

Peters' elephantnose fish

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Peters' elephant-nose fish (*Gnathonemus petersii*; syn. *Gnathonemus brevicaudatus* Pellegrin, 1919, *Mormyrus petersii* Günther, 1862^[2]) is an African freshwater elephantfish in the genus *Gnathonemus*. Other names in English include **elephantnose fish**, **long-nosed elephant fish**, and **Ubangi mormyrid**, after the Ubangi River. As the Latin name *petersii* confirms it is named after someone called "Peters" (probably Wilhelm Peters), although the apostrophe is often misplaced and the common name given as "Peter's elephantnose fish". It uses electrolocation to find prey, and has the largest brain-to-body weight ratio of all known vertebrates.^[1]

Contents

- 1 Description
- 2 In the aquarium
- 3 See also
- 4 Notes
- 5 References
- 6 External links

Description

Peters' elephantnose fish are native to the rivers of West and Central Africa, in particular the lower Niger River basin, the Ogun River basin and in the upper Chari River. It prefers muddy, slowly

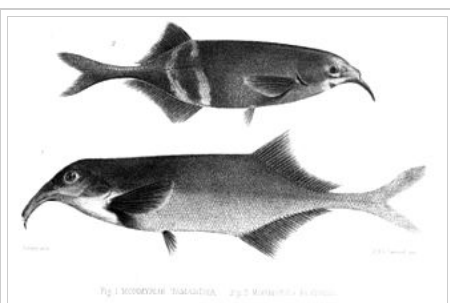
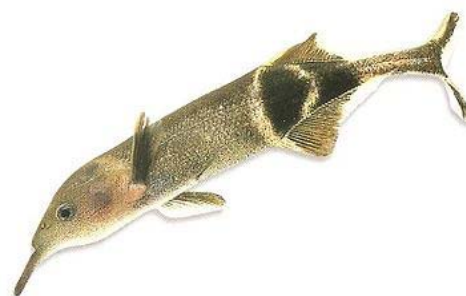


Illustration (1864), the upper is Peters' elephantnose fish. The lower is Worm-Jawed Mormyrid, (*Campylomormyrus tamandua*), [Mormyridae], Elephant Nose

moving rivers and pools with cover such as submerged branches. It is a dark brown to black in colour, laterally compressed (averaging 23–25 cm), with a rear dorsal fin and anal fin of the same length. Its caudal or tail fin is forked. It has two stripes on its lower pendicular. Its most

striking feature, as its names suggest, is a trunk-like protrusion on the head. This is not actually a nose, but a sensitive extension of the mouth, that it uses for self-defense, communication, navigation, and finding worms and insects to eat. This organ is covered in electroreceptors, as is much of the rest of its body. The elephantnose fish has poor eyesight and uses a weak electric field, which it generates with specialized cells called electrocytes, which evolved from muscle cells, to find food, to navigate in dark or turbid waters,

Elephantnose fish



Elephantnose fish have the largest brain-to-body weight ratio of all known vertebrates.^[1]

Scientific classification

Kingdom: Animalia
 Phylum: Chordata
 Class: Actinopterygii
 Order: Osteoglossiformes
 Family: Mormyridae
 Genus: *Gnathonemus*
 Species: *G. petersii*

Binomial name

Gnathonemus petersii

(Günther, 1862)



Two elephantnose fish

and to find a mate. Peters' elephantnose fish live to about 6-10 years, but there are reports of them living even longer.

In the aquarium

Peters' elephantnose fish is probably the most commonly available Mormyrid in aquarium stores in the USA. In the aquarium (which should be at least 200 liters) it is timid, preferring a heavily planted environment with subdued lighting. Ideally, a pipe or hollow log should be provided. The substrate should ideally be soft sand to allow the fish to sift through it with its delicate extended lip. It feeds on small worms (bloodworms) and aquatic invertebrates such as mosquito larvae, but in the aquarium will usually accept frozen or even flake food. How peaceful an elephantnose fish is can depend on the individual; some are quite aggressive with other species, while others are retiring. They may be kept in a community aquarium with peaceful species who share their water preferences. However, unless kept in an aquarium of over 400 liters, it is unwise to keep more than one elephantnose fish as they can be territorial. The conditions suggested to keep them in an aquarium are as follows: pH of 6.8 to 7.2, water temperature 26 to 28 degrees Celsius, and water of medium hardness. The substrate should always be something that does not irritate the sensitive snout of the fish.

The weak electrical impulses generated by this fish can be made audible by placing two electrodes in the fish tank that are then hooked up to an audio amplifier or a piezoelectric earbud. The elephant nose fish can use its electrosensing to detect moving prey and worms in the substrate.

Although the elephant nose fish was once thought to have poor eyesight, it is now known to have good low light vision. Its eyes use a combination of photonic crystals, parabolic mirrors and a clustered arrangement of rods and cones. ^[3]

See also

- List of freshwater aquarium fish species

Notes

- Nilsson G (1996) "Brain and body oxygen requirements of *Gnathonemus petersii*, a fish with an exceptionally large brain" (<http://jeb.biologists.org/cgi/content/abstract/199/3/603>) *Journal of Experimental Biology*, **199**(3): 603-607. Download (<http://www.bio.uio.no/genfys/PDFfiler/GN/JEB199,603.pdf>)
- "*Gnathonemus petersii*" (http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=161918). Integrated Taxonomic Information System. Retrieved July 3, 2007.
- http://www.sciencemag.org/content/suppl/2012/06/27/336.6089.1730-b.DC1/SciencePodcast_120629.pdf

References

- Froese, Rainer and Pauly, Daniel, eds. (2006). "*Gnathonemus petersii*" (<http://www.fishbase.org/summary/SpeciesSummary.php?genusname=Gnathonemus&speciesname=petersii>) in FishBase. May 2006 version.

External links

- Peter Cain and Sapna Malwal, Landmark use and development of navigation behaviour in the weakly

electric fish *Gnathonemus petersii* (Mormyridae; Teleostei), *Journal of Experimental Biology*, 205, 3915-3923 (2002), [1] (<http://jeb.biologists.org/cgi/content/full/205/24/3915>)

- Photo (http://news.bbc.co.uk/2/shared/spl/hi/pop_ups/07/sci_nat_enl_1187693729/html/1.stm) (BBC News)
- [2] (http://sci-toys.com/scitoys/scitoys/biology/electric_fish/electric_fish.html) Sci-toys.com instructions on making elephant nose electrical emissions audible.

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Categories: Mormyridae | Weakly electric fish

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