

**Miscellaneous Publication**

**Occasional Paper No. 10**

# **Records of the Zoological Survey of India**

**AID TO IDENTIFICATION  
OF SILUROIDS**

**by**

**K. C. JAYARAM**

**Issued by the Director  
Zoological Survey of India, Calcutta**

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2. SILURIDAE, SCHILBEIDAE, PANGASIDAE  
AMBLYCIPITIDAE, AKYSIDAE

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K. C. JAYARAM

**RECORDS  
OF THE  
ZOOLOGICAL SURVEY OF INDIA**

**MISCELLANEOUS PUBLICATION**

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INDIA, BURMA, SRI LANKA, PAKISTAN AND BANGLADESH**

**2. SILURIDAE, SCHILBEIDAE, PANGASIDAE,  
AMBLYCIPITIDAE, AKYSIDAE**

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**K. C. JAYARAM**



*Edited by the Director, Zoological Survey of India*

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<b>No. 10</b>	1977	Pages 1-33
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## INTRODUCTION

This is the second part of the above series to contain the illustrated key, diagnosis and brief description of five families as listed in the title. Of the five families, the first three are common in all fishery operations, and are also of commercial value.

The methods adopted are the same as in part 1 (Jayaram, 1977). For identification of families, the key given in part 1 may be consulted.

The illustrations were executed by Shri D. Sengupta of the Zoological Survey of India, Madras, under author's guidance for which thanks are due to him.

### Family SILURIDAE

Large sized, elongate fishes with a compressed body. Teeth on premaxillaries, mandible and prevomer, depressible. Nostrils separated from each other by a short distance, anterior tubular on tip of snout, posterior valved and situated before anterior border of eyes. Barbels four or six, generally well developed. Gill openings very wide, extending upto lateral line.

Rayed dorsal fin inserted far forwards over pelvics. Adipose dorsal fin absent. Paired fins laterally inserted. Pectoral fins with a strong spine, occasionally serrated. Anal fin very long, extending from just posterior to anal opening to caudal or confluent with it. Caudal fin rounded to weakly emarginate, with bluntly rounded lobes, or forked. Lateral line straight, complete, and with short ventral branches, dendritic or not, but no dorsal branches.

Air-bladder large, attached to second to fourth vertebrae.

Lateral ethmoid facet for articulation of palatines antero-lateral, palatines short, broad. Ecto-, Metapterygoids present, variously developed. Endopterygoid absent. Prevomer small, dentigerous. Autopterotics and autosphenotics alone provide ventrally articular facet for hyomandibular. Post-emporals absent. Mesocoracoid in pectoral girdle present.

Vertebrae 52 to 74.

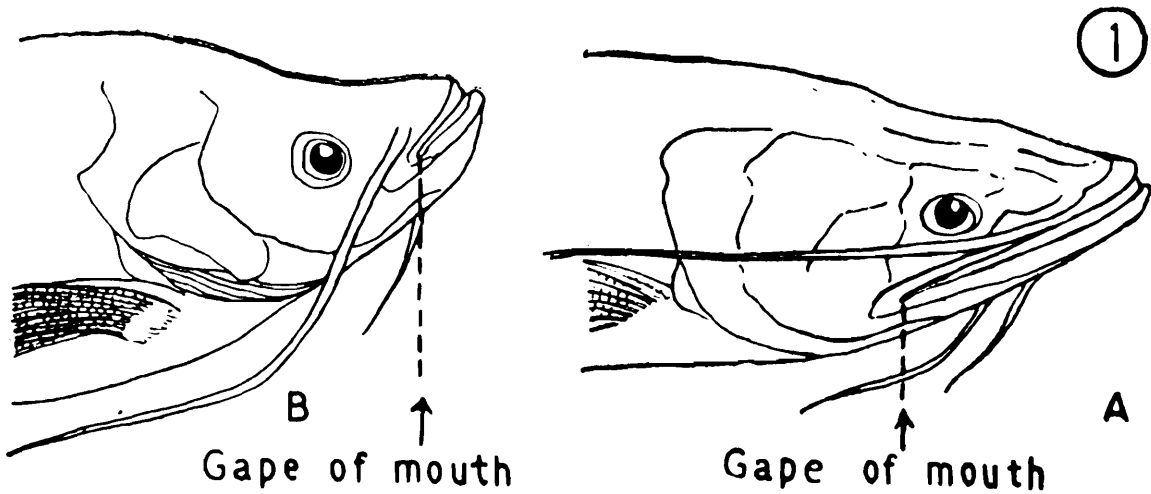
*Distribution.*—India, Pakistan, Sri Lanka, Bangladesh, Burma, Thailand, Viet Nam, Malaya, Indonesia.

*Type-genus.*—*Silurus* Linnaeus.

*Remarks.*—A total of nine genera are known of this family from its range as stated above. It is a Palaearctic and Oriental family, of which only three genera occur in the Indian region.

