

The ETYFish Project

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COMMENTS: 

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Order BELONIFORMES Needlefishes

6 families · 44 genera/subgenera · 313 species/subspecies

Suborder ADRIANICHTHYOIDEI

Family ADRIANICHTHYIDAE

3 genera · 42 species

Subfamily Oryziinae Medakas or Ricefishes

***Nasutoryzias* Roberts 2021**

nasutus, long-snouted, referring to upper and lower jaws equally projecting when mouth is closed; *Oryzias*, superficially similar genus

***Nasutoryzias ataranensis* Roberts 2021**

-*ensis*, suffix denoting place: Ataran Chaung, a large tidal creek, lower Salween basin, Myanmar, type locality

***Oryzias* Jordan & Snyder 1906**

Greek for rice, referring to occurrence of *O. latipes* in flooded rice fields of Japan, especially during the summer

***Oryzias andrewi* Roberts, Chakraborty, Yardi & Mukherjee 2021**

in honor of ornamental-fish collector Andrew Arunava Rao, Malabar Tropicals, Calcutta, who collected type specimens and made them available to the authors

***Oryzias asinua* Parenti, Hadiaty, Lumbantobing & Herder 2013**

named for Sungai Asinua, Tenggara, Sulawesi, Indonesia, type locality

***Oryzias bonneorum* Parenti 2008**

-*orum*, commemorative suffix, plural: in honor of Cornelis Bonne (1890-1948) and Johanna Bonne-Wepster (1892-1978), husband-and-wife entomologists who worked throughout Indonesia in the early 20th century and collected fish (including type of this one) to determine if they were eating mosquito larvae

***Oryzias carnaticus* (Jerdon 1849)**

-*icus*, belonging to: the Carnatic coast, referring to distribution in South India (also occurs in Andaman Islands, Sri Lanka and Bangladesh)

***Oryzias celebensis* (Weber 1894)**

-*ensis*, suffix denoting place: Celebes (now Sulawesi), Indonesia, where type locality (Maros River near Maros) is situated (also occurs in East Timor)

***Oryzias curvinotus* (Nichols & Pope 1927)**

curvis, curved or bent; *notus*, back, allusion not explained, perhaps referring to flat head curving or bending upwards to slightly elevated back, which then slopes down towards caudal peduncle

***Oryzias dancena* (Hamilton 1822)**

latinization of *Dhankhena*, local name for this species in India (also occurs in Sri Lanka, Bangladesh and Myanmar)

***Oryzias dopingdopingensis* Mandagi, Mokodongan, Tanaka & Yamahira 2018**

-*ensis*, suffix denoting place: Doping-doping River, Sulawesi, Indonesia, type locality

***Oryzias eversi* Herder, Hadiaty & Nolte 2012**

in honor of aquarist Hans-Georg Evers (b. 1964), who discovered this ricefish while exploring fishes and habitats in Sulawesi

***Oryzias hadiatyae* Herder & Chapuis 2010**

in honor of ichthyologist Renny Kurnia Hadiaty (1960-2019), Indonesian Institute of Sciences, who “contributed significantly to the exploration of fish diversity in the Malili Lakes area” of Sulawesi; she also discovered this ricefish in remote Lake Masapi

***Oryzias haugiensis* Roberts 1998**

-*ensis*, suffix denoting place: Hau Giang, Vietnamese name for the Bassac River (type locality), one of the two large distributaries of the Mekong River in the Mekong delta

***Oryzias hubbsi* Roberts 1998**

in honor of ichthyologist Carl L. Hubbs (1894-1979), who collected this species in 1929 and recognized it as new

***Oryzias javanicus* (Bleeker 1854)**

Javanese, referring to Java, Indonesia, where type locality (Panimbang River) is situated (but occurs throughout southeast Asia, including peninsular Thailand, Malaysia, Singapore, and Borneo)

***Oryzias kalimpaaensis* Gani, Suhendra, Herder, Schwarzer, Möhring, Montenegro, Herjayanto & Mokodongan 2022**

-ensis, Latin suffix denoting place: Lake Kalimpa'a, Sulawesi Tengah, Indonesia, type locality

***Oryzias landangiensis* Utama & Yamahira 2022**

-ensis, Latin suffix denoting place: Landangi Hamlet, Matano Village, Nuha subdistrict, Luwu Timur Regency, Sulawesi Selatan, Indonesia, type locality

***Oryzias latipes* (Temminck & Schlegel 1846)**

latus, broad; *pes*, foot, referring to longer anal fin compared to presumed congeners in *Poecilia* (Cyprinodontiformes: Poeciliidae)

***Oryzias loxolepis* Kobayashi, Mokodongan & Yamahira 2023**

loxos, oblique; *lepis*, scale, referring to its diagonally aligned scales

***Oryzias luzonensis* (Herre & Ablan 1934)**

-ensis, suffix denoting place: Luzon Island, Philippines, where it is endemic

***Oryzias marmoratus* (Aurich 1935)**

marbled, referring to sides “more or less marbled” (translation)

***Oryzias matanensis* (Aurich 1935)**

-ensis, suffix denoting place: Lake Matano, Sulawesi, Indonesia, where it is endemic

***Oryzias mekongensis* Uwa & Magtoon 1986**

-ensis, suffix denoting place: Mekong River basin of Thailand, type locality (also occurs in Laos and Kampuchea)

***Oryzias minutillus* Smith 1945**

diminutive of *minutus*, small, attaining full maturity when only 17 mm long, smallest member of genus

***Oryzias nebulosus* Parenti & Soeroto 2004**

misty or foggy, referring to how this species was previously unrecognized among the melanistic *Oryzias* in Lake Poso, Sulawesi Tengah, Indonesia

***Oryzias nigrimas* Kottelat 1990**

niger, black; *mas*, males, referring to dark nuptial coloration of males

***Oryzias orthognathus* Kottelat 1990**

orthos, right; *gnathos*, jaw, referring to upturned mouth, forming a sharp angle between lower jaw and body axis

***Oryzias pectoralis* Roberts 1998**

pectoral, referring to black spot at base of pectoral fin

***Oryzias profundicola* Kottelat 1990**

profundus, deep; *cola*, dweller or inhabitant, referring to preferred habitat below 1.5 m, unusual for ricefishes, which usually occur close to surface

***Oryzias sakaizumii* Asai, Senou & Hosoya 2012**

in honor of molecular geneticist Mitsuri Sakaizumi, Niigata University, who “pioneered in and contributed to the field of molecular phylogenetic study of Japanese ricefishes”

***Oryzias sarasinorum* (Popta 1905)**

-orum, commemorative suffix, plural: in honor of Swiss naturalist-ethnologist Paul Sarasin (1856-1929) and his second cousin, naturalist Fritz Sarasin (1859-1942), who collected type

***Oryzias setnai* (Kulkarni 1940)**

in honor of Sam Bomansha Setna (1895-1969), Fisheries Officer, Bombay, who provided “encouragement, ready help, valuable criticisms and suggestions” during Kulkarni’s completion of the fish’s description

***Oryzias sinensis* Chen, Uwa & Chu 1989**

-ensis, suffix denoting place: Sinica (China), proposed as a subspecies of the Japanese *O. latipes* occurring in China (also occurs in Korea, Laos, Việt Nam and Thailand; introduced in Europe)

***Oryzias soerotoi* Mokodongan, Tanaka & Yamahira 2014**

in honor of ichthyologist Bambang Soeroto (b. 1929), Sam Ratulangi University (Indonesia), for his “enduring contributions to the exploration of fish diversity in Sulawesi”

***Oryzias songkhramensis* Magtoon 2010**

-ensis, suffix denoting place: Songkhram River basin of Thailand, where it occurs; also occurs in Mekong River basin in northeast Thailand and central Laos



Adrianichthys roseni. From: Parenti, L. R. and B. Soeroto. 2004. *Adrianichthys roseni* and *Oryzias nebulosus*, two new ricefishes (Atherinomorpha: Beloniformes: Adrianichthyidae) from Lake Poso, Sulawesi, Indonesia. *Ichthyological Research* v. 51 (no. 1): 10-19.

