

ORDER MASTACHEMBLIFORMES

XXVI. FAMILY MASTACEMBLIDAE

174. *Macrogonathus aculeatus*

175. *Macrogonathus pancalus*

176. *Mastacembellus armatus*

24-36

- exotic species
- primarily estuarine species, but rarely found in the lower reaches of the river Indus.

The native freshwater teleostean fish fauna of Pakistan comprises of 160 species belonging to 69 genera, 23 families and 11 orders (Mirza, 1994). Of these, 90 species are of common occurrence while the remaining ones are less common or rare. Again, a quite good number of these are of commercial importance.

4.2 COMMERCIAL FISHES OF PAKISTAN

Following is the short account of various important commercial fishes of Pakistan.

(i). *Tenualosa ilisha* (Fig. 4.1)

Commonly called as River shad and locally known as "Palla". It is an anadromous fish which usually lives in sea but migrates to river Indus for spawning during months of April and May. It forms an important fishery of Pakistan.

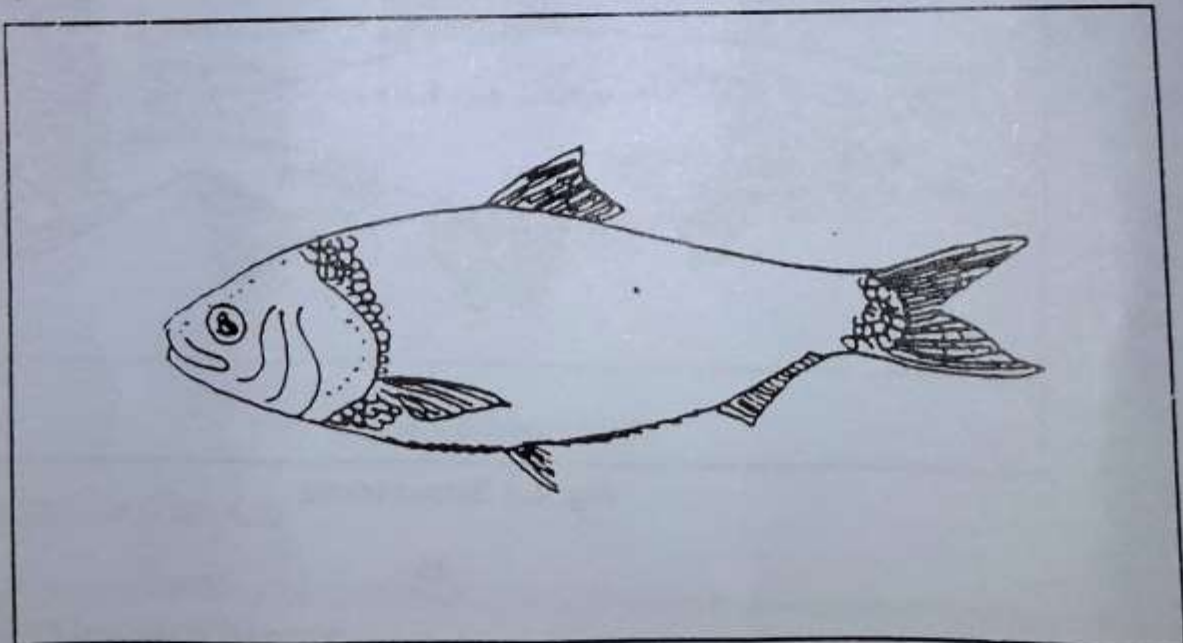


Fig. 4.1 *Tenualosa ilisha*

Body laterally compressed; abdomen keeled and serrated; mouth terminal; gape of mouth small; teeth absent; gill rakers fine, long and numerous, large cycloid scales; colour of the body silvery white with purple band on the lateral side; planktonic feeder; grows upto 0.3 - 0.5 m in length.

(ii). *Notopterus chitala* (Fig. 4.2)
Commonly called as Featherback while locally known as 'Chital' or 'Gundun'.

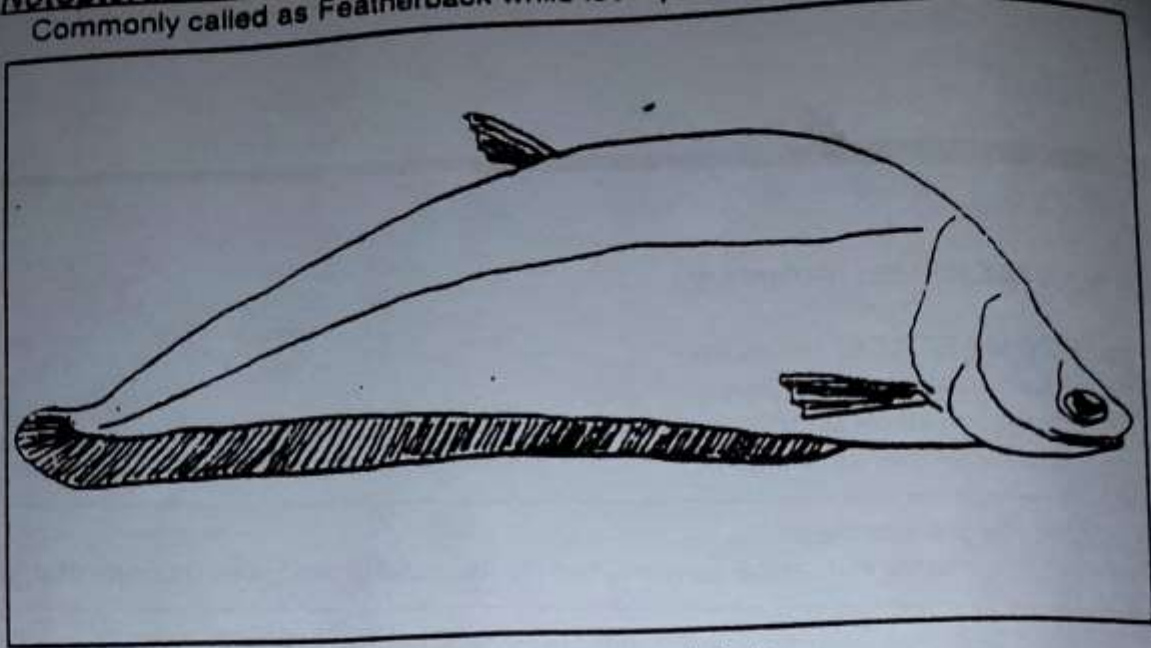


Fig. 4.2 *Notopterus chitala*

Body laterally compressed; dorsal profile of the body very convex, but upper profile of head deeply concave; scales small; anal fin long and confluent with caudal; abdomen serrated anterior to pelvic fin; gape wide; lips thin; colour silvery white, becoming greyish on the back; about 15 copper coloured small bands on the back; predatory in habit; grows upto 1.2 m in length.

(iii). *Salmo trutta* (Fig. 4.3)

Commonly called as Brown trout. It is a river and lake fish of Northern hemisphere and was brought to India from U.K. In 1876. It was introduced in N.W.F.P from Sringer (India) in about 1925-28. Since then it has successfully established in wild state.

