The ETYFish Project

COMMENTS:

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Subdivision BERYCIMORPHACEAE
-morpha, form or shape, i.e., having the form of a beryciform; *-aceae*, terminal ending for subdivisions in zoology

Order TRACHICHTHYIFORMES Roughies
5 families · 23 genera/subgenera · 74 species/subspecies

Family ANOPLOGASTRIDAE Fangtooths

***Anoplogaster* Günther 1859**
anoplos, unarmed; *gaster*, belly, allusion not explained; described from juveniles (adults were considered a distinct species until 1955), probably referring to black patch on belly formed by dark-colored cup-like scales (scales form on belly as the juvenile matures)

***Anoplogaster brachycera* Kotlyar 1986**
brachys, short; *ceratos*, horn, referring to short temporal and preopercular spines of young specimens

***Anoplogaster cornuta* (Valenciennes 1833)**
horned, referring to several long spines on head of juveniles (absent in adults, which were considered a distinct species until 1955)

Family DIRETMIDAE Spinyfins
3 genera · 4 species

***Diretmichthys* Kotlyar 1990**
Diretmus, type genus of family; *ichthys*, fish, "close in sound to the names of other genera, which stresses the unity of the family Diretmidae" (translation)

***Diretmichthys parini* (Post & Quéro 1981)**
in honor of ichthyologist Nikolai Vasil'evich Parin (1932-2012), Russian Academy of Sciences, whose work revealed the existence of unnamed diretmid species

***Diretmoides* Post & Quero 1981**
-oides, having the form of: *Diretmus*, its closest relative, a name the authors selected "in order to emphasize the homogeneity of the Diretmidae family" (translation)

***Diretmoides pauciradiatus* (Woods 1973)**
pauci-, few; *radiatus*, rayed, presumably referring to fewer dorsal-, anal- and pectoral-fin rays compared to *Diretmus argenteus*, its presumed congener at the time

***Diretmoides veriginae* Kotlyar 1987**
in honor of Inna Alexandrovna Verigina, curator of marine fishes, Zoological Museum, Moscow University, for helping Kotlyar over the course of many years

***Diretmus* Johnson 1864**
di-, two; *eretmon*, oar or paddle, presumably referring to bony appendages at root of ventral fins, "resembling in shape the wings of some insects"

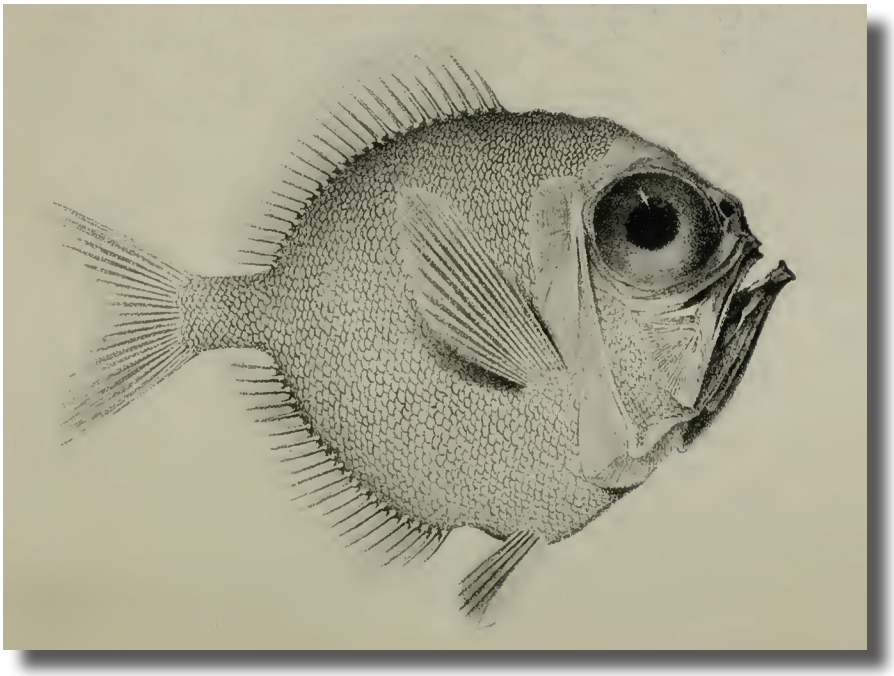
***Diretmus argenteus* Johnson 1864**
silvery, referring to its "silvery-grey colour, with darker grey near the dorsal and anal fins"

