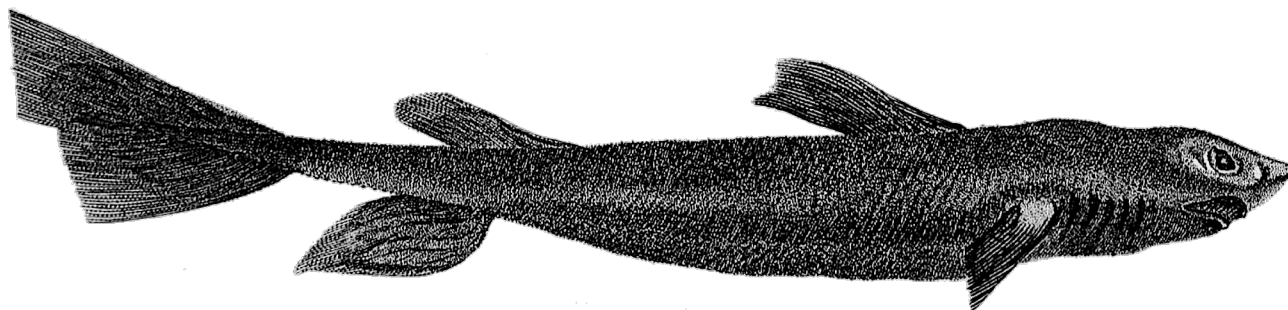


Order SQUALIFORMES

Kitefin Sharks

Family DALATIIDAE

Gray 1851



Probably first-published image of *Dalatias licha* (as *Squalus nicaensis*, a synonym). From: Risso, A. 1810. *Ichthyologie de Nice, ou histoire naturelle des poissons du Département des Alpes Maritimes*. F. Schoell, Paris. i–xxxvi + 1–388, Pls. 1–11. Note: An earlier image said to be *D. licha* in Lacépède 1798 (*Histoire naturelle des poissons*, v. 1) is almost certainly a species of *Deania* (Centrophoridae). Thanks to Thomas Lachenal for noticing the misidentification and to David A. Ebert and Simon Weigmann for confirming it.

Dalatias

Rafinesque 1810

etymology not explained nor evident (see essay on next page)

***Dalatias licha* (Bonnaterre 1788)** derived from “La Liche,” an old French name for this shark dating to at least Broussonet (1780), etymology unclear (see essay on next page)

Euprotomicroides

Hulley & Penrith 1966

-oides, Neo-Latin from *eîdos* (εἶδος), form or shape: referring to its resemblance to *Euprotomicrus* in general shape

***Euprotomicroides zantedeschia* Hulley & Penrith 1966** referring to *Zantedeschia aethiopica*, South African Arum Lily, after which the *Arum*, Cape Town trawler from which holotype was collected, was named



Euprotomicroides zantedeschia, holotype, mature male, 176 mm TL. From: Hulley, P. A. and M. J. Penrith. 1966. *Euprotomicroides zantedeschia*, a new genus and species of pigmy dalatiid shark from South Africa. *Bulletin of Marine Science* 16 (2): 222–229.

Euprotomicrus

Gill 1865

eû- (εὖ-), intensive, i.e., well or very; *prôtos* (πρῶτος), first; *micrus*, from *mikrós* (μικρός), small, referring to very small first dorsal fin

***Euprotomicrus bispinatus* (Quoy & Gaimard 1824)** *bi-*, from *bis* (L.), twice; *spinatus* (L.) thorny, referring to spiny processes on each pelvic fin (claspers) of the male



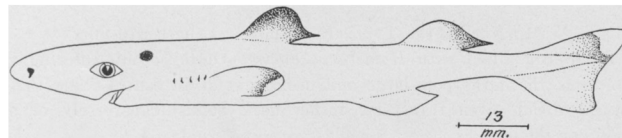
Euprotomicrus bispinatus. From: Quoy, J. R. C. and J. P. Gaimard. 1824–25. *Description des Poissons*. Chapter IX. In: Freycinet, L. de, *Voyage autour du Monde ... exécuté sur les corvettes de L. M. “L’Uranie” et “La Physicienne,” pendant les années 1817, 1818, 1819 et 1820*. Paris. 192–401 [1–328 in 1824; 329–616 in 1825], Atlas pls. 43–65.

Heteroscymnoides

Fowler 1934

-oides, Neo-Latin from *eîdos* (εἶδος), form or shape: similar to *Heteroscymnus* (= *Sommiosus*, now in *Sommiosidae*)

***Heteroscymnoides marleyi* Fowler 1934** in honor of Natal fisheries officer Harold Walter Bell-Marley (1872–1945), to whom Fowler was “indebted” for many “interesting” South African fishes,” this shark being “another of his numerous discoveries”



Heteroscymnoides marleyi. Illustration by Henry Weed Fowler. From: Fowler, H. W. 1934. Descriptions of new fishes obtained 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. *Proceedings of the Academy of Natural Sciences of Philadelphia* 85 (for 1933): 233–367.