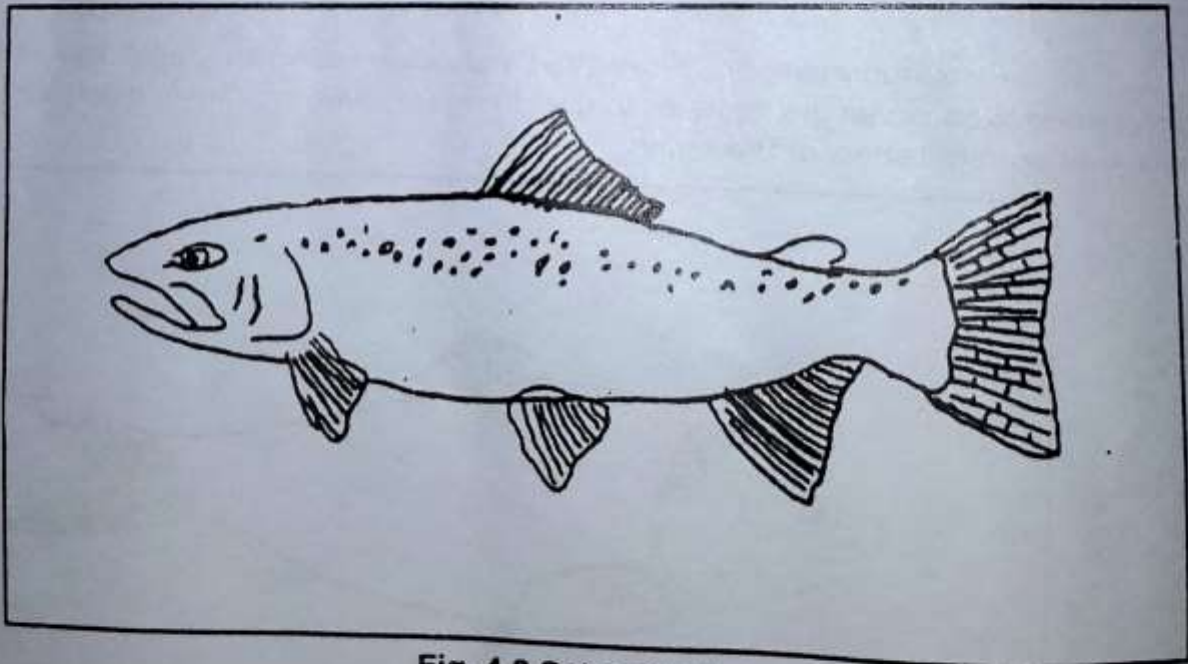


Fig. 4.3 *Salmo trutta*

Body is streamlined and laterally compressed; scales cycloid and small; teeth sharp and in many rows; adipose fin present; barbel absent; colour brown with red spots on the dorsal half of the body; feeds on insects molluscs, small fish and tadpoles, prefers cold and clear water of hill streams; breeds during winter; attains a maximum size of 35 cm and 500 gms.

(iv). *Gibleon catla (Catla catla) Fig. 4.4*

Locally known as 'Thaila or Thaili' is one of the popular food fish.

Body short, deep with conspicuous head; large upturned mouth; non-fringed lips; barbels absent; dorsal profile is more convex than that of ventral; dorsal fin commences slightly in advance of the ventrals; mainly feeds on zooplankton using large gill rakers and is considered surface feeder; colour of body dark green to black with lighter sides; fast growing and favourite species for culture; matures in the second year; attains a maximum size of 1.8 m. and 45 kg.

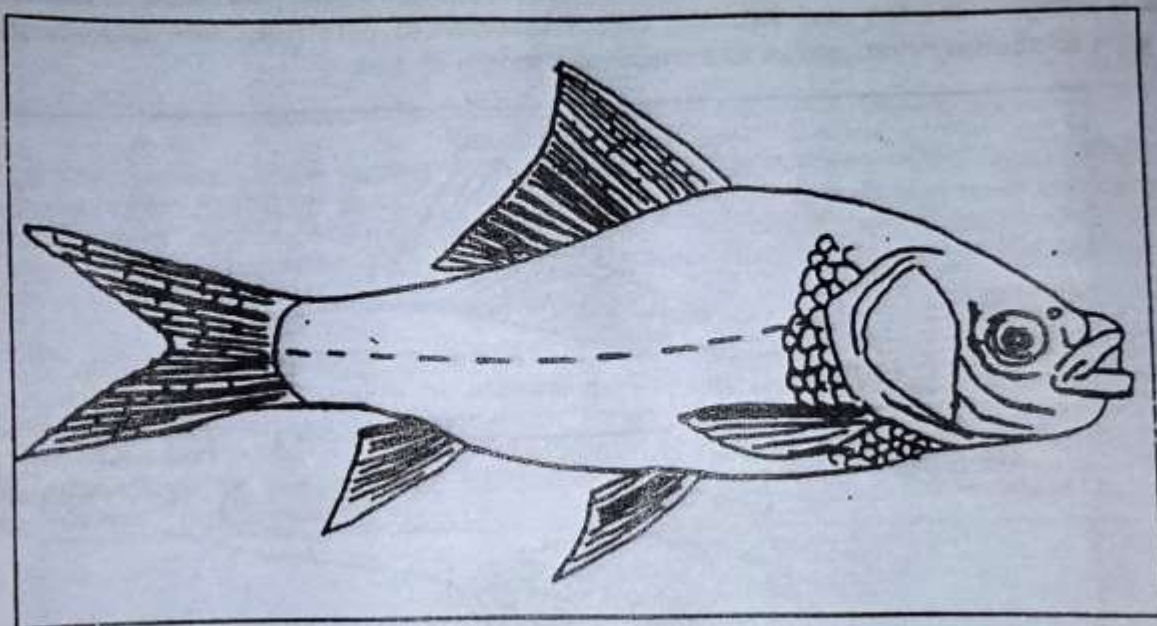


Fig .4.4 Gibleon catla

(v). *Labeo rohita (Fig. 4.5)*

Locally known as 'ROHU' or 'DUMBRA'. It is one of the most important food fish of Pakistan and is considered as tastiest of all carps.

Body moderately elongated; small pointed head; mouth terminal and semioval; lips thick and fringed; one pair of short maxillary barbels; dorsal fin slightly concave; caudal deeply forked; colour bluish black on the back reddish tinge along the sides, and silvery beneath; feeds on phytoplankton and soft weeds; breeds during summer in flooded riverine areas or in bundh type tanks; grows upto a length of 1.2 m.

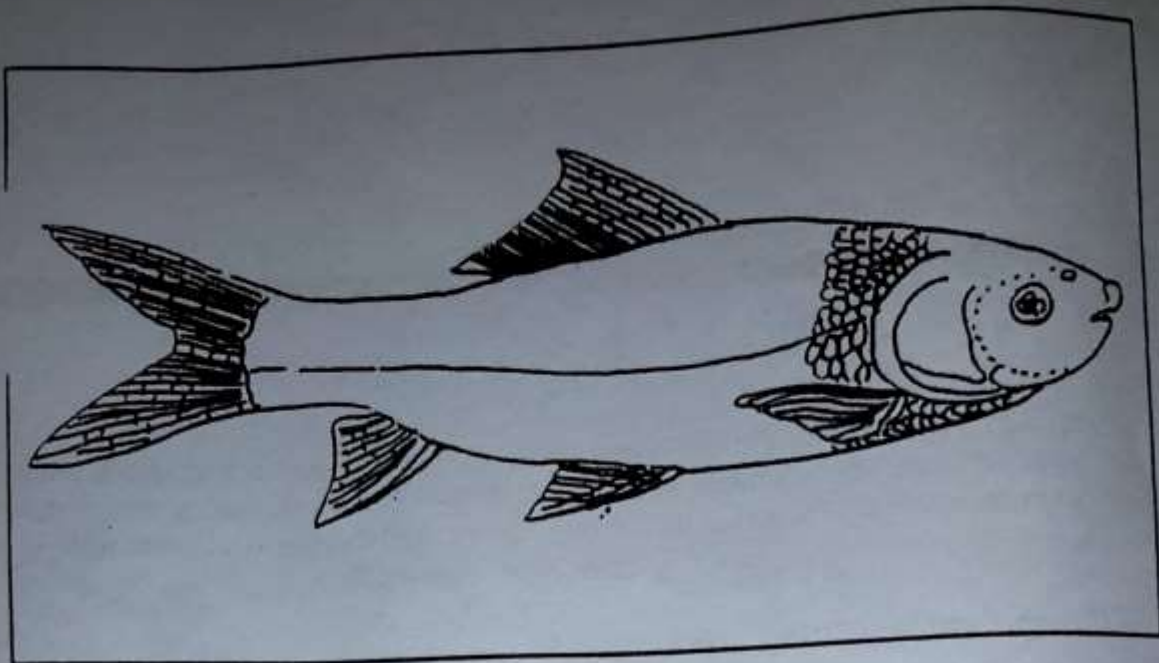


Fig. 4.5 *Labeo rohita*

(vi). ***Labeo calbasu* (Fig. 4.6)**

Commonly referred as Black Rohu, locally known as 'Kalbance' or 'Dohee'.

