Réunion). No types known.

Echeneis dussumierii Guichenot in Duméril, 1858: 377 (type locality, Seychelles). No types known.

Echeneis gaimardi Guichenot in Duméril, 1858: 377 (type locality, Tongatabu). No types known.

Echeneis homodonta Guichenot in Duméril, 1858: 377 (type locality, China). No types known.

Echeneis isodonta Guichenot in Duméril, 1858: 377 (type locality, Seychelles). No types known.

Echeneis jamaicensis Duméril, 1858: 377 (type locality, Jamaica). Holotype: MNHN A-5950.

Echeneis macrochir Guichenot in Duméril, 1858: 377 (no locality stated). No types known.

Echeneis maculosa Guichenot in Duméril, 1858: 377 (type locality, Cayenne). No types known.

Echeneis malabarica Guichenot in Duméril, 1858: 377 (type locality, Malabar). No types known.

Echeneis maxillosa Duméril, 1858: 377 (type locality, Trinquemalé and Waigiou). No types known.

Echeneis obsoleta Guichenot in Duméril, 1858: 377 (type locality, Pondichéry). No types known.

Echeneis occidentalis Duméril, 1858: 377 (type locality, Sénégal and Gorée). No types known.

Echeneis pacifica Duméril, 1858: 377 (type locality, Trinquemalé and Waigiou). No types known.

Echeneis polyancura Duméril, 1858: 377 (type locality, Touranne and Malabar). No types known.

Echeneis purpurascens Duméril, 1858: 377 (type locality, Guadeloupe). No types known.

Echeneis ricordii Duméril, 1858: 377 (type locality, Cayenne and Saint Domingo). No types known.

Echeneis scaphecrates Duméril, 1858: 377 (type locality, Mer des Indes). No types known.

Echeneis virgata Guichenot in Duméril, 1858: 377 (no locality stated). No types known.

Echeneis verticalis Poey, 1860: 253 (type locality, Cuba). Syntypes: MCZ 8709 (1) Type catalog: Howell Rivero (1938:216) with MCZ 8709 as a paratype.

Echeneis guaican Poey, 1860: 248 (type locality, Cuba). No types known. Poey specimens: ZMB 5899 (1, dry).

Echeneis metallica Poey, 1860: 252 (type locality, Cuba). No types known.

Leptecheneis flaviventris Seale, 1906: 83, Fig. 23 (type locality, Mangareva Island, Gambier Islands, Pacific). Holotype (unique): BPBM 834.

Echeneis quinquevittata, *nomen novum*. Replacement name for *Echeneis vittata* Lowe, 1839. Etymology: name refers to the presence of five longitudinal stripes mentioned by Lowe in his description of *E. vittata*.

Distribution: Circum-global in tropical and subtropical seas (including Gulf of Mexico, Caribbean Sea, Mediterranean Sea, Sea of Marmara, Black Sea, Red Sea, Persian Gulf, Sea of Japan, Gulf of California).

Comments: the nominal species included in Duméril (1858) are regarded as *nomina nuda* by Bauchot and Desoutter (1989), however, the number of laminae is reported for each of them, justifying their status of species incompletely described.

***Echeneis neucratoides* Zuiew, 1789:**

Echeneis neucratoides Zuiew, 1789: 279, Pl. 6 (no locality stated). Holotype: ZIN uncat. (whereabouts unknown). As *Echeneidis* nova species in title, but spelled *Echeneis neucratoides* in the main heading, and that is the spelling used by current workers.

Echeneis naucratoides Duméril, 1858: 377 (no locality stated). No types known.

Distribution: Western Atlantic from New England to South America.

Genus *Phtheirichthys* Gill, 1862:

Phtheirichthys Gill, 1862:239. Masculine. Type species *Echeneis lineata* Menzies, 1791. Type by original designation (also monotypic).

***Phtheirichthys lineatus* (Menzies 1791):**

Echeneis lineata Menzies, 1791: 187, Pl. 17 (fig. 1) (type locality, Pacific). No types known.

Echeneis apicalis Poey, 1860: 254 (type locality, Cuba). No types known.

Echeneis tropica Euphrasen, 1791: 317 (type locality, Western tropical Ocean). No types known.

Echeneis sphyraenarum Poey, 1860: 255 (type locality, Cuba). No types known.

Phtheirichthys multiradiatus Schultz, 1943: 256, Pl. 9 (type locality, off reef of Canton Island, Phoenix Islands; off of a barracudas). Holotype: USNM 115736. Paratypes: MCZ 37257 ex USNM 117864 (1).

Distribution: Circum-global in tropical and subtropical seas (including Sea of Japan).

Genus *Remora* Gill, 1862:

Remora Gill, 1862: 239. Feminine. Type species *Echeneis remora* Linnaeus, 1758. Type by original designation. On Official List (Opinion 242; ICZN, 1954); *Remora* Goüan 1770:183 and *Remora* Forster 1771:20 placed on Official Index.

