

# The *ETYFish* Project

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COMMENTS: 

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## Order CYPRINODONTIFORMES (part 3 of 4)

### Suborder CYPRINODONTOIDEI

#### Family PANTANODONTIDAE Spine Killifishes

3 genera · 8 species

##### ***Aliteranodon* Meinema & Huber 2023**

*alius*, other, and *iter*, a way or passage, i.e., “otherwise” or “in another way”; *-odon*, abridgement of *Pantanodon*, referring to its “previously unnoticed differences” with that “putatively closely related” genus

##### ***Aliteranodon bucinus* Meinema & Huber 2023**

Latin for hornblower or trumpeter, referring to its superior mouth, reaching above the eye and partially above the dorsal area

##### ***Aliteranodon filimbi* Meinema & Huber 2023**

Swahili (national language of Tanzania, type locality) for whistle or flute, referring to its slightly superior mouth, resembling a swollen upper lip, less pronounced than the superior mouth of *A. bucinus* (hence a flute rather than a horn or trumpet)

##### ***Aliteranodon ndoano* Meinema & Huber 2023**

Swahili (national language of Kenya, type locality) for hook, referring to its “extreme underbite, the dentary bent and curved upward like a hook”

##### ***Aliteranodon rostratus* Meinema & Huber 2023**

Latin for beaked, referring to its “bird-like” snout

##### ***Aliteranodon stuhlmanni* (Ahl 1924)**

in honor of Franz Ludwig Stuhlmann (1863-1928), German Colonial Service, who, with Emin Pascha, led the German East Africa Expedition (1889-1892), during which holotype was collected

##### ***Malagodon* Meinema & Huber 2023**

*Malag-*, from Malagasy, old name for Madagascar, where genus is endemic; *odon*, tooth, referring to presence of external teeth (vs. their absence on *Aliteranodon* and *Pantanodon*)

##### ***Malagodon madagascariensis* (Arnoult 1963)**

*-ensis*, suffix denoting place: Madagascar, where it is endemic [extinct due to habitat loss and exotic species]

##### ***Pantanodon* Myers 1955**

*podus*, foot (homologous to the anal fin); *oxys*, sharp or pointed, referring to its acuminate anal fin

##### ***Pantanodon podoxys* Myers 1935**

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

##### ***Pantanodon propinquus* Meinema & Huber 2023**

Latin for neighboring or similar to, referring to its resemblance to, and nearby distribution of, *P. podoxys*

#### Family CYPRINODONTIDAE Pupfishes

10 genera · 112 species/subspecies

##### Subfamily Cubanichthyinae Island Pupfishes

##### ***Cubanichthys* Hubbs 1926**

Cuba, where genus was thought to be endemic until generic placement of *C. pengelleyi*; *ichthys*, fish

##### ***Cubanichthys cubensis* (Eigenmann 1903)**

*-ensis*, suffix denoting place: Cuba, where it is endemic (including mainland and Isla de la Juventud, or Isle of Pines)

##### ***Cubanichthys pengelleyi* (Fowler 1939)**

in honor of Jamaican physician and medical officer Charles Edward Pengelley (1888-1966), who “obtained” type specimens and “sent interesting details of his experience with them as aquarium fishes”

##### ***Yssolebias* Huber 2012**

*yssos*, javelin, referring to elongate and narrow dorsal and anal fins with sharp borders; *lebias*, Greek name for a kind of small fish, first applied to killifishes (“Les Lebias”) by Cuvier (1816) and now a common root-name formation in the order

***Yssolebias marta* (Steindachner 1876)**

of Santa Marta, Colombia, type locality (only one specimen known, perhaps extinct)

**Subfamily Cyprinodontinae** Pupfishes

***Cualac* Miller 1956**

derived from a Mexican place name of Nahuatl origin meaning “where there is good water,” referring to type locality (La Media Luna, San Luis Potosí, México), a “spectacular spring area”

***Cualac tessellatus* Miller 1956**

tessellated, i.e., inlaid with small squares, referring to “mosaic-like or checkered pattern so prominently displayed on the dorsal fin of the male”

***Cyprinodon* Lacepède 1803**

*cyprinus*, carp or minnow; *odon*, tooth, i.e., a carp- or cyprinid-like fish but with teeth (hence “tooth carps,” another name for the order)

***Cyprinodon albivelis* Minckley & Miller 2002**

*albus*, white; *velum*, sail, referring to white color covering at least 1/3 of outer dorsal and anal fins of nuptial males

***Cyprinodon alvarez* Miller 1976**

in honor of Mexican ichthyologist José Álvarez del Villar (1903-1986), who collected this species in 1952 and intended to describe it but turned it over to Miller to study [extinct in the wild]

***Cyprinodon arcuatus* Minckley & Miller 2002**

arched or shaped or bent like a bow, referring to highly convex dorsal body profile [extinct in 1971 due to habitat alteration and introduced Largemouth Bass]

***Cyprinodon artifrons* Hubbs 1936**

*artus*, narrow; *frons*, forehead, proposed as a subspecies of *C. variegatus* with a narrower bony interorbital compared with *C. v. ovinus*

***Cyprinodon atrorus* Miller 1968**

*atra*, black; *ora*, border, referring to “conspicuous” black terminal band on caudal fin of males

***Cyprinodon beltrani* Álvarez 1949**

in honor of Mexican biologist Enrique Beltrán Castillo (1903-1994) on the occasion of his 25th anniversary as a biologist

***Cyprinodon bifasciatus* Miller 1968**

*bi-*, two; *fasciatus*, striped, referring to two prominent lateral stripes: one along midside from head to base of caudal fin, the other from base of pectoral fin to end of anal-fin base

***Cyprinodon bobmilleri* Lozano-Vilano & Contreras-Balderas 1999**

in honor of Robert Rush Miller (1916-2003), University of Michigan, known as “Bob” to his colleagues, for his lifelong devotion to Mexican fishes and his “friendly support” of the authors’ studies

***Cyprinodon bondi* Myers 1935**

in honor of biologist Richard Marshall Bond (1903-1976), who collected types during an ecological investigation of Hispaniolan lakes

***Cyprinodon bovinus* Baird & Girard 1853**

like a bull, allusion not explained, perhaps referring to robust body shape of males

***Cyprinodon brontotheroides* Martin & Wainwright 2013**

*-oides*, having the form of: referring to resemblance of protruding nasal region to the “bizarre” horn-like skull appendages of the extinct odd-toed ungulate family Brontotheriidae

***Cyprinodon ceciliae* Lozano-Vilano & Contreras-Balderas 1993**

in honor of Cecilia Contreras Lozano, the senior author’s daughter and the junior author’s niece, who helped in the 1988 trip during which type was collected [extinct when spring nearly dried in 1991]

***Cyprinodon dearborni* Meek 1909**

in honor of American ornithologist Ned Dearborn (1865-1948), who collected type

***Cyprinodon desquamator* Martin & Wainwright 2013**

*de-*, remove; *squamator*, scaler, referring to its scale-eating behavior

***Cyprinodon diabolis* Wales 1930**

devilish or of the devil, referring to Devils Hole, Ash Meadows, Nevada, only area of occurrence (believed to be the smallest natural range of any known vertebrate species)

***Cyprinodon elegans* Baird & Girard 1853**

elegant, allusion not explained, perhaps referring to more elongate shape compared to other *Cyprinodon* described

in same publication

***Cyprinodon eremus* Miller & Fuiman 1987**

lonely or alone, referring to isolated type locality (spring-fed pond, Organ Pipe Cactus National Monument, Pima County, Arizona, USA)

***Cyprinodon esconditus* Strecker 2002**

hidden, referring to prior failure to detect this species among specimens not assignable to one of the other pupfish species in Laguna Chichancanab (Yucatán, México)