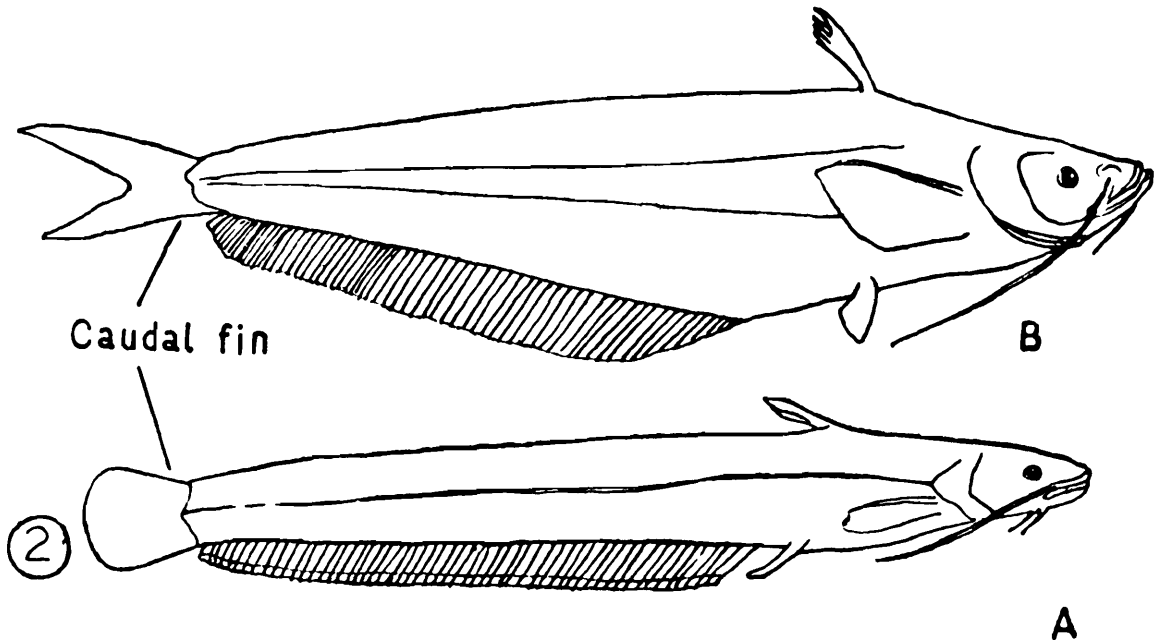
KEY TO THE GENERA

1. Gape of mouth very wide, extending beyond eyes posteriorly ... .. *Wallago* Bleeker  
 ... (TF 1A)



- Gape of mouth not wide, not extending beyond eyes posteriorly ... .. 2  
 ... (TF 1B)

2. Caudal fin rounded, truncate or weakly emarginate medially with bluntly rounded lobes. Mandibular barbels one or two pairs ... .. *Silurus* Linnaeus  
 ... (TF 2A)



- Caudal fin forked. Mandibular barbels one pair, may be rudimentary ... .. *Ompok* Lacépède  
 ... (TF 2B)

Genus **Ompok** Lacépède

*Ompok* Lacépède, 1803, *Hist. Nat. Poiss.*, 5, p. 49 (type species, *Ompok siluroides* Lacépède, by monotypy).

*Ompok*: Haig, 1950, *Rec. Indian Mus.*, 48, p. 103 (see for synonymy, review).

*Description.*—Dorsal profile concave upto base of dorsal fin, generally descending beyond it. Head small, broad, depressed; snout bluntly rounded, depressed; jaws subequal, lower jaw prominent, more or less elevated at symphysis; lips thin. *Mouth superior*, moderately wide, *its cleft oblique, not extending to front border of eyes*. Teeth uniformly villiform, depressible on jaws in bands, in two separate patches on palate. *Eyes small, their ventral border on level with corner of mouth, visible from underside of head*. Two pairs of barbels, one pair each of maxillary and mandibular; latter occasionally rudimentary or small. Gill membranes deeply notched, overlapping, free from each other and from isthmus. Branchiostegals 9 to 14.

Rayed dorsal fin with four or five rays and without any spine. Adipose dorsal absent. *Pectoral fins* with 11 to 14 rays and a feebly serrated or smooth spine; its length *surpassing pelvic fins*. Pelvic fins with 7 to 10 rays. Anal fin very long with 52 to 75 rays, close to caudal fin, free from it or narrowly connected with it. *Caudal fin forked*. Lateral line complete, simple.

*Distribution.*—India, Sri Lanka, Bangladesh, Burma, Thailand, Sumatra, Java, Borneo.

A total of 8 species are known, of which three are dealt here.

