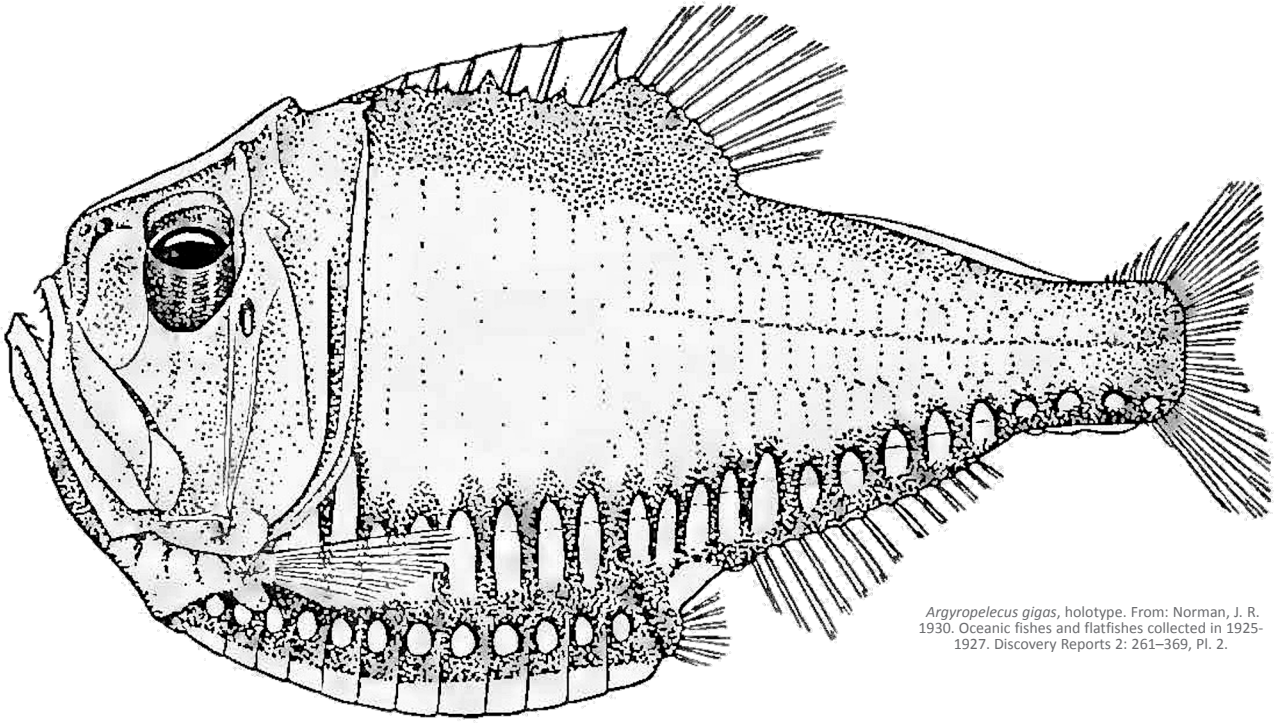
Order STOMIIFORMES

Marine Hatchetfishes

Family **STERNOPTYCHIDAE**

Duméril 1805



Argyropelecus gigas, holotype. From: Norman, J. R. 1930. Oceanic fishes and flatfishes collected in 1925-1927. Discovery Reports 2: 261–369, Pl. 2.

Subfamily STERNOPTYCHINAE

Duméril 1805

Argyropelecus

Cocco 1829

árgyros (Gr. ἄργυρος), white metal (i.e., silver); *pélekus* (Gr. πέλεκυς), battle axe, referring to silvery pigment and hatchet-shaped body of *A. hemigymnus*

***Argyropelecus aculeatus* Valenciennes 1850** Latin for sharp-pointed, referring to double row of spines along lower side of tail

***Argyropelecus affinis* Garman 1899** Latin for related, presumably referring to its similarity to, and previous misidentification as, *A. hemigymnus*