***Cyprinodon eximius* Girard 1859**

exceptional, allusion not explained, perhaps referring to its being the largest *Cyprinodon* species “so far observed in North America” at the time

***Cyprinodon fontinalis* Smith & Miller 1980**

living in or near springs, referring to its occurrence in five springs and their outflows in Bolsón de los Muertos, Chihuahua, México

***Cyprinodon higuey* Rodriguez & Smith 1990**

named for the Higuey people who originally inhabited eastern Hispaniola, where this species occurs (a coastal lake in eastern Dominican Republic)

***Cyprinodon inmemoriam* Lozano-Vilano & Contreras-Balderas 1993**

in memory, referring to its being described after it went extinct shortly after its discovery in 1983 due to dewatering of spring habitat

***Cyprinodon julimes* De la Maza-Benignos & Vela-Valladares 2009**

named for municipality of Julimes, Chihuahua, México, where this pupfish is known from a single thermal spring

***Cyprinodon labiosus* Humphries & Miller 1981**

large-lipped, referring to its “enlarged and convoluted” lips

***Cyprinodon laciniatus* Hubbs & Miller 1942**

lacinate (divided into deep narrow irregular segments), referring to “strongly and diagnostically lacinate scale margins”

***Cyprinodon latifasciatus* Garman 1881**

*latus*, broad; *fasciatus*, banded, presumably referring to much wider caudal band compared to *C. variegatus* [extinct due to habitat destruction, last seen in 1903]

***Cyprinodon longidorsalis* Lozano-Vilano & Contreras-Balderas 1993**

*longus*, long; *dorsalis*, of the back, referring to long dorsal fin of mature males, reaching caudal fin when depressed [extinct in wild]

***Cyprinodon macrolepis* Miller 1976**

*macro-*, large; *lepis*, scales, referring to its distinctively large scales, 23 or 24 along lateral line

***Cyprinodon macularius* Baird & Girard 1853**

spotty, referring to color pattern of females and non-breeding males

***Cyprinodon maya* Humphries & Miller 1981**

named for the Maya, indigenous peoples of Mesoamerica in pre-Columbian times, who occupied the region (Yucatán, México) where this pupfish occurs

***Cyprinodon meeki* Miller 1976**

in honor of ichthyologist Seth Eugene Meek (1859-1914), who “pioneered in exploring the Mexican freshwater fish fauna”

***Cyprinodon nazas* Miller 1976**

named for the Río Nazas basin of northern México (Durango, Zacatecas, Coahuila), where it is endemic

***Cyprinodon nevadensis nevadensis* Eigenmann & Eigenmann 1889**

*-ensis*, suffix denoting place: referring to type locality, Saratoga Spring, Death Valley, Inyo County, California, USA, which the authors erroneously placed in Nevada

***Cyprinodon nevadensis amargosae* Miller 1948**

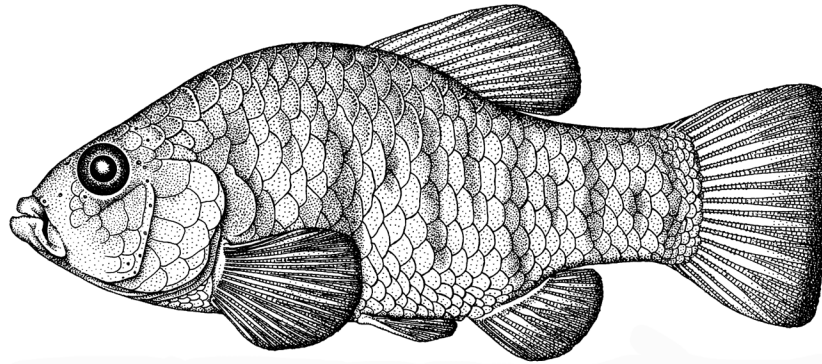
of the Armagosa River, San Bernardino County, California, USA, where it is endemic

***Cyprinodon nevadensis calidae* Miller 1948**

of a *calida*, warm spring, referring to Tecopa Hot Springs, Inyo County, California, USA, where it occurred [extinct due to modification of springs for bathhouses; last seen in 1970]

***Cyprinodon nevadensis mionectes* Miller 1948**

Greek for “one who has less,” referring to its reduced size and lower number of fin rays and scales compared to other *C. nevadensis* subspecies



*Cyprinodon nichollsi*. From: Smith, M. L. 1989. *Cyprinodon nichollsi*, a new pupfish from Hispaniola, and species characteristics of *C. bondi* Myers (Teleostei: Cyprinodontiformes). *American Museum Novitates* No. 2953: 1-10.

***Cyprinodon nevadensis pectoralis* Miller 1948**

pectoral, referring to increased number of pectoral-fin rays compared to other *C. nevadensis* subspecies

***Cyprinodon nevadensis shoshone* Miller 1948**

Native American word meaning “warm water,” referring to Shoshone Spring outflow, Inyo County, California, USA, where it is endemic

***Cyprinodon nichollsi* Smith 1989**

in honor of Kenneth W. Nicholls (no other information available), for “support of fieldwork”

***Cyprinodon pachycephalus* Minckley & Minckley 1986**

*pachy*, thick; *cephalus*, head, referring to greatly enlarged head, its length  $>1/3$  and width  $>1/4$  SL, with “broad and massive” jaws

***Cyprinodon pecosensis* Echelle & Echelle 1978**

*-ensis*, suffix denoting place: Pecos River system of Texas and New Mexico, USA, where it is endemic

***Cyprinodon pisteri* Miller & Minckley 2002**

in honor of fisheries biologist Edwin Philip (“Phil”) Pister (b. 1929); “For almost four decades, Phil Pister has unerringly and effectively performed the daunting task of preserving the integrity of natural aquatic habitats and biotas in North American deserts, along the way teaching others to do the same. His infectious and tireless persistence, enthusiasm, optimistic outlook, and unique capability to redirect conflicting views toward common goals have led to significant and enviable successes in equating science and a strong environmental ethic with political reality.”

***Cyprinodon radiosus* Miller 1948**

rayed, referring to higher average number of dorsal-, anal- and pelvic-fin rays compared to congeners from Death Valley (California, USA) system (*macularius*, *nevadensis*, *diabolis*, *salinus*)

***Cyprinodon riverendi* (Poey 1860)**

in honor of Cuban naturalist Luis Le Riverend, who provided type; he “added to the knowledge of natural history” in Cuba (type locality) “through his collections and his aquariums” (translation)

***Cyprinodon rubrofluviatilis* Fowler 1916**

*rubro-*, red; *fluviatilis*, of a river, referring to the Red River drainage of Texas and Oklahoma, the “most northern inland region” in which the genus naturally occurs

***Cyprinodon salinus salinus* Miller 1943**

of salt, named for Salt Creek, Death Valley, California, USA, where it is endemic

***Cyprinodon salinus milleri* LaBounty & Deacon 1972**

in honor of Robert Rush Miller (1916-2003), University of Michigan, who described the nominate form in 1943

***Cyprinodon salvadori* Lozano-Vilano 2002**

in honor of Salvador Contreras-Balderas (1936-2009), for his “life-long dedication” to the study and teaching about Mexican fishes, and his “friendly support” of the author’s studies over many years [note: Lozano-Vilano is married to Contreras-Balderas’ brother]

***Cyprinodon simus* Humphries & Miller 1981**

snub-nosed, referring to its short, blunt snout

***Cyprinodon suavius* Strecker 2005**

kiss, referring to distinctive protruded appearance of its lips

***Cyprinodon tularosa* Miller & Echelle 1975**

named for the endorheic Tularosa basin on New Mexico, USA, where it is endemic

***Cyprinodon variegatus variegatus* Lacepède 1803**

variegated, referring to variable color patterns of brown spots and bands on sides

***Cyprinodon variegatus baconi* Breder 1932**

in honor of Daniel Bacon, sponsor of the Bacon-Andros Expedition in the Caribbean, during which type was collected; Bacon was also Breder's host in Long Cay, Bahamas

