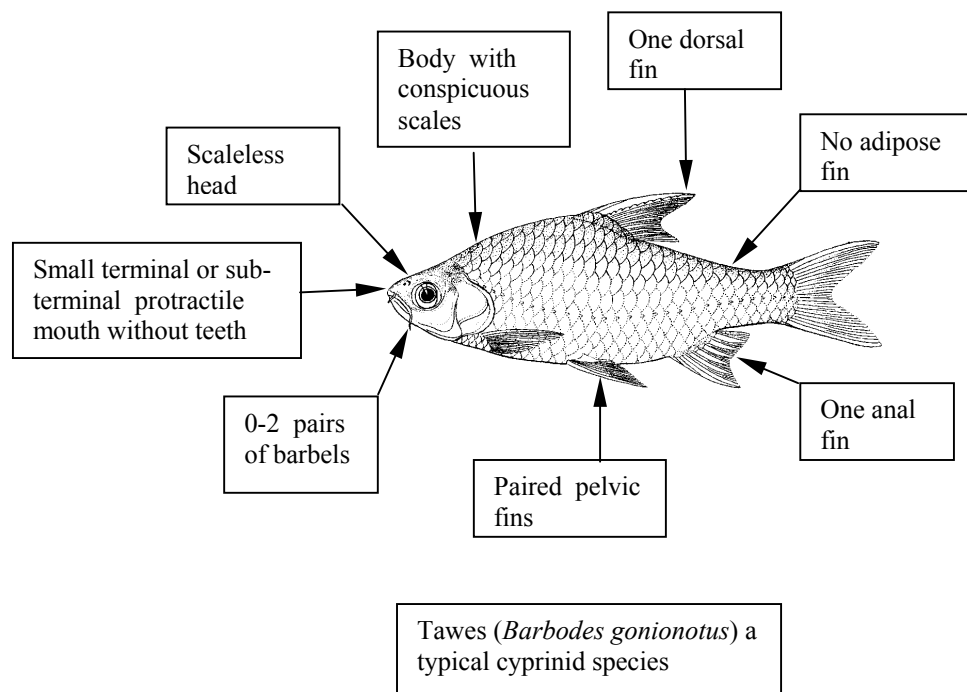


THE FAMILY CYPRINIDAE (CARPS)

The family Cyprinidae is the largest of all fish families. More than 2000 members of the family have already been described corresponding to about 10 % of all fish species in the world, or about 25% of all freshwater fish species. In the Mekong it is also the largest family of freshwater fish and, according to taxonomist Dr. Water Rainboth, includes at least 200 species or about 20% of the described fish fauna. There is much confusion over common terminology in the family. Members of the family are often referred to as “carps” although usually the term is applied only to larger species. The “carp”, on the other hand, often means the common, or European, carp (*Cyprinus carpio*). The “Indian” or “Chinese” carps refer to genera prominent in those countries, although they are not necessarily restricted to there. The term “Indian major carps” has no taxonomic significance and refers to the larger species that are prominent in the fisheries in the Indian sub-continent. Outside that region, the term is unhelpful since elsewhere they may not be “major” at all. Members of the family are more accurately termed cyprinids.

So, why are certain fish classified as cyprinids? Contrary to popular belief, taxonomy is a far from precise science. There is no single feature that cyprinids possess that distinguishes them from other families but the absence of certain features is a prerequisite for membership. Cyprinid fishes range from small “aquarium sized species”, to huge fish like the giant barb *Catlocarpio siamensis*, which reputedly reach three meters in length. Despite this, cyprinids vary surprisingly little in their appearance, most gross differences are due only to their relative dimensions (proportions). Almost all species look like “typical fish”. “Unspecialised” is perhaps the most obvious feature. This may also account for their evolutionary success as a group. They usually have large eyes and a body with conspicuous scales, but no scales on the head. They have only one dorsal and anal fin, typical pectoral fins and a pair of separated pelvic fins on the abdomen, but never an adipose fin. The mouth is usually small and terminal (pointing forwards) or sub-terminal (downwards). The mouth is often protractile (can be extended and withdrawn - e.g., for “sucking”). There are never any teeth on the jaws or elsewhere in the mouth but pharyngeal teeth (in the throat) are present and the number of these is an important characteristic in distinguishing species. Some species have short barbels (“whiskers”) but never more than two pairs, sometimes none.