***Oryzias timorensis* (Weber & de Beaufort 1922)**

-ensis, suffix denoting place: Timor Island, Indonesia, where it is endemic

***Oryzias uwai* Roberts 1998**

in honor of the late Hiroshi Uwa (1942-1993), Shinshu University (Matsumoto, Japan), a “pioneer” in the study of ricefish chromosomes

***Oryzias wolasi* Parenti, Hadiaty, Lumbantobing & Herder 2013**

named for District of Wolasi, Regency of Konawe Selatan, Sulawesi, Indonesia, type locality

***Oryzias woworae* Parenti & Hadiaty 2010**

in honor of carcinologist Daisy Wowor (b. 1956), Museum Zoologicum Bogoriense (Bogor, Indonesia), who collected type and “had the foresight to take color photographs of the fish alive”

Subfamily Adrianichthyinae Duckbilled Fishes

***Adrianichthys* Weber 1913**

Adrian, in honor of Dutch Christian missionary and linguist Nicolaus Adriani (1865-1926), who collected natural history specimens in Poso, Sulawesi, and who “was kind enough to have the missionary Mr. A. Kruyt [see *A. kruyti*] at Lake Poso procure the fish for me” (translation) fish; *ichthys*, fish

***Adrianichthys kruyti* Weber 1913**

in honor of Albert Christian Kruyt (1889-1949), Dutch medical missionary at Poso, Sulawesi, type locality, who procured type for Weber

***Adrianichthys oophorus* (Kottelat 1990)**

oon, egg; *phorus*, to carry or bear, the only species of the family known to develop an abdominal cavity to carry its eggs, 2.0-2.1 mm in diameter, with almost fully developed embryos (when seen from below, eggs are almost entirely covered by pelvic fins)

***Adrianichthys poptae* (Weber & de Beaufort 1922)**

in honor of Canna Maria Louise Popta (1860-1929), the “indefatigable ichthyologist” of the at the Rijksmuseum van Natuurlijke Historie (Leiden, Netherlands), where she was Curator of Reptiles, Amphibians and Fishes

***Adrianichthys roseni* Parenti & Soeroto 2004**

in honor of the late Donn E. Rosen (1929-1986), American Museum of Natural History, for his “enthusiasm, generosity, and enduring contributions to atherinomorph systematics”

Suborder EXOCOETOIDEI

Family EXOCOETIDAE Flyingfishes

15 genera/subgenera · 91 species/subspecies

Subfamily Fodiatorinae

***Fodiator* Jordan & Meek 1885**

one who stabs, presumably referring to long, slender and pointed snout of *F. acutus*, the lower jaw much projecting

***Fodiator acutus* (Valenciennes 1847)**

sharp, referring to long, slender and pointed snout, the lower jaw much projecting

***Fodiator rostratus* (Günther 1866)**

beaked, referring to its “much produced” snout

Subfamily Parexocoetinae

***Parexocoetus* Bleeker 1865**

para-, near, referring to similarity to, and previous placement of *P. mento* in, *Exocoetus*

***Parexocoetus brachypterus* (Richardson 1846)**

brachy, short; *pterus*, fin, presumably referring to shorter pectoral fins compared to *Exocoetus mesogaster*, its presumed congener at the time

***Parexocoetus hillianus* (Gosse 1851)**

-ianus, belonging to: Jamaican magistrate and amateur naturalist Richard Hill (1795-1872), “a gentlemen, whose scientific attainments are equalled only by his urbane manners, and truly estimable character” (described from Jamaica but no types known)

***Parexocoetus mento* (Valenciennes 1847)**

mentum, chin, referring to bony triangular knob at symphysis of lower jaw, which projects beyond upper jaw

Subfamily Exocoetinae

***Exocoetus* Linnaeus 1758**

ex-, out of; *koitos*, bed, i.e., sleeping (or lying) outside, reportedly referring to belief held by early Mediterranean sailors that flyingfish left the ocean at night to sleep on the shore, however, name dates to Pliny (*Naturalis Historia*), who appears to have described a freshwater fish, and to Aelianus (*De Natura Animalium*), a Roman author who applied the name to a fish he called a mullet but was probably a blenny that grazes on algae outside the water on exposed rocks of the tidal zone and may sometimes be stranded when the tide goes out; Artdi applied “*exocoetus*” to flyingfishes for reasons unknown, although it could be said that flyingfishes have a mullet-like shape, are seen at the surface like mullets, and commonly strand themselves on boats (but not on shore)

***Exocoetus gibbosus* Parin & Shakhovskoy 2000**

humpbacked, referring to body form, especially of juveniles

***Exocoetus mesogaster* Bloch 1795**

mesos, middle; *gaster*, belly, referring to insertion of ventral fins midway between pupil and last caudal vertebra

***Exocoetus monocirrus* Richardson 1846**

mono-, one; *cirrus*, curl or tendril, referring to single barbel on chin

***Exocoetus obtusirostris* Günther 1866**

obtusus, blunt; *rostris*, snout, referring to shorter snout compared to *E. evolans* (= *volitans*)

***Exocoetus peruvianus* Parin & Shakhovskoy 2000**

-ianus, belonging to: occurring in waters off Peru (and Ecuador)

***Exocoetus volitans* Linnaeus 1758**

flying, referring to how it propels itself out of the water and appears to fly (actually, it glides)

Subfamily Cypselurinae

***Cheilopogon* Lowe 1841**

cheilos, lip; *pogon*, beard, referring to “cirrate appendage” on lower jaw of *Cypselurus pulchellus* (= *Cheilopogon pinnatibarbatus*), “like a leathern flap or apron, torn irregularly at the bottom into strips or thongs”

Subgenus ***Cheilopogon***

***Cheilopogon altipennis* (Valenciennes 1847)**

altus, high; *pennis*, fin, referring to its greatly developed dorsal fin, “whose rays exceed the height of the trunk measured beneath them” (translation)

***Cheilopogon pinnatibarbatus pinnatibarbatus* (Bennett 1831)**

pinnatus, winged, referring to wing-like pectoral fins; *barbatus*, bearded, referring to fringed chin barbel, presumably of a juvenile

***Cheilopogon pinnatibarbatus californicus* (Cooper 1863)**

Californian, described as the “Californian Flying-Fish,” found in “great numbers” during the summer south of Point Conception (California, USA)

***Cheilopogon pinnatibarbatus japonicus* Franz 1910**

Japanese, referring to type locality, Oyama, Sagami Bay, Japan (types now lost, destroyed in World War II)

***Cheilopogon pinnatibarbatus melanocercus* (Ogilby 1885)**

melanos, black; *cercus*, tail, referring to black caudal fin

Subgenus ***Abeichthys* Parin 1961**

Abe, in honor of ichthyologist Tokiharu Abe (1911-1996), Zoological Institute of Tokyo University, who made detailed studies of the flyingfishes of Japan and was the first to call attention to the special position occupied by *C. agoo* in the

taxonomy of the family; *ichthys*, fish

***Cheilopogon agoo* (Temminck & Schlegel 1846)**

vernacular name for this species in 19th-century Japan

***Cheilopogon rapanouiensis* Parin 1961**

-*ensis*, suffix denoting place: Rapa Nui (Easter Island), near where type was collected

Subgenus ***Amustotrogon* Shakhovskoy & Parin 2019**

amustacas, without barbels; *perotrogon*, a toothed creature, referring to absence of barbels in juveniles and presence of strong teeth on jaws

***Cheilopogon formosus formosus* (Kotthaus 1969)**

pretty, presumably referring to juvenile coloration (e.g., dark bands on yellow-brown body, brown-black area near posterior margin of pale pectoral fins)

***Cheilopogon formosus andamanicus* Shakhovskoy & Parin 2019**

-*icus*, belonging to: referring to distribution mainly in the Andaman Sea

***Cheilopogon formosus pseudospilopterus* Shakhovskoy & Parin 2019**

pseudo-, false, i.e., although adults of this species are extremely similar to *C. spilopterus*, such an appearance is false

***Cheilopogon marisrubri* Shakhovskoy & Parin 2019**

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

Subgenus ***Maculocoetus* Whitley & Colefax 1938**

maculo-, spotted, presumably referring to large black spot on dorsal fin and/or large dark spots on pectoral fins of *C. suttoni*; *coetus*, etymology not explained, presumably short for *Exocoetus*

***Cheilopogon atrisignis* (Jenkins 1903)**

atri-, black; *signis*, mark, referring to black spot on dorsal fin and/or black spots on anterior and posterior membranes of pectoral fins

***Cheilopogon spilopterus* (Bleeker 1865)**

spilos, spot; *notos*, back; *pterus*, fin, referring to large brown spot on dorsal fin

***Cheilopogon spilopterus* (Valenciennes 1847)**

spilos, spot; *pterus*, fin, referring to numerous brown or blackish spots on pectoral fins

***Cheilopogon suttoni* (Whitley & Colefax 1938)**

in honor of Australian public-health physician Harvey Sutton (1882-1963), Director, School of Tropical Medicine, Sidney University (he also competed in the 1908 Summer Olympics in track and field)

Subgenus ***Paracypselurus* Parin 1961**

para-, near, proposed as a subgenus of *Cypselurus*

***Cheilopogon papilio* (Clark 1936)**

butterfly, probably referring to “broad, wing-like” ventral fins, reminding Clark of William Beebe’s colored drawing of the “Butterflying Fish” published in 1926

Subgenus ***Procypsilurus* Bruun 1935**

pro-, before, forward or front, allusion not explained nor evident; *Cypsilurus* (= *Cypselurus*), proposed as a subgenus of that genus

***Cheilopogon abei* Parin 1996**

in honor of “well-known” (translation) ichthyologist Tokiharu Abe (1911-1996), Tokyo University, who first reported this species, as *C. katoptron*, in 1956

***Cheilopogon cyanopterus* (Valenciennes 1847)**

cyanos, blue; *pterus*, fin, referring to dark blue (almost black) pectoral fins

***Cheilopogon dorsomacula* (Fowler 1944)**

dorsum, back; *macula*, spot or blotch, referring to large black blotch on hind part of dorsal fin

***Cheilopogon exsiliens* (Linnaeus 1771)**

leaping out, referring to how it leaps out of the water and glides along the surface

***Cheilopogon katoptron* (Bleeker 1865)**

Greek for mirror, allusion not explained, possibly referring to how its sides are silver (i.e., shiny) like a knife

***Cheilopogon milleri* (Gibbs & Staiger 1970)**

in honor of George C. Miller, National Marine Fisheries Service, who collected type during a fishery survey in Liberia, and who made further “significant” collections, including only known barbeled juvenile, during cruise 6801 of the Bureau of Commercial Fisheries research vessel *Undaunted*