***Cyprinodon variegatus hubbsi* Carr 1936**

in honor of ichthyologist Carl L. Hubbs (1894-1979), who suggested this form of *C. variegatus* be described as a new species

***Cyprinodon variegatus ovinus* (Mitchill 1815)**

of sheep, referring to Sheep's-Head Killifish, local name of *C. variegatus* in New York, USA (now widely known as Sheepshead Minnow)

***Cyprinodon verecundus* Humphries 1984**

mysterious or shy, referring to how it was overlooked in previous investigations of pupfishes of the Yucatán Peninsula of México

***Cyprinodon veronicae* Lozano-Vilano & Contreras-Balderas 1993**

in honor of Verónica Contreras Arqueita, the junior author's daughter and the senior author's niece, for her help in the 1984 trip during which type was collected [extinct in wild]

***Floridichthys* Hubbs 1926**

Florida (USA), where Hubbs stated the genus "appears to be wholly confined" (but Hubbs later found *F. polyommus* to occur along the Yucatán Peninsula of México); *ichthys*, fish

***Floridichthys carpio* (Günther 1866)**

carp (*Cyprinus carpio*), allusion not explained, probably referring to its carp-like shape, especially since it is larger than most of its presumed congeners in *Cyprinodon*

***Floridichthys polyommus* Hubbs 1936**

*poly*, many; *omma*, eye, referring to numerous ocellated spots on posterior body of adult males

***Garmanella* Hubbs 1936**

*-ella*, diminutive connoting endearment: "dedicated to the respected memory" of Harvard ichthyologist-herpetologist Samuel Garman (1843-1927), with "special regard" to his 1895 monograph on cyprinodontiform fishes; "In a prospective second revision of this group, left unfinished by his death, Garman recognized the genotype of *Garmanella* as a undescribed species" [treated as a junior synonym of *Jordanella* by many workers]

***Garmanella pulchra* Hubbs 1936**

lovely or beautiful, described as a "very pretty species" and "handsomely marked" [placed in *Jordanella* by many workers]

***Jordanella* Goode & Bean 1879**

*-ella*, diminutive connoting endearment: in honor of ichthyologist David Starr Jordan (1851-1931)

***Jordanella floridae* Goode & Bean 1879**

of Florida, USA, where it is endemic (but introduced elsewhere)

***Megupsilon* Miller & Walters 1972**

*mega*, large; *upsilon*, the Greek letter Y, referring to exceptionally large Y chromosome in males

***Megupsilon aporus* Miller & Walters 1972**

*a-*, without; *porus*, pores, referring to lack of pores in sensory cephalic canal system [extinct; last surviving captive specimens perished in 2014]

**Subfamily Orestiinae** Andean Pupfishes***Orestias Valenciennes* 1839**

named for the Greek mythological figure Orestes, the "nymph of the mountains" (translation), referring to their occurrence in the Andes [genus is feminine, so all adjectival names, originally ending in *-us* (e.g., *albus*, *robustus*), have been emended (e.g., *alba*, *robusta*) per Cruz-Jofré et al. (2013)]

***Orestias agassii* Valenciennes 1846**

in honor of zoologist-geologist Louis Agassiz (1807-1873), who collected type, but was specifically honored (along with O. F. Müller, see *O. mulleri*) for his contributions to science [three spellings appear in the publication: *agassii*, *agassizii*, *agassisi*; Parenti (1994), as the first reviser to analyze all three spellings, chose "*agassii*" since it appears above the original description and is used by most modern workers; according to Huber (2014), Valenciennes may have deleted the "z" in order to create a phonetic spelling that was easier for non-French readers to pronounce]



***Orestias alba* Valenciennes 1846**

white, one of two species from Lake Titicaca locally known by their colors, a yellow species (see *O. lutea*) and this one, described as “gilded green” in alcohol but probably “whiter” in life (translation)

***Orestias ascotanensis* Parenti 1984**

-*ensis*, suffix denoting place: Lago Ascotan, a salt basin in northwestern Chile, where it is endemic

***Orestias chungarensis* Vila & Pinto 1987**

-*ensis*, suffix denoting place: Lake Chungará, Chilean Altiplano, where it is endemic

***Orestias crawfordi* Tchernavin 1944**

in honor of malacologist George I. Crawford (1910-2011), British Museum (Natural History), Deputy Leader of Percy Sladen Trust Titicaca Expedition (1937), during which type was collected

***Orestias ctenolepis* Parenti 1984**

*ctenos*, comb; *lepis*, scale, referring to ctenoid scales over most of body of adult males

***Orestias cuvieri* Valenciennes 1846**

in honor of French naturalist and zoologist Georges Cuvier (1769-1832); Valenciennes was Cuvier’s pupil and successor as author of the 22-volume *Histoire Naturelle des Poissons* (1828-1850)

***Orestias elegans* Garman 1895**

elegant, fine or select, allusion not explained, perhaps referring to more elongate shape compared to the similar *O. agassii*

***Orestias empyraeus* Allen 1942**

named for Empyrean, the highest heaven in ancient cosmologies, referring to its “extremely elevated habitat” (3048-4267 m)

***Orestias forgeti* Lauzanne 1981**

in honor of Lauzanne’s friend J. M. Forget (no other information available)

***Orestias frontosa* Cope 1876**

with a broad head, presumably referring to wider head compared to *O. ortonii* (= *agassii*)

***Orestias gilsoni* Tchernavin 1944**

in honor of botanist Hugh Cary Gilson (1910-2000), Leader of Percy Sladen Trust Titicaca Expedition (1937), during which type was collected

***Orestias gloriæ* Vila, Scott, Mendez, Valenzuela, Iturra & Poulin 2012**

in honor of Chilean ichthyologist Gloria Arratia, for her research work on Chilean fishes, especially those of the Andean region

***Orestias gracilis* Parenti 1984**

slender or thin, referring to its “overall elongate and delicate appearance”

***Orestias gymnota* Parenti 1984**

*gymnos*, naked or lightly clad; -*ta*, adjectival suffix denoting possession, referring to few or no head scales, and no lateral scales dorsal or ventral to the lateral, median rows of scales

***Orestias hardini* Parenti 1984**

in honor of ecologist Tim Hardin, Colorado State University (now biologist and instream flow specialist, Oregon Department of Fish & Wildlife), for collecting and donating *Orestias* specimens from northern Peru, including type of this one

***Orestias imarpe* Parenti 1984**

abbreviation for Instituto del Mar del Peru, which “helped to inspire a cooperative study of the Titicaca Basin”

***Orestias incae* Garman 1895**

of the Incas, presumably referring to its occurrence in Lake Titicaca (Bolivia and Peru), part of the Inca Empire in the 15th century

***Orestias ispi* Lauzanne 1981**

etymology not explained, almost certainly derived from *ispus*, local Andean name for smaller *Orestias* species

***Orestias jussiei* Valenciennes 1846**

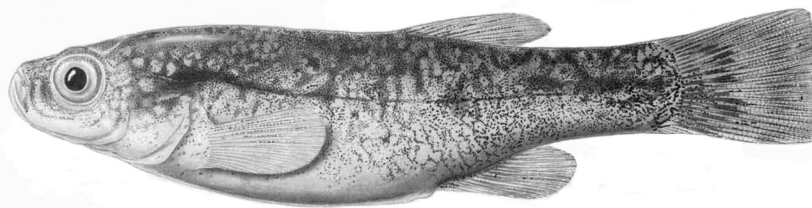
in honor of Joseph de Jussieu (1704-1779), French botanist and explorer in South America, who illustrated this species and *O. pentlandii*; according to Huber (2014), Valenciennes may have deleted the “*u*” in order to create a phonetic spelling that was easier for non-French readers to pronounce