Remilegia Gill, 1862: 239. Feminine. Type species *Echeneis scutata* Günther, 1860. Type by original designation (also monotypic).

Remoropsis Gill, 1863: 88. Feminine. Type species *Echeneis brachyptera* Lowe, 1839. Type by original designation (also monotypic).

Rhombochirus Gill, 1863: 88. Masculine. Type species *Echeneis osteochir* Cuvier, 1829. Type by original designation (also monotypic).

Remorina (subgenus of *Remora*) Jordan and Evermann, 1896: 490. Feminine. Type species

Echeneis albescens Temminck and Schlegel, 1850. Type by original designation (also monotypic).

Pseudoreмора Taranetz, 1937: 139. Feminine. Type species *Pseudoreмора golubevi* Taranetz, 1937. Type by monotypy.

***Remora albescens* (Temminck and Schlegel, 1850):**

Echeneis albescens Temminck and Schlegel, 1850: no page number, Pl. 20 (Fig. 3) (type locality, Nagasaki, Japan). No types known.

Echeneis clypeata Günther, 1860: 401 (type locality, Cape Seas, South Africa). No types known.

Echeneis lophioides Guichenot, 1863: C-20 (type locality, Réunion). Holotype (unique): MNHN 0000-1239.

Distribution: Circum-global in tropical and subtropical seas (including Red Sea, Sea of Japan).

***Remora australis* (Bennett 1840):**

Echeneis australis Bennett, 1840: 273 (no locality stated). No types known.

Echeneis scutata Günther, 1860: 401, Pl. 10 (Fig. B) (type locality, Sri Lanka). Holotype (unique): BMNH 1952.10.8.1.

Distribution: circum-global in tropical and warm temperate seas (including Mediterranean Sea, Gulf of California).

***Remora brachyptera* (Lowe, 1839):**

Echeneis sexdecimlamellata Eydoux and Gervais, 1837:1, Pl. 16 (type locality, Indian Ocean). Holotype (unique): MNHN A-5961. On Official Index (Opinion 1033); suppressed for purposes of priority but not homonymy.

Echeneis quatuordecimlaminatus Storer, 1839:496 155 (type locality, Massachusetts, U.S.A.) On Official Index (Opinion 1033); suppressed for purposes of priority but not homonymy.

Echeneis brachyptera Lowe, 1839: 89 (type locality, Madeira). Holotype: whereabouts unknown.

Echeneis nieuhoftii Bleeker, 1853: 279 (Priaman, Sumatra, Indonesia). Holotype (unique): whereabouts unknown.

Echeneis pallida Temminck and Schlegel, 1850: 271, Pl. 120 (Figs. 2-2a) (type locality, Japan). Lectotype: RMNH 3646a. Paralectotypes: RMNH 3646b (1). Lectotype selected by Boeseman (1947:193). Objectively invalid; preoccupied by *Echeneis pallida* Lowe, 1839 [= *Remora remora* (Linnaeus, 1758)].

Echeneis loevis Castelnau, 1861: 73 (type locality, South Africa). Syntypes (2): whereabouts unknown; not at SAIAB.

Remora adtenuata, *nomen novum*. Replacement name for *Echeneis pallida* Temminck and Schlegel, 1850 preoccupied by *Echeneis pallida* Lowe, 1839. Etymology: *adtenuata* means pale and it is a synonym of *pallida*.

Distribution: Circum-global in tropical and temperate seas (including Red Sea, Sea of Japan).

Comment: *Echeneis pallida* Temminck and Schlegel, 1850 has been wrongly treated as valid as *Remora pallida* (Temminck and Schlegel 1850) by Nakabo (2002: 788). Therefore we propose a new name, *Echeneis adtenuata* n.n. for *Echeneis pallida* Temminck and Schlegel.

***Remora osteochir* (Cuvier, 1829):**

Echeneis osteochir Cuvier, 1829: 348 (type locality, Martinique Island). Syntypes: MNHN A-5934 (1), A-5945 (1).

Echeneis jacobaea Lowe, 1839: 89 (type locality, off Madeira). Holotype: Probably lost.

Echeneis musignani Costa, 1840: *Echeneis* p. 9, Pl. 27 (type locality, Naples, Italy, Mediterranean Sea). Lectotype: MZUF 4408. Lectotype selected by Tortonese (1972:4) as MZUF 1096.

Echeneis chirosteon Guichenot in Duméril, 1858: 378 (type locality, Brazil). No types known.

Echeneis tetrapturorum Poey, 1860: 256 (type locality, Cuba). Syntypes and/or Poey specimens:

MCZ 8652 (2, now 1), 21805 (1), 27228-29 (1, 1); USNM ex MCZ 8652 153581 (1); ZMB 5951 (1).

Echeneis pediculus Girard, 1893:611, Pl. 2 (type locality, coast of Portugal). Holotype: lost.

