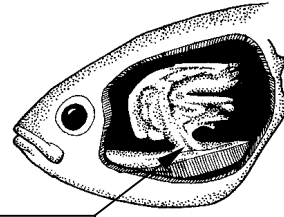


Labyrinth fish – Anabantoidei

The labyrinth fish literally brings life to the Cambodian aphorism “Where there is water there is fish” (see Catch and Culture 4 (1)), species of this suborder can be found wherever there is enough water to cover their backs, no matter how deoxygenated and uninhabitable it may seem. The ability for these fish to survive in such inhospitable environments is due to an accessory breathing organ, called the labyrinth organ, which allows these fish to breathe air from the atmosphere. The labyrinth organ is situated above the gills, and occupies most of the gill-chamber, as a consequence the gills have become much reduced, and some species will die from suffocation, if prevented from breathing at the surface. Because air is a better transmitter of sound than water the labyrinth organ also gives anabantoid fishes an acute hearing, when it is air filled.



The labyrinth organ

Labyrinth fish possess a special organ, which allows them to breathe atmospheric air.

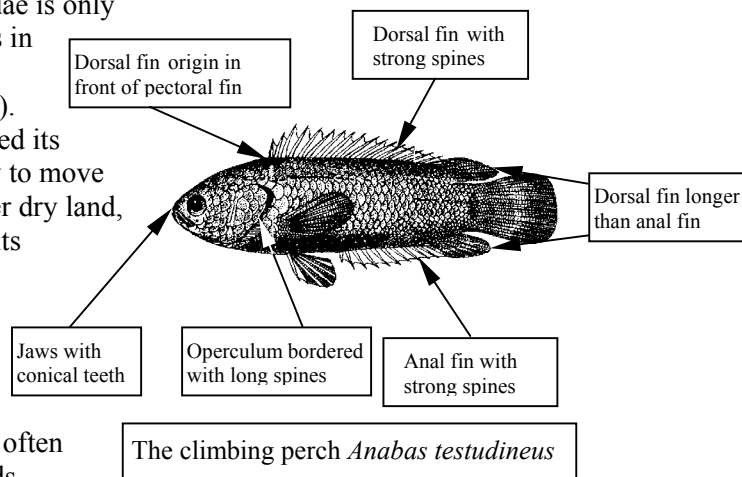
Another key to the success of labyrinth fishes in adverse environments is their specialised reproductive behaviour. The male constructs a floating froth nest by blowing mucus-covered air-bubbles from the mouth. The eggs are deposited in the nest by the female, and are aggressively guarded by the male until they hatch. This habit puts the eggs in the water surface where the oxygen level is highest.

The interesting behaviour, and modest requirements together with their vivid colours, and small adult size (most species never exceed 15 cm and many species are considerable smaller), make the labyrinth fish among the most popular aquarium fishes.

The small size, however, does not mean they are without importance in the fisheries – on the contrary. Labyrinth fishes, although not that common at the markets, are among the most important species for the subsistence in many rural areas of the Mekong Basin. In highly seasonal environments, like rice fields, and small canals, gouramies often constitute the majority of the catch.

The first family Anabantidae is only represented by one species in the Mekong, the climbing perch (*Anabas testudineus*).

The climbing perch received its name because of its ability to move considerable distances over dry land, in search for water, when its habitat dries up. Climbing perches, larger than 15 cm, are rarely seen in the Mekong, but they are said to grow up to 23 cm. The climbing perch is often found in canals or ricefields



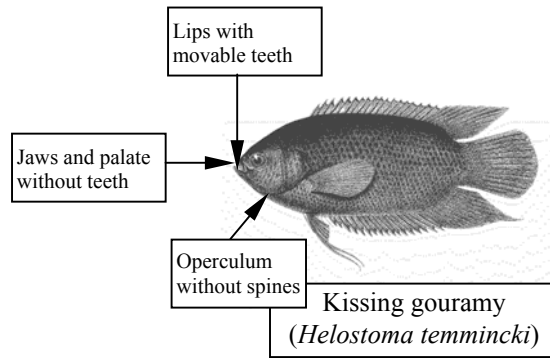
The climbing perch *Anabas testudineus*

where it feeds on invertebrates and small fish. It is caught with gillnets and seines. When sold on the markets they can be kept alive for several days if kept moist.