***Orestias laucaensis* Arratia 1982**

-*ensis*, suffix denoting place: Río Lauca, Parinacota, Chile, elevation ~4300 m, type locality

***Orestias lutea* Valenciennes 1846**

yellow, one of two species from Lake Titicaca locally known by their colors, a white species (see *O. alba*) and this



*Orestias tchernavini*. From: Lauzanne, L. 1981. Description de trois *Orestias* nouveaux du Lac Titicaca, *O. ispi* n. sp., *O. forgeti* n. sp. et *O. tchernavini* n. sp. (Pisces, Cyprinodontidae). *Cybium* 3e série. Bulletin de la Société Française d'Ichtyologie v. 5 (no. 3): 71-91

one, pale in alcohol but with a yellowish background that indicates the fish is more yellow in life (and indeed it is)

***Orestias minima* Tchernavin 1944**

least, at 36 mm SL, the smallest *Orestias* known

***Orestias minuta* Tchernavin 1944**

minute or very small, referring to maximum size (37 mm SL) of type specimens, both ripe females

***Orestias mooni* Tchernavin 1944**

in honor of biologist Harold Philip Moon (1919-1982), Freshwater Biological Association (UK), member of Percy Sladen Trust Titicaca Expedition (1937), during which type was collected

***Orestias mulleri* Valenciennes 1846**

patronym identified only as "Muller," one of three *Orestias* species Valenciennes named after famous biologists of the day, including *O. agassii* (see above) and *O. owenii* (Richard Owen, now a junior synonym of *O. jussiei*); probably in honor of Danish naturalist Otto Friedrich Müller (1730-1784), whose *Fauna Danica* (also known as *Zoologica Danica*) is cited three times in the volume, and who was earlier praised by Cuvier & Valenciennes (1828) as "one of the most painstaking and accurate observers of the 18th century, made famous by his microscopic discoveries" (translation) [Huber (2001) states that name honors Johann Friedrich "Fritz" Theodor Müller (1822-1897), but he was still at university and medical school in 1846 and had not yet emigrated to Brazil where he conducted his famous studies on mimicry in butterflies]

***Orestias multiporis* Parenti 1984**

*multi-*, many; *porus*, pore, referring to multiple series of neuromasts along median dorsal ridge and lateral series

***Orestias munda* Parenti 1984**

neat or trim, referring to unadorned, nearly uniform color pattern from juvenile through adult males and females

***Orestias olivacea* Garman 1895**

olive-colored, referring to "olive" color of larger specimens (7.6-11.3 cm) in and "olivaceous mottled with brownish" color of smaller specimens (5 cm)

***Orestias parinacotensis* Arratia 1982**

*-ensis*, suffix denoting place: Parinacota, northern Chile, where type locality, a bofedales (wetland) at 4300 m, is situated

***Orestias pentlandii* Valenciennes 1846**

in honor of Joseph Barclay Pentland (1796-1873), Irish explorer and diplomat in Bolivia, who collected several species of *Orestias* from Lake Titicaca, including type of this one

***Orestias piacotensis* Vila 2006**

*-ensis*, suffix denoting place: Lake Piacota, Parinacota Province, Chilean Altiplano, where it is endemic

***Orestias polonorum* Tchernavin 1944**

Poles (i.e., people of Poland), presumably referring to how "first specimens of this species were collected by a Polish zoologist, [Konstanty] Jelski, member of the Count K. Branicki Expedition to South America in 1866-1867, and the British Museum of Natural History obtained these specimens through the courtesy of the Warsaw University"

***Orestias puni* Tchernavin 1944**

of Bahia de Puno, Lake Titicaca, Peru, type locality

***Orestias richersoni* Parenti 1984**

in honor of limnologist (and later evolutionary anthropologist) Peter J. Richerson (b. 1943), University of California, Davis, who provided the impetus for a multidisciplinary and international study of Lake Titicaca

***Orestias robusta* Parenti 1984**

strong or robust, referring to its "overall robust appearance"

***Orestias rotundipinnis* Parenti 1984**

*rotundus*, round; *pinnis*, fin, referring to rounded margin of pectoral fins

***Orestias silustani* Allen 1942**

of Silustan, “nearby Inca ruin on the shore of Lake Umayo [Peru], overlooking the weedy habitat” from which type was collected

***Orestias taquiri* Tchernavin 1944**

named for Taquiri Island, Lesser Lake Titicaca, Bolivia, only known area of occurrence

***Orestias tchernavini* Lauzanne 1981**

patronym not identified but clearly in honor of Russian ichthyologist Vladimir V. Tchernavin (1887-1949), author of 1944 revision of the subfamily (he earlier achieved fame as one of the few prisoners of the Soviet Gulag to escape and live abroad, eventually settling at the Natural History Museum of London)

***Orestias tomcooni* Parenti 1984**

in honor of ecologist-limnologist Thomas G. “Tom” Coon, University of California, Davis (now at Michigan State University), for his “expert collection” of more than 3000 specimens of *Orestias* from the Titicaca Basin in 1979, which formed the impetus for Parenti’s revision of the family

***Orestias tschudii* Castelnau 1855**

in honor of Swiss naturalist and “learned traveler” (translation) Johann Jakob von Tschudi (1818-1889), author of *Faune du Pérou* and other works

***Orestias tutini* Tchernavin 1944**

in honor of botanist Thomas Gaskell Tutin (1908-1987), member of Percy Sladen Trust Titicaca Expedition (1937), during which type was collected

***Orestias uruni* Tchernavin 1944**

named for Uruni Bay, north side of Capachica Peninsula, Lake Titicaca, Peru, only known area of occurrence

***Orestias ututo* Parenti 1984**

named for Lago Ututo, Peru, type locality

***Pseudorestias Arratia, Vila, Lam, Guerrero & Quezada-Romegialli* 2017**

*pseudo-*, false, i.e., although this genus may have “overall similarities” with *Orestias*, such an appearance is false

***Pseudorestias lirimensis* Arratia, Vila, Lam, Guerrero & Quezada-Romegialli 2017**

*-ensis*, suffix denoting place: Lirima, a small village in northern Chile that is irrigated by Charvinto Creek, type locality

## Family PROFUNDULIDAE Middle American Killifishes

2 genera · 14 species

***Profundulus* Hubbs 1924**

*pro-*, in front of or before, allusion not explained but clearly reflecting Hubbs’ belief (“it seems not improbable that *Profundulus*, of all American genera, diverges least from a general ancestral cyprinodont type”) that this genus is ancestral compared with *Fundulus*, its confamilial at the time (name does not mean “deep” as stated by FishBase and others)

***Profundulus balsanus* Ahl 1935**

*-anus*, belonging to: Río Balsas system, Guerrero, México, where Ahl believed type locality (Malinaltepec River) was situated; in actuality, that river is a tributary of the Papagayo River and does not occur in the Balsas system

***Profundulus chimalapensis* Del Moral-Flores, López-Segovia & Hernández-Arellano 2020**

*-ensis*, suffix denoting place: Selva de Los Chimalapas, geographic area in Oaxaca, México, type locality (Chimalapa means “jicara [cup or bowl made from the fruit of a calabash tree] of gold” in Castilian)

***Profundulus emilioi* Calixto-Rojas, Lira-Noriega, Rubio-Godoy, Pérez-Ponce de León & Pinacho-Pinacho 2023**

in honor of Emilio Martínez Ramírez, professor of ichthyology, colleague and friend, “always willing to study fishes” in Oaxaca, Mexico, and who “kindly opened the doors of his lab” to the first and fourth authors “in their early student days”

***Profundulus guatemalensis* (Günther 1866)**

*-ensis*, suffix denoting place: Guatemala, where it occurs (also occurs in Ecuador)

***Profundulus kreiseri* Matamoros, Schaefer, Hernández & Chakrabarty 2012**

in honor of biologist Brian R. Kreiser, University of Southern Mississippi (USA), doctoral advisor and friend of the first author