Family ANOMALOPIDAE Flashlight or Lanterneye Fishes
6 genera · 9 species

***Anomalops* Kner 1868**
anamalo-, anomalous or odd; *ops*, eye, referring to two gland-like organs beneath its eyes, "to which no analogy among fishes is known" (translation) [Kner was not aware that these glands were luminous]

***Anomalops katoptron* (Bleeker 1856)**
Greek for mirror, referring to inside of light organ enclosed by a guanine crystal reflector (although Bleeker was unaware of the specific structure and function of this reflector)

***Kryptophanaron* Silvester & Fowler 1926**
kryptos, hidden; *phaneron*, shining (authors say "lantern"), referring to phosphorescent organ under eye, which can be



Diretmus argenteus. From: Johnson, J. Y. 1864. Descriptions of three new genera of marine fishes obtained at Madeira. *Proceedings of the Zoological Society of London* 1863 (pt 3) (art. 8): 403-410, Pl. 36.

covered by a "membranous curtain"

***Kryptophanaron alfredi* Silvester & Fowler 1926**
in honor of American businessman Alfred Mitchell (1832-1911), who lived in Jamaica and provided collecting opportunities for Princeton biologist Ulrich Dahlgren (1870-1946), who found type specimen floating on the surface

***Parmops* Rosenblatt & Johnson 1991**
parme, a small shield; *ops*, eye, referring to first four infraorbital bones expanded laterally to form a shelf beneath the eye

***Parmops coruscans* Rosenblatt & Johnson 1991**
sparkling, referring to ovoid luminous organ below eye

***Parmops echinatus* Johnson, Seeto & Rosenblatt 2001**
spiny, referring to strongly ctenoid scales and well-developed spination on head and fin rays

***Photoblepharon* Weber 1902**
photo-, light; *blepharon*, eyelid; Weber was among the first scientists to understand that their eyes are luminous and that the fish uses its eyelids to blink these lights on and off at will

***Photoblepharon palpebratum* (Boddaert 1781)**
palpebra, eyelid, referring to skin folds that slide up to cover the eyes in the manner of an eyelid (blinking the luminous organs on and off, but this was unknown to Boddaert)

***Photoblepharon steinitzi* Abe & Haneda 1973**
in honor of the late Heinz Steinitz (1909-1971), marine biologist and herpetologist (Hebrew University, Jerusalem), who sent specimens to the senior author and suggested he describe it

***Phthanophaneron* Johnson & Rosenblatt 1988**
phthanos, early; *phaneron*, shining, referring to apparent primitiveness of the manner in which it occludes its continuously shining luminous organ

***Phthanophaneron harveyi* (Rosenblatt & Montgomery 1976)**
in honor of American zoologist Edmund Newton Harvey (1887-1959), a leading authority on bioluminescence, for his "pioneering" investigations of the biology of the Anomalopidae

***Protoblepharon* Baldwin, Johnson & Paxton 1997**
protos, first; *blepharon*, eyelid, referring to cladistic position of genus as first in the lineage of flashlight fishes that occlude the light organ with an erectable shutter

***Protoblepharon mccoskeri* Ho & Johnson 2012**
in honor of John E. McCosker (b. 1945), California Academy of Sciences, for his interest in and contribution to

our knowledge of flashlight fishes

***Protoblepharon rosenblatti* Baldwin, Johnson & Paxton 1997**
in honor of Richard H. Rosenblatt (1930-2014), Scripps Institution of Oceanography, a mentor to the second author and friend and valuable colleague to all three, for his contributions to the systematics and functional morphology of flashlight fishes, which have shed much light on the evolution and biology of the Anomalopidae

Family MONOCENTRIDAE Pinecone Fishes

***Cleidopus* De Vis 1882**
cleidos, key or latch; *pous*, foot, referring to how its ventral-fin spine can lock into place

***Cleidopus gloriamaris* De Vis 1882**
gloria, glory; *maris*, sea, i.e., Glory of the Sea, allusion not explained, perhaps echoing Houttuyn (1782), who described the similar *Monocentris japonica* and called it "the most remarkable fish which exists" (translation)

***Monocentris* Bloch & Schneider 1801**
mono-, one; *kentron*, thorn or spine, allusion not explained, perhaps referring to ventral fin, which consists of a single very strong rough spine