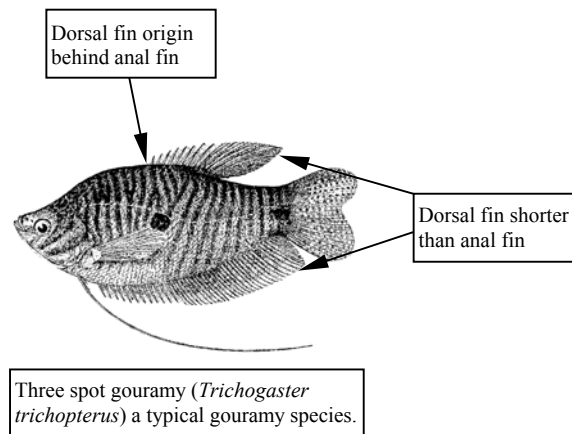
The following characters can be used to identify the climbing perch: A rounded caudal fin, both dorsal and anal fins have strong spines. The dorsal fin origin is in front of the pectoral fin; and the base of the dorsal fin base is longer than the anal fin base. The jaws are filled with conical teeth, and there are also teeth on the palate. The operculum is bordered by long radiating spines. The spiny armour and a very thick and tough skin make the climbing perch difficult to handle for most predators. There are also many stories about fishermen, who have suffocated because a climbing perch, which they were holding with their teeth have become stuck in their throat.

The next family Helostomatidae is also only represented by one species the kissing gouramy

(*Helostoma temmincki*). Kissing gouramies are very popular aquarium and food fish, but they are not as commonly seen in Mekong fish markets as the climbing perch. Kissing gouramies, like climbing perches, have long dorsal and anal fins with strong spines, but the presence of movable teeth on the lips and the lack of teeth on jaws and palate distinguish kissing gouramies from climbing perches. The kissing gouramy feeds mainly on phyto- and zooplankton supplemented by periphyton, aquatic insects and detritus.

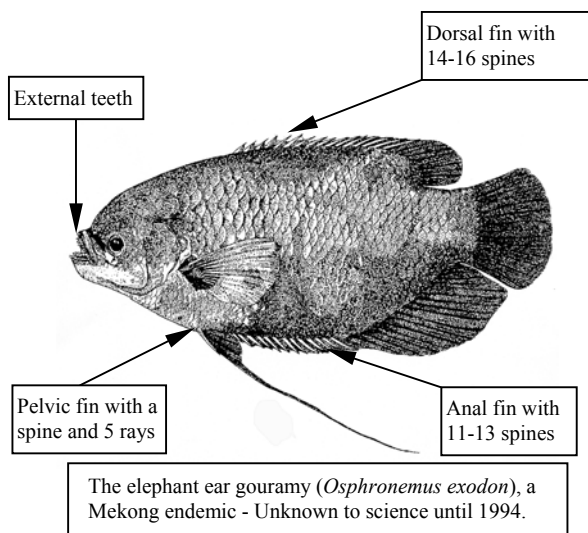


With at least eight species the gouramies (Belontiidae) is the largest family of labyrinth fish. All the gouramies are very common in the aquarium trade, but they are also eaten in rural areas. Boys are often seen armed with a long bamboo pole, mounted with a line as thin as a spider's web, and a minute hook, in an attempt to catch these fish. The gouramies are easily spotted because of their air breathing habit, but it is a real challenge to hook these finger-long fish, these fish are also caught with traps, and lift- and scoop-nets. The food of gouramies consists of zooplankton and aquatic insects.



Gouramies possess a dorsal fin with 10 or fewer rays. The basis of the dorsal fin is shorter than anal fin base, and its origin is behind the pectoral fin base. The pelvic fins, which are very long in many gouramy species, are used as "feelers", when they move around in dense vegetation. The dorsal, anal and pectoral fins as well as operculae are used for display in the famous fighting fish (*Betta* spp). When two male fighting fish confront each other they undergo a fantastic change from an inconspicuous greyish brown little creature into one of the most beautiful freshwater fishes with marvellous blue or red colours. During their display all fins are widely spread out in order to intimidate the rival, if that does not scare him off, the fight will continue with strokes and bites, until one of them give up.

The Osphronemidae, the last family of Mekong labyrinth fish, includes the largest labyrinth fish – they grow up to 70 cm long. One or two species of osphronemids are known from the Mekong, namely the endemic elephant ear gouramy (*Osphronemus exodon*), and possibly the giant gouramy (*O. gouramy*). Until 1994, when the elephant ear gouramy was described, all Mekong osphronemids were believed to be giant gouramies. Now there is considerable doubt whether the giant gouramy actually occurs in the Mekong at all, and if so, whether it has been introduced.



Osphronemids are mainly vegetarians; they are found in pools in large rivers and migrate onto the floodplain where they feed on fruit. Because of their size and tasty flesh, they are popular food fish, and the giant gouramy is a common species in

aquaculture in large parts of Asia. In the Mekong basin osphronemids still have not gained the same popularity, but since species of this family seem to be doing fine in reservoirs they will doubtless become more common on Mekong fishmarkets in the future.

The osphronemids are characterised by a spine, and five soft rays in the very long pelvic fin. Both dorsal and anal fins are very long, and the origin of the dorsal fin is behind the origin of the anal fin.

The elephant ear gouramy can be distinguished from the giant gouramy by the presence of teeth outside the mouth, and by different numbers of spines in dorsal and anal fins.