Isistius

Gill 1865

etymology not explained, probably *is-*, from *isos* (ἴσος), equal; *istius*, from *hístion* (ἰστίον), sail (i.e., dorsal fin), referring to its two similarly shaped and sized (and posterior) dorsal fins, a character Gill used to diagnose the genus¹

***Isistius brasiliensis* (Quoy & Gaimard 1824)** -ensis, Latin suffix denoting place: off the coast of Brazil, type locality

***Isistius plutodus* Garrick & Springer 1964** *plóutos* (πλούτος), wealth or abundance; *odoús* (ὀδοός), tooth, referring to larger size of lower jaw teeth compared with congeners



Isistius plutodus, holotype, female, 432 mm TL. From: Garrick, J. A. F. and S. Springer. 1964. *Isistius plutodus*, a new squaloid shark from the Gulf of Mexico. *Copeia* 1964 (4): 678–682.

¹ José I. Castro, *The Sharks of North America* (Oxford University Press, 2011), suggests name may allude to the Egyptian goddess Isis, represented in statuary with her head veiled, or to the dark collar encircling throat of *I. brasiliensis*, “which could also suggest a veil over the head” (p. 145). This interpretation is rejected by the fact that Gill often used “*istius*” — from *hístion* (ἰστίον), sail — in the names of several genera distinguished (at least in part) by their dorsal fins (*Acanthistius*, *Brachyistius*, *Caristius*, *Dichistius*, *Goniistius*, *Inistius*, *Micromesistius*, *Nematistius*).

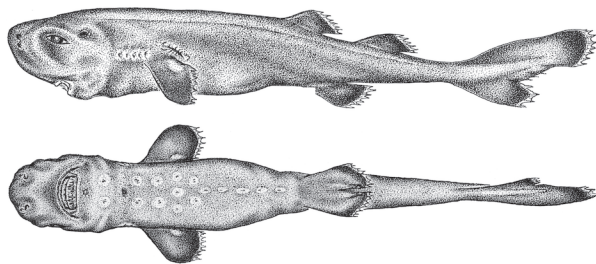
Mollisquama

Dolganov 1984

mollis (L.), soft; *squama* (L.), scale, referring to its soft scales, apparently unique among sharks

***Mollisquama mississippiensis* Grace, Doosey, Denton, Naylor, Bart & Maisey 2019** -*ensis*, Latin suffix denoting place: the “vast” North American Mississippi River Basin, a “biologically and geographically rich region that nurtures Gulf of Mexico [type locality] fauna and unites diverse cultures”

***Mollisquama parini* Dolganov 1984** in honor of ichthyologist Nikolai Vasil'evich Parin (1932–2012), P. P. Shirov Institute of Oceanology, Russian Academy of Sciences, an authority on the fauna of the Nazca submarine ridge (east of Chile), where holotype was collected



Mollisquama mississippiensis, holotype, immature male, 142 mm TL. From: Grace, M. A., M. H. Doosey, J. S. S. Denton, G. J. P. Naylor, H. L. Bart Jr. and J. G. Maisey. 2019. A new Western North Atlantic Ocean kitefin shark (Squaliformes: Dalatiidae) from the Gulf of Mexico. *Zootaxa* 4619 (1): 109–120.

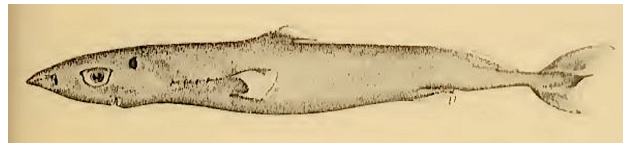
Squaliolus

Smith & Radcliffe 1912

diminutive of *squalus* (L.), dirty or filthy (i.e., squalid), and an ancient Latin name for marine fishes considered unfit for human consumption, including sharks, referring to small size of *S. laticaudus*, i.e., a small *squalus*

***Squaliolus aliae* Teng 1959** in honor of the Teng's wife Huang A-li, for her “cordial help and constant encouragement” [originally spelled *alii*; since name honors a woman, *aliae* reflects the correct gender]

***Squaliolus laticaudus* Smith & Radcliffe 1912** *latus* (L.), wide or broad; *cauda* (L.), tail, referring to its broad (but short) caudal fin



Squaliolus laticaudus. From: Smith, H. M. 1912. The squaloid sharks of the Philippine Archipelago, with descriptions of new genera and species. *Proceedings of the United States National Museum* 41 (1877): 677–685, Pls. 50–54.

The meaning of *Dalatias*: three speculations



Dalatias was named and described by the brilliant but eccentric naturalist Constantine Samuel Rafinesque (1783–1840). One aspect of his eccentricity was his penchant for coining names that make little etymological, grammatical or biological sense. *Dalatias* is one such name. No one knows what it means.

With the help of Holger Funk, our resident expert on the ancient names of fishes, we took a closer look at *Dalatias*. We found some tantalizing clues and came up with three speculative explanations but nothing definitive.