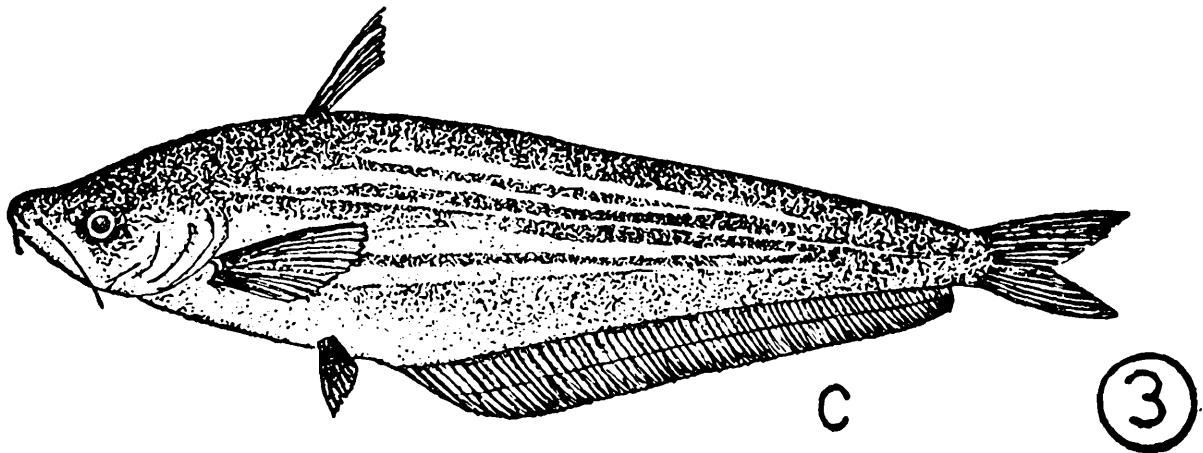
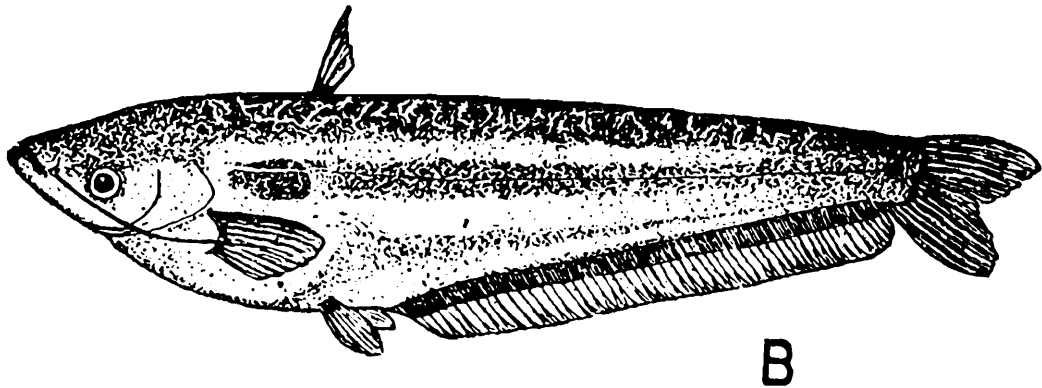
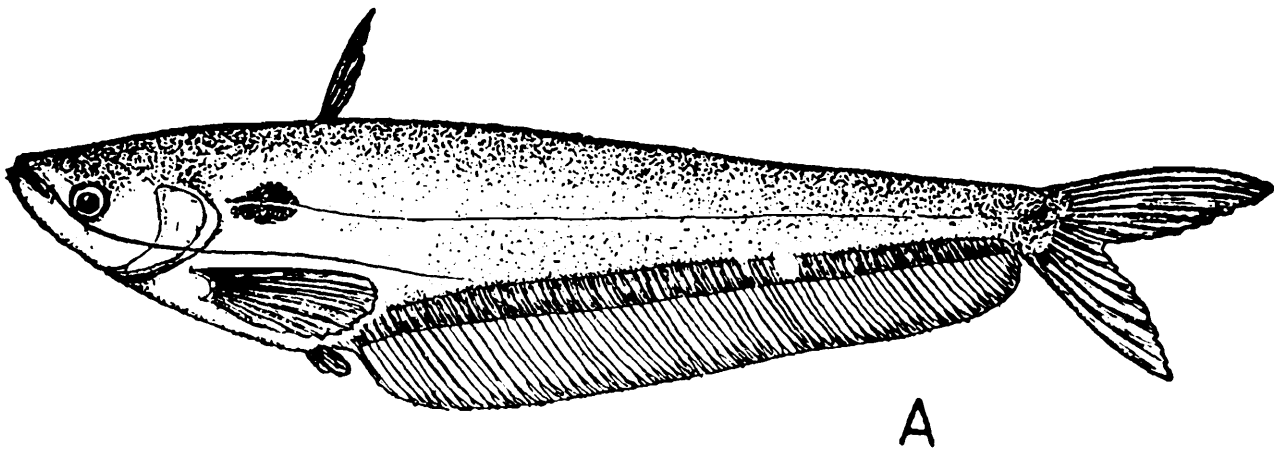
*Remarks.*—Fishes of the genus *Ompok* were known for a long time under the name *Callichrous* Hamilton. Lacépède (1803) defined *Ompok* with a single species *O. siluroides*. Bleeker (1863, p.85) substituted the name *Callichrous* Hamilton, 1822, because the original description of *Ompok siluroides* rested on a badly mutilated dried specimen and the description was defective. However, Valenciennes (1839, p.362) rectified the errors in Lacépède's description after re-examining the type specimen. The fact that a genus is inadequately or even incompletely described or a description is zoologically poor does not affect the validity of the proposed name. As such, as far as *Ompok* is concerned, as per Law of priority, being an earlier valid name it has to be used, although Hora (1936a) did not subscribe to this view.

Considerable confusion has also prevailed regarding the species *O. pabo* (Hamilton) and *O. pabda* (Hamilton). Parameswaran *et al.*, (1967) on the basis of analysis of meristic characters clearly elucidated that the two are distinct, each having a separate life history.

### KEY TO THE SPECIES

- |  |     |     |     |     |     |                                  |
|--|-----|-----|-----|-----|-----|----------------------------------|
| 1. Maxillary barbels longer than head, extending upto or beyond anal fin | ... | ... | ... | ... | ... | <i>O. bimaculatus</i><br>(TF 3A) |
| Maxillary barbels shorter than head, not extending upto anal fin         | ... | ... | ... | ... | ... | 2                                |
| 2. Anal fin with 22 to 56 rays   | ... | ... | ... | ... | ... | <i>O. pabda</i><br>(TF 3B)       |
| Anal fin with 66 to 71 rays  | ... | ... | ... | ... | ... | <i>O. pabo</i><br>(TF 3C)        |

\* Characters in Italics are of diagnostic value.



### **Ompok bimaculatus** (Bloch)

*Silurus bimaculatus* Bloch, 1797, *Ichthyol. Hist. Nat. Poiss.*, part 2, p. 17, pl. 364 (type locality, Malabar).

*Ompok bimaculatus*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 103 (see for synonymy, review).

D. 4; P. I, 12-14; V 8-9; A. ii-iii, 59-73; C. 17-18.

*Diagnostic characters*.—Maxillary barbels longer than head extending upto anal fin.

*Colour*.—In preserved specimens silvery shot with purple, a black spot on shoulder behind gill openings and above middle of pectoral fin; occasionally the caudal fin is edged with grey and its tips are black. In live condition, silvery shot with purple, dorsally faint greenish dark with a tinge of golden yellow. Fins pale gold. A black spot on shoulder, on the lateral line behind gill opening and above middle of pectoral fin. A small triangular black spot just above lateral line on caudal peduncle also present.