Body oblong but somewhat deep than the other species of genus *Labeo*; snout obtuse; mouth narrow and slightly sub-terminal; lower lip distinctly fringed; two pairs of barbels; omnivorous bottom feeder on detritus and animals; colour blackish to dark grey, fins distinctively black; tip of upper lobe of caudal white; grows to a maximum length of 1 m.

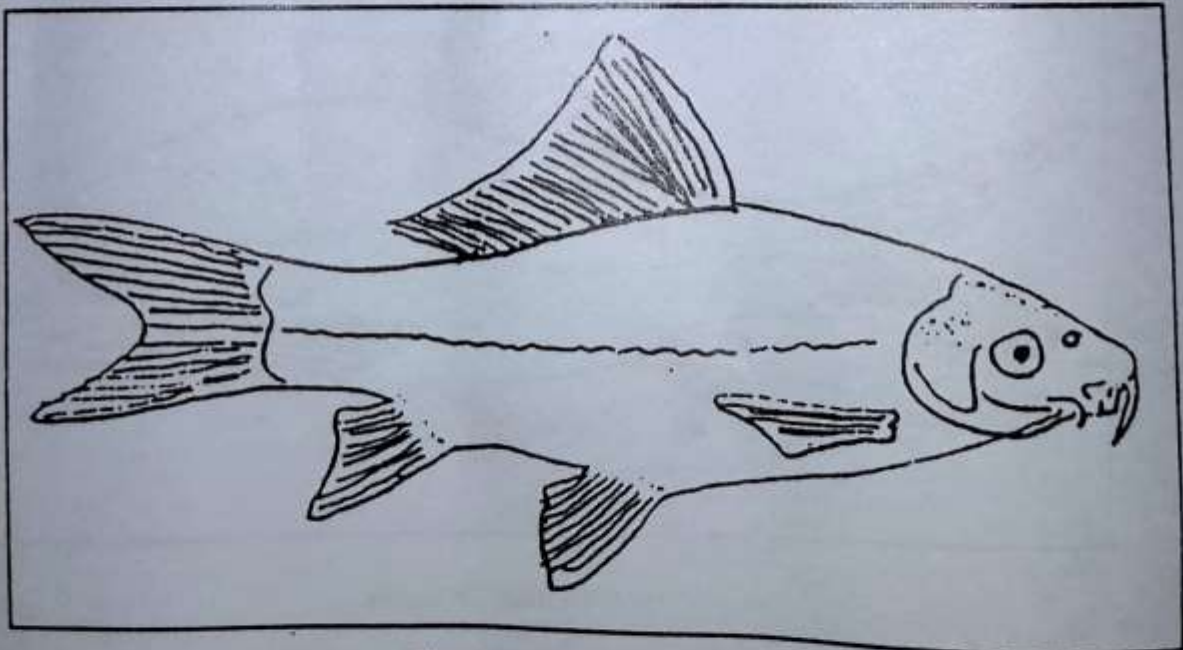


Fig. 4.6 *Labeo calbasu*

(vii).

***Labeo gonius* (Fig. 4.7)**

Locally known as 'Cireah' or 'Cirreah'

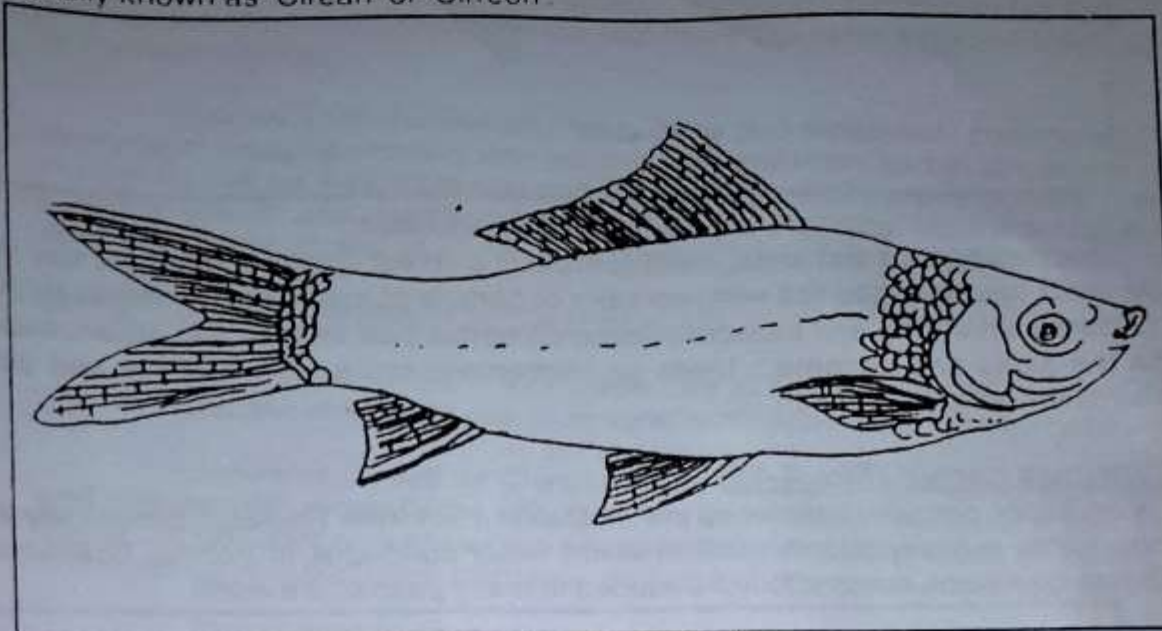


Fig. 4.7 *Labeo gonius*

Body oblong, dorsal profile more convex than abdomen; head region slightly concave; mouth narrow, inferior, and transverse; lips thick and fringed with a distinct inner fold along the entire circumference; two pairs of minute barbels, one rostral and one maxillary; numerous pores on snout which is sometime tuberculated; colour greenish black on dorsal side, rest of the body silvery; grows upto 1.5 m in length.

(viii). ***Cirrhinus mrigala* (Fig. 4.8)**

Locally called as 'Morakhi' or 'Mirgal' or 'Mori' or 'Naraini'. Body moderately elongated with rounded abdomen, small head with blunt snout; mouth subterminal with non-fringed thin lips; one pair of small rostral barbel; bright silvery body with golden or coppery tinge; feeds on decaying organic and vegetable debris and is regarded as bottom feeder, young feed on zooplankton; maximum size attained is 0.9m