Speculation #1 *Dalatias* may be derived from the Greek *dalós* (δαλός), meaning torch, firebrand, lamp, or lantern. This would seem a reasonable explanation for the name since *Dalatias licha* is bioluminescent. Trouble is, this fact was discovered and reported only recently (2021).¹ Was Rafinesque two centuries ahead of his time in describing this genus? We think not. It seems to us that something as remarkable as bioluminescence — remarkable enough to base a name on it — would be mentioned in Rafinesque's brief description. Alas, it is not.

Speculation #2 Interestingly, *dalós*, in addition to designating a lit or burning torch, can also refer to a torch that is burned out, charred or black. In this way, *dalós* can serve as a synonym of black. *Dalatias licha* is indeed a blackish fish, described by most contemporary shark experts as having a uniform brown-to-black color. This explanation would have a semblance of credibility had Rafinesque described the shark's color. Alas, he did not.

Speculation #3 The word *dalós* has been associated with a different kind of fish. According to post-antiquity historian and lexicographer Hesychius of Alexandria, *dalós* is another name for μελάνουρος ιχθύς (*melánouros ichthys*, “blacktailed fish”), most likely referring to *Oblada melanura*, the Saddled Seabream, named for the black spot on its caudal peduncle. This is potentially relevant since Rafinesque called his shark *Dalatias sparophagus* (now regarded as a *nomen dubium*). The specific epithet (*-phagus*, from φαγεῖν, *phageîn*, to eat), according to Rafinesque, reflects what the shark was called among Sicilian fishers, *Mangia-Luvaro*,² referring to how it likes to eat “Luvari” (presumably the Louvar, *Luvarus imperialis*) and other species of the then catch-all genus *Sparus* (hence *sparophagus*), which at the time included *Oblada melanura*. If Rafinesque named *D. sparophagus* after the shark's preferred prey, might the generic name *Dalatias* also be a reference,

continued on next page

albeit an oblique one, to the same? It could be. But the possibility is so strained and far-fetched that we can't imagine that someone even as peculiar as Rafinesque would coin such a peculiar name.

There is also the possibility that *Dalatias* is one of Rafinesque's idiosyncratic spellings. Sometimes when coining names, he deleted what he believed were unnecessary consonants. Maybe *Dalatias* is a "creative" spelling of an ancient word or local Italian vernacular we've yet to uncover. Perhaps the best explanation comes from a 1986 book³ about edible aquatic animals from off the coast of Italy: *Dalatias* is a "nomo fantasioso," a fanciful or imaginative name.

The etymology of "*licha*" is also unclear

In 1780, naturalist Pierre Marie Auguste Broussonet published the first account of *Dalatias licha*, which he called simply "La Liche." Broussonet's account served as the basis for the shark's first Linnaean name, *Squalus licha*, proposed by zoologist Pierre Joseph Bonnaterre in 1788. But what does "La Liche" mean? As with *Dalatias*, no one knows for sure.

"*Licha*" is a French variant of the Italian *leccia* (meaning "acorn of a holm oak"), used as a vernacular name for different kinds of fishes, all of which have an acorn-like (oblong-oval) shape. According to one source⁴, *leccia* was also a vernacular for sharks (although sharks do not in any way look like acorns). According to the Wikipedia entry for *D. licha*, "*liche*" is from the Occitan *lecha*, in turn from *lec*, meaning glutton. Occitan is a historic language still spoken in Southern France, Monaco, Italy's Occitan Valleys, and Spain's Val d'Aran in Catalonia. While "glutton" seems like an apt name for a shark, we've not been able to confirm that meaning in any Occitan dictionary we've consulted, and the online dictionary cited by Wikipedia is no longer available.

Another source⁵ indicates that *lichia*, *licha* and *liche* are etymologically related to the Greek *lýchnos* (λύχνος) or *lychnískos* (λυχνίσκος, diminutive of the former), meaning shiny, perhaps referring to the silvery sides and belly of some carangid fishes. Why *liche* was also applied to a blackish shark is not explained.

¹ Mallefet J., D. W. Stevens, and L. Duchatelet. 2021. Bioluminescence of the largest luminous vertebrate, the kitefin shark, *Dalatias licha*: first insights and comparative aspects. *Frontiers in Marine Science* 8 (article 633582): 1–13.

² Rafinesque may have gotten his sharks mixed up. According to Italian zoologist Pietro Doderlein (*Manuale ittologico del Mediterraneo*, 1879), *Mangia-Luvaro* correctly refers to *Prionodon lamia*, now known as *Carcharodon carcharias*, the Great White Shark.

³ Palombi, A., and M. Santarelli. 1986. *Gli animali commestibili dei mari d'Italia*. 4th ed. Milan: Ulrico Hoepli. vi + 348 + 2 pl.

⁴ Pfister, M. 1987. *Lessico etimologico italiano*. Vol. II (albus-apertura). Mainz, Germany: Akademie der Wissenschaften und der Literatur. 1–880. [See entry for *alechi*.]

⁵ Strömberg, R. 1943. *Studien zur Etymologie und Bildung der griechischen Fischnamen*. Göteborg: Wettergren & Kerber. 1–165.