***Profundulus mixtlanensis* Ornelas-García, Martínez-Ramírez & Doadrio 2015**

*-ensis*, suffix denoting place: Mixtlan (*mixtli*, cloud and *-tlan*, place, i.e., “the place of the clouds”), Nahuatl name used in Tenoch culture for the Mixteca region of Oaxaca, México, where this killifish occurs



***Profundulus oaxacae* (Meek 1902)**

of Oaxaca, México, where it is endemic to the Verde River basin

***Profundulus parentiae* Matamoros, Domínguez-Cisneros, Velázquez-Velázquez & McMahan 2018**

in honor of Lynne R. Parenti (b. 1954), Smithsonian Institution, for “many important contributions to our knowledge of the systematics, biogeography, biology, and morphology of cyprinodontiforms as well as numerous other groups of fishes”

***Profundulus punctatus* (Günther 1866)**

spotted, described as having a vertical dark-purple or violet spot at center of each scale (especially on the tail), and 3–4 series of blackish dots on dorsal fin

***Profundulus rei* Calixto-Rojas, Lira-Noriega, Rubio-Godoy, Pérez-Ponce de León & Pinacho-Pinacho 2023**

named for the first author’s pet cat Rei, his “companion for 11 years, during which his academic formation took place (BSc, MSc and almost all PhD), and was his constant attendant while measuring all the fish specimens for this work”; the cat’s name was inspired by the fictional character Rei Ayanami from the Japanese animation series *Neon Genesis Evangelion*

***Tlaloc* Álvarez & Carranza 1951**

named for Tlaloc, god of water in Aztec mythology, presumably referring to occurrence of *T. mexicanus* (= *labialis*) in Chiapas, México

***Tlaloc candaliarius* (Hubbs 1924)**

-*ius*, pertaining to: Candalaria, a limestone spring near the Mexican boundary of Guatemala, type locality (also occurs in Chiapas, México)

***Tlaloc hildebrandi* (Miller 1950)**

in memory of Samuel F. Hildebrand (1883–1949), for his “significant contributions to our understanding of the ichthyology of Central America”

***Tlaloc labialis* (Günther 1866)**

of the lips, referring to “well developed, broad” lips, extending to angle of mouth

***Tlaloc portillorum* (Matamoros & Schaefer 2010)**

-*orum*, commemorative suffix, plural: in honor of Honduran brothers Hector (b. 1963, ecologist and environmental consultant) and Danilo (b. 1965) Portillo, life-long fieldwork collaborators who guided senior author to type locality and provided valuable natural history information about the area

**Family GOODEIDAE** Goodeids

19 genera/subgenera · 53 species/subspecies

**Subfamily Empetrichthyinae** Springfishes***Crenichthys* Hubbs 1932**

*creno-*, spring, referring to occurrence in desert springs; *ichthys*, fish

***Crenichthys baileyi baileyi* (Gilbert 1893)**

in honor of American naturalist and ethnographer Vernon Orlando Bailey (1864–1942), who collected type with C. Hart Merriam (see *Empetrichthys merriami*)

***Crenichthys baileyi albivallis* Williams & Wilde 1981**

*albus*, white; *vallis*, valley, referring to White River Valley of Nevada (USA), where it is endemic

***Crenichthys baileyi grandis* Williams & Wilde 1981**

large, the largest subspecies of *C. baileyi*

***Crenichthys baileyi moapae* Williams & Wilde 1981**

of the Moapa River system (specifically, headwater streams), Clark County, Nevada (USA), where it is endemic

***Crenichthys baileyi thermophilus* Williams & Wilde 1981**

*thermos*, heat; *philo*, to love, referring to its occurrence in warm spring waters

***Crenichthys nevadae* Hubbs 1932**

of Nevada (USA), where it is endemic to thermal spring systems of Railroad Valley in Nye County

***Empetrichthys* Gilbert 1893**

*em-*, within and *petra*, rock, referring to stone-like pharyngeal teeth of *E. merriami*; *ichthys*, fish

***Empetrichthys latos latos* Miller 1948**

*latus*, wide; *os*, mouth, referring to wider mouth compared to *E. merriami*

***Empetrichthys latos concavus* Miller 1948**

concave, referring to marked concavity of top of head [extinct by 1960 due to introduced carp and bullfrogs]

***Empetrichthys latos pahrump* Miller 1948**

named for Pahrump Ranch in Pahrump Valley, Nevada, USA, where it was endemic [extinct in 1958 due to introduced carp and bullfrogs and excessive spring pumping]

***Empetrichthys merriami* Gilbert 1893**

in honor of American naturalist and physician C. Hart Merriam (1855-1942), who led Death Valley (California, USA) expedition during which he collected type with Vernon O. Bailey (see *Crenichthys baileyi*) [extinct in the early 1950s due to introduced bullfrogs and crayfish]

**Subfamily Goodeinae** Goodeids or Splittfins***Allodontichthys* Hubbs & Turner 1939**

*allos*, different and *odon*, tooth, referring to distinctly shaped jaw teeth of *A. zonistius*, “instead of being regularly conic (everywhere evenly round in cross section) are definitely compressed and shouldered within the slender conic tip and are keeled (rather weakly) at either edge of the anterior face”; *ichthys*, fish

***Allodontichthys hubbsi* Miller & Uyeno 1980**

in honor of ichthyologist Carl L. Hubbs (1894-1979), “whose early studies on goodeids set the stage for subsequent understanding of this compact but highly diversified family”

***Allodontichthys polylepis* Rauchenberger 1988**

*poly*, many; *lepis*, scales, referring to greater number of scales along lateral line compared to congeners

***Allodontichthys tamazulae* Turner 1946**

of Tamazula, a town in Jalisco, México, where type locality is situated

***Allodontichthys zonistius* (Hubbs 1932)**

*zon(us)*, band; *istius*, sail, referring to jet-black bands on dorsal fin

***Alloophorus* Hubbs & Turner 1939**

*allos*, different; *oön*, egg; *phoras*, bearing, referring to its distinctive ovarian structure, e.g., ovarian septum entire and trophotaeniae (see *Allotoca*) not rosette-shaped

***Alloophorus robustus* (Bean 1892)**

stout, allusion not explained, perhaps referring to chunky appearance compared to presumed congeners in *Fundulus* (Fundulidae)

***Allotoca* Hubbs & Turner 1939**

*allos*, different; *tokos*, offspring, referring to the trophotaeniae, ribbon-like extensions that hang from anal region of developing goodeine embryos and absorb nutrients from the mother's ovarian fluid

***Allotoca catarinae* (de Buen 1942)**

of Laguna Santa Catarina, Michoacán, México, type locality

***Allotoca diazi* (Meek 1902)**

in honor of José de la Cruz Porfirio Díaz Mori (1830-1915), President of México from 1877-1880 and 1884-1911

***Allotoca dugesii* (Bean 1887)**

in honor of French physician Alfredo Dugès (1826-1910), often called the father of Mexican herpetology, who collected type

***Allotoca goslinei* Smith & Miller 1987**

in honor of ichthyologist William A. Gosline (1915-2002), University of Michigan, for his work on sensory canals in cyprinodontoid fishes [possibly extinct in wild]

***Allotoca maculata* Smith & Miller 1980**

spotted, referring to black spot at base of caudal fin

***Allotoca meeki* (Álvarez 1959)**

in honor of ichthyologist Seth Eugene Meek (1859-1914), who authored the first review of Mexican fishes in 1904