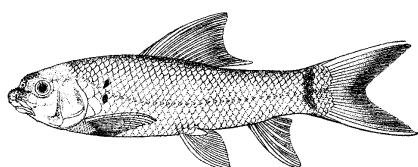


The cyprinids are primary freshwater fishes - i.e., they evolved in freshwater (as opposed to the sea). They cannot endure high salinities and none of the species are marine. A very small number of species can survive but not reproduce in brackish water. They are prominent members of the fish fauna in Asia, Europe and North America but are naturally absent from South America and Australasia. However, a number of species have now been moved by man into all regions. The common carp, for

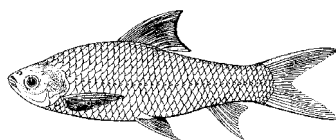
example, is the most widely distributed of all exotic fish species with records of it being moved dating from over 5000 years ago. Cyprinids are encountered in all kinds of freshwater habitats (excluding ice). Since they are toothless, and most species relatively small, only a few species are predators of fish. Most species are generalists and feed on a mixture of invertebrates, organic debris and plants. Many thus feed low in the food chain which, in part, accounts for their popularity in aquaculture. Many are important forage fish for predators. Various species can tolerate high temperatures, low oxygen levels, and they are often capable of proliferating in harsh environments where other species might perish. This further enhances their appeal in aquaculture where cyprinids dominate production. Examples of widely cultured species are: common carp, silver carp (*Hypophthalmichthys molitrix*), grass carp (*Ctenopharyngodon idella*), bighead (*Aristichthys nobilis*), mrigal (*Cirrhinus mrigala*), rohu (*Labea rohu*) and tawes (*Barbodes gonionotus*). Excepting the latter, these are all introduced species to the Mekong basin. There is, however, no reason to assume that local species are not better. The MRCS Fisheries Programme is already promoting efforts to substitute native species such as: *Cirrhinus microlepis*, the seven-line barb (*Probarbus jullieni*), *Hypsibarbus suvattii* and others.

Cyprinids are generally social species and often form schools at some stage of their life cycle. Many Mekong cyprinids also undertake extensive migrations, especially during the dry season. For example, enormous numbers of fish move up-river from Cambodia through Khone Falls in southern Lao PDR around December and January. Some species, e.g., the seven-line barb, travel several hundreds of kilometers further into northern Thailand and Lao PDR and possibly beyond. Cyprinids generally have small eggs and, therefore, they are normally highly fecund. Substrate spawning is the norm, usually on rocks or amongst plants to which the eggs often stick. Eggs are normally all released at one single spawning. Parental care of the eggs or young is unheard of.

Cyprinids are of major economic importance in world fisheries. According to official FAO statistics well over 4 million tons are produced or landed worldwide. This figure is a considerable under-estimate since a large proportion of landings and production is either not recorded or included in the statistics under “miscellaneous” species. One single species, the silver carp, is ranked 7th in the world in terms of total production, surpassed only by marine species such as anchovy, mackerel and pilchard. Much of the world production of cyprinids ostensibly comes from “aquaculture” but the figures are entirely dominated by China where a large proportion of the production actually arises from culture-enhanced capture fisheries (e.g., stocked reservoir fisheries). In the Mekong, there is little doubt that cyprinids are the most important group. Many Mekong species make up an extremely important component in the fishery of the riparian countries. The migratory habits of some species make them an easier target for the fishermen, and a large part of the fishery is directed towards these species. It is also quite possible that the smaller species are as important, if not more so, than the more prominent larger species. For example, when migrating (December-February), the riel (*Henicorhynchus* spp.) account for 2/3 of the dai catch on the Tonle Sap River in Cambodia. The small size, beautiful coloration, omnivorous diet, lack of teeth and hardy nature of many species, make them popular, and economically valuable, in the aquarium fish industry. The potential of the latter resource has yet to be fully recognised in the Mekong. Some of the larger cyprinids are among the most popular targets for sportfishermen. Several of the species of *Tor*, for example, are regarded in higher esteem than the salmon for their fighting spirit, endurance and difficulty of capture by hook and line. With wild salmon in some European rivers now being valued in excess of US\$ 25,000 each (in terms of asset value) this could well provide further arguments for sustaining the Mekong fishery !



Bangana behri an important migratory species



Riel (*Henicorhynchus siamensis*) an important migratory species.



Rasbora espei a popular ornamental species.