*Distribution*.—Throughout India, Pakistan, Sri Lanka, Bangladesh, Thailand, Malaya, Viet Nam, Sumatra, Java, Borneo and Yunnan.

*Size*.—Maximum size 457 mm. TL.

*Fishery value*.—Inhabits rivers, tanks and ponds. Caught in good quantity. It is a good eating fish, called the “Butter fish” by the Europeans. Eggs are small, numerous and of pale chocolate brown colour. Ovaries are large sized. It spawns during the monsoon and thrives well in confined waters, overgrown with vegetation. Qayyum and Qasim (1964) have worked out the bionomics of this species.

*Type-specimen*.—Not known.

### **Ompok pabda** (Hamilton)

*Silurus pabda* Hamilton, 1822, *Fish. Ganges*, p. 950, pl. 25, fig. 47 (type locality, Bengal).

*Ompok pabda*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 103 (as a synonym of *O. bimaculatus*).

D. 4; P. I, 11–13; V 7–8; A. ii–iii, 50–54; C. 17–19.

*Diagnostic characters*.—Maxillary barbels shorter than head, not extending upto commencement of anal fin.

*Colour*.—Varies considerably. In preserved examples usually silvery, glossed with gold having a dark shoulder spot above middle of pectoral fin and generally another close to caudal base. In fresh condition silvery green with a tinge of yellow; dark on back, fading to dull silver on abdomen. Irregular light brown patches concentrated close to back and forming longitudinal lighter bands along lateral line and just above anal fin, with the space in between bands light yellow. A dark oval shoulder spot on lateral line, above middle of pectoral fin and another diffused black spot on lateral line near base of caudal. Opercle greenish yellow with fine dark spots. Anal and caudal fins golden yellow with fine black dots, having black line on their bases (after Parameswaran *et al.* 1967).

*Distribution*.—India, Pakistan, Bangladesh. Generally confined to Indus, Ganga, and Brahmaputra river systems. Recorded from Indawgyi Lake, Burma by Prashad and Mukerji (1929).

*Size*.—Maximum size 172 mm. TL.

*Fishery value*.—Inhabits rivers, tanks and ponds. Considered good eating and caught in large numbers. Eggs are of dull green colour.

*Type-specimen*.—Not known.

### **Ompok pabo** (Hamilton)

*Silurus pabo* Hamilton, 1822, *Fish. Ganges*, p. 153, pl. 17, fig. 48 (type locality, Brahmaputra river, Assam).

*Ompok pabo*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 106 (see for synonymy).

D. 5; P. I, 14; V 9–10; A.iii, 63–68; C. 17.

*Diagnostic characters*.—Maxillary barbels shorter than head, not extending upto anal fin. Anal fin with 66–71 rays.

*Colour*.—Silvery with a faint shoulder spot in preserved specimens.

*Distribution*.—India: Assam, North Bengal, Jamuna, Ganga and Brahmaputra river systems. Bangladesh, Burma.

*Size*.—Maximum size 241 mm. TL.

*Fishery value*.—A rare species, not known by many specimens.

*Type-specimen*.—Not known.

### Genus **Wallago** Bleeker

*Wallago* Bleeker, 1851, *Nat. Tijdschr. Nederl. Inde*, **2**, p. 202 (type species, *Wallago dinema* Bleeker, by original designation).

*Wallago*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 101 (review, see for synonymy).

*Description*.—Dorsal profile nearly straight or oblique. Head large, depressed; snout spatulate, somewhat protruded, jaws subequal, lower jaw longer, prominent; lips thin. *Mouth* subterminal, oblique, *gape wide, reaching to or beyond anterior border of eyes*. Teeth villiform in bands on jaws and in patches on palate. Eyes small, *above level of corner of mouth, not visible from underside of head*. Two pairs of barbels, one pair each of maxillary and mandibular. Gill membranes free from each other, sometimes overlapping or deeply notched. Branchiostegals 15–20.

*Rayed dorsal fin with five rays and without a spine. Adipose dorsal absent. Pectoral fins with 13 to 15 rays and a feeble, smooth spine. Pelvic fins with 8 to 10 rays. Anal fin very long with 86 to 89 rays free from caudal fin. Caudal fin forked with rounded lobes. Lateral line complete, well marked, simple.*

*Distribution*.—India, Pakistan, Bangladesh, Burma, Thailand, Sri Lanka, Java, Sumatra, Borneo.

A total of 5 species are known, of which only one is dealt here.

### **Wallago attu** (Schneider)

*Silurus attu* Schneider, 1801, *Syst. Ichthyol.*, p. 378 pl. 75 (type locality, Malabar).

*Wallago attu*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 101 (see for synonymy, review).

D. 5; P I, 13–15; V 8–10; A. iv, 82–89; C. 17.

*Diagnostic characters*.—As in the genus.

*Colour*.—More or less uniform, somewhat darker above and lighter below; fins sometimes covered with fine dots. Fresh specimens may be light green above, with the sides of a cream colour, lighter below and darker above. A faint band of orange yellow may be along the lateral line.

*Distribution*.—Throughout India, Pakistan, Bangladesh, Sri Lanka, Burma, Thailand, Malaya, Java, Sumatra and China. Inhabits large rivers, tanks and lakes.

*Size*.—Maximum size 2 metres TL.

*Fishery value*.—Caught in large numbers, it is one of the large sized, voracious predatory cat-fishes which thrives well in rivers and tanks also, specially in *jheels* with grassy margin. It is caught in large scoop nets and long lines and hooks. When handled it bites fiercely. The fish prefers muddy tanks subject to periodical flooding from a *nallah* or river. It is very destructive to all other kinds of fish as it is predatory by nature, destroying fry and small fish in large numbers. It feeds both on animal and vegetable matter. The great size, large mouth and formidable teeth make this fish powerful to kill and devour almost every kind of fish. Called the freshwater shark, it is esteemed as food by the poorer classes and salts well. Though offered to the goddess Kali by the Hindus, it is considered as unclean by many and is there-

fore avoided. Abundant during the warm season, considerable quantities are sold round the year in all parts of the country. The presence of this fish in a given place is usually made known by its pursuit of small fishes at or near the surface and by its habit at such times, of jumping out of water and falling back with a loud splash.