***Allotoca regalis* (Álvarez 1959)**

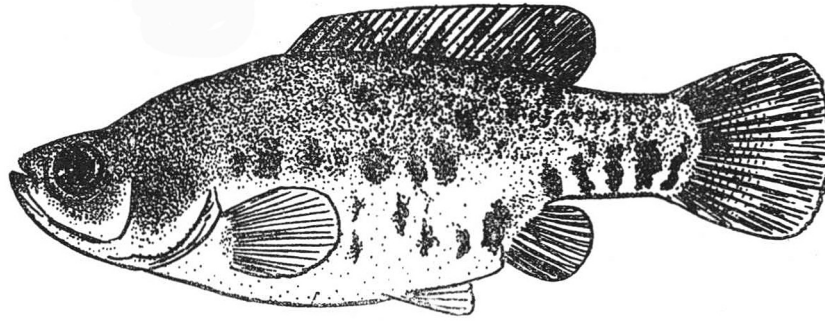
regal, referring to Los Reyes (the kings), Michoacán, México, near type locality [placed in a monotypic *Neophorus* by some workers, but that genus is a junior synonym of *Allotoca* based on placement of type species, *A. diazi*; if *A. regalis* warrants its own genus, then a new one needs to be proposed for it]

***Allotoca zacapuensis* Meyer, Radda & Domínguez-Domínguez 2001**

*-ensis*, suffix denoting place: Laguna de Zacapu, Michoacán, México, type locality

***Ameca* Miller & Fitzsimons 1971**

named for upper Río Ameca basin (primarily in the Río Teuchitlán springs), Jalisco, México, where it is endemic



*Girardinichthys turneri*, holotype, female. From: de Buen, F. 1940. Un nuevo género de la familia Goodeidae perteneciente a la fauna ictiológica mexicana. *Anales de la Escuela Nacional de Ciencias Biológicas, México* v. 2 (no. 2/3): 133-140, Pl. 10.

- Ameca splendens* Miller & Fitzsimons 1971**  
bright, shining or glowing, referring to its “striking” colors in life
- Ataeniobius* Hubbs & Turner 1939**  
*a-*, without; *taenia*, band; *bios*, means of living, referring to lack of functional trophotaeniae (see *Allotoca*) in newborn fish
- Ataeniobius toweri* (Meek 1904)**  
in honor of its discoverer, William L. Tower (1872-1955), evolutionary biologist, University of Chicago (USA)
- Chapalichthys* Meek 1902**  
named for Lago de Chapal, near Ocotlan, Jalisco, México, type locality of *C. encaustus*; *ichthys*, fish
- Chapalichthys encaustus* (Jordan & Snyder 1899)**  
branded, referring to nine vertical bands on median part of body
- Chapalichthys pardalis* Álvarez 1963**  
leopard, referring to its circular black spots, like those of a leopard
- Characodon* Günther 1866**  
*charax*, Greek word meaning “palisade of pointed sticks”; *odon*, tooth, presumably referring to “about twenty smallish teeth in each jaw” of *C. lateralis*
- Characodon audax* Smith & Miller 1986**  
bold or daring, referring to its aggressive behavior
- Characodon garmani* Jordan & Evermann 1898**  
in honor of Harvard ichthyologist-herpetologist Samuel Garman (1843-1927), for his “valuable studies” of cyprinodontoid fishes [extinct]
- Characodon lateralis* Günther 1866**  
of the sides, referring to darker (than brownish-olive body) band running from eye to caudal-fin root, sometimes broken up into a series of brownish black spots (band most evident in preserved specimens)
- Girardinichthys* Bleeker 1860**  
named for ichthyologist-herpetologist Charles Girard (1822-1895), whose 1859 work on cyprinodontoid fishes mentioned a form that Bleeker believed represented a new genus and species, now a junior synonym of *G. viviparus*; *ichthys*, fish
- Subgenus ***Girardinichthys***
- Girardinichthys multiradiatus* (Meek 1904)**  
*multi-*, many; *radiatus*, rayed, referring to its long (>20 rays) dorsal and anal fins
- Girardinichthys viviparus* (Bustamante 1837)**  
livebearer (as are all members of the subfamily), but at the time believed to be a cyprinid that gave birth to live young [note: the first Mexican fish scientifically described by a Mexican]
- Subgenus ***Hubbsina* de Buen 1940**  
*-ina*, belonging to: ichthyologist Carl L. Hubbs (1894-1979); when paired with the specific epithet of *G. turneri*, the combined name honors the biologists who collaborated on a seminal revision of the goodeids in 1939
- Girardinichthys ireneae* Radda & Meyer 2003**  
in honor of Radda’s wife Irene
- Girardinichthys turneri* (de Buen 1940)**  
in honor of zoologist Clarence Lester Turner (1890-1969); when paired with the genus-level epithet of *Hubbsina*,

the combined name honors the biologists who collaborated on a seminal revision of the goodeids in 1939 [probably extinct; not seen since the 1980s]

**Goodea Jordan 1880**

-*ea*, belonging to: ichthyologist George Brown Goode (1851-1896), Director, U.S. National Museum, and “one of the most scholarly of modern writers on fishes” (per Jordan & Evermann 1896)

**Goodea atripinnis Jordan 1880**

*ater*, black; *pinnna*, fin, referring to “chiefly black” vertical fins, especially on distal half

**Ilyodon Eigenmann 1907**

*ilyos*, ooze; *odon*, tooth, allusion not explained, perhaps referring to how single series of bicuspid teeth of *I. paraguayense* (= *furcidens*), along with its alimentary canal (described as three times as long as entire fish) are adaptations for grazing on afwuchs and detrital matter

**Ilyodon cortesae Paulo-Maya & Trujillo-Jiménez 2000**

in honor of María Teresa Cortés, for her “outstanding” (translation) contributions to the development of Mexican ichthyology [treated as a synonym of *I. whitei* by some workers]

**Ilyodon furcidens (Jordan & Gilbert 1882)**

*furcatus*, forked; *dens*, teeth, referring to anterior teeth, all bicuspid or Y-shaped

**Ilyodon lennoni Meyer & Förster 1983**

in honor of singer-songwriter John Lennon (1940-1980), formerly of The Beatles [treated as a synonym of *I. whitei* by some workers]

**Ilyodon whitei (Meek 1904)**

in honor of E. A. White, Inter-oceanic Railway of Mexico (Mexico City), who took a “personal interest” in Meek’s work, for “many favors received through his courtesy,” which “resulted in considerable substantial aid”

**Neotoca Hubbs & Turner 1939**

*neo*, new; *tokos*, offspring, i.e., a new type of embryo, presumably a general reference to trophotaeniae (see *Allotoca*)

**Neotoca bilineata (Bean 1887)**

*bi-*, two; *lineatus*, lined, referring to two vertical lines on body of females

**Skiffia Meek 1902**

-*ia*, belonging to: Frederick J. V. Skiff (1851-1921), Director of the Field Columbian Museum (now the Field Museum, Chicago, USA), where Meek was Assistant Curator of Zoology at the time

**Skiffia francesae Kingston 1978**

in honor of Frances H. Miller (1919-1987), daughter of Carl L. Hubbs (see *Hubbsina*) and wife and collecting partner of Mexican fish expert Robert Rush Miller, for her “help in furthering our understanding of Mexican fishes” [extinct in wild]

**Skiffia lermae Meek 1902**

of the Río Lerma system, where type locality (Patzcuaro Lake at Parzcuaro, Michoacan, México) is situated

**Skiffia multipunctata (Pellegrin 1901)**

*multi-*, many; *punctatus*, spotted, referring to dark spot on posterior margin of each scale on upper half of body

**Xenophorus Hubbs & Turner 1939**

*xenos*, strange; *oön*, egg; *phorus*, bearing, referring to distinctive structure of ovary; e.g., ovarian flaps thick and trophotaeniae (see *Allotoca*) “very considerably elongated, when fully developed about reaching end of caudal fin, not lobate, asymmetrical”

**Xenophorus captivus (Hubbs 1924)**

captive, allusion not explained, probably referring to Hubbs’ hypothesis that it derived from *Goodea atripinnis* (presumed closest relative) after isolation following stream capture