***Monocentris chrysadamas* Su, Lin & Ho 2022**
chrysos, gold; *adamas*, diamond, referring to yellowish body color in life and diamond-shaped scales; moreover, the meaning of these two words in Chinese refers to a famous agricultural variety of pineapple in Taiwan (type locality), which this fish resembles

***Monocentris japonica* (Houttuyn 1782)**
-*ica*, belonging to: described from off Nagasaki, Japan

***Monocentris neozelanica* (Powell 1938)**
-*ica*, belonging to: described from off New Zealand

***Monocentris reedi* Schultz 1956**
in honor of Edwyn P. Reed (1880-1966), Chief of the biological department, Dirección General de Pesca y Gaza (Valparaiso, Chile), who secured type and sent it to Schultz for identification

Family TRACHICHTHYIDAE Roughies
11 genera/subgenera · 55 species/subspecies

***Aulotrachichthys* Fowler 1938**
aulos, tube or flute, referring to "subcutaneous silvery-gray striated tubes and areas along lower surface of body" of *A. latus*; *Trachichthys*, type genus of family

***Aulotrachichthys argyrophanus* (Woods 1961)**
argyros, silver; *phanaios*, giving light, referring to silvery white reflections on cheeks, striated areas at base of pectoral fins, and along lower sides

***Aulotrachichthys atlanticus* (Menezes 1971)**
-*icus*, belonging to: referring to its known distribution in the Atlantic Ocean off southern Brazil

***Aulotrachichthys heptalepis* (Gon 1984)**
hepta, seven; *lepis*, scale, referring to 7-8 large ventral scutes between anus and anal-fin origin

***Aulotrachichthys latus* (Fowler 1938)**
broad, allusion not explained, perhaps referring to its "low, broadly convex" interorbital

***Aulotrachichthys novaezelandicus* (Kotlyar 1980)**
-*icus*, belonging to: New Zealand, described from New Zealand waters in the South Pacific

***Aulotrachichthys nyx* Su, Ho & Lin 2023**
named after Nyx, the Greek goddess of night, referring to its overall darker appearance than its congeners

***Aulotrachichthys prosthemius* (Jordan & Fowler 1902)**
forward, referring to anterior insertion of the vent, in front of the abdominal serrae and between the ventral fins

***Aulotrachichthys pulsator* Gomon & Kuiter 1987**
striker or beater, referring to its ability to make click-like sounds when disturbed

***Aulotrachichthys spiralis* Matsunuma, Ujihara & Endo 2023**
Neo-Latin for spiral, referring to the longitudinal helical ridges on the fin spines of large specimens

***Aulotrachichthys titan* Matsunuma, Ujihara & Endo 2023**
named for the Titans of Greek mythology, this species having a larger head and body compared with most congeners

***Gephyroberyx* Boulenger 1902**
gephyra, a bridge; *beryx*, a berycoid fish, presumably reflecting Boulenger's belief that it is a transitional or intermediate genus between *Trachichthys* and squirrelfishes (*Holocentrus* or *Myripristis*, both now placed in Holocentriformes), all of which were classified in one family (Berycidae) at the time

***Gephyroberyx darwinii* (Johnson 1866)**
in honor of Charles Darwin (1809-1889), an "accomplished man of science ... to whom naturalists are greatly indebted, amongst many other labours, for an excellent monograph on the Cirripedia [barnacles]"

***Gephyroberyx japonicus* (Döderlein 1883)**
-*icus*, belonging to Japan: described from Tokyo (but occurring elsewhere in the western and central North Pacific)

***Hoplostethus* Cuvier 1829**
hoplon, armor; *stethos*, breast or chest, referring to bony plates on abdomen, each ending in a retrorse spine

Subgenus ***Hoplostethus***

***Hoplostethus abramovi* Kotlyar 1986**
in honor of friend and fellow ichthyologist Alexey Aleksandrovich Abramov, for "many years of working together" (translation)

***Hoplostethus confinis* Kotlyar 1980**
bordering or adjoining, referring to its similarity to (or affinity with) *H. mediterraneus*

***Hoplostethus crassispinus* Kotlyar 1980**
crassus, thick; *spinus*, spine, referring to its thick dorsal-, anal- and pelvic-fin spines

***Hoplostethus druzhinini* Kotlyar 1986**
in honor of fisheries scientist Anatoly Dmitrievich Druzhinin (1926-1979), All-Russian Research Institute of Fisheries and Oceanography (VNIRO), for his work on fishes of the Indian Ocean (where this species occurs)