Echeneis megalodiscus Franz, 1910:69, Pl. 8 (Fig. 57) (type locality, Yokohama and Aburatsubo, Japan). Syntypes: ZSM old collection (1 + 6) destroyed in WWII.

Distribution: Warm and temperate seas of all oceans: Western Central Pacific; Eastern Pacific: southern California, USA to Peru. Western Atlantic: Massachusetts, USA and northern Gulf of Mexico to Brazil. Eastern Central Atlantic: Madeira Island (including Mediterranean Sea).

***Remora remora* (Linnaeus, 1758):**

Echeneis remora Linnaeus, 1758: 260 (type locality, Indian Ocean). Syntypes: ZMUU Linn. Coll. 58 (1).

Echeneis caudabifurca Olafsen and Povelsen, 1775: 207 (type locality, Iceland). No types known.

Echeneis squalipeta Daldorff, 1793: 157 (type locality, Atlantic, between the Tropics). No types known.

Echeneis mediterraneus Rafinesque, 1810a: 35 (type locality, Sicily, Italy, Mediterranean Sea. No types known.

Echeneis imperati Rafinesque, 1810b: 29 (type locality, Sicily, Italy, Mediterranean Sea). No types known. New name for *Echeneis mediterraneus* Rafinesque 1810.

Echeneis arrostii Cocco, 1838: 14 (type locality, Messina, Sicily). No types known.

Echeneis pallida Lowe, 1839: 89 (type locality, off Madeira). Holotype: whereabouts unknown.

Echeneis parva Gronow in Gray, 1854: 92 (type locality, American Ocean). No types known.

Echeneis remoroides Bleeker, 1855: 70 (type locality, Batu Islands, Indonesia). Holotype (unique): whereabouts unknown.

Echeneis congesta Duméril, 1858: 377 (type locality, Bourou, Maldives, and Mediterranean Sea).

Echeneis moratrix Duméril, 1858: 377 (no locality stated). No types known.

Echeneis novaehollandiae Guichenot in Duméril, 1858: 377 (type locality, Australia).

Echeneis potomac Duméril, 1858: 377 (type locality, Potomac). No types known.

Echeneis batrachoides Duméril, 1858: 378 (type locality, Porto Praya, Cape Verde Islands)

Echeneis flavescens Duméril, 1858: 378 (no locality stated). No types known.

Echeneis ranina Guichenot in Duméril, 1858: 378 (type locality, Seychelles). No types known.

Echeneis veterum Costa, 1840: *Echeneis* p. 3, Pl. 25 (type locality, Naples, Italy, Mediterranean Sea).

Echeneis postica Poey, 1860: 255 (type locality, Cuba). No types known.

Echeneis borboniensis Guichenot, 1863: C-19 (type locality, Réunion). Holotype (unique): MNHN 0000-1238.

Echeneis remeligo Guichenot (ex Duméril), 1863:C-17 (type locality, Réunion). Syntypes: MNHN 0000-1098 (2) Buenos Aires, 0000-1099 (1) Buenos Aires, 0000-1237 (1) Réunion I.

Remora jacoboea Gill, 1863:88. *Nomen novum*; replacement name for *Echeneis remora* Linnaeus 1758 to avoid "Strickland tautonymy".

Echeneis nubifera Tanaka, 1915: 360, Pls. 96 (302-303), 97 (304-305) (type locality, Matsuwa coast, near Misaki, Kanagawa Prefecture, Sagami Sea, Japan). Holotype (unique): ZUMT 54384.

Pseudoremorea golubevi Taranetz, 1937: 139 (type locality, Rynda Bay, Northern Primoriye, Russia). No types known.

Distribution: Circum-global in tropical through temperate seas (including Gulf of Mexico, Caribbean Sea, western Baltic Sea, North Sea,

Mediterranean Sea, Sea of Marmara, Red Sea, Sea of Japan).

Comments: *Echeneis veterum* Costa, 1840 and *Echeneis caudabifurca* Olafsen and Povelsen, 1775 are new synonyms. Illustration and description of *E. veterum* leaves no doubt of its identity with *R. remora*. *E. caudabifurca* is based on a fish illustrated by Catesby (1754, Pl. 26) which has been reported in the account of *E. remora* by Linnaeus (1758).

Species incertae sedis

Echeneis holbrookii Günther A. 1860: 400. Based on literature sources.

Nomina nuda

Echeneis caudisetis Rafinesque, 1818:203 as having been published "sent in 1811 to the Linnean Society of London", but not yet confirmed; name only in 1818. Also reported by Rafinesque (1815) in the cover text of his book in a list of Titles already published by the author.

The present article proposes a checklist of remoras. As demonstrated in previous article (Parenti, 2019a, 2019b, 2020, 2021a, 2021b; Parenti and Randall, 2020) checklists are useful tools for determining the status of the art of a particular taxonomic group or of a particular geographical area.

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