**Xenotaenia Turner 1946**

*xenos*, strange; *taenia*, ribbon or band, but in this case possibly short for trophotaeniae (see *Allotoca*); since its trophotaeniae “are unlike any others in the subfamily, the genus is named for [this] character”

**Xenotaenia resolanae Turner 1946**

of Río Resolana, ~40 km southwest of Autlan, Jalisco, México, type locality

**Xenotoca Hubbs & Turner 1939**

*xenos*, strange; *toca*, offspring (i.e., embryo), presumably a general reference to trophotaeniae (see *Allotoca*)

**Xenotoca doadrioi Domínguez-Domínguez, Bernal-Zuñiga & Piller 2016**

in honor of the “prestigious” ichthyologist Ignacio Doadrio (b. 1957), Museo Nacional de Ciencias Naturales (Spain), who has “strongly contributed to the study and knowledge of Mesoamerican fish diversity”

***Xenotoca eiseni* (Rutter 1896)**

in honor of Gustav Eisen (1847-1940), Curator of Marine Invertebrates, California Academy of Sciences (San Francisco, USA), who collected type

***Xenotoca lyonsi* Domínguez-Domínguez, Bernal-Zuñiga & Piller 2016**

in honor of the “prominent” ichthyologist John Lyons, Wisconsin Department of Natural Resources (now retired), for “substantial contributions to our understanding of the distribution, ecology, diversity, and conservation status of fishes in Mexico, and to goodeids in particular”

***Xenotoca melanosoma* Fitzsimons 1972**

*melano-*, black; *soma*, body, referring to “nearly jet-black” adult males and “dark-bodied” females

***Xenotoca variata* (Bean 1887)**

spotted, referring to numerous dark spots on lower half of body

***Zoogoneticus* Meek 1902**

*-icus*, having the nature of: *zoon*, animal; *gonos*, offspring, i.e., live young, referring to its viviparity, which Meek used to distinguish it from the superficially similar *Fundulus* (Fundulidae)

***Zoogoneticus purhepechus* Domínguez-Domínguez, Pérez-Rodríguez & Doadrio 2008**

derived from Purhepecha, name of indigenous ethnic group who inhabited part of the distribution range of this species, including type locality (Zamora, Michiacán, México)

***Zoogoneticus quitzeoensis* (Bean 1898)**

*-ensis*, suffix denoting place: Lake Quitzeo (now known as Cuitzeo), Michoacán, México, type locality

***Zoogoneticus tequila* Webb & Miller 1998**

named for Volcan Tequila (2920 m), which “looms north” of type locality (Río Teuchitlán, Río Ameca drainage, at eastern edge of Teuchitlán, Jalisco, México)

**Family FUNDULIDAE Topminnows**

6 genera/subgenera · 46 species/subspecies

***Fundulus* Lacepède 1803**

*fundus*, bottom; *-ulus*, a diminutive suffix, i.e., a “small burrower,” referring to “mudfish,” local name for *F. heteroclitus* in South Carolina (USA), perhaps referring to their occurrence in muddy pools, creeks and ditches, and/or to how they bury 15–20 cm into the mud during winter

Subgenus ***Fundulus******Fundulus albolineatus* Gilbert 1891**

*albus*, white; *lineatus*, lined, referring to rows of scales on males with “interrupted whitish streaks, most conspicuous on hinder half of body” [extinct by 1900 due to habitat modification, dewatering and exotics]

***Fundulus bifax* Cashner & Rogers 1988**

two-faced, referring to strong resemblance with *F. catenatus*

***Fundulus catenatus* (Storer 1846)**

chained, allusion not explained, probably referring to series of dots and dashes that form lines on flanks

***Fundulus confluentus* Goode & Bean 1879**

flowing together, allusion not explained, perhaps referring to confluence of salt and fresh water at type locality (Lake Monroe, Florida, USA), which is 161 miles from the sea; Wildekamp (1996) says name refers to “partial interconnection of the cross-bars on the sides of the body” but provides no source for this explanation

***Fundulus diaphanus diaphanus* (Lesueur 1817)**

transparent, referring to its semi-translucent (“diaphanous”) body (probably a male)

***Fundulus diaphanus menona* Jordan & Copeland 1877**

named for Lake Menona, Wisconsin (USA), type locality (but occurs throughout Mississippi River and Great Lakes basins)

***Fundulus grandis* Baird & Girard 1853**

large, probably referring to its “stout” body and/or length (described at 12.7 cm)

***Fundulus grandissimus* Hubbs 1936**

very large, referring to larger size compared to the similar *F. grandis*

***Fundulus herminiamatildae* García-Ramírez, Lozano-Vilano & De la Maza Benignos 2022**

in honor of Herminia Ramírez and Matilde García, the senior author’s parents, “who were important pillars in the professional [*sic*] and personal growth of the author, and who have a great respect for nature” [preferably spelled *herminiamatildarum* since name honors more than one woman, but ICZN 32.5.1 forbids such a correction; first published online in 2021 but without ZooBank registration, so name dates to printed version, which



appeared in 2022]

***Fundulus heteroclitus heteroclitus* (Linnaeus 1766)**

*heteros*, different; *clinus*, leaning or inclining, i.e., deviating, abnormal or different, allusion not explained, perhaps referring to Linnaeus' uncertainty ("Genus nondun certam") in placing it in the loach genus *Cobitis*, from which it clearly differs; Wildekamp (1996) states that name refers to "differences between the sexes," but sexual dimorphism is not included in Linnaeus' brief description (based on notes from South Carolina naturalist Andrew Garden, who sent Linnaeus right half-skins of two specimens, pressed in a botanical press, varnished, and glued to a sheet of herbarium paper)

***Fundulus heteroclitus macrolepidotus* Walbaum 1792**

*macro-*, large; *lepidotus*, scaled, referring to larger scales on head and preorbital region compared to nominate form

***Fundulus jenkinsi* (Evermann 1892)**

in honor of Oliver Peebles Jenkins (1850-1935), physiology professor, Stanford University, for his work on fishes of the Sandwich (Hawaiian) Islands

***Fundulus julisia* Williams & Etnier 1982**

derived from the Cherokee (Native American) words *amjulisi*, watercress, and *atsat*, fish, referring to its association with aquatic vegetation, typically watercress

***Fundulus majalis* (Walbaum 1792)**

pertaining to May, based on "Mayfish," local name recorded by Schöpf (1788), who collected specimens from New York City's East River

***Fundulus persimilis* Miller 1955**

*per*, through or by, referring to its "evolution through *F. similis* or the precursor of that species"

***Fundulus philpisteri* García-Ramírez, Contreras-Balderas & Lozano-Vilano 2007**

in honor of fisheries biologist Edwin Philip ("Phil") Pister (b. 1929), for his dedication to the study and teaching of ichthyology, and for promoting the conservation of the desert fishes and their ecosystems

***Fundulus pulvereus* (Evermann 1892)**

powdery, referring to small mother-of-pearl spots on sides of males

***Fundulus rathbuni* Jordan & Meek 1889**

in honor of Richard Rathbun (1852-1918), Chief of the Division of Scientific Inquiry, U.S. Fish Commission

***Fundulus saguanus* Rivas 1948**

*-anus*, belonging to: Sagua La Grande, Las Villas Province, Cuba, type locality (also known from southern peninsular Florida and the Florida Keys)

***Fundulus seminolis* Girard 1859**

*-is*, genitive singular of: allusion not explained, probably referring to the Seminole Indians, originally from Florida (USA), where this killifish is endemic

***Fundulus similis* (Baird & Girard 1853)**

similar, allusion not explained, perhaps referring to similarity with *F. majalis*; Jordan & Evermann (1896) say name refers "sexes being nearly alike," perhaps referring to "Transverse narrow black bands in both sexes" as noted in original description