***Argyropelecus gigas* Norman 1930** *gígas* (Gr. γίγας), giant, the largest marine hatchetfish, described at 87 mm SL (but reaching 110 mm)

***Argyropelecus hemigymnus* Cocco 1829** *hemi-*, from *hḗmisys* (Gr. ἥμισυς), half; *gymnus*, from *gymnós* (Gr. γυμνός), bare or naked, allusion not explained, perhaps referring to phosphorescent spots that run along lower portion of body, which might create the impression that half of the otherwise scaleless body is scaled

***Argyropelecus lychnus* Garman 1899** Latin for a light or lamp (hung from a ceiling), referring to luminous organs, which Garman called "lanterns," on head and body (a feature of the genus) [often misspelled as *lynchus*]

***Argyropelecus olfersii* (Cuvier 1829)** in honor of German naturalist and diplomat Ignaz von Olfers (1793–1871), who discovered this species in the vicinity of the Azores

***Argyropelecus sladeni* Regan 1908** in honor of British echinoderm biologist Percy Sladen (1849–1900) and the Percy Sladen Memorial Trust, which funded Indian Ocean expedition that collected type

Polyipnus

Günther 1887

polý (Gr. πολύ), many; *ipnós* (Gr. ἰπνός), lantern, referring to luminous organs of *P. spinosus*, which have reached "an extraordinary degree of development as regards size and number"

***Polyipnus aquavitus* Baird 1971** Latinization of *akavit*, the Danish national drink, allusion not explained but possibly an indirect allusion to the research vessel *Galathea*, also Danish

***Polyipnus asper* Harold 1994** Latin for rough, referring to presence of denticles in the ACB (above anal fin) photophore scales

***Polyipnus asteroides* Schultz 1938**
-oides, Neo-Latin from *eἶdos* (Gr. εἶδος), form or shape: *aster*, star, referring to its star-like photophores

***Polyipnus bruuni* Harold 1994** in honor of the research vessel *Anton Bruun* (named for the Danish marine biologist, 1901–1961), which collected holotype during the International Indian Ocean Expeditions

***Polyipnus clarus* Harold 1994** Latin for bright or distinct, referring to its very light pigmentation compared with *P. asteroides*, with which it has been confused

***Polyipnus danae* Harold 1990** named to acknowledge the contributions of the Carlsberg Foundation *Dana* Expeditions (1928–1930) to deep-sea ichthyology; the *Dana* also collected holotype

***Polyipnus elongatus* Borodulina 1979** Latin for prolonged, referring to

Polyipnus laruei, holotype, 45.6 mm SL. Photo by William Larue, for whom it is named. From: Vourey, E., C. Dupoux and A. S. Harold. 2017. A new species of *Polyipnus* (Stomiiformes: Sternoptychidae) from the western South Pacific. Zootaxa 4263 (3): 567–577.

its elongate body shape

Polyipnus fraseri **Fowler 1934** in honor of marine biologist Charles McLean Fraser (1872–1946), University of British Columbia (Canada), "with pleasant memories of the Fourth Pacific Congress in Java 1929"

Polyipnus indicus **Schultz 1961** *-icus* (L.), belonging to: Western Indian Ocean, where it occurs

Polyipnus inermis **Borodulina 1981** Latin for unarmed, referring to its smooth photophore scales, i.e., without denticles

Polyipnus kiwiensis **Baird 1971** *-ensis*, Latin suffix denoting place: Kiwi, a common self-reference of residents of New Zealand, where this species is known from Red Mercury Island off the northeastern coast of North Island

Polyipnus laruei **Vourey, Dupoux & Harold 2017** in honor of fisherman William Larue, who collected and photographed holotype (found dead, floating on the surface)

Polyipnus laternatus **Garman 1899** *-atus* (L.), provided with: *laterna* (L.), lantern, lamp or torch (i.e., luminous organs), "very well developed in both disks and reflectors"