***Cheilopogon nigricans* (Bennett 1840)**

blackish, referring to black head and upper portion of body

***Cheilopogon xenopterus* (Gilbert 1890)**

xenos, strange or different; *pterus*, fin, allusion not explained, probably referring to elongate pectoral fin, nearly reaching base of tail, and/or its uniformly black coloration without white markings

Subgenus ***Ptenichthys* Müller 1843**

ptenos, winged, referring to large pectoral fins (the “wings”); *ichthys*, fish

***Cheilopogon arcticeps* (Günther 1866)**

arctus, narrow or straight; *ceps*, head, allusion not explained nor evident, perhaps referring to shape of head compared to closely related congeners

***Cheilopogon doederleinii* (Steindachner 1887)**

in honor of German zoologist Ludwig Döderlein (1855-1936), formerly with the Imperial University at Tokyo, who collaborated with Steindachner in studying the fishes of Japan

***Cheilopogon fisunovi* Parin & Belyanina 1998**

in honor of Georgy Kasyanovich Fisunov (or Fissunov, see *Myctophum fissunovi*, Myctophiformes: Myctophidae), a senior technician-oceanologist aboard the research vessel *Vityaz*; “he was very adept at catching fish with a cast net and caught thousands of flyingfish at light stations in all oceans” (translation)

***Cheilopogon furcatus furcatus* (Mitchill 1815)**

forked, allusion not explained, probably referring to forked appearance of long, double barbels of juveniles (the main character Mitchill used to distinguish the species)

***Cheilopogon furcatus neimani* Parin & Belyanina 1998**

in honor of V. G. Neiman, “well-known” (translation) researcher of hydrology of the Indian Ocean (where this subspecies occurs) and a participant in numerous oceanographic cruises

***Cheilopogon heterurus* (Rafinesque 1810)**

heteros, different; *oura*, tailed, referring to lower lobe of caudal fin longer than the upper (a characteristic of the family)

***Cheilopogon hubbsi* Parin 1961**

in honor of ichthyologist Carl L. Hubbs (1894-1979), who wrote about the early stages and development of this species (identified as *Cypselurus* sp.) in 1946

***Cheilopogon intermedius* Parin 1961**

intermediate, referring to how presence of palatine teeth links the subgenus *Ptenichthys* with *Procypselurus*

***Cheilopogon katherinae* Shakhovskoy & Parin 2019**

in honor of Katherine Elliott Bemis, Virginia Institute of Marine Science, for her “kind” help with the authors’ work on their review of this genus

***Cheilopogon melanurus* (Valenciennes 1847)**

melanos, black; *oura*, tailed, referring to black spot at base of caudal fin

***Cheilopogon olgae* Parin 2009**

in honor of Parin’s wife and assistant, Olga Vladimirovna Parina

***Cheilopogon unicolor* (Valenciennes 1847)**

uni-, one, referring to uniform purplish-gray color of pectoral fins, lacking white spot and border of *Hirundichthys speculiger*, its presumed congener at the time

***Cheilopogon ventralis* (Nichols & Breder 1935)**

ventral, referring to large black ventral fins of juveniles, its “most striking character”

Subgenus *Incertae sedis*

***Cheilopogon pitcairnsensis* (Nichols & Breder 1935)**

-ensis, suffix denoting place: Pitcairn Island, South Pacific, type locality

***Cypselurus* Swainson 1838**

kypselos, swallow (bird), allusion not explained, possibly alluding to Pliny, who called the flyingfish *Hirundo* (ancient name and current genus name for swallows), for it “flieth truly almost in the same manner as the bird so called,” and/or to Swainson’s own description of flyingfish flight, which, “although short, is very rapid,—almost as much so as that of a swallow”; *oura*, tail, allusion not explained, possibly referring to how their forked tails are analogous to those of a swallow, in which the power of flight is at its “maximum when the tail, also, is forked: the common house swallow shows this in perfection” [originally spelled “*Cypsilurus*” but ICZN Opinion 26 ruled this was an error]

Subgenus ***Cypselurus***

***Cypselurus angusticeps* Nichols & Breder 1935**

angustus, narrow; *ceps*, head, “narrow and pointed for this genus”

***Cypselurus comatus* (Mitchill 1815)**

long-haired, referring to long chin barbel of juveniles

***Cypselurus hiraii* Abe 1953**

in honor of Masaji Hirai, Manazuru Branch of Tokaiku Suisan Kenkujo (Kanakawa Prefecture, Japan), who has been collecting fishes for Abe for the past few years, and collected a “fine specimen of the young” of this species in summer 1952

***Cypselurus naresii* (Günther 1889)**

patronym not identified but probably in honor of George Strong Nares (1831-1915), British naval officer and captain of the *Challenger* expedition (1872-1876), during which type was collected

***Cypselurus opisthopus* (Bleeker 1865)**

opistho-, behind; *pous*, foot, referring to posterior placement of ventral (or pelvic) fins, closer to tail than to gill openings

Subgenus *Poecilocypsilurus* Bruun 1935

poecilio-, varicolored, probably referring to colorful pectoral fins of *C. callopterus* and/or *C. poecilopterus*

***Cypselurus bosha* Shakhovskoy & Parin 2019**

in honor of Boris Vladimirovich Shakhovskoy, father of the senior author, who provided significant material and technical assistance; name is formed by a combination of the first syllables of his forename and surname

***Cypselurus callopterus* (Günther 1866)**

callo-, beautiful; *pterus*, fin, presumably referring to numerous small roundish blackish-brown spots on pectoral fins (its “wings”), with upper and lower rays whitish

***Cypselurus clariangulatus* Shakhovskoy & Parin 2022**

clarus, clear; *angulatus*, cornered, referring to unpigmented inner corner of pelvic fins in juveniles, its main diagnostic character

***Cypselurus hexazona* (Bleeker 1853)**

hexa-, six; *zonatus*, banded, referring to six transverse bands on body of juveniles [*species inquirenda*, provisionally included here; Bleeker’s description and the one museum specimen do not match any known forms]

***Cypselurus izumii* Shakhovskoy & Parin 2022**

in honor of the “famous” Japanese ichthyologist Izumi Nakamura, who, while participating in cruises of R/V *Shoyo Maru*, collected all specimens of this species examined by the authors

***Cypselurus neglectus neglectus* (Bleeker 1865)**

Latin for overlooked, referring to how Bleeker overlooked this species by keeping it in the same jar as *C. o. oligolepis*

***Cypselurus neglectus shcherbachevi* Shakhovskoy & Parin 2022**

in honor of the late Yuriy Nikolaevitch Shcherbachev, a “dear colleague,” for his many years of studying fishes at the Shirshov Institute of Oceanology, Russian Academy of Sciences

***Cypselurus nossibe* Shakhovskoy & Parin 2022**

named after Nossi-Be Island, Madagascar, near which several specimens (including holotype) were collected

***Cypselurus oligolepis oligolepis* (Bleeker 1865)**

oligo-, few; *lepis*, scales, referring to 40 scales along lateral line, compared with upwards of 50 among presumed congeners in *Exocoetus*

***Cypselurus oligolepis apus* (Valenciennes 1847)**

a-, without; *pous*, feet, alluding to the Common Swift, *Hirundo* (now *Apus*) *apus* (thought by the ancients to be a type of swallow with no feet), allusion not explained but clearly echoing Pliny, who called the flyingfish *Hirundo* (ancient name and current genus name for swallows), for it “flieth truly almost in the same manner as the bird so called” [although *apus* predates the nominate subspecies, the name had not been used as a valid name since 1899 and therefore can be regarded as a *nomen oblitum*, whereas *oligolepis*, a junior synonym, has been commonly used and therefore takes precedence as a *nomen protectum*; as of 2022, the two taxa are regarded as subspecies of a single species, in which case the younger *nomen protectum* becomes the nominate taxon]

***Cypselurus oligolepis georgii* Shakhovskoy & Parin 2022**

in honor of Georgy B. Shakhovskoy, a brother of the senior author, who was “very helpful” in preparing the figures

***Cypselurus oligolepis persicus* Shakhovskoy & Parin 2022**

-icus, belonging to: Persia, referring to its distribution mainly in the Persian Gulf

***Cypselurus olpar* Shakhovskoy & Parin 2019**

in honor of Olga Vladimirovna Parina (wife of junior author), who provided both authors with “great help and moral support” during their work; name is formed by a combination of the first two letters of her forename and the first three letters of her surname

***Cypselurus poecilopterus poecilopterus* (Valenciennes 1847)**

poecilio-, varicolored; *pterus*, fin, referring to greenish pectoral fins speckled with a large number of round, irregular brown spots (described as sienna, but darker in the middle)

***Cypselurus poecilopterus arabicus* Shakhovskoy & Parin 2022**

-icus, belonging to: Arabia, referring to its distribution mainly in the waters of Arabia and in the Arabian Sea

***Cypselurus poecilopterus crassus* Shakhovskoy & Parin 2022**

Latin for stout, referring to the “extremely” wide and deep body of juveniles

***Cypselurus simus* (Valenciennes 1847)**

blunt-nosed, referring to its “short, rounded, bulging” snout (translation)

***Cypselurus starksi* Abe 1953**

in honor of the late Edwin Chapin Starks (1867-1932), Stanford University, who reported this species as *Cypselurus* (now *Cheilopogon*) *agoo* in 1903