Eggs are numerous, small, 1.2 to 1.5 mm. diameter. It is a pre-monsoon, summer breeder, development of eggs to the fry stage is quick and is attained in about a week.

*Type-specimen.*—Not known.

### Genus **Silurus** Linnaeus

*Silurus* Linnaeus, 1758, *Syst. Nat.* Ed. 10, p. 304 (type species, *Silurus glanis* Linnaeus, by subsequent designation by Bleeker, 1862, p. 393).

*Silurus*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 97 (see for synonymy, review).

*Description.*—Dorsal profile nearly horizontal. Head small, broad, rounded, depressed; snout obtusely rounded; lips thin. Mouth terminal, horizontal to somewhat oblique, wide, *gape of mouth reaching to below eyes*. Teeth uniformly villiform in bands on jaws and in one or two patches on palate. *Eyes small, above level of angle of mouth, not visible from below*. Two or three pairs of barbels, one pair maxillary, rather heavy, flattened, one or two pairs mandibular. Gill membranes notched anteriorly, free from each other, not united with isthmus. Branchiostegals 12–15.

*Rayed dorsal fin with four or five rays and without a spine. Adipose dorsal absent.* Pectoral fins with 10 to 15 rays and a spine serrated along inner edge with antrorse teeth or smooth. Pelvic fins with 7 to 10 rays. *Anal fin very long with 58 to 68 rays\**, free from caudal or narrowly to rather broadly joined with it; *anal rays covered by integument for most of their length.* Caudal fin rounded to weakly emarginate, with bluntly rounded lobes. Lateral line complete, simple.

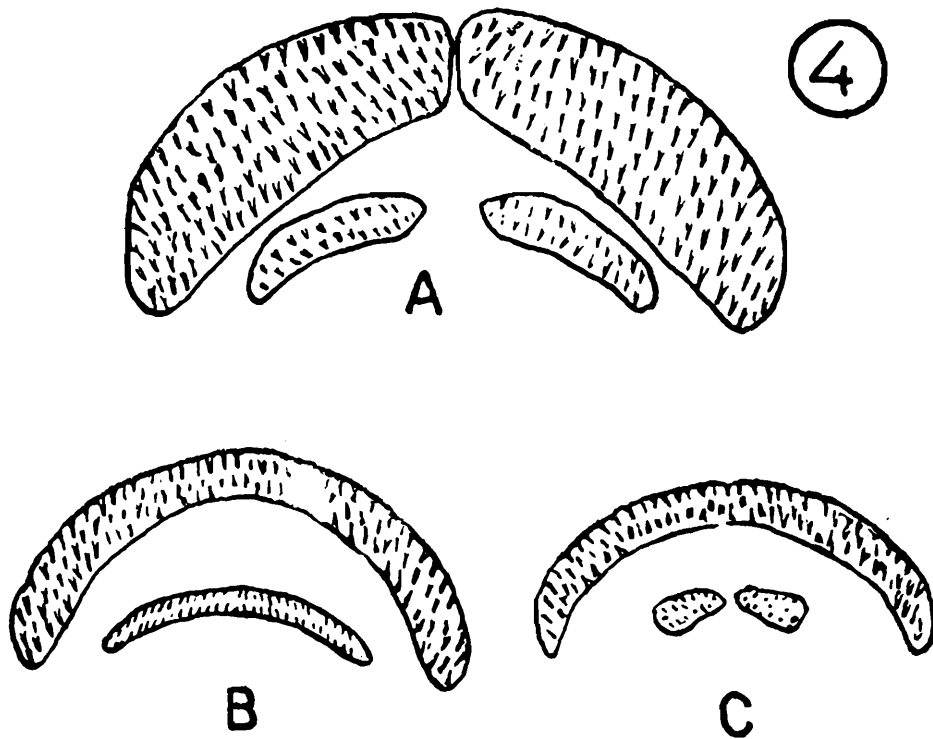
*Distribution.*—Freshwaters of the temperate parts of Palaearctic region, Eastern Himalaya, Assam, Western ghats in Peninsular India, Burma, Laos (Cochin-China). Usually found on or near the hills.

A total of 12 species are known the World over, of which three are dealt here.

### KEY TO THE SPECIES

- |   |  |
|---|--|
| 1. Teeth on upper jaw in two separate, mesially separated broad bands. ... .. | <i>S. goae</i><br>(TF 4A)                  |
| Teeth on upper jaw in a single continuous narrow band ... ..                  | 2  |
| 2. Teeth on prevomer continuous. Two mandibular barbels. ... ..               | <i>S. cochinchinensis</i><br>(TF 4B)       |
| Teeth on prevomer discontinuous. Four mandibular barbels ... ..               | <i>S. berdmorei wynaadensis</i><br>(TF 4C) |

\* Applicable to species dealt here only.



*Remarks.*—A good taxonomic account of this genus is overdue. Hora (1936a) in a review, recognised two Indian species: *S. wynaadensis* Day and *S. cochinchinensis* Valenciennes. He synonymised *S. afghana* Günther, *Silurichthys berdmorei* Blyth and *Pterocryptis gangetica* Peters, with *S. cochinchinensis*. Bhimachar and Rau (1941) Bhimachar and David (1943) considered *S. wynaadensis* to be synonymous with *S. cochinchinensis*. Silas (1952) after examining the type of *S. berdmorei* thought that it is a valid taxa, but kept *wynaadensis* as a subspecies of *berdmorei* on the nature of dentition and the number of anal fin rays. It is not known however, whether *cochinchinensis* and *berdmorei* coexist with each other. This problem requires study with adequate material of both the species.

The third species *S. goae* was described by Haig (1950) and is distinct by its dentition, and also by its deeper body.

I have followed Silas (1952) in the treatment of the three species.

### ***Silurus berdmorei wynaadensis* (Day)**

*Silurus wynaadensis* Day, 1873, *Proc. zool. Soc. London*, p. 155 (type locality, Wynaad).

*Silurus wynaadensis*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 99 (as a synonym of *S. cochinchinensis*).

*Silurus berdmorei wynaadensis*: Silas, 1952, *Proc. nat. Inst. Sci. India*, **18**, p. 433.

D. 5; P. I, 10; V 8; A. ii, 58–60; C. 19.

*Diagnostic characters.*—Teeth on prevomer in two discontinuous patches. Four mandibular barbels. Premaxillary band of teeth in a continuous narrow band.

*Colour.*—In preserved specimens leaden becoming purplish beneath covered with minute black points: some specimens may have a dark finger-like mark on shoulder.

*Distribution.*—India: Wynaad range of hills, Kerala.

*Size.*—Maximum size 280 mm. TL.

*Fishery value.*—This species inhabits streams at about 1000 metres alt. Being a species of hill ranges, its economic value is very little.

*Type-specimen.*—Not known.

**Silurus cochinchinensis** (Valenciennes)

*Silurus cochinchinensis* Valenciennes, 1839, *Hist. nat. Poiss.*, **14**, p. 352 (type locality, Cochinchina).

*Silurus cochinchinensis*: Haig, 1950, *Rec. Indian Mus.*, **48**, p. 99 (see for synonymy, review).

D. 4; P. I, 11; V 10; A. ii, 60-62; C. 17.

*Diagnostic characters*.—Teeth on prevomer in a continuous band. Two mandibular barbels. Premaxillary band of teeth continuous in a narrow band.

*Colour*.—In preserved specimens leaden, purplish below, and covered all over with minute black points, which sometimes form an irregular finger-like mark on the shoulder; caudal fin sometimes yellow (after Day, 1889).

*Distribution*.—India: Eastern Himalaya, Kalimpong Duars, Siliguri Terai, Teesta river drainage system in North Bengal. Burma: hills above Akyab, Tenasserim.

*Size*.—Maximum size 130 mm. TL.

*Fishery value*.—This species appears to be mainly confined to the hills; very few specimens have been taken from the plains. The fishery value is very little.

*Type-specimens*.—Syntypes, 2 exs., 573, B 602, "Cochinchine", Coll. Diard, 120, 140 mm. SL., Paris Mus.

**Silurus goae** (Haig)

*Silurus goae* Haig, 1950, *Rec. Indian Mus.*, **48**, p. 77 (type locality, Goa).

*Silurus goae*: Silas, 1952, *Proc. nat. Inst. Sci. India*, **18**(5), pp. 433-434 (dentition figured).

D. 4; P. I, i, 12-14; V 7-8; A. 68.

*Diagnostic characters*.—Premaxillary band of teeth villiform, in a discontinuous band. Teeth on prevomer in two separate villiform bands. Only one pair of mandibular barbels.

*Colour*.—Preserved specimens dark brown, darkest on dorsal surface; fins same shade as body, darker at their bases; a bluish spot behind gill opening; lateral line and base of anal rays marked black.

*Distribution*.—India: Trivandrum, Goa.

*Size*.—Maximum size 240 mm. TL.

*Fishery value*.—Nil.

*Type-specimens*.—Holotype, Regd. No. 41889, California Academy of Sciences, California, Paratype I ex. Regd. No. 41888.

## Family SCHILBEIDAE

Medium to large sized fishes with a compressed body. Teeth on premaxillaries, mandible and prevomer. Nostrils widely separated, anterior wide, along front border of snout; posterior slit-like or with a lip or simple, nearer eye than tip of snout. Barbels two, four or eight, fairly well developed. Gill openings very wide, extending upto lateral line.

Rayed dorsal fin when present inserted far in advance of pelvics, above half of pectoral fins. Adipose dorsal fin generally present, may be absent.

Paired fins inserted laterally. Pectoral fins with a strong spine, usually serrated. Anal fin very long, not confluent with caudal. Caudal fin forked. Lateral line generally complete, simple.

Air-bladder of varying types and shapes as described under genera.

Lateral ethmoid facet for articulation of palatines more lateral than ventral. Palatines rod-like, broad. Endopterygoid occasionally present (*Clupisoma*, *Silonia*). Ectopterygoid toothed. Metapterygoid may have sutural contact with hyomandibular (exception *Pseudeutropius*, *Neotropius*). Autopterotics and autosphenotics provide ventrally articular facet for hyomandibular, but variable. Post-temporals present, connected to skull by sutures. Lower limb of post-temporal moderate to well developed.

Vertebrae 47 to 58.

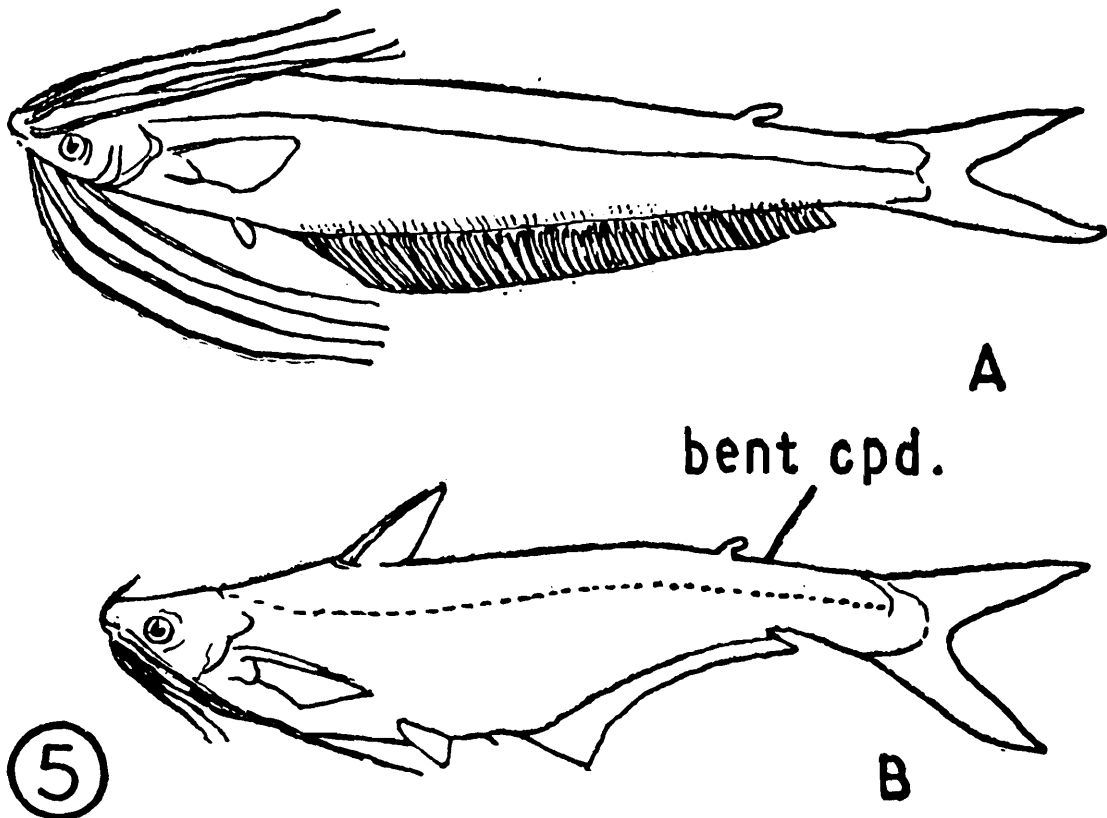
*Distribution.*—Africa, India, Pakistan, Bangladesh, Burma, Thailand, Malaya.

*Type-genus.*—*Schilbe* Oken from Africa.

*Remarks.*—Very well represented in Africa, this family has many genera. Six occur in the Indian region.

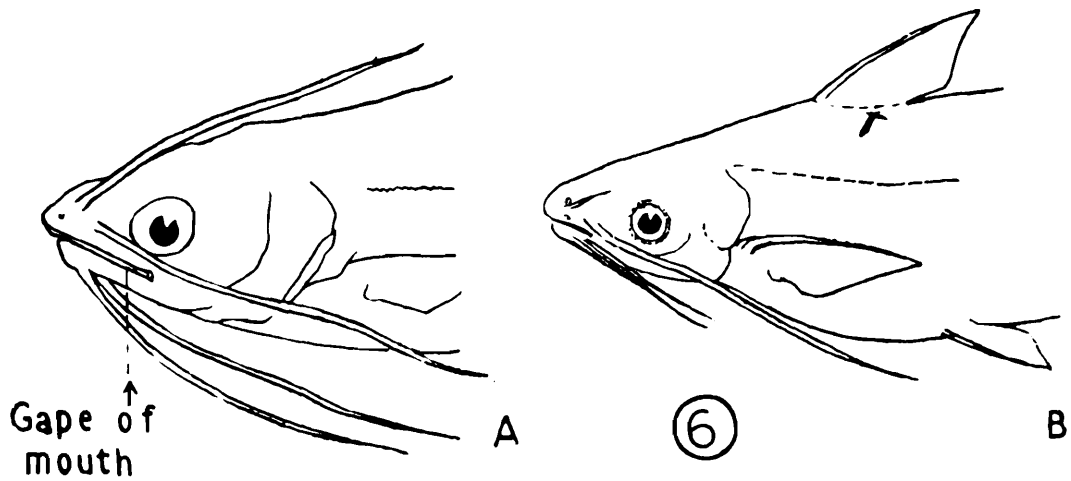
KEY TO THE GENERA

1. Rayed dorsal fin absent					<i>Ailia</i> Gray
Rayed dorsal fin present	...	...	...	...	(TF 5A; B) 2
2. Two or four barbels. Nasal and one pair mandibular absent	...	...	...	...	<i>Silonia</i> Swainson
Eight barbels	...	...	...	...	3



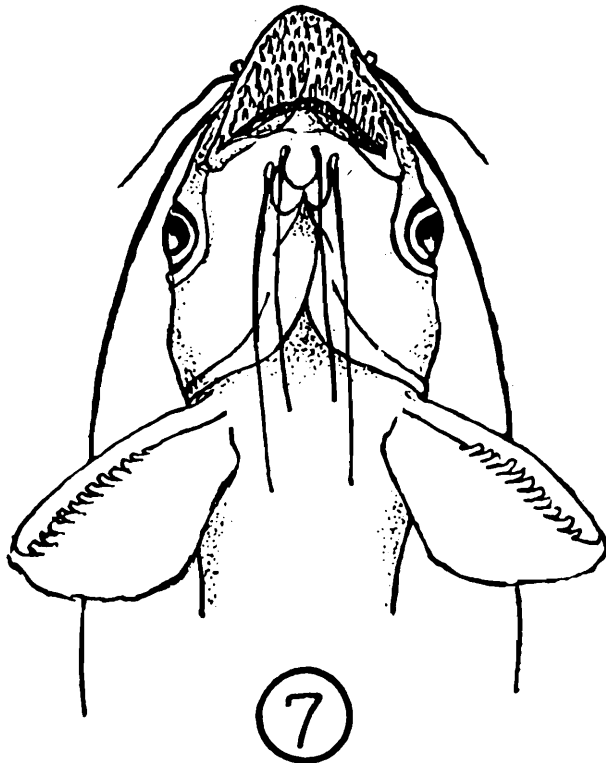
3. Caudal fin bent downwards from caudal peduncle onwards. Teeth on palate in four small distinct patches	...	...	...	...	<i>Proeutropiichthys</i> Hora
Caudal fin normal, but bent downwards. Teeth on palate in two extensive patches	...	...	...	...	(TF 5B) 4

4. Cleft of mouth oblique, extending upto middle of eye ..... *Eutropiichthys* Bleeker (TF 6A)



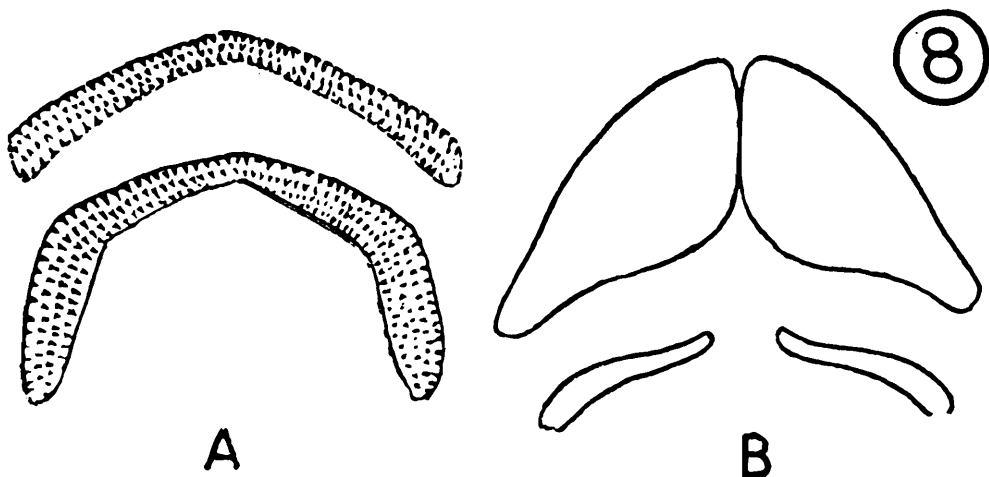
- Cleft of mouth not oblique, extending only to front edge of eye or even shorter ... (TF 6B)

5. Teeth on upper jaw exposed. Jaws wide ... *Neotropius* Kulkarni (TF 7)

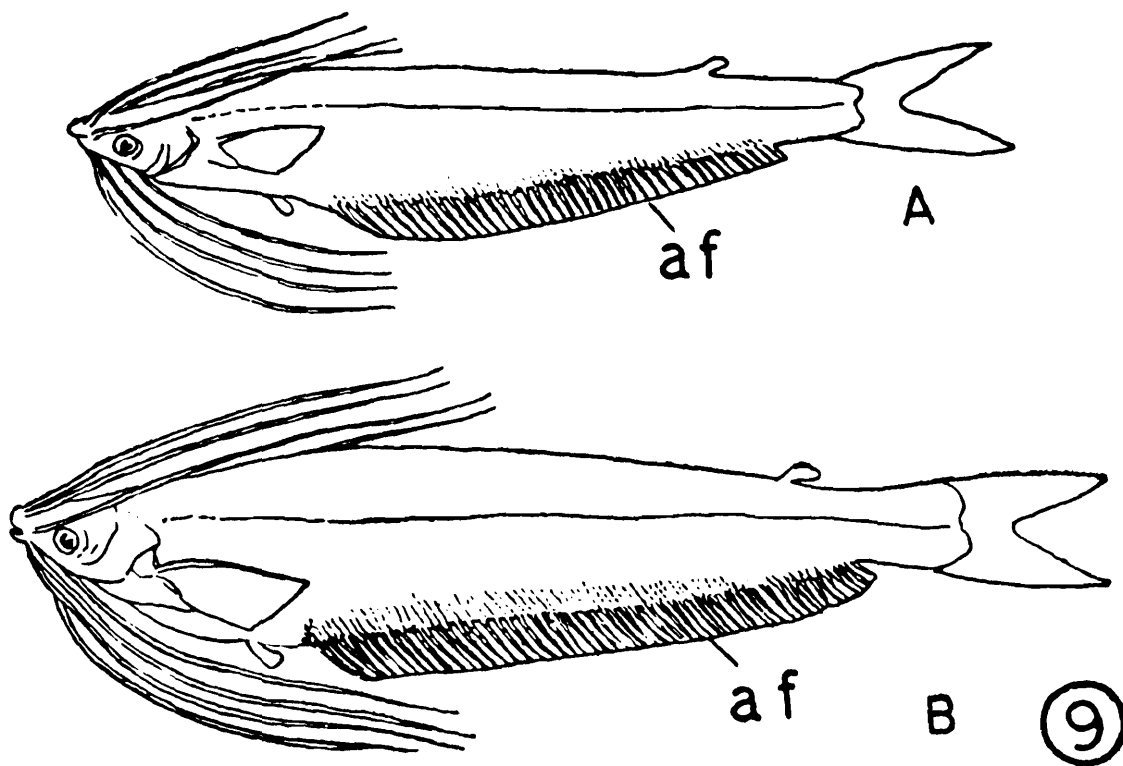


- {Teeth on upper jaw not exposed. Jaws not wide... 6

6. Teeth on palate in bands, not separated in middle. Posterior nostrils wide ... *Clupisoma* Swainson (TF 8A)







***Ailia coila* (Hamilton)**

*Malapterurus coila* Hamilton, 1822, *Fish Ganges*, pp. 158, 375 (type locality, Bengal):

*Ailia