Polyipnus latirastrus **Last & Harold 1994** *latus* (L.), side or flank; *rastrus*, from *rastrum* (L.), comb or rake, referring to exceptionally long spine-like denticles on scales covering lateral surfaces of many photophores

Polyipnus limatulus **Harold & Wessel 1998** diminutive of *limatus* (L.), filed, polished or smoothed, referring to characteristic lack of denticles on scales covering ACB (above anal fin) photophores

Polyipnus matsubarai **Schultz 1961** in honor of "esteemed colleague" Kiyomatsu Matsubara (1907–1968), ichthyologist, Imperial Fisheries Institute (Tokyo), who loaned specimens for study (and translated Japanese papers for Schultz)

Polyipnus meteori **Kotthaus 1967** in honor of the German research vessel *Meteor*, which collected holotype

Polyipnus notatus **Harold, Kemp & Shore 2016** Latin for marked, referring to "distinctive" shape of lateral pigment bar, narrow and triangular

Polyipnus nuttingi **Gilbert 1905** in honor of American zoologist Charles Cleveland Nutting (1858–1927), member of the *Albatross* Hawaiian expedition in 1902, during which holotype was collected

Polyipnus oluolus **Baird 1971** Latinization of *oluolo*, Hawaiian for happy, allusion not explained nor evident

Polyipnus omphus **Baird 1971** Marathi word that roughly translates as "unwanted," allusion not explained, perhaps alluding to its extremely disjunct distribution: a few specimens north of Madagascar in the Indian Ocean and one specimen from the Central Pacific north of the Marquesas Islands

Polyipnus ovatus **Harold 1994** Latin for egg-shaped (i.e., oval), referring to its general body shape

Polyipnus parini **Borodulina 1979** in honor of ichthyologist Nikolai Vasil'evich Parin (1932–2012), Russian Academy of Sciences

Polyipnus paxtoni **Harold 1989** in honor of American-born Australian ichthyologist John R. Paxton (1938–2023), Australian Museum (Sydney), for his contributions to the study of oceanic fishes, and for providing collections of this species

Polyipnus polli **Schultz 1961** in honor of "esteemed colleague" Max Poll (1908–1991), Belgian ichthyologist, who loaned specimens to Schultz

Polyipnus ruggeri **Baird 1971** of *rugger*, a slang word for rugby football, in honor of New Zealand's national sport, referring to this species' only known area of occurrences off Wellington, New Zealand, and west of the Kermadec Islands

Polyipnus soelae **Harold 1994** of the Australian fishing vessel *Soela*, which collected many specimens of this species

Polyipnus spinifer **Borodulina 1979** *spinus* (L.), thorn; *-ifer*, from *fera* (L.), to have or bear, referring to spinulose scales of anal photophores

Polyipnus spinosus **Günther 1887** Latin for thorny, referring to pair of horizontal spines, pointing backwards, on the occiput

Polyipnus stereope **Jordan & Starks 1904** *stereós* (Gr. στερεός), solid, hard or three-dimensional; *opé* (Gr. ὀπή), opening or hole, hole or cavity, allusion not explained, perhaps referring to large cavity in skull above and behind eye (not mentioned in text but clearly seen in illustration)

Polyipnus surugaensis **Aizawa 1990** *-ensis*, Latin suffix denoting place: Suruga Bay, Japan, only known area of occurrence

Polyipnus tridentifer **McCulloch 1914** *tri-* (L.), three, and *dentatus* (L.), toothed; *-ifer*, from *fera* (L.), to have or bear, referring to three very large spines on each side of the post-temporals

Polyipnus triphanos **Schultz 1938** *tri-* (L.), three; *phanós* (Gr. φανός), light or torch, referring to characteristic position of the three supra-abdominal photophores (last or third organ above middle organ by a distance equal to its width; first organ extends above second organ a distance equal to 1.5–2.0 times its width)