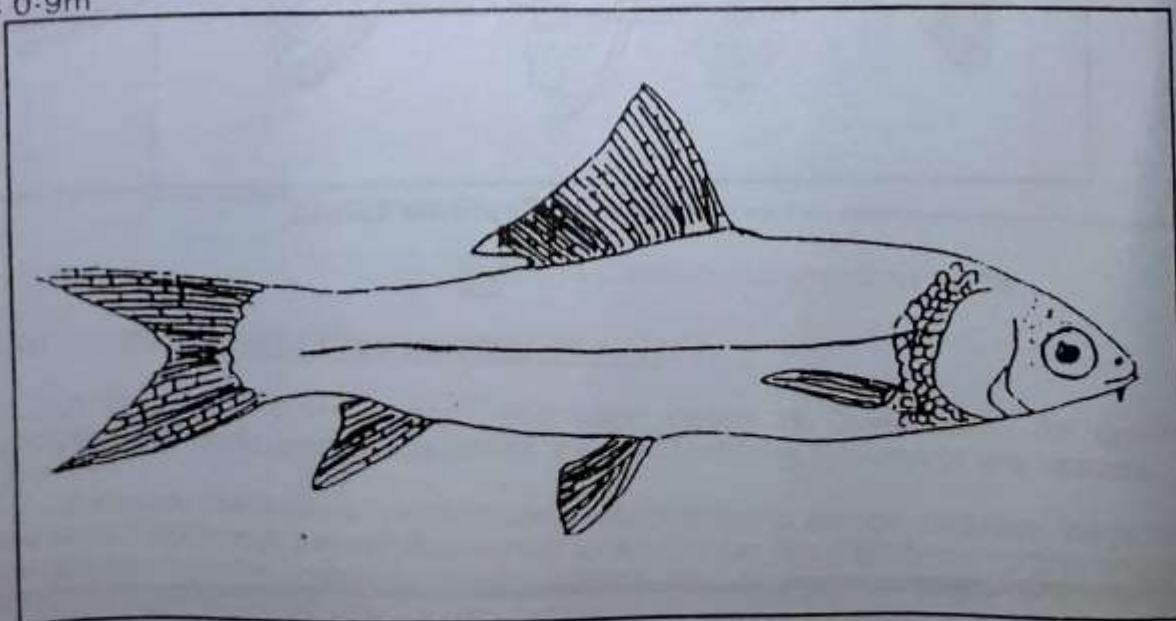


Fig. 4.8 *Cirrhinus mrigala*

(ix). *Tor pituitora* (Fig. 4.9)

Locally known as 'Mahasheer' and is reckoned as good sport fish

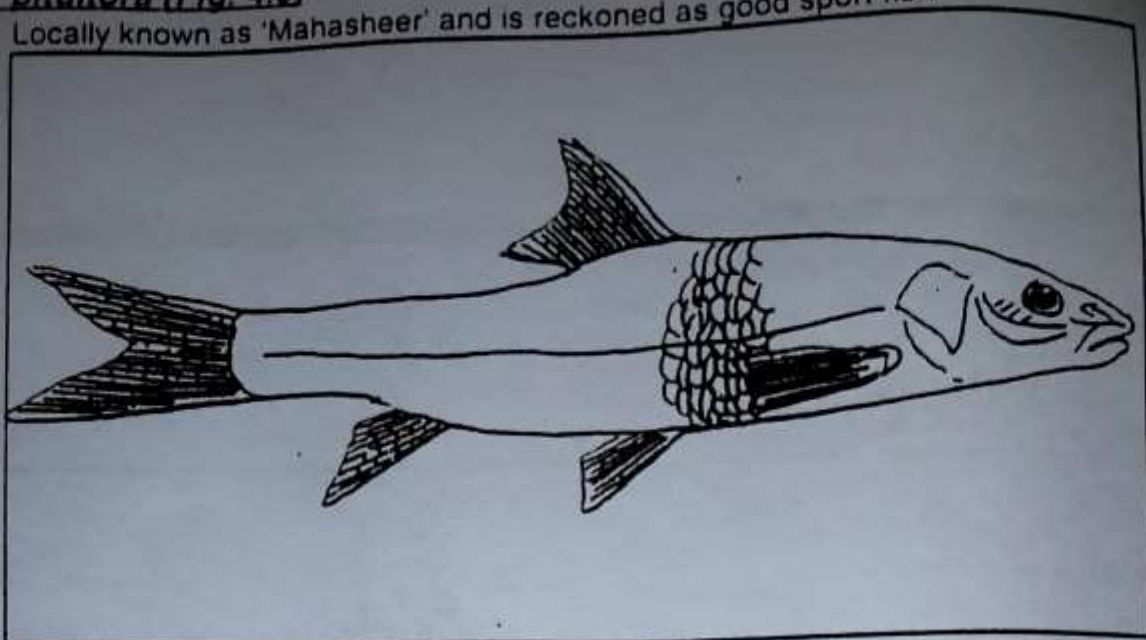


Fig. 4.9 *Tor pituitora*

Body elongated and stout; head is broadly pointed; length of head greater than the depth of the body; male has enlarged lips with two pairs of barbels of equal length; scales large; last undivided fin ray of dorsal fin strong and osseous; colour on dorsal side reddish sap green, becoming yellowish white on the sides and abdomen; feeds on filamentous algae, insect larvae and soft macrophytes; attains a maximum size of 1.8 m.

(x) *Cyprinus carpio* (Fig. 4.10)

It is an exotic species, introduced in Pakistan in 1964 from Thailand. Essentially a cold water fish, but being hardy it easily adapts itself to warm water conditions of tropics. Originated in China this species has now been successfully introduced in many parts of the world.

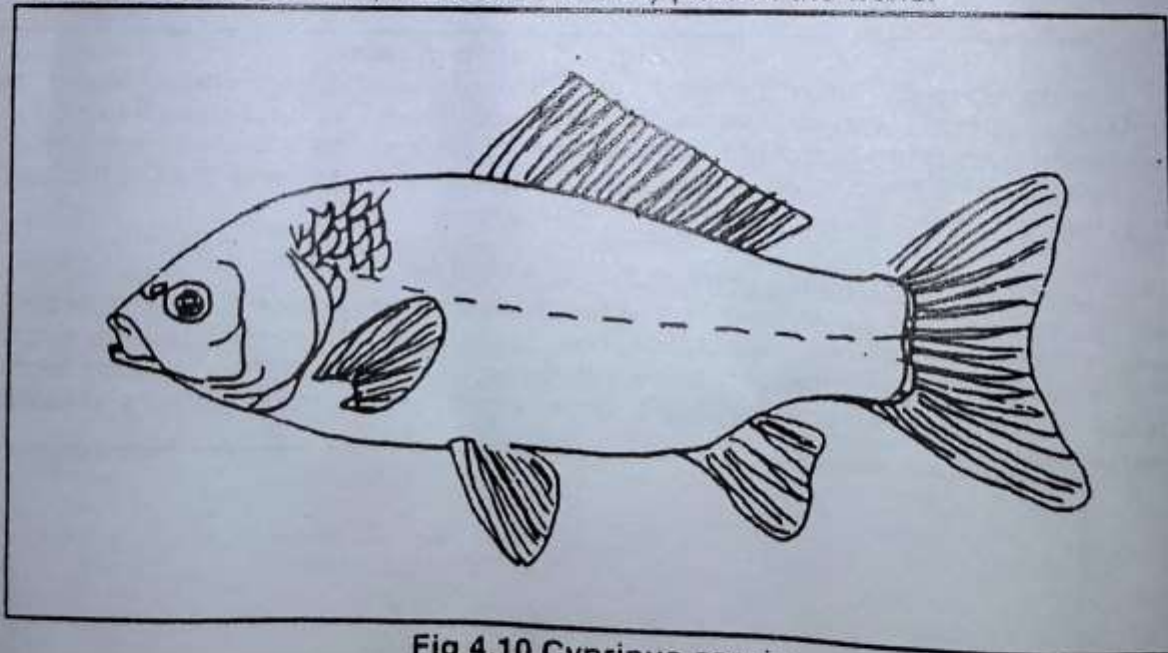


Fig 4.10 *Cyprinus carpio*.

By selective breeding a number of varieties have been developed. Of these, two varieties namely *Cyprinus carpio* var: *communis* (also called as scale carp) characterized by small scales, and *Cyprinus carpio* var. *specularis* (also called mirror carp) characterized by large, shiny, and scattered scales are found in Pakistan. This species is strongly recommended for domestic culture due to its omnivorous habit and because of the fact that all its varieties breed freely all the year round in ponds or confined waters.