***Hirundichthys* Breder 1928**

Hirundo, a genus of swallows, allusion not explained but probably alluding to Pliny, who called the flyingfish *Hirundo* (ancient name and current genus name for swallows), for it “flieth truly almost in the same manner as the bird so called”; *ichthys*, fish

Subgenus ***Hirundichthys***

***Hirundichthys affinis* (Günther 1866)**

allied, described as “Closely allied” to *H. speculiger*

***Hirundichthys coromandelensis* (Hornell 1923)**

-ensis, suffix denoting place: Coromandel Coast, southeastern India, type locality

***Hirundichthys indicus indicus* Shakhovskoy & Parin 2013**

Indian, referring to Indian Ocean, where it is endemic

***Hirundichthys indicus orientalis* Shakhovskoy & Parin 2013**

eastern, referring to distribution in eastern Indian Ocean

***Hirundichthys oxycephalus oxycephalus* (Bleeker 1853)**

oxy, sharp; *cephalus*, head, referring to more tapered head compared to *Cheilopogon unicolor*, its presumed congener at the time

***Hirundichthys oxycephalus frereensis* Shakhovskoy & Parin 2013**

-ensis, suffix denoting place: 10 miles northeast of Cape Frere (Goodnough Bay), New Guinea, where only known specimen was taken [name is technically unavailable since authors did not indicate a holotype]

***Hirundichthys speculiger* (Valenciennes 1847)**

speculum, mirror; *-iger*, to bear, referring to large white spot on top of dark-blue or almost black pectoral fins, which Valenciennes compared to the “mirror of the wing of a large number of palmipeds” (translation), a mirror being a white spot or bar with dark outer portion of outer primaries of a gull’s wing

Subgenus ***Danichthys* Bruun 1934**

Dan, presumably named for the *Dana* fishery research cruises, whose collections confirmed Günther’s (1868) belief that *Exocoetus volitans* and *E. obtusirostris* represent distinct species; *ichthys*, fish

***Hirundichthys albimaculatus* (Fowler 1934)**

albus, white; *maculata*, spotted, referring to broad whitish basal area on each pectoral fin

***Hirundichthys gilberti* (Snyder 1904)**

in honor of ichthyologist and fisheries biologist Charles H. Gilbert (1859-1928), who had “immediate supervision of the zoological work” of fishes collected from the steamer *Albatross* in 1902, including this one

***Hirundichthys marginatus* (Nichols & Breder 1928)**

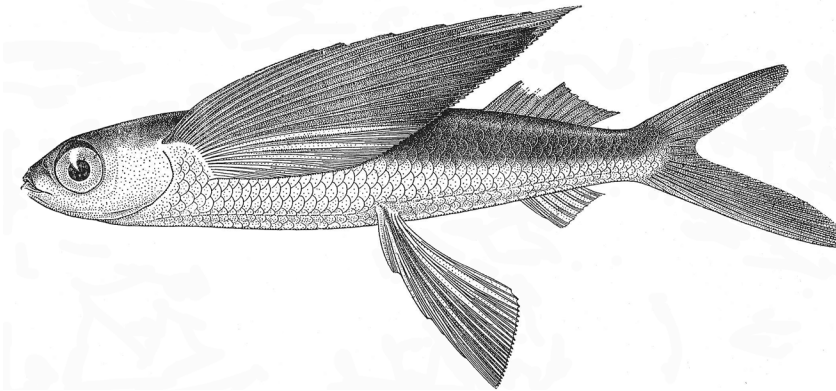
edged or bordered, referring to narrow dark borders on pectoral fins of juveniles

***Hirundichthys rondeletii* (Valenciennes 1847)**

in honor of physician-naturalist Guillaume Rondelet (1507-1566), who illustrated what appeared to be this species in his *Libri de piscibus marinis* (1554-55)

***Hirundichthys rufipinnis* (Valenciennes 1847)**

rufinus, rufous or rosy; *pinnis*, fin, referring to “russet brown or chocolate-white” (translation) upper surface of pectoral fins and/or reddish tail



Prognichthys sealei. From: Abe, T. 1955. On a new Pacific flying fish, *Prognichthys sealei*, retaining five unbranched fin-rays above in the pectoral throughout life. *Records of Oceanographic Works in Japan* v. 2 (no. 1): 185-192, 1 pl.

***Hirundichthys volador* (Jordan 1884)**

Spanish for flying and Spanish name by which some flyingfishes are known

***Prognichthys* Breder 1928**

Progne, a genus of swallows (the martins), allusion not explained but probably alluding to Pliny, who called the flying-fish *Hirundo* (ancient name and current genus name for swallows), for it “flieth truly almost in the same manner as the bird so called”; *ichthys*, fish

***Prognichthys brevipinnis* (Valenciennes 1847)**

brevis, short; *pinnis*, fin, referring to shorter pectoral and ventral fins compared to other flyingfishes in Valenciennes’ account of the family

***Prognichthys gibbifrons* (Valenciennes 1847)**

gibbus, hump; *frons*, forehead, referring to protruding forehead

***Prognichthys glaphyrae* Parin 1999**

in honor of Glafira Nikiforovna (Tanya) Pokhil’skaya, who worked in the Department of Nekton and Laboratory of Oceanic Ichthyofauna (Russian Academy of Sciences) from 1948-1990; Parin has used her “high-quality” (translation) illustrations in many of his papers

***Prognichthys occidentalis* Parin 1999**

western, referring to distribution in western Atlantic Ocean

***Prognichthys sealei* Abe 1955**

in honor of ichthyologist Alvin Seale (1871-1958), Stanford University, who reported this flyingfish as *Cypselurus zaca* (= *P. brevipinnis*) in 1935

***Prognichthys tringa* Breder 1928**

Tringa, a genus of sandpipers with a “not dissimilar wing shape”

Family HEMIRAMPHIDAE Halfbeaks

9 genera/subgenera · 64 species/subspecies

***Arrhamphus* Günther 1866**

ar-, not, i.e., similar to *Hemiramphus* (which Günther spelled as “*Hemirhamphus*”) except that lower jaw is not produced into a beak

***Arrhamphus sclerolepis sclerolepis* Günther 1866**

sclero-, hard; *lepis*, scale, presumably referring to its “rather large” scales and/or scaled upper surface of head (except for intermaxillaries)

***Arrhamphus sclerolepis krefti* Steindachner 1867**

patronym not identified but probably in honor of Johann Ludwig (Louis) Gerard Krefft (1830-1881), Australian zoologist and paleontologist (this subspecies is endemic to Australia) [Steindachner spelled the name with one “f”; since he did not explicitly name Krefft in the description, emendment to “*krefti*” is not required]

***Chriodorus* Goode & Bean 1882**

chreia, want or need (i.e., lack); *dorus*, lance, referring to both jaws very short, unlike produced lower jaw of *Hemirhamphus*

Chriodorus atherinoides Goode & Bean 1882

-*oides*, having the form of: referring to bright silvery lateral band as in the silverside genus *Atherina* (Atheriniformes: Atherinidae)

Euleptorhamphus Gill 1859

eu-, very and *leptos*, slender, presumably referring to much more slender and greatly compressed body and/or much longer beak compared to *Hemirhamphus*

Euleptorhamphus velox Poey 1868

swift, allusion not explained, probably referring to its extremely elongate and slender body

Euleptorhamphus viridis (van Hasselt 1823)

green, allusion not explained, perhaps referring to iridescent blue-green back in life

Hemiramphus Cuvier 1816

hemi-, half; *rhampus*, beak, referring to lower jaw prolonged into a slender beak, i.e., possessing half a beak

Hemiramphus archipelagicus Collette & Parin 1978

-*icus*, belonging to: referring to center of distribution around islands of the Indo-Australian Archipelago

Hemiramphus balao Lesueur 1821

Balaó, a common Spanish name for species of this genus, from *bailar*, meaning to leap or dance

Hemiramphus bermudensis Collette 1962

-*ensis*, suffix denoting place: waters surrounding Bermuda, where it appears to be endemic

Hemiramphus brasiliensis (Linnaeus 1758)

-*ensis*, suffix denoting place: Brazil, based in part on a description from Marcgrave's *Historia Naturalis Brasiliae* (1648); species occurs along both Atlantic coasts (to Brazil in the eastern Atlantic) and the Caribbean

Hemiramphus convexus Weber & de Beaufort 1922

rounded or curving out, referring to convex interorbital space

Hemiramphus depauperatus Lay & Bennett 1839

imperfectly developed, presumably referring to how middle body of type specimen had been “cut away”

Hemiramphus far (Forsskål 1775)

Arabic vernacular for this species, described from the Red Sea of Yemen

Hemiramphus lutkei Valenciennes 1847

patronym not identified but almost certainly in honor of German navigator and geographer Frédéric Benjamin Lütke (1797-1882), whose 1826-29 voyage around the globe provided illustrations of several fish species, including this one

Hemiramphus marginatus (Forsskål 1775)

edged or bordered, probably referring to midlateral silvery stripe edged dorsally in dark green

Hemiramphus robustus Günther 1866

fat or stout, allusion not explained, perhaps referring to triangular part of upper jaw, which is wider relative to length compared to some congeners

Hemiramphus saltator Gilbert & Starks 1904

Latin for dancer, previously reported as *H. balao*, from *Balaó*, a common Spanish name for species of this genus, from *bailar*, meaning to leap or dance

Hyporhamphus Gill 1859

hypo-, below; *rhampus*, beak, referring to lower jaw prolonged into a slender beak