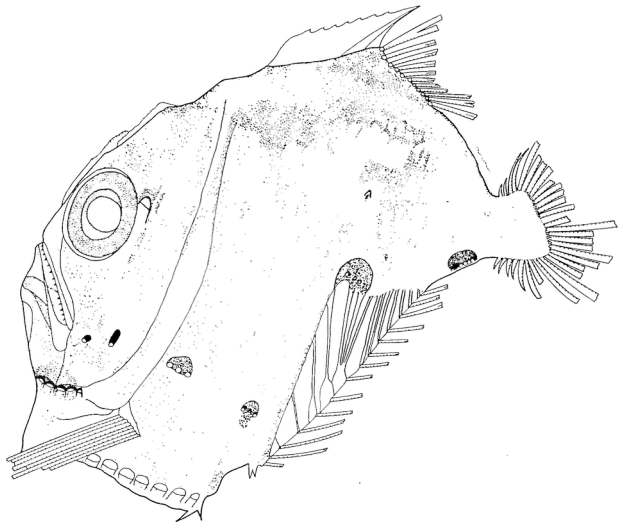
Polyipnus unispinus **Schultz 1938** *uni-*, from *unus* (L.), one; *spinus* (L.) spine, referring to its single post-temporal spine

Sternoptyx

Hermann 1781

stérnon (Gr. στέρνον), breast or chest (especially of men); *ptýx* (πτύξ), layer or fold, referring to fold of transparent skin on breast of *S. diaphana*

Sternoptyx diaphana **Hermann 1781** from *diaphanḗs* (Gr. διαφανής), translucent or transparent, referring to pellucid fold of skin on breast



Sternoptyx pseudobscura. From: Baird, R. C. 1971. The systematics, distribution, and zoogeography of the marine hatchetfishes (family Sternoptychidae). Bulletin of the Museum of Comparative Zoology 142 (1): 1–128.

***Sternoptyx obscura* Garman 1899** Latin for dark, presumably referring to upper half of body "clouded brown or blackish"

***Sternoptyx pseudobscura* Baird 1971** *pseudo-*, from *pseúdēs* (Gr. ψεύδης), false, i.e., although it may closely resemble *S. obscura*, such an appearance is false

***Sternoptyx pseudodiaphana* Borodulina 1977** *pseudo-*, from *pseúdēs* (Gr. ψεύδης), false, referring to its close relationship to *S. diaphana*

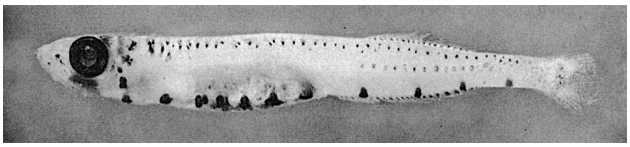
Subfamily MAUROLICINAE
Gill 1885

Araiophos
Grey 1961

araiós (Gr. ἀραιός), thin, slender or weak (Grey says "few"); *phős (*Gr. φῶς), light, referring to reduced number of photophores compared with other maurolicine genera

***Araiophos eastropas* Ahlstrom & Moser 1969** derived from name of expedition, EASTROPAC (Eastern Tropical Pacific Ocean Survey Cruise), during which type material was collected

***Araiophos gracilis* Grey 1961** Latin for thin or slender, referring to its "elongate, slender" body



Araiophos eastropas, holotype, male, 37.3 mm SL. Photo by George Mattson. From: Ahlstrom, E. H. and H. G. Moser. 1969. A new gonostomatid fish from the tropical eastern Pacific. Copeia 1969 (3): 493–500.

Argyripnus
Gilbert & Cramer 1897

árgyros (Gr. ἄργυρος), white metal (i.e., silver), presumably referring to primary body coloration in life of *A. ephippiatus*; *ipnós* (Gr. ἰπνός), lantern, referring to numerous photophores on body

***Argyripnus atlanticus* Maul 1952** *-icus* (L.), belonging to: Atlantic Ocean, referring to type locality at Funchal Harbor, Madeira, in the eastern Atlantic