Locally know as 'Gulfam'; body deep and moderately compressed laterally; head short and depressed; mouth protractile with smooth lips; maxillary barbel longer than rostral ones; long dorsal fin, the last fin ray being ossified and serrated; generally greyish green in colour, but can be golden yellow or orange also; feeds on larvae of insects, molluscs, worms and shoots of submerged weeds; attains a maximum size of 75 cm and 6.0 kg.

(xi). *Ctenopharyngodon idella* (Fig 4.11)

An exotic species, it was introduced in Pakistan in 1964 from China. It is famous for the control of aquatic vegetation due to its voracious herbivorous feeding habit.

Commonly called as Chinese grass carp; body elongated with rounded snout; head broad and depressed; scales large with greenish tinge; mouth transverse with slightly longer upper jaw; colour of body dark grey above and silvery white on the belly; feeds on all kinds of aquatic weeds, and in the absence of plant may even feed on fish fry; attains a maximum size of 1.3m and 30kg.

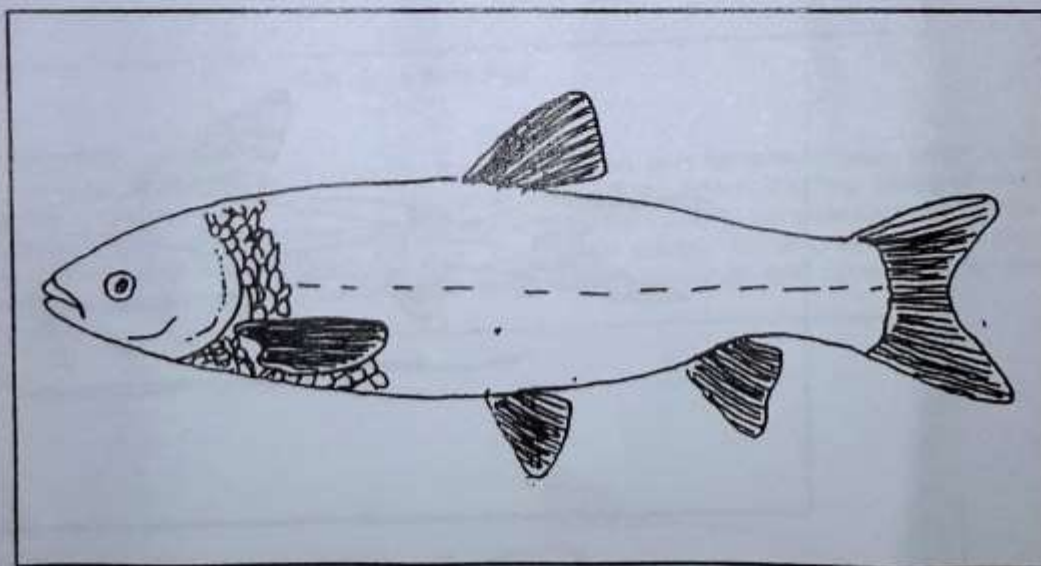


Fig. 4.11 *Ctenopharyngodon idella*

(xii) *Hypohthalmichthys molitrix* (Fig. 412)

It is also a Chinese carp, commonly called as 'Silver carp'. An upturned mouth, laterally compressed body, and silvery scales are the identifying features of this species.

It mainly feeds on phytoplankton; prefers diatoms and green algae; body long and robust; eyes are small; abdomen keeled from throat to vent; lower jaw slightly protruding and with a tubercle; upper jaw slightly notched; possess a high growth rate, attaining a weight of about 1.5kg in the first year; maximum length is 60 cm.

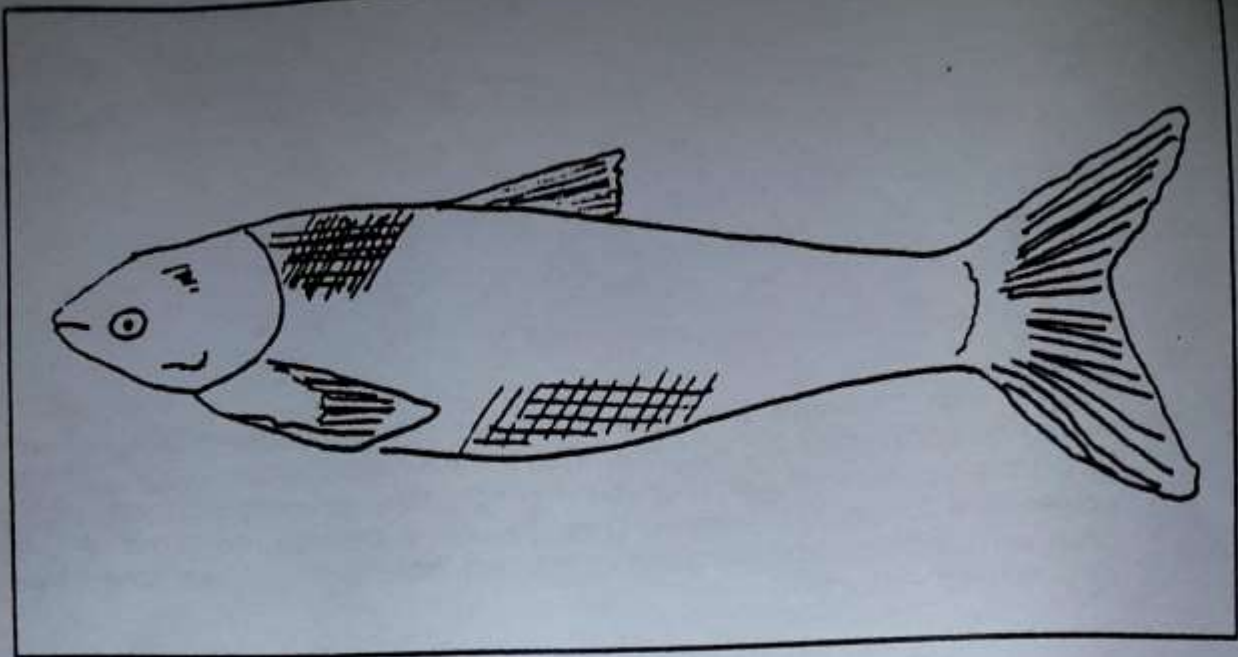


Fig 4.12 Hypothalmichthys molitrix

(xiii). *Aorichthys aor* (Fig. 4.13)

Locally known as 'Singharee' or 'Chanja' or 'Seenghara'. Body elongated and compressed; abdomen rounded; head large and slightly depressed; mouth transverse, wide and subterminal; upper jaw longer; upper surface of head rugose with tuberculated ridges; villiform teeth on lower jaws; four pairs of barbels; dorsal fin with strong serrated spine; adipose fin with prominent black spot; colour bluish above, becoming gradually white beneath; fins are yellowish with dark bands or blotches; attains a size of 1.8 meters.