Subgenus **Hyporhamphus****Hyporhamphus brederi** (Fernández-Yépez 1948)

in honor of ichthyologist Charles M. Breder Jr. (1897-1983), American Museum of Natural History, for “cooperation in the knowledge” (translation) of beloniform fishes [originally spelled “*brederi*” consistent with Fernández-Yépez’ misspelling of the name, but “*brederi*” is in prevailing usage]

Hyporhamphus capensis (Thomiot 1886)

-*ensis*, suffix denoting place: Cape of Good Hope, South Africa, type locality

Hyporhamphus collettei Banford 2010

in honor of Bruce B. Collette (b. 1934), Senior Scientist, National Marine Fisheries Service Systematics Laboratory, “eminent ichthyologist who has greatly increased our understanding of the taxonomy and systematics of fishes, particularly beloniform fishes”; he also “pioneered” the study of endemism in Bermudian shore fishes, such as this one, in 1962

***Hyporhamphus gernaerti* (Valenciennes 1847)**

in honor of Benoit Gernaert (ca. 1797-1843), French Consul in Macao (or Macau), now a Special Administrative Region of the People's Republic of China, who provided type

***Hyporhamphus gilli* Meek & Hildebrand 1923**

patronym not identified but probably in honor of Smithsonian zoologist Theodore Gill (1837-1914), who proposed the genus in 1859

***Hyporhamphus improvisus* (Smith 1933)**

unforeseen, unexpected or sudden, allusion not explained nor evident

***Hyporhamphus intermedius* (Cantor 1842)**

intermediate, allusion not explained nor evident

***Hyporhamphus limbatus* (Valenciennes 1847)**

edged or bordered, referring to unpaired fins finely edged in black

***Hyporhamphus meeki* Banford & Collette 1993**

in honor of ichthyologist Seth Eugene Meek (1859-1914), who recognized that this species was distinct from *H. unifasciatus* in 1884 but misapplied the name *H. roberti*

***Hyporhamphus melanopterus* Collette & Parin 1978**

melanos, black; *pterus*, fin, referring to diagnostic prominent black spots in lobes of dorsal and caudal fins

***Hyporhamphus mexicanus* Álvarez 1959**

Mexican, referring to type locality in Oaxaca, México (also occurs in Guatemala)

***Hyporhamphus naos* Banford & Collette 2001**

named for Naos Island, Bay of Panama, where this species is common and site of the Smithsonian Tropical Research Institute (STRI) Marine Laboratory; since the 1960s, many studies of transisthmian geminate taxa have been conducted at STRI's Naos lab

***Hyporhamphus neglectissimus* Parin, Collette & Shcherbachev 1980**

most neglected or unnoticed, referring to how specimens were initially mixed and confused with *H. neglectus*, just as *H. neglectus* had been mixed with *Hemiramphus gaimardi* (= *Hyporhamphus quoyi*)

***Hyporhamphus neglectus* (Bleeker 1866)**

neglected or unnoticed, referring to how Bleeker initially overlooked this species, preserved in the same jar as *Hemiramphus gaimardi* (= *Hyporhamphus quoyi*)

***Hyporhamphus paucirastris* Collette & Parin 1978**

paucus, few; *rastrum*, rake or raker, referring to low number of gill rakers (19-21) on first arch

***Hyporhamphus picarti* (Valenciennes 1847)**

in honor of M. (Monsieur?) Picart (no other information available), who brought "several curious molluscs and annelids to the King's Cabinet" and probably this species from the harbor of Cádiz (Spain)

***Hyporhamphus regularis regularis* (Günther 1866)**

regular, i.e., according to rule, allusion not explained nor evident

***Hyporhamphus regularis ardelio* Whitley 1931**

zealous person, busybody or meddler, allusion not explained; Whitley partly based his account on Stead (1908, *Edible Fishes of New South Wales*), who described the fish as occurring in "great abundance," which might have been Whitley's idea of meddler (D. Hoese, pers. comm.)

***Hyporhamphus roberti roberti* (Valenciennes 1847)**

in honor of M. (Monsieur?) Robert (no other information available) who collected type with M. Poiteau, probably French botanist Pierre-Antoine Poiteau (1766-1854), in Cayenne, French Guiana

***Hyporhamphus roberti hildebrandi* Jordan & Evermann 1927**

in honor of Samuel F. Hildebrand (1883-1949), U.S. Fish and Wildlife Service, who collected type with Seth Eugene Meek (see *H. meeki*)

***Hyporhamphus rosae* (Jordan & Gilbert 1880)**

in honor of Rosa Smith (1858-1947) of San Diego (California, USA), later wife of ichthyologist Carl H. Eigenmann, "who has given much attention to ichthyology, and to whom the National Museum [Smithsonian] is indebted for many specimens of San Diego fishes" (including possibly this one)

***Hyporhamphus sajori* (Temminck & Schlegel 1846)**

common name for this species in 19th-century Japan

***Hyporhamphus sindensis* (Regan 1905)**

-*ensis*, suffix denoting place: Sindh province of Pakistan, referring to type locality at Karachi

***Hyporhamphus snyderi* Meek & Hildebrand 1923**

patronym not identified but almost certainly in honor of ichthyologist John Otterbein Snyder (1867-1943)

***Hyporhamphus taiwanensis* Collette & Su 1986**

-*ensis*, suffix denoting place: Taiwan, where it is endemic

***Hyporhamphus unicuspis* Collette & Parin 1978**

referring to predominantly unicuspid teeth on both jaws

***Hyporhamphus unifasciatus* (Ranzani 1841)**

uni-, one or single; *fasciatus*, banded, referring to silvery line running from eye to caudal peduncle

***Hyporhamphus xanthopterus* (Valenciennes 1847)**

xantho-, yellow; *pterus*, fin, referring to “lemon yellow” (translation) unpaired fins

Subgenus *Reporhamphus* Whitley 1931

etymology not explained, perhaps *repium*, incline downwards; *rhampus*, beak, possibly referring to what could be perceived as a slight downward slope in prolonged lower jaw of some specimens of *H. australis*

***Hyporhamphus acutus* (Günther 1872)**

sharp or pointed, allusion not explained, probably referring to long, slender beak (lower jaw)

***Hyporhamphus affinis* (Günther 1866)**

related, “Closely allied to *H. dussumierii*, but with the head narrower”

***Hyporhamphus australis* (Steindachner 1866)**

southern or Australian, referring to type locality, Port Jackson, New South Wales, Australia

***Hyporhamphus balinensis* (Bleeker 1858)**

-*ensis*, suffix denoting place: Bali, Indonesia, type locality (but occurs elsewhere in the Red Sea and Indo-West Pacific)

***Hyporhamphus dussumieri* (Valenciennes 1847)**

in honor of Jean-Jacques Dussumier (1792-1883), French voyager and merchant who collected zoological specimens from southeastern Asia and the Indian Ocean, and reported on this species

***Hyporhamphus erythrorinchus* (Lesueur 1821)**

erythros, red; *rhynchus*, snout, allusion not explained, probably referring to bright red or orange at tip of lower jaw

***Hyporhamphus gamberur* (Rüppell 1837)**

from Massaua Gamberur, its local name along the Red Sea

***Hyporhamphus ihi* Phillipps 1932**

Maori name for this halfbeak in New Zealand as reported by Phillipps (Maori spelling is now *ihe* per Robert Vennell, pers. comm.)

***Hyporhamphus melanocheir* (Valenciennes 1847)**

melanos, black; *cheiros*, hand, referring to “black hues” (translation) of pectoral fins

***Hyporhamphus pacificus* (Steindachner 1900)**

Pacific, described from the Hawaiian Islands (also occurs at Johnston Atoll) of the Central Pacific

***Hyporhamphus quoyi* (Valenciennes 1847)**

in honor of surgeon-naturalist Jean René Constant Quoy (1790-1869), who, with Joseph Paul Gaimard (1793-1858), collected holotype

***Hyporhamphus yuri* Collette & Parin 1978**

in honor of ichthyologist Yuri Nikolayevich Shcherbachev (Institute of Oceanology, Academy of Sciences of the USSR), for his assistance with the authors’ review of halfbeaks of the Indo-West Pacific [a noun in apposition, without the patronymic “i”]

***Melapedalion* Fowler 1934**

melas, black; *pedalion*, rudder, referring to black-tipped vertical fins

***Melapedalion breve* (Seale 1910)**

short, presumably referring to “extremely short” beak (lower jaw)

***Oxyporhamphus* Gill 1864**

oxyp[ages], sharp-pointed; *rhampus*, beak, referring to “acutely cuspidate” lower jaw of *O. cuspidatus* (=micropterus)

***Oxyporhamphus bruuni* Parin, Collette & Shcherbachev 1980**

patronym not identified but clearly in honor of Danish oceanographer and ichthyologist Anton Frederick Bruun (1901-1961), author of a 1935 monograph on flying fishes, in which *O. similis* was described

***Oxyporhamphus micropterus* (Valenciennes 1847)**

micro-, small; *pterus*, fin, referring to shorter fins compared to presumed congeners in the flyingfish genus *Exocoetus*

(Exocoetidae)

***Oxyporhamphus similis* Bruun 1935**

similar, proposed as an Atlantic subspecies of the Indo-Malayan *O. micropterus*

***Rhynchorhamphus* Fowler 1928**

rhynchus, snout; *rhampus*, beak, referring to snout and beak (lower jaw), both elongated