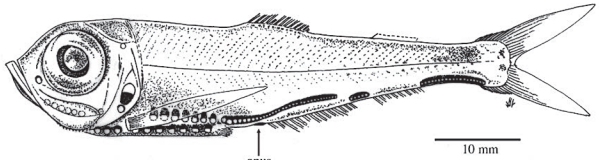
***Argyripnus boreopacificus* Prokofiev 2017** *-icus* (L.), belonging to: *borealis* (L.), northern, referring to its distribution in the northwestern Pacific Ocean (also, most northern record of this genus in the Pacific)

***Argyripnus brocki* Struhsaker 1973** in honor of the late Vernon E. Brock (1912–1971), American biologist, for his contributions to marine biology and his encouragement and support of Struhsaker's studies of Hawaiian bathyal fishes (see essay, next page)

***Argyripnus electronus* Parin 1992** *élektron* (Gr. ἤλεκτρον), amber, referring to unofficial name used by Russian fishermen at seamount where it was collected, *gora Yantarnaya* (Amber seamount); also describes its general coloration, "reminiscent of light and semitransparent Baltic amber"

***Argyripnus ephippiatus* Gilbert & Cramer 1897** Latin for saddled, referring to black saddle-shaped markings behind head

***Argyripnus hulleyi* Quéro, Spitz & Vayne 2009** in honor of Percy (mis-stated as Paul) Alexander Hulley (b. 1941), Curator of Fishes, Iziko South African Museum, for assistance to the authors



Argyripnus hulleyi, holotype, 57 mm SL. From: Quéro, J.-C., J. Spitz and J.-J. Vayne. 2009. *Argyripnus hulleyi*: une nouvelle espèce de Sternoptychidae (Stomiiformes) de l'île de la Réunion (France, océan Indien). Cybium 33 (1): 39–43.

***Argyripnus iridescens* McCulloch 1926** Neo-Latin for iridescent or rainbow-like, referring to iridescent colors on otherwise black occiput and portions of opercles, throat and chest

***Argyripnus pharos* Harold & Lancaster 2003** from *Pháros* (Gr. Φάρος), the lighthouse of Alexandria (but here meaning lighthouse in general), referring to dorsally displaced elements of VAV (ventral, pelvic-fin to anal-fin base) + ACA (above anal photophores) photophore cluster

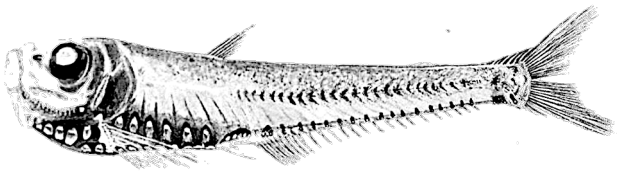
***Argyripnus scharpfi* Prokofiev 2023** in honor of Christopher Scharpf (b. 1961), author of The ETYFish Project

Danaphos
Bruun 1931

Dana, Danish fishery research vessel that collected holotype of *D. ateroscopus*; *phős (*Gr. φῶς), light, referring to its "large and conspicuous" photophores

***Danaphos asteroscopus* Bruun 1931** *astḗr (Gr. ἀστήρ), star*; *skopós* (Gr. σκοπός), looker, contemplator or viewer, referring to its telescopic (turned upward) eyes

***Danaphos oculatus* (Garman 1899)** Latin for eyed, allusion not explained, probably referring to its large eyes, "nearly two fifths of the length of the head"



Danaphos asteroscopus, holotype, 41 mm TL. From: Bruun, A. F. 1931. On some new fishes of the family Gonostomatidae. Preliminary note. Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening, Kjøbenhavn 92: 285–291, Pl. 8.