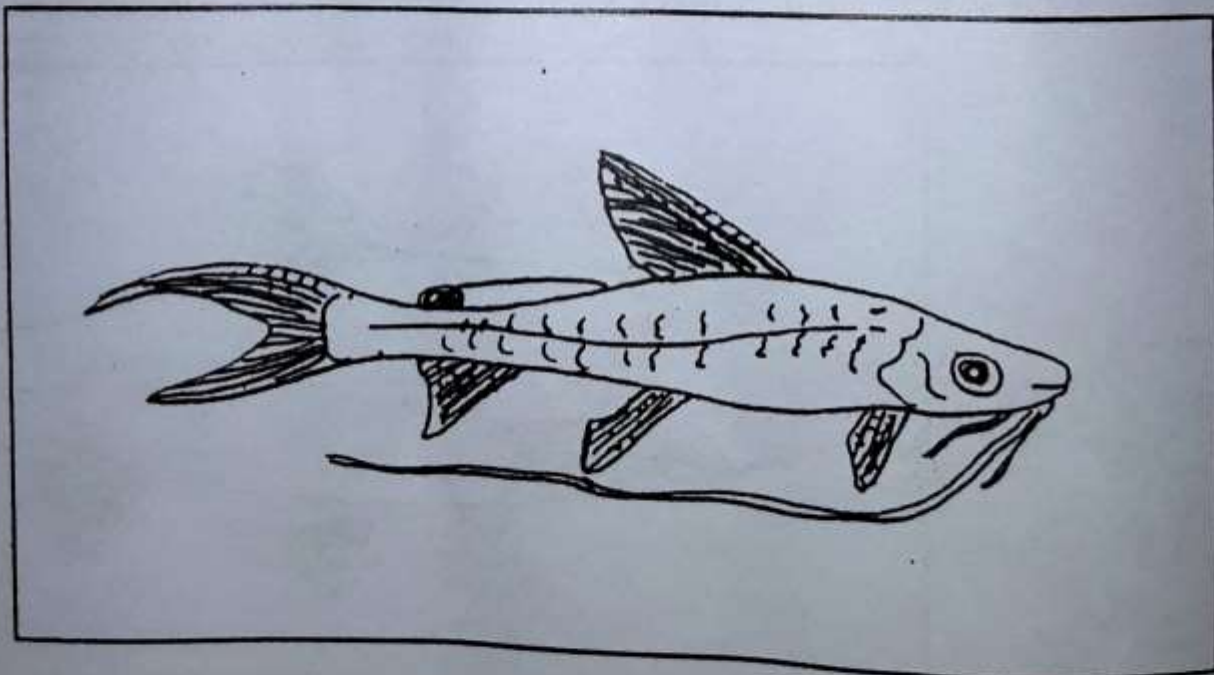


Fig. 4.13 *Aorichthys aor*

(xiv). *Rita rita* (Fig. 4.14)

Locally known as "Khagga". Body is stout and rounded; upper surface of head covered with skin; mouth terminal, transverse and wide; upper jaw slightly longer; villiform teeth in both jaws; three pairs of barbels; nasal pair being shorter than maxillary and mandibular ones; dorsal and pectoral fins supported with strong serrated spines; adipose present; colour grey or brown; attains a maximum size of 1.5 m.

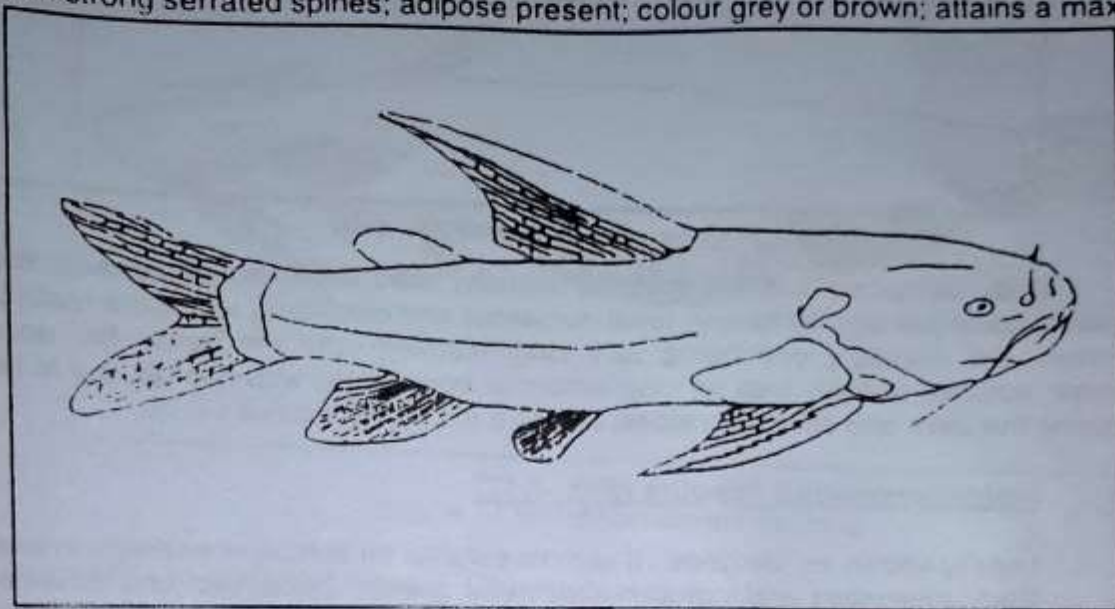


Fig. 4.14 *Rita rita*

(xv). *Bagarius bagarius*.

Locally known as 'Coonch' or 'Goonch'. Body elongated and flattened; head large, naked and depressed; mouth transverse and subterminal; upper jaw longer; lips thick; four pairs of barbel, one pair each of maxillary and nasal, and two pairs of mandibular; maxillary barbels have broad base; dorsal spine smooth and osseous; adipose present; caudal fin deeply forked, both lobes having filamentous prolongations; colour greyish yellow, with large black markings and cross bands; grows upto a length of 1.8 m.

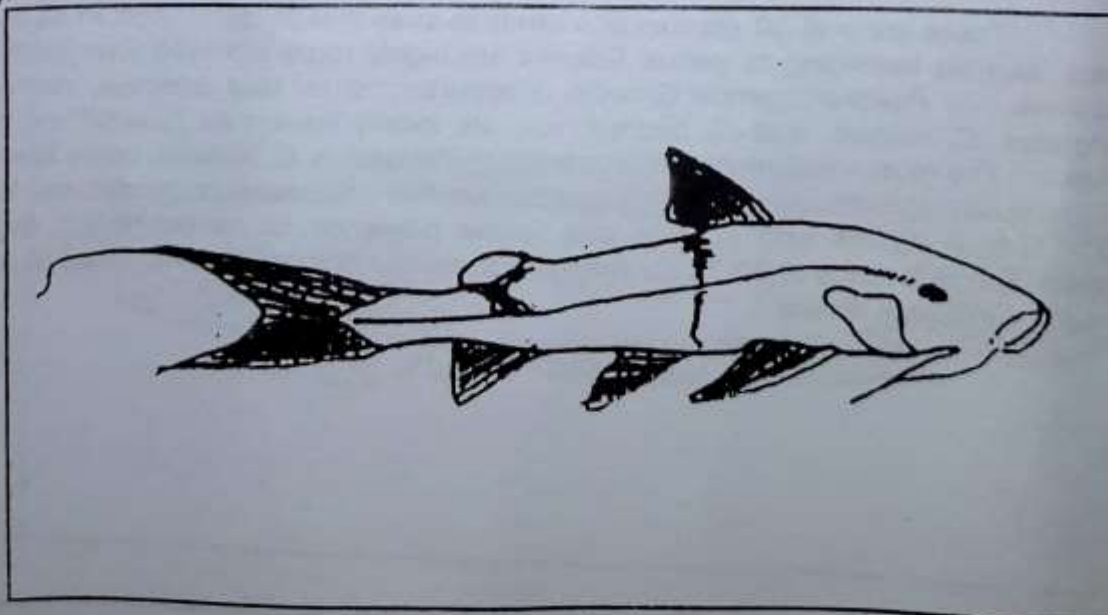


Fig. 4.15 *Bagarius bagarius*

(xvi) Wallago attu (Fig. 4.16)

Locally known as 'Mulee' or 'Jhirkee' or 'Jhirko'. It is highly predatory and is not suitable for pond culture.