***Hoplostethus fedorovi* Kotlyar 1986**
in honor of Vladimir Vladimirovich Fedorov (1939-2011), Zoological Institute, St. Petersburg, a "great expert" (translation) on Pacific fishes

***Hoplostethus gigas* McCulloch 1914**
large, the largest species of the genus, reportedly reaching 525 mm SL

***Hoplostethus grandperrini* Roberts & Gomon 2012**
in honor of René Grandperrin, retired chief scientist of ORSTOM (Office de la Recherche Scientifique et Technique d'Outre-Mer), "ardent" fish researcher and leader of deepwater fish explorations off New Caledonia, for his "strong" support for collaborative fieldwork between French and New Zealand scientists

***Hoplostethus japonicus* Hilgendorf 1879**
-*icus*, belonging to Japan: known only from the western North Pacific of Japan

***Hoplostethus latus* McCulloch 1914**
wide, proposed as a deeper-bodied form of *H. mediterraneus*

***Hoplostethus marisrubri* Kotlyar 1986**
maris, sea; *rubrus*, red, referring to the Red Sea, where it is endemic

***Hoplostethus mediterraneus mediterraneus* Cuvier 1829**
referring to type locality in northwestern Mediterranean Sea (Nice, France)

***Hoplostethus mediterraneus intermedius* Hector 1875**
described as intermediate in characters between *Trachichthys australis* and *Optivus elongatus*, its presumed congeners at the time

***Hoplostethus mediterraneus sonodae* Kotlyar 1986**
in honor of Pearl Sonoda (1918-2015), California Academy of Sciences, who, along with Loren P. Woods, provided the data on which this taxon is based in 1973 [name proposed by Quéro in 1979 but without a description]

***Hoplostethus mediterraneus trunovi* Kotlyar 1986**
in honor of ichthyologist Ivan Andreevich Trunov (1936-2005), Atlantic Research Institute of Fisheries and Oceanography, for his many works on the fishes of the southeast Atlantic

***Hoplostethus melanopeza* Roberts & Gomon 2012**
melano-, black; *peza*, edge, referring to characteristic black edge on all fins of large individuals

***Hoplostethus mikhailini* Kotlyar 1986**
in honor of Soviet ichthyologist Sergey Vladimirovich Mikhailin (1943-1981), for his contribution to the study of fishes off southern Africa [biographical footnote: Mikhailin died while saving people from a burning train]

***Hoplostethus occidentalis* Woods 1973**
western, presumably referring to its more westerly distribution (e.g., Gulf of Mexico) compared to congeners that occur in the Western North Atlantic

***Hoplostethus pacificus* Garman 1899**
-icus, belonging to: the Pacific Ocean (specifically, the eastern Pacific, off the Galápagos Islands)

***Hoplostethus ravurictus* Gomon 2008**
ravus, grayish yellow; *rictus*, open mouth, referring to its pale buccal cavity, which contrasts with black lining of mouth found in most other species of the subgenus *Hoplostethus*

***Hoplostethus rifti* Kotlyar 1986**
named for the Russian fishery research vessel *Rift*, from which type was collected

***Hoplostethus robustispinus* Moore & Dodd 2010**
robustus, strong; *spinus*, spine, referring to its "extremely thickened" fin spines

***Hoplostethus roseus* Su, Lin & Ho 2022**
Latin for rose, referring to rosy coloration dorsally on body and on dorsal, pectoral and caudal fins of fresh specimens

***Hoplostethus vniro* Kotlyar 1995**
named for the All-Russian Research Institute of Fisheries and Oceanography (VNIRO), where Kotlyar worked for 20 years, which included expedition that collected type

Subgenus ***Aulohoplostethus* Fowler 1938**
a subgenus of *Hoplostethus* with *aulos*, tube or flute, referring to "silvery lateral tubelike striate areas" on chest, breast, prepectoral region, and along abdominal edge

***Hoplostethus metallicus* Fowler 1938**
like metal, referring to its shining metallic dusky sheen, described as "peculiar" and "likely luminous"

Subgenus ***Leiogaster* Weber 1913**
leios, smooth; *gaster*, belly, referring to rounded abdomen, compared to serrated abdomen of *Trachichthys* and most other species in *Hoplostethus*

***Hoplostethus cadenati* Quéro 1974**
in honor of French ichthyologist Jean Cadenat (1908-1992), Director, Marine Biological Section of the Institut Français d'Afrique Noire (Gorée, Senegal), who was the first to recognize this species as distinct