Maurolicus
Cocco 1838

etymology not explained, presumably a Latinization of *Maurolico*, honoring Italian mathematician-astronomer Francesco Maurolico (1494–1575), who taught and died in Messina, where holotype of *M. amethystinopunctatus* originated

***Maurolicus amethystinopunctatus* Cocco 1838** *amethystino*, masculine singular of *amethystinus* (L.), amethyst; *punctatus* (L.), spotted, presumably referring to small photophores imbedded in skin of body, tail and lower sides of head

***Maurolicus australis* Hector 1875** Latin for southern, dubbed the "Southern Pearlside" by Hector, referring to New Zealand, type locality

***Maurolicus breviculus* Parin & Kobyliansky 1993** Latin for somewhat short, referring to small size compared to congeners

***Maurolicus imperatorius* Parin & Kobyliansky 1993** *-ius* (L.), pertaining to: Emperor submarine ridge, Central North Pacific, type locality

***Maurolicus inventionis* Parin & Kobyliansky 1993** *-is*, genitive singular of: *inventio* (L.), invention or discovery, referring to Discovery Seamount (named for the research vessel *Discovery*), southeast Atlantic, type locality

***Maurolicus japonicus* Ishikawa 1915** *-icus* (L.), belonging to: Japan, referring to its occurrence in the Japan Sea and Pacific coast of Japan

***Maurolicus javanicus* Parin & Kobyliansky 1993** *-icus* (L.), belonging to: Java, referring to type locality off the coast of Java in the Eastern Indian Ocean

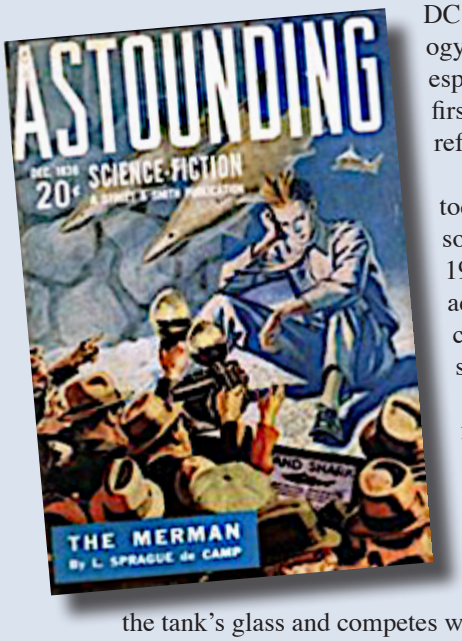
***Maurolicus kornilovorum* Parin & Kobyliansky 1993** *-orum* (L.), commemorative suffix, plural: in honor of fisheries scientists Nikolay Pavlovich Kornilov and his wife Galina Nikolayevna Kornilova, for their help receiving samples, organizing research expeditions, and sharing data on the ecology and distribution of deep-sea fishes

***Maurolicus mucronatus* Klunzinger 1871** Latin for pointed, referring

Vernon Brock, biologist and "Merman"

In 1938, Vernon E. Brock (1912-1971) was a Fishery Biologist in the Department of Research of the Fish Commission of Oregon. Little did he know that Vernon Brock was also a male mermaid in "The Merman," a 1938 short story by science-fiction writer L. Sprague de Camp (1907-2000), published in the December 1938 issue of *Astounding Science-Fiction*.

Brock achieved professional fame during his tenure with Department of Fish and Game for the Territory (later state) of Hawaii (1944–1959), as Director of the Bureau of Commercial Fisheries Biological Laboratory, Washington, DC (1959-1963), and then as Director of the Hawaii Institute of Marine Biology (1963–1971). He was considered the leading authority on Pacific fisheries, especially the biology of tuna. In 1960, he published, with William Gosline, the first edition of *Handbook of Hawaiian Fishes*, which continues to be a standard reference today. He also published on reptiles and birds.



Eight fish species have been named after Brock; two are considered valid today: a pipefish (Syngnathidae), *Halicampus brocki* (Herald 1953), from the southeast Indian and western Pacific oceans, and *Argyripnus brocki* Struhsaker 1973, a deepsea bristlemouth (Sternoptychidae) from the Hawaiian Islands. In addition, the labrid blenny genus *Brockius* Hubbs 1953 is named for Brock, who collected the type species, *B. striatus*, and developed a collecting technique to sample its habitat (rocky bottom slightly below low-tide line).