***Rhynchorhamphus arabicus* Parin & Shcherbachev 1972**

Arabian, referring to its occurrence in southern Yemeni waters

***Rhynchorhamphus georgii* (Valenciennes 1847)**

in honor of M. (Monsieur) Dussumier, presumably Jean-Jacques Dussumier (1792-1883), French voyager and merchant who collected zoological specimens from southeastern Asia and the Indian Ocean and provided holotype of this one; Valenciennes honored Dussumier three times in the same volume, including *Hemiramphus* (now *Hyporhamphus*) *dussumieri* and *Exocoetus georgianus* (= *monocirrhus*), inexplicably giving Dussumier's first name as "George"

***Rhynchorhamphus malabaricus* Collette 1976**

-*icus*, belonging to: Malabar Coast of India, where the first specimens Collette examined were from

***Rhynchorhamphus naga* Collette 1976**

named after the Naga Expedition to the Gulf of Thailand and South China Sea, during which most of the fresh material was collected from 1959-1961

Family ZENARCHOPTERIDAE Viviparous Halfbeaks

5 genera · 64 species/subspecies

***Dermogenys* Kuhl & van Hasselt 1823**

dermo-, skin; *genys*, cheek, referring to folds of skin bordering along each side beak

***Dermogenys bispina* Meisner & Collette 1998**

bi-, two; *spina*, spined, referring to second set of paired spines at distal tip of spiculus (lanceolate structure at end of andropodium, the modified intromittent anal fin of mature males)

***Dermogenys brachynotopterus* (Bleeker 1853)**

brachys, short; *notos*, back; *pterus*, fin, referring to dorsal fin shorter than anal fin

***Dermogenys bruneiensis* Meisner 2001**

-*ensis*, suffix denoting place: Brunei Darussalam, island of Borneo, where it is endemic

***Dermogenys burmanica* Mukerji 1935**

-*icus*, belonging to: Burma (Myanmar), where type locality is situated (also occurs in Bangladesh)

***Dermogenys collettei* Meisner 2001**

in honor of Bruce B. Collette (b. 1934), Senior Scientist, National Marine Fisheries Service Systematics Laboratory, who "brought the problem of halfbeak taxonomy" to Meisner's attention

***Dermogenys orientalis* (Weber 1894)**

eastern, allusion not explained, perhaps referring to its Indo-Australian distribution (Sulawesi, Indonesia) compared with its western (African) presumed congeners in *Hemiramphus*

***Dermogenys palawanensis* Meisner 2001**

-*ensis*, suffix denoting place: Palawan, Philippines, where it is endemic

***Dermogenys pusilla* Kuhl & van Hasselt 1823**

very small, allusion not explained but probably referring to its size (up to 16.1 cm TL) compared to the hemirhamphid *Euleptorhamphus viridis* (53.0 cm TL) proposed in the same paper

***Dermogenys robertsi* Meisner 2001**

in honor of ichthyologist Tyson R. Roberts (b. 1940), "Southeast Asian fish expert who provided specimens from his private collection" for Meisner's study

***Dermogenys siamensis* Fowler 1934**

-*ensis*, suffix denoting place, Siam (Thailand), where type locality is situated

***Dermogenys sumatrana* (Bleeker 1854)**

Sumatran, referring to Sumatra, Indonesia, where type locality (Lake Maninjau) is situated

***Dermogenys vogti* Brembach 1982**

in honor of German aquarium writer and editor Dieter Vogt (b. 1933), who collected type

***Hemirhamphodon* Bleeker 1865**

odon, tooth, i.e., similar to *Hemiramphus* but with anteriorly directed teeth along entire length of lower jaw

***Hemirhamphodon byssus* Tan & Lim 2013**

fine thread, referring to distinct filamentous dorsal-fin rays of large males

***Hemirhamphodon chrysopunctatus* Brembach 1978**

chrysos, gold; *punctatus*, spotted, referring to a series of golden spots on sides of larger adults

***Hemirhamphodon kapuasensis* Collette 1991**

-ensis, suffix denoting place: Kapuas River basin (Kalimantan Barat, Borneo, Indonesia), where it is endemic

***Hemirhamphodon kecil* Tan & Lim 2013**

Bahasa Indonesian word meaning small, referring to its diminutive size (up to 41 mm SL)

***Hemirhamphodon kuekenthali* Steindachner 1901**

in honor of German zoologist Willy Georg Kükenthal (1861-1922), who led expedition to Borneo during which type was collected

***Hemirhamphodon phaiosoma* (Bleeker 1852)**

phaios, dusky brown; *soma*, body, referring to body coloration

***Hemirhamphodon pogonognathus* (Bleeker 1853)**

pogonos, beard; *gnathus*, jaw, referring to fleshy red growth that curves downwards from tip of beak (lower jaw)

***Hemirhamphodon sesamum* Tan & Lim 2013**

named for minute oily seeds of the *Sesamum* plant (Pedaliaceae), alluding to small black spots/dashes on dorsal fin which resemble black sesame seeds

***Hemirhamphodon tengah* Collette 1991**

named for Kalimantan Tengah, central province of Kalimantan, Borneo, Indonesia, where most specimens were collected

***Nomorhamphus* Weber & de Beaufort 1922**

etymology not explained, perhaps *nomos*, custom or tradition; *rhampus*, beak, perhaps referring to how jaws of this genus, which are nearly equal length (lower jaw projects slightly), is more “traditional” compared to *Dermogenys*, in which lower jaw is produced into a beak

***Nomorhamphus aenigma* Kobayashi, Masengi & Yamahira 2020**

Greek for riddle, referring to riddle raised by this “beakless” halfbeak: “Why are the mandibles of most halfbeaks long?” (hypothesis: neuromasts on elongate jaws may help surface-dwelling halfbeaks locate food, particularly falling insects; this species, however, swims in the middle and lower areas unlike the sympatric *N. rex* and therefore may have evolved short jaws as ecological character displacement)

***Nomorhamphus bakeri* (Fowler & Bean 1922)**

in honor of Frederick Baker (1854-1938), American physician, naturalist and amateur malacologist (San Diego, California), who collected type

***Nomorhamphus brembachi* Vogt 1978**

in honor of biologist Manfred Brembach (b. 1949), for his many contributions to the knowledge of Hemiramphidae (presumed family at the time)

***Nomorhamphus celebensis* Weber & de Beaufort 1922**

-ensis, suffix denoting place: Celebes (now Sulawesi), where it is endemic

***Nomorhamphus ebrardtii* (Popta 1912)**

in honor of Privy Councillor Ebrardt, possibly Friedrich Clemens Ebrardt (also spelled Ebrard, 1850-1935), honorary member of Geographische und Statistische Vereinigung Frankfurt, which mounted 1911 expedition to Lesser Sunda Islands, during which type was collected

***Nomorhamphus hageni* (Popta 1912)**

patronym not identified but probably in honor of German physician and amateur naturalist Bernhard Hagen (1853-1919), member of 1911 expedition to the Lesser Sunda islands, during which type was collected

***Nomorhamphus kolonodensis* Meisner & Louie 2000**

-ensis, suffix denoting place: Kolonodale region of Sulawesi, Indonesia, where most specimens were collected

***Nomorhamphus lanceolatus* Huylebrouck, Hadiaty & Herder 2014**

lanceolate, referring to shape of spiculus, structure at end of andropodium, the modified intromittent anal fin of mature males

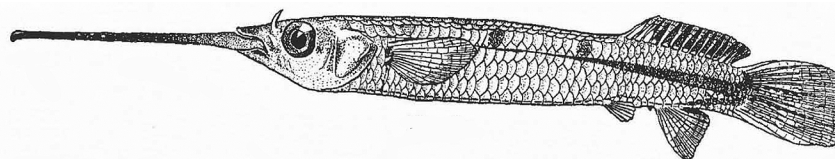
***Nomorhamphus liemi* Vogt 1978**

in honor of Vogt’s “longtime friend” (translation) in Indonesia, Dr. Dig Liem (presumably an aquarist and/or fish collector)

***Nomorhamphus manifestus* Meisner 2001**

clear or distinct, but Meisner says it means “unadorned,” referring to lack of distinctive body pigmentation