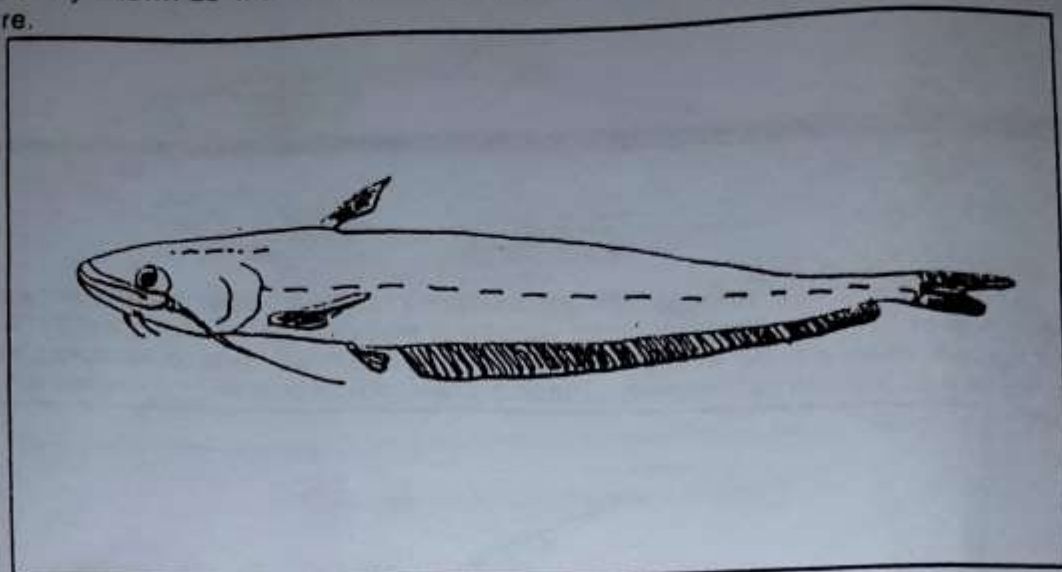


Fig. 4.6 Wallago attu

Body elongated and compressed laterally; head large and depressed; mouth subterminal; gape wide; lower jaw slightly longer; teeth numerous and cardiform; vomerine teeth present; two pairs of barbels, the maxillary one being very long reaching upto the pelvic fin; dorsal fin short and spineless; adipose absent; anal fin long; colour of body varies with habitat; but is generally yellowish grey along the back and silvery on sides; attains a maximum size of 1.8 m.

(xvii). Heteropneustes fossilis (Fig. 4.17)

Locally known as 'Singhee'. It is most suitable for culture in swampy areas.

Body elongated and compressed; head greatly depressed and covered with thick skin; snout flat; mouth terminal, transverse, and narrow; villiform teeth in bands on jaws; four pairs of long barbels; dorsal fin short and spineless, adipose fin absent; anal fin long; caudal fin rounded; gill chamber with accessory breathing organs; pectoral fin bears strong serrated spine with a poisonous sac at its base, if handled carelessly, can inflict very painful wound leading to local inflammation and fever; colour light grey to reddish, often with two lateral yellowish bands; attains a maximum length of 45 cm.

(xviii) Murrels or Snake heads.

There are over 30 species of murrels or snakeheads distributed in tropical Asia, China, and Africa. Murrels belonging to genus *Channa* are highly regarded food fish in the South East Asian countries. In Pakistan, genus *Channa* is represented by four species, namely, *C. marulius*, *C. punctatus*, *C. striatus*, and *C. gachua*. All are locally known as "Daula" or "Murrel" or "Saul" or "Shakur". The most widely distributed species in Pakistan is *C. striatus*, while the largest of all the four is *C. marulius*. Murrels are very hardy and can tolerate unfavourable conditions. If kept moist, they can live out of water for long periods due to the presence of air breathing organs. The preferred temperature is in range of 20-35°C. They can survive in both acidic and alkaline waters. They can also withstand brackish waters.

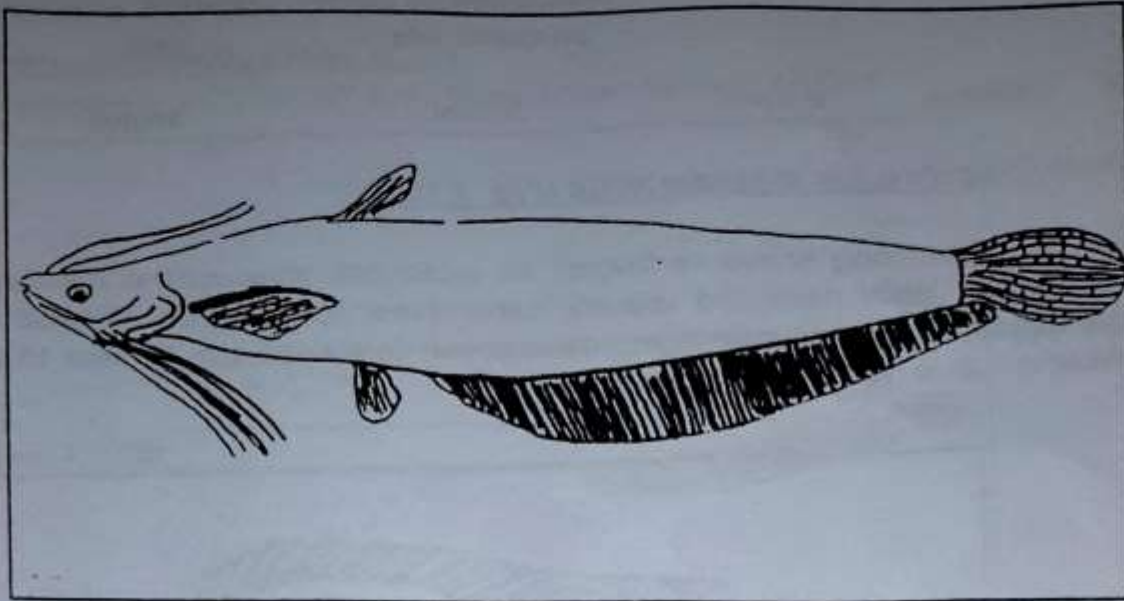


Fig. 4.17 *Heteropneustes fossilis*

The general characters of genus *Channa* are, Body elongated and cylindrical; head depressed and very much resemble the head of a snake (hence, the name 'snakehead'); mouth large, terminal and protractile; villiform teeth on mandibles; palatine and vomerine teeth present; highly predaceous and prefers muddy waters. Being a predator, Murrel feeds on minnows, minor carps, fingerlings, insects, frogs and other live food. The fry of murrels probably feed largely on zooplankton and insects.

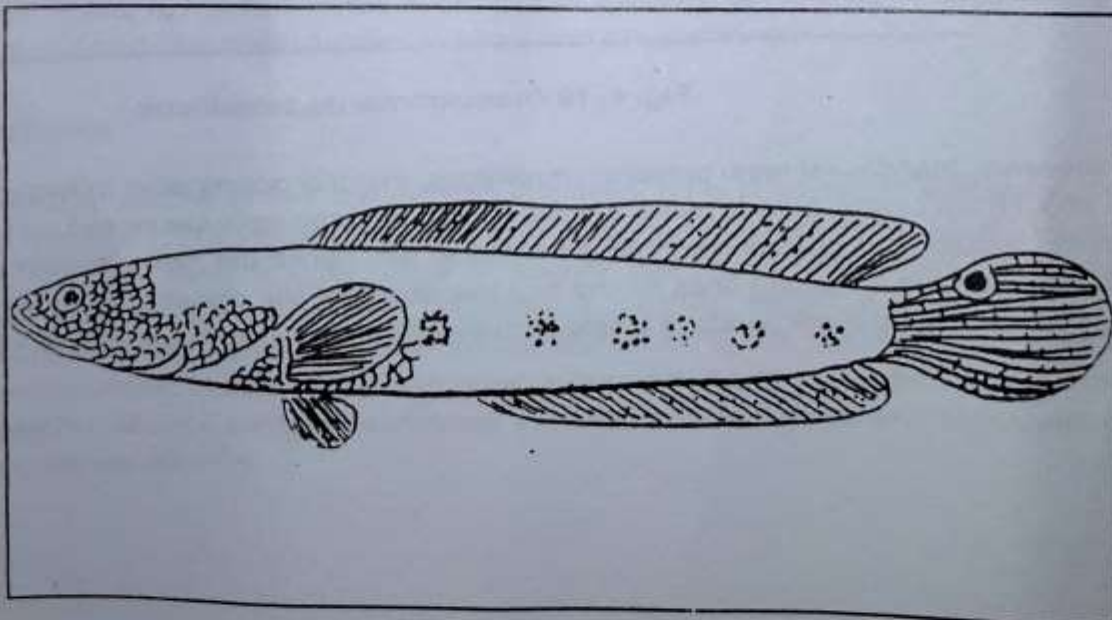


Fig. 4.18 *Channa marulius*

The distinguishing features of the four species found in Pakistan are:

Characters	<i>C. marulius</i>	<i>C. punctatus</i>	<i>C. striatus</i>	<i>C. gachua</i>
1. Max. size	1.2m	30 cm	90 cm	30 cm
2. Dorsal f. rays	46.52	29 - 31	37 - 45	32 - 37
3. Anal f. rays	32 - 34	20 - 22	24 - 25	21 - 23
4. Caudal f. rays	14	12	13	12
5. Colour	darks green back belly white	black or dark grey several oblique bands on lateral side	green and yellow striations on either side.	dorsal side blackish with slanting white striations.
6. Ocellous	Present	Absent	Absent	Absent

(xix) *Oreochromis mossambicus* (Fig. 4.19)

Commonly known as 'tilapia'. An exotic fish, introduced-in Pakistan in 1951 from Java (Indonesia). Body deep and laterally compressed; upper profile of head concave; lateral line interrupted; caudal peduncle is well demarcated; dorsal and anal fin bear 15 and 5 spines respectively; mouth is terminal and

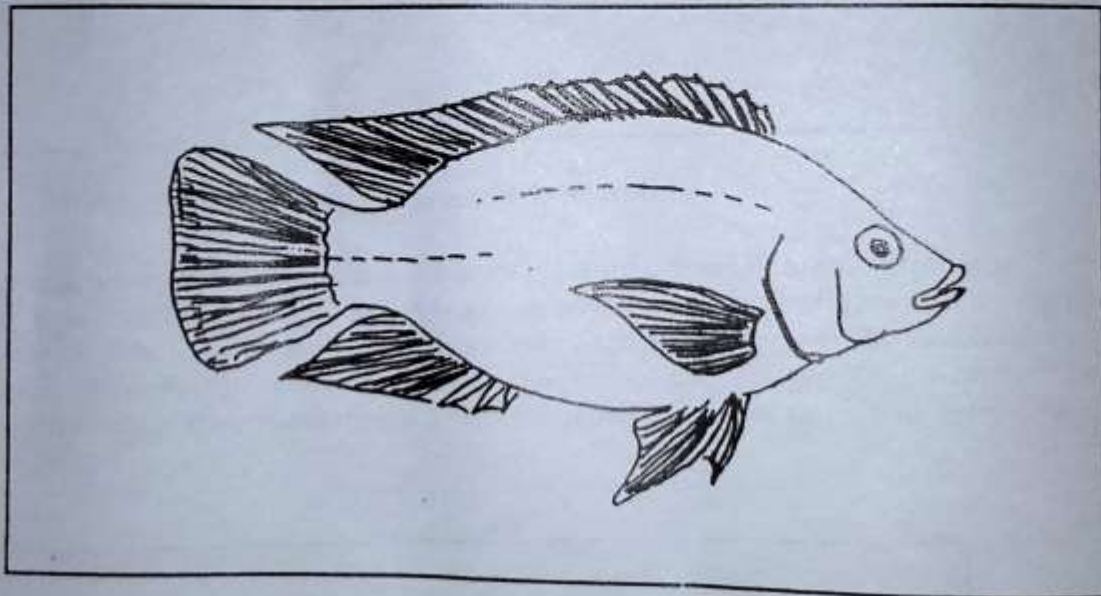


Fig. 4. 19 *Oreochromis mossambicus*

transverse, mandibular teeth present; omnivorous, maturity occurs even in two months old individuals of about 8 cm in size; breeds nearly 8 times a year; fertilized eggs are picked up by the female and are kept in mouth, in a special chamber, till hatching and hence the name 'mouth breeder'; both males and female care for young ones for the first few weeks of life; colour grey olive, or light yellow with a number of vertical black bands; if ample food available, grows upto a length of 40 cm.

(xx).

***Mastacembelus armatus* (Fig. 4. 20)**

Commonly referred to as 'Spiny eel' while locally known as 'Bam' or 'Groj'

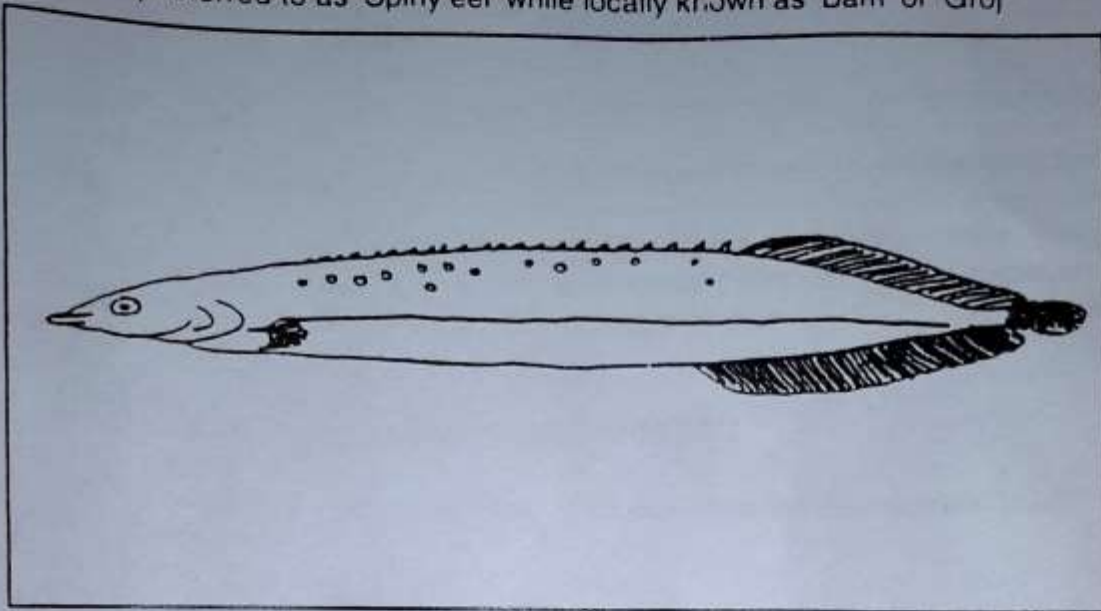


Fig. 4.20 *Mastacembelus armatus*

Body is elongated and serpentine (snake-like); head is pointed; gape of mouth small; long fleshy appendage attached to trilobed mouth; mandibular teeth minute; preopercular bone with three or more denticulations; preorbital spine present; instead of an anterior dorsal fin, a row of free and stumpy spines present; posterior dorsal, caudal, and anal fin confluent with each other; ventrals absent; small cycloid scales; colour rich brown on the back, bottom yellowish white; a black undulating band is present in the upper half of the body; it grows to about one meter in length.

(xxi). ***Mugil cephalus***

Of the various species of fish that inhabit estuaries, none is so widely distributed as the 'striped mullet', *M. cephalus*. The mullets inhabit coastal water but migrate into brackish water and even fresh water as they have a wide range of salinity tolerance. Their tolerance range for temperature is also wide, i.e., from 3°C - 30°C. The mullet is a detritus feeder; it sucks mud from the pond bottom (if kept in ponds) and also feeds on surface scum; in the sea, however, it feeds on planktonic and benthic algae. Mulletts reach maturity at a fairly small size (i.e., when 30 cm in length and 300 gm in weight). Mulletts are very often used in mixed culture system with tilapia and carps since they do not compete for food.