Apparently unbeknownst to Brock, L. Sprague de Camp created a second, fictional Vernon Brock — an aquarist at the New York City Aquarium who, in addition to his normal duties, was working on an organic compound to turn vertebrate lungs into gills. During an experiment with alligators, the fictional Brock breaks a flask and inhales vapors from the compound. Overcome, he falls into a shark tank, whereupon he discovers he can now "breathe" water but not air. Unable to leave the tank, he uses a remora to scrawl messages on the tank's glass and competes with the sharks for food. He grows delusional because of the "constant muscular effort required to work his lungs." Believing he is a fish and that an aquarium visitor wants to eat him, he attacks the glass with a pocket knife until it gives way. Brock recovers in the hospital, but learns that the Aquarium is facing a lawsuit from a man who nearly drowned from the water Brock let out of the tank. Brock convinces the man to drop the suit. The man, a former circus acrobat, agrees to use Brock's discovery to exhibit himself for money as a Merman.

Science-fiction scholars say the story is a forerunner to the concept of genetic engineering, a major theme in subsequent science-fiction tales. Others credit the story as a possible influence on water-breathing comic book superheroes such as Sub-Mariner and Aquaman. L. Sprague de Camp was reportedly mortified to learn that a real Vernon Brock existed who actually worked with fishes. According to one account, de Camp worried that the real Brock would sue for defamation. Alas, he did not. Upon learning of his water-breathing fictional alter ego, Vernon Brock the man — not the Merman — simply laughed.

to slightly protruding lower jaw, which forms a small tip (Klunzinger said name refers to its "small chin" [translation], presumably the same feature)

***Maurolicus muelleri* (Gmelin 1789)** in honor of Danish naturalist Otto Friedrich Müller (1730–1784), who briefly described this species in his *Zoologiae Danicae Prodromus* (1766) but did not provide a Linnaean name

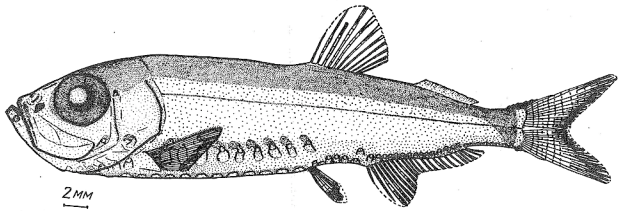
***Maurolicus parvipinnis* Vaillant 1888** *parvus* (L.), small; *pinnis*, Neo-Latin adjective of *pinna* (L.), fin, i.e., finned, presumably referring to smaller number of dorsal- and anal-fin rays compared with *M. amethystinopunctatus*

***Maurolicus rudjakovi* Parin & Kobyliansky 1993** in honor of Yuri Alexandrovich Rudjakov (b. 1938), researcher of suprabenthic plankton and participant of cruises to Nazca and Sala y Gomez ridges, Eastern South Pacific, where this species occurs

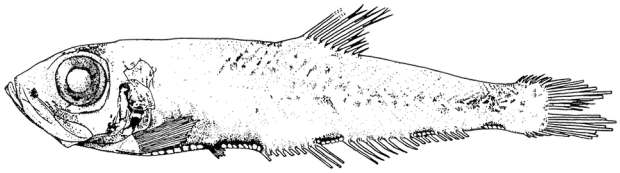
***Maurolicus stehmanni* Parin & Kobyliansky 1993** in honor of German ichthylogist Matthias Stehmann (b. 1943), Institut für Seefischerei (Hamburg), who participated with the authors in a number of expeditions and helped to collect holotype

***Maurolicus walvisensis* Parin & Kobyliansky 1993** *-ensis*, Latin suffix denoting place: Port of Walvis Bay, Namibia, where it is common

***Maurolicus weitzmani* Parin & Kobyliansky 1993** in honor of American ichthyologist Stanley H. Weitzman (1927–2017), National Museum of Natural History, Smithsonian Institution (Washington, D.C.), for his 1974 monograph on sternoptychid osteology and phylogeny



Maurolicus rudjakovi, holotype, 59.2 mm SL. From: Parin, N. V. and S. G. Kobyliansky. 1993. Review of the genus *Maurolicus* (Sternoptychidae, Stomiiformes), with re-establishing validity of five species considered junior synonyms of *M. muelleri* and descriptions of nine new species. Trudy Instituta Okeanologii Imeni P.P. Shirshova (Transactions of the P.P. Shirshov Institute of Oceanology) 128: 69–107.