- Nomorhamphus megarrhamphus (Brembach 1982)**
mega-, large; *rhampus*, beak, referring to “remarkably” (translation) long beak (lower jaw), 6.3 times in TL [we do not know why spelling has an extra “r”]
- Nomorhamphus pectoralis (Fowler 1934)**
 pectoral, referring to large pectoral fins, which extends far back as ventral fin
- Nomorhamphus philippinus (Ladiges 1972)**
 Filipino, referring to the Philippine Islands, where it is known only from Cebu and Mindanao
- Nomorhamphus pinnimaculatus Meisner 2001**
pinna, fin; *maculatus*, spotted, referring to diagnostic black spot on anterior anal-fin rays in the female and dorsal-fin rays in males
- Nomorhamphus rex Huylebrouck, Hadiaty & Herder 2012**
 a king, referring to its teeth, “reminiscent of the dentition of the late Cretaceous *Tyrannosaurus rex*”
- Nomorhamphus rossi Meisner 2001**
 in honor of herpetologist Charles “Andy” Ross (1953–2011), who collected all the specimens
- Nomorhamphus sagittarius Huylebrouck, Hadiaty & Herder 2014**
 an archer, referring to body shape, “reminiscent of the shape of an arrow”
- Nomorhamphus towoetii Ladiges 1972**
 of Towoeti (or Towuti) Lake, Sulawesi, Indonesia, type locality (also occurs in Lake Poso)
- Nomorhamphus versicolor Kraemer, Hadiaty & Herder 2019**
 colorful or iridescent, referring to its “remarkable colorfulness,” with “prismatic colors, ranging from shades of yellow and orange to purple and blue” on sides and belly, a bright-yellow spot between pelvic fin and genital papilla, and orange or reddish dorsal and anal fins
- Nomorhamphus viviparus viviparus (Peters 1865)**
 livebearing, like other members of the family
- Nomorhamphus viviparus mindanensis Herre 1944**
-ensis, suffix denoting place: Mindanao, Philippines, where type locality (outlet of Lake Mainit) is situated
- Nomorhamphus weberi (Boulenger 1897)**
 in honor of ichthyologist Max Weber (1852–1937), who “most ably dealt” with the fishes of Celebes (Sulawesi) in an 1894 publication
- Tondanichthys Collette 1995**
 Tondano, referring to Lake Tondano, Sulawesi Utara, Indonesia, where it appears to be endemic; *ichthys*, fish
- Tondanichthys kottelati Collette 1995**
 in honor of Swiss ichthyologist Maurice Kottelat (b. 1957), “southeast Asian fish expert, whose help made this project possible” (also editor of journal in which description appeared)
- Zenarchopterus Gill 1864**
 etymology not explained, perhaps *zen*, latinization of the Greek *xen*, strange or different; *archus*, anal; *pterus*, fin, referring to “thickened” rays of anal fin of *Z. dispar* males (some online sources indicate first part of name is derived from “*zao*, to give life,” but is not clear whether Gill knew the modified anal-fin rays [andropodium] is an intromittent organ)
- Zenarchopterus alleni Collette 1982**
 in honor of ichthyologist Gerald R. Allen (b. 1942), Western Australia Museum (Perth), who brought the “unique” holotype to Collette’s attention and who has collected and described many new fish species from New Guinea
- Zenarchopterus buffonis (Valenciennes 1847)**
-is, genitive singular of: *Buffon*, ship owned by Jean-Jacques Dussumier (1792–1883), French voyager and merchant who collected zoological specimens from southeastern Asia and the Indian Ocean, from which type was collected
- Zenarchopterus caudovittatus (Weber 1907)**
cauda-, tail; *vittatus*, banded, referring to black stripe on tail
- Zenarchopterus clarus Mohr 1926**
 bright, distinct or clear, allusion not explained, perhaps referring to its yellowish-white coloration, which could be perceived as brighter than congeners known to Mohr (Ronald Fricke, pers. comm.)
- Zenarchopterus cotnog (Smith 1902)**
 local name for this species in the Bicol region of Luzon Island, Philippines, type locality
- Zenarchopterus dispar (Valenciennes 1847)**
 dissimilar, referring to unusual anal fin of males, strikingly different from male anal fins of presumed congeners in *Hemiramphus* (Valenciennes was apparently unaware that modified anal-fin rays [andropodium] is an intromittent organ)



Zenarchopterus quadrimaculatus. From: Mohr, E. 1926. Die Gattung *Zenarchopterus* Gill. *Zoologische Jahrbücher, Abteilung für Systematik, Geographie und Biologie der Tiere* (Jena) v. 52: 231-266.

***Zenarchopterus dunckeri* Mohr 1926**

in honor of Mohr's friend, ichthyologist Georg Duncker (1870-1953), Zoologisches Museum Hamburg, whose support accelerated the progress of Mohr's work

***Zenarchopterus dux* Seale 1910**

leader (i.e., prince or ruler), allusion not explained nor evident

***Zenarchopterus ectuntio* (Hamilton 1822)**

presumably local Bengali name for this species in India

***Zenarchopterus gilli* Smith 1945**

in memory of Smithsonian zoologist Theodore Gill (1837-1914), who proposed the genus in 1864

***Zenarchopterus kampeni* (Weber 1913)**

in honor of herpetologist Pieter Nicolaas van Kampen (1878-1937), member of 1907-1909 New Guinea expedition, during which type was collected

***Zenarchopterus novaeguineae* (Weber 1913)**

of New Guinea, where type locality (Lorentz River) is situated (also occurs in northern Australia)

***Zenarchopterus ornithocephala* Collette 1985**

ornithos, bird; *cephala*, head, named for Vogelkop (birdhead) Peninsula, Irian Jaya, Indonesia, where it appears to be endemic

***Zenarchopterus pappenheimi* Mohr 1926**

in honor of Paul Pappenheim (1878-1945), curator of fishes, Royal Museum of Berlin, who provided Mohr with all of the museum's zenarchopterid specimens for study

***Zenarchopterus philippinus* (Peters 1868)**

Filipino, referring to the Philippine Islands, where it appears to be endemic

***Zenarchopterus quadrimaculatus* Mohr 1926**

quadri-, fourfold; *maculatus*, spotted, presumably referring to large spots on upper body, two on each side

***Zenarchopterus rasori* (Popta 1912)**

in honor of August Rasor, treasurer of Geographische und Statistische Vereinigung Frankfurt, which mounted 1911 expedition to Lesser Sunda Islands, during which type was collected

***Zenarchopterus robertsi* Collette 1982**

in honor of ichthyologist Tyson R. Roberts (b. 1940), who collected this and many other new fish species in New Guinea

***Zenarchopterus striga* (Blyth 1858)**

swath (strip or belt), presumably referring to narrow silvery stripe on side, "little perceptible, excepting towards the tail, where [it is] broader and distinct"

***Zenarchopterus xiphophorus* Mohr 1934**

xiphos, sword or saber; *phorus*, to bear, referring to sword-like extension on anal fin of males

Family BELONIDAE Needlefishes

10 genera · 47 species/subspecies

***Ablennes* Jordan & Fordice 1887**

Ablennes (*a*-, without; *blennos*, mucus), per Jordan & Evermann (1896) a name applied by some Medieval authors to *Belone acus* (originally and inadvertently spelled "*Athlennes*," which Jordan felt obliged to retain, but spelling was formally corrected by ICZN Opinion 41)

***Ablennes hians* (Valenciennes 1846)**

gaping, referring to upper jaw strongly arched upward at base so that mouth cannot be closed

***Belone* Cuvier 1816**

tautonymous with *Esox belone*

***Belone acus* Risso 1827**

Latin for needle, being an ancient name for a needlefish (originally referring to the Greater Pipefish, *Syngnathus acus*)

***Belone belone* (Linnaeus 1760)**

Greek for needle, being an ancient name for a needlefish (originally referring to the Greater Pipefish, *Syngnathus acus*)

***Belone svetovidovi* Collette & Parin 1970**

in honor of colleague Anatolii Nikolaevich Svetovidov (1903-1985), Zoological Institute (Saint Petersburg, Russia), the first reviser of the genus

***Belonion* Collette 1966**

diminutive of *belone*, needle, referring to small size of both species (reproductive maturity attained at ~25 mm BL)

***Belonion apodion* Collette 1966**

a-, without; *podos*, foot, referring to absence of pelvic fins and girdle

***Belonion dibranchodon* Collette 1966**

di-, two; *branchos*, gill; *odon*, tooth, referring to two pairs of toothed upper pharyngeal bones

***Petalichthys* Regan 1904**

petal, leaf or thin metal plate, allusion not explained, possibly referring to strongly compressed body; *ichthys*, fish

***Petalichthys capensis* Regan 1904**

-ensis, suffix denoting place: Eastern Cape Province, South Africa, where type locality (Port Elizabeth) is situated, or to Cape of Good Hope area in general

***Platybelone* Fowler 1919**

proposed as a subgenus of *Belone*, referring to wide or broad (*platy*) caudal peduncle of *P. platyura*, its width greater than its depth

***Platybelone argalus argalus* (Lesueur 1821)**

etymology not explained, perhaps from the Greek *argaleos*, troublesome, difficult or vexatious, possibly referring to how “species of this genus [then recognized as *Belone*] are not yet well distinguished, that they resemble each other so much, and present at first view so little difference that they all might apparently be embraced in the same description; that those who had observed them had been deceived by neglecting to obtain drawings, by which it would have been easy to observe their differences in a manner more sensible and more exact”; name could also allude to its association with the dangerous *Tylosurus crocodilus*, its presumed congener at the time and described in the same paper

***Platybelone argalus annobonensis* Collette & Parin 1970**

-ensis, suffix denoting place: Annobón Island, Equatorial Guinea, type locality

***Platybelone argalus pterura* (Osburn & Nichols 1916)**

pteron, fin; *oura*, tailed; referring to “much depressed” caudal peduncle, its width (with large lateral keels) slightly more than twice its depth

***Platybelone lovii* (Günther 1866)**

in honor of British biologist-clergyman Richard Thomas Lowe (1802-1874), who presented type to the British Museum

***Platybelone platura* (Rüppell 1837)**

etymology not explained, probably *platy*, flat and *oura*, tailed, referring to strongly depressed caudal peduncle

***Platybelone platyura* (Bennett 1832)**

platy, broad; *oura*, tailed, referring to strongly depressed caudal peduncle with large lateral keels

***Platybelone trachura* (Valenciennes 1846)**

trachy, rough; *oura*, tailed, presumably referring to scales on flat, lateral keels on caudal peduncle

***Potamorhaphis* Günther 1866**

potamos, river, referring to freshwater habitat of *Belone taeniata* (= *P. guianensis*); *rhaphis*, needle, i.e., a freshwater needlefish