***Hoplostethus melanopterus* Fowler 1938**
melano-, black; *pterus*, fin, referring to its "dark to blackish" paired fins

***Hoplostethus melanopus* (Weber 1913)**
melano-, black; *pous*, foot, referring to its black ventral fins

***Hoplostethus rubellopterus* Kotlyar 1980**
rubellus, reddish; *pterus*, fin, referring to reddish coloration of pectoral fins

***Hoplostethus shubnikovi* Kotlyar 1980**
in honor of Dar Alexeevich Shubnikov, All-Russian Research Institute of Fisheries and Oceanography (VNIRO), for his help in Kotlyar's study of trachichthyids

***Hoplostethus tenebricus* Kotlyar 1980**
dark or gloomy, referring to its general coloration

***Hoplostethus mento* (Garman 1899)**
mentum, chin, allusion not explained, perhaps referring to "Snout longer than the eye, blunt, curving steeply to the crown, chin vertical in the anterior halves of the mandibles"

Subgenus ***Macrohoplostethus* Kotlyar 1986**
macro-, large, referring to size of *H. atlanticus* and greater value of certain meristic features (vertebrae, pyloric caeca)

***Hoplostethus atlanticus* Collett 1889**
-icus, belonging to: northeastern Atlantic Ocean, type locality (occurs throughout Atlantic and in Indo-West Pacific)

***Hoplostethus fragilis* (de Buen 1959)**
fragile or brittle, allusion not explained, perhaps referring to fragile bones ("formaciones oseas débiles") of the skull

***Optivus* Whitley 1947**
Latin for "chosen," allusion not explained nor evident, "possibly indicating that the name was selected at random" (Paulin & Roberts, *Rockpool Fishes of New Zealand*, 1992)

***Optivus agastos* Gomon 2004**
Greek for "near kinsman," referring to its similarity to and presumed close relationship with *O. elongatus*

***Optivus agrammus* Gomon 2004**
a-, without; *gramme*, line, referring to absence of stripes on caudal fin

***Optivus elongatus* (Günther 1859)**
referring to its more elongate body compared to *Trachichthys australis*, its presumed congener at the time

***Paratrachichthys* Waite 1899**
para, near, i.e., similar to *Trachichthys* but with the vent in front of, instead of behind, the abdominal scutes

***Paratrachichthys fernandezianus* (Günther 1887)**
-ianus, belonging to: Juan Fernández Islands of Chile, South Pacific Ocean, type locality (also occurs near San Felix Island and Easter Island)

***Paratrachichthys macleayi* (Johnston 1881)**
in honor of William John Macleay (1820-1891), Australian politician and zoologist, "to whom Australian naturalists are indebted for much of their knowledge of the Australian fishes"

***Paratrachichthys sajademalensis* Kotlyar 1979**
-ensis, suffix denoting place: Saya de Malha Bank, Indian Ocean, type locality

***Paratrachichthys trailli* (Hutton 1875)**
in honor of Charles Traill (1826-1891), Postmaster of Stewart Island, New Zealand (type locality), and amateur botanist-conchologist, who found the type specimen "dead and floating on the surface of the water" and presented it to the Otago Museum

***Parinoberyx* Kotlyar 1984**
Parin, named for ichthyologist Nikolai Vasil'evich Parin (1932-2012), Russian Academy of Sciences, who greatly assisted Kotlyar in his study of beryciform fishes; *beryx*, a beryciform fish, referring to the order in which this genus had originally been placed

***Parinoberyx horridus* Kotlyar 1984**
rough or bristly, referring to spinules on scales

***Sorosichthys* Whitley 1945**
sorosis, botanical term for any multiple fleshy fruit derived from the ovaries of multiple flowers (e.g., a pineapple), referring to its rough scales; *ichthys*, fish, reflecting Whitley's suggested vernacular name "Litte Pineapple Fish"

***Sorosichthys ananassa* Whitley 1945**
diminutive of *Ananas*, botanical genus of the pineapple, i.e., little pineapple, a Latin transliteration of Whitley's suggested vernacular name "Little Pineapple Fish"

***Trachichthys* Shaw 1799**
trachys, rough, referring to its rough-edged scales, hence the vernacular "roughy"; *ichthys*, fish

***Trachichthys australis* Shaw 1799**
southern, a fish of Australian waters