Sonoda paucilampa, holotype, 67 mm SL. From: Grey, M. 1960. *Sonoda paucilampa*, a new gonostomatid fish from the Western Atlantic. Fieldiana Zoology 39 (42): 465–471.

Sonoda

Grey 1959

named for Pearl Sonoda (1918–2015), then Assistant in the Division of Fishes, Chicago Natural History Museum, where Grey worked

***Sonoda megalophthalma* Grey 1959** big-eyed, from *mégas* (Gr. μέγας), big, and *ophthalmós* (Gr. ὀφθαλμός), eye referring to its "very large" eyes

***Sonoda paucilampa* Grey 1960** *paucus* (L.), scanty or few; *lampás* (Gr. λαμπάς), lamp, referring to "greatly reduced number" of AC (anal-fin base to caudal-fin base) photophores compared to *S. megalophthalma*

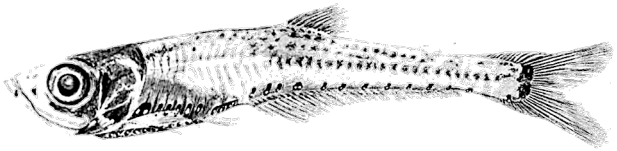
Thorophos

Bruun 1931

Thor, the first Danish research ship specially equipped for scientific work on the oceans; *phŏs (*Gr. φῶς), light, referring to "large and conspicuous" photophores of *T. euryops*

***Thorophos euryops* Bruun 1931** *eurýs* (Gr. εὐρύς), wide or broad; *ṓps* (Gr. ὤψ), eye, referring to its large eyes

***Thorophos nexilis* (Myers 1932)** Latin for tied up or interwoven, presumably referring to photophores on trunk, which are arranged in a "close set row with a few breaks"



See *Danaphos asteroscopus* caption for source.

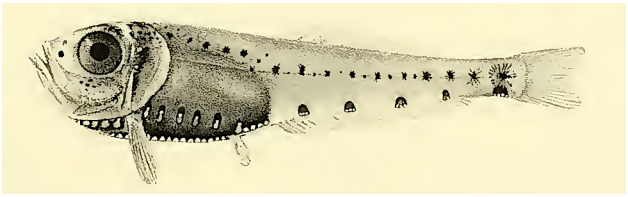
Valenciennellus

Jordan & Evermann 1896

-ella (L.) diminutive connoting endearment: in honor of French zoologist Achille Valenciennes (1794–1865), author of most of *Histoire Naturelle des Poissons* (1828–1850), "a noble work which is the foundation of modern ichthyology"

***Valenciennellus carlsbergi* Bruun 1931** in honor of the Carlsberg Foundation, which financed the *Dana* fishery research cruise during which holotype was collected

***Valenciennellus tripunctulatus* (Esmark 1871)** *tri-* (L.), three; *punctulatus*, diminutive of *punctum* (L.), spot, i.e., having tiny spots, referring to luminous organs above anal-fin base, each with three silver little spots



Probably first-published image of holotype of *Valenciennellus tripunctulatus*. From: Lütken, C. F. 1892. Spolia Atlantica. Scopelini Musei zoologici Universitatis Hauniensis. Bidrag til Kundskab om det aabne Havs Laxesild eller Scopeliner. Med et tillaeg om en anden pelagisk fiskeslaegt. Mémoires de l'Académie Royale des Sciences et des Lettres de Danemark, Copenhague (Sér. 6) 7 (6): 221–297, Pls. 1–3.