***Potamorhaphis eigenmanni* Miranda Ribeiro 1915**

in honor of ichthyologist Carl H. Eigenmann (1863-1927), who reported this species as *P. guianensis* in 1907

***Potamorhaphis guianensis* (Jardine 1843)**

-ensis, suffix denoting place: Guyana, where type locality (Paduirí River) is situated (occurs elsewhere in Amazon and Orinoco River basins)

***Potamorhaphis labiata* Sant’Anna, Delapieve & Reis 2012**

large-lipped, referring to expanded labial membrane; this fragile skinfold is a lateral expansion of the membrane

connecting premaxilla to dentary, which floats horizontally when fish is alive, but usually collapses and folds down when fish is preserved

***Potamorrhaphis petersi* Collette 1974**

in honor of the late James A. Peters (1922-1972), Curator of Reptiles and Amphibians, Smithsonian Institution, who “directly aided” Collette’s studies of the South American genera *Potamorrhaphis* and *Pseudotylotus*

***Pseudotylotus* Fernández-Yépez 1948**

pseudo-, false, i.e., although this genus may resemble *Tylotus*, such an appearance is false

***Pseudotylotus angusticeps* (Günther 1866)**

angustus, narrow; *ceps*, head, referring to its “narrow, elongate” head

***Pseudotylotus microps* (Günther 1866)**

micro-, small; *ops*, eye, referring to smaller eye relative to length of postorbital portion of head compared to presumed congeners in *Belone*

***Strongylura* van Hasselt 1824**

strongylos, round; *oura*, tailed, allusion not explained but probably referring to conspicuous round spot on tail of *Belone* (now *Strongylura*) *strongylura* [not strictly a tautonym since van Hasselt 1824 is a French translation of van Hasselt 1823, which is in Dutch; for reasons unexplained, the French version renamed *Belone strongylura* as *Strongylura caudimaculata*]

***Strongylura anastomella* (Valenciennes 1846)**

etymology not explained, perhaps *ana-*, upward; *stomus*, mouth; *-ella*, a diminutive, perhaps referring to “small opening at base of beak” (translation)

***Strongylura exilis* (Girard 1854)**

slender, referring to its “very slender and exiguous” body

***Strongylura fluviatilis* (Regan 1903)**

of a river, referring to occurrence in freshwater rivers of northwest Ecuador (also occurs in Colombia)

***Strongylura hubbsi* Collette 1974**

in honor of ichthyologist Carl L. Hubbs (1894-1979), for collecting the first specimens and on the occasion of his 80th birthday

***Strongylura incisa* (Valenciennes 1846)**

notched, allusion not explained, perhaps referring to upper edge of suborbital, described as “deeply indented under the nostril” (translation) and/or deep longitudinal furrows on upper surface of beak

***Strongylura krefftii* (Günther 1866)**

in honor of Johann Ludwig (Louis) Gerard Krefft (1830-1881), Australian zoologist-paleontologist, who provided type

***Strongylura leiurus* (Bleeker 1850)**

leios, smooth; *oura*, tail, referring to absence of lateral keels on caudal peduncle [name often spelled *leiura*, treated as an adjective (tailed), but Bleeker consistently used the Greek *oura* (Latinized as *urus*) as a noun]

***Strongylura marina* (Walbaum 1792)**

of the sea, at the time presumed to be a marine inhabitant of the pike genus *Esox* (Esociformes: Esocidae)

***Strongylura notata notata* (Poey 1860)**

marked, referring to posterior border of preoperculum broadly bordered with dark blue, forming a vertical band

***Strongylura notata forsythia* Breder 1932**

-ia, belonging to: Lake Forsyth, Andros Island, Bahamas, type locality (also occurs off southern Florida and Gulf of Mexico west to Mobile Bay, Alabama, USA)

***Strongylura scapularis* (Jordan & Gilbert 1882)**

scapular, referring to large distinct rounded black spot above base of pectoral fin

***Strongylura senegalensis* (Valenciennes 1846)**

-ensis, suffix denoting place: Senegal, type locality (but occurs in the Eastern Atlantic as far south as Angola)

***Strongylura strongylura* (van Hasselt 1823)**

strongylos, round; *oura*, tailed, allusion not explained but probably referring to conspicuous round spot on tail

***Strongylura timucu* (Walbaum 1792)**

local Brazilian name for needlefishes, apparently introduced into scientific literature by Marcgrave (1648)

***Strongylura urvillii* (Valenciennes 1846)**

in honor of explorer Jules Sébastien César Dumont d’Urville (1790-1842), leader of *Astrolabe* expedition (1826-1829), during which type was collected, an “intrepid and unfortunate navigator whose death always bring back painful memories” (translation) [he was and his family were killed in a French railway disaster]

Tylosurus Cocco 1833

tylos, callus; *oura*, tail, referring to lateral keels on caudal peduncle

Tylosurus acus (Lacepède 1803)

Latin for needle, being an ancient name for a needlefish (originally referring to the Greater Pipefish, *Syngnathus acus*)

Tylosurus choram (Rüppell 1837)

Arabic name for needlefishes along the Red Sea (also known as *charman*)

Tylosurus crocodilus (Péron & Lesueur 1821)

like a crocodile, the “armature of its jaws renders it dangerous and deservedly feared by those who swim or bathe in the places which it frequents” [note: there are many contemporary accounts of this species stabbing people with its beak when it leaps from the water]

Tylosurus fodiator Jordan & Gilbert 1882

one who stabs, referring to its strong jaws, which are “dreaded” by the fishermen of Mazatlán, Sinaloa, México, who say that it is able to thrust through the bottom of a boat

Tylosurus gavialoides (Castelnau 1873)

-oides, having the form of: gavial (or gharial, the fish-eating crocodile), allusion not explained but probably alluding to the same fearsomeness that inspired the name of *T. crocodilus*

Tylosurus imperialis (Rafinesque 1810)

of the empire or emperor (i.e., majestic), referring to *Aguglia Imperialis* (Imperial Needlefish), its common name in Sicily; according to Bonaparte's *Iconografia della fauna italica* (puntata 82, published in 1836), “imperial” refers to its “most delicate” (translation) meat

Tylosurus melanotus (Bleeker 1850)

melanos, black; *notus*, back, referring to black dorsal fin

Tylosurus pacificus (Steindachner 1875)

-ica, belonging to the Pacific Ocean, referring to distribution in the Eastern Pacific (Gulf of California south to Peru and the Galápagos Islands)

Tylosurus punctulatus (Günther 1872)

diminutive of *punctum*, spot, i.e., dotted, referring to numerous brown dots on silvery sides and lower body

Tylosurus rafale Collette & Parin 1970

named for the French exploratory fishing vessel *La Rafale*, on which senior author spent several “productive and eventful” weeks during the Guinean Trawling Survey in 1963; the captain, crew, fellow scientists, and especially the first mate contributed directly to collecting many specimens of this species

Xenentodon Regan 1911

xenos, strange or foreign (i.e., different); *odon*, tooth, referring to one pair of dentigerous upper pharyngeals, compared to three pairs in presumed congeners at the time

Xenentodon cancila (Hamilton 1822)

apparent latinization of *Kangkila* (also spelled *Kokilah*, *Kakhya* and other variations), all local names for this species in India

Xenentodon canceloides (Bleeker 1854)

-oides, having the form of: referring to similarity with *X. cancila*

Family SCOMBERESOCIDAE Sauries

2 genera · 5 species

Cololabis Gill 1896

colo-, curtailed or shortened; *labis*, forceps, referring to very short beak of *C. brevirostris* (=saira)

Cololabis adoceta Böhlke 1951

unexpected or surprising, presumably referring to the discovery of this species among a collection labeled as juvenile *C. saira* at the California Academy of Sciences but bearing locality data that placed them “rather far south”

Cololabis saira (Brevoort 1856)

from *Saira-owoo*, local name in Japan, meaning “spear fish”

Scomberesox Lacepède 1803

combining the features of *Scomber*, the mackerels (shape, color, pelagic habits) with the prolonged jaws of *Esox*, the pikes

Scomberesox saurus (Walbaum 1792)

lizard, a name dating to “De Sauro” of Rondelet (1554), who described it was similar to *Saurida*, a generic term

for lizardfishes (Aulopiformes: Synodontidae)

***Scomberesox scombroides* (Richardson 1843)**

-oides, having the form of: unpublished name coined by Swedish naturalist Daniel Solander (1733-1782), probably referring to its *Scomber* (mackerel)-like coloration, described as “intense aquamarine or ‘garter-blue’ on the back” with a “silvery hue on the belly”

***Scomberesox simulans* (Hubbs & Wisner 1980)**

imitating, allusion not explained, perhaps referring to its appearance as a dwarf version of *S. saurus*



Cololabis saira. From: Brevoort, J. C. 1856. Notes on some figures of Japanese fish taken from recent specimens by the artists of the U. S. Japan Expedition. Pp. 253-288, Pls. 3-12. *In*: M. C. Perry, Narrative of the Expedition of an American Squadron to the China Seas and Japan, performed in the years 1852, 1853, and 1854 under the command of Commodore M. C. Perry, United States Navy, by order of the Government of the United States. Vol. 2. U.S. Senate Ex. Doc. No. 79, 33rd Congress, 2nd Session. Beverley Tucker, Washington, D.C. [i-viii] + 1-414 + 1-14 + I-XI + [1], 17 folded charts, Pls.