***Fundulus stellifer* (Jordan 1877)**

*stella*, star; *fero*, to bear, probably referring to sparkles on nuptial males and/or large pale yellow blotch on back in front of dorsal fin, "very distinct in life, so that the fish may be recognized in the water as far as it can be seen"

***Fundulus waccamensis* Hubbs & Raney 1946**

*-ensis*, suffix denoting place: Lake Waccamaw, North Carolina, USA, where it is endemic

Subgenus ***Plancterus* Garman 1895**

wandering, allusion not explained, possibly referring to "convolutions of the intestine and the reduction of the pharyngeals [which] indicate habits ["mud-eating"] differing from those of the majority of the genus"

***Fundulus kansae* Garman 1895**

of Kansas, USA, type locality (but occurs elsewhere in central USA, including Wyoming, Nevada, Colorado, Iowa, Missouri, New Mexico, Oklahoma and Texas)

***Fundulus zebrinus* Jordan & Gilbert 1883**

zebra-like, replacement name for *Hydrargyra zebra* Girard 1859, secondarily preoccupied by *Fundulus zebra* DeKay 1842 (= *F. heteroclitus*), originally referring to its "numerous transverse lateral bars"

Subgenus ***Wileyichthys* Ghedotti & Davis 2013**

in honor of Edward O. Wiley (b. 1944), University of Kansas (USA), for his many contributions to our understanding of fundulid fishes, North American biogeography, and to phylogenetic systematics; *ichthys*, fish

***Fundulus parvipinnis parvipinnis* Girard 1854***parvus*, small; *pinnis*, fin, “All the fins are of small dimensions”***Fundulus parvipinnis brevis* Osburn & Nichols 1916**

short, referring to “noticeably shorter and deeper body” compared to nominate form

***Fundulus lima* Vaillant 1894**

file, referring to scale ctenii, which form elongate spines in breeding males

Subgenus ***Zygonectes* Agassiz 1854***zygos*, yoke (i.e., in pairs; *nectes*, swimmer, allusion not explained; according to Jordan (1882), referring to “supposed habit of swimming at the surface of the water in pairs”***Fundulus blairae* Wiley & Hall 1975**

in honor of Blair Knies (no other information available), for her assistance in the field

***Fundulus chrysotus* (Günther 1866)**based on manuscript name coined by physician-naturalist John E. Holbrook (1796-1871); scholars have offered two etymologies: gilded, referring to gold flecks on sides, and *chrysos*, gold and *otos*, ear, referring to gold iridescence on opercle (neither character mentioned by Günther, who remarked “it is impossible to know whether the specimens described are identical with those for which Holbrook intended this name”)***Fundulus cingulatus* Valenciennes 1846**

banded, referring to vertical bars on sides of both sexes

***Fundulus dispar* (Agassiz 1854)**

dissimilar, allusion not explained, perhaps referring to differences between the sexes (“Longitudinal lines of minute dots particularly distinct in the anterior part of the body, alternating backwards with continuous lines in the males, which are besides transversely barred, whilst the female has only continuous serrated lines upon the sides”)

***Fundulus escambiae* (Bollman 1887)**

of the Escambia River, Alabama (USA), type locality; also occurs in Georgia and Florida

***Fundulus euryzonus* Suttkus & Cashner 1981***eury*, broad; *zonus*, band, referring to wide purple-brown stripe on sides of both sexes***Fundulus lineolatus* (Agassiz 1854)**

lined, presumably referring to black stripes on sides of females (vertical bars on males)

***Fundulus luciae* (Baird 1855)**

in honor of Baird’s daughter, Lucy Hunter Baird (1848-1913)

***Fundulus notatus* (Rafinesque 1820)**

marked, referring to white spot (pineal eye) on top of head

***Fundulus nottii* (Agassiz 1854)**

in honor of Josiah Clark Nott (1804-1873), surgeon-anthropologist from Mobile, Alabama (USA), who sent type to Agassiz (footnote: a slave owner, Nott claimed that “the negro achieves his greatest perfection, physical and moral, and also greatest longevity, in a state of slavery”)

***Fundulus olivaceus* (Storer 1845)**

olive-colored, referring to coloration of upper body, “sprinkled with minute black dots”

***Fundulus rubrifrons* (Jordan 1880)***ruber*, red; *frons*, forehead, “Jaws and space in front of eyes bright orange-red”***Fundulus sciadicus* Cope 1865**

shady or belonging to the shade, allusion not explained nor evident; perhaps referring to coloration (described as “olive slate” above, “brownish yellow” below) or to habitat (occurs in heavy vegetation, but this is not mentioned by Cope)

***Fundulus xenicus* (Jordan & Gilbert 1882)**strange, foreign or exotic, allusion not explained, perhaps referring to deep, diamond-shaped body, like that of *Cyprinodon* (Cyprinodontidae), unusual for *Fundulus*; Huber (2013) says name refers to its “rare or discontinuous occurrence,” but the species occurs along Gulf Coast from southern Florida to Corpus Christi, Texas, and was described as “locally very abundant” (as *Adinia multifasciata*) by Jordan and Evermann in 1896 [previously placed in its own genus, *Adinia*]***Leptolucania* Myers 1924***leptos*, slender, compared to the deeper-bodied *Lucania****Leptolucania ommata* (Jordan 1884)**

eyed, referring to ocellus on mid-caudal peduncle of both sexes

**Lucania Girard 1859**

a Native American word chosen presumably because Girard liked the sound of it

**Lucania goodei Jordan 1880**

in honor of ichthyologist George Brown Goode (1851-1896), who collected type

**Lucania interioris Hubbs & Miller 1965**

interior, being an “isolated endemic species of an interior-drainage basin far inland in northeastern México”

**Lucania parva (Baird & Girard 1855)**

small, referring to its “diminutive size” (up to 6.2 cm TL)

**Family FLUVIPHYLACIDAE American Lampeyes**

1 genus · 7 species

**Fluviphylax Whitley 1965**

*fluvius*, river; *phylax*, guard or guardian, replacement name for *Potamophylax* Myers & Carvalho 1955 (*potamos*, river), preoccupied in caddisflies, allusion not explained by the original authors, possibly referring to occurrence of *F. pygmaeus* in the middle Amazon basin and metaphorical all-seeing or guardian nature of its “enormous eyes”

**Fluviphylax gouldingi Bragança 2018**

in honor of conservation ecologist Michael Goulding (b. 1950), for his collection efforts in the Amazon, especially in the Rio Negro, and for his many ecological studies on neotropical fishes

**Fluviphylax obscurus Costa 1996**

dark, referring to how larger specimens preserved in alcohol seem to be darker than congeners known at the time

**Fluviphylax palikur Costa & Le Bail 1999**

named for the Palikur Indians, who live in the coastal part of the lower Oiapoque drainage of northern Brazil, where this species occurs

**Fluviphylax pygmaeus (Myers & Carvalho 1955)**

dwarf, a “very tiny” species (up to 19.3 mm SL)

**Fluviphylax simplex Costa 1996**

simple, referring to open cephalic sensory canals of adults

**Fluviphylax wallacei Bragança 2018**

in honor of English naturalist Alfred Russel Wallace (1823-1913), for his collection effort in the Amazon, especially in the Rio Negro drainage (where this species occurs); unfortunately, when he was returning to Europe, an accidental fire resulted in the sinking of the ship and all specimens were lost (only some drawings of the fishes survived)

**Fluviphylax zonatus Costa 1996**

banded, referring to 6-12 dark bars on sides of males



*Fluviphylax wallacei*, a) male, b) juvenile male. From: Bragança, P. H. N. 2018. *Fluviphylax gouldingi* and *F. wallacei*, two new miniature killifishes from the middle and upper Rio Negro drainage, Brazilian Amazon. *Spixiana* (München) v. 41 (no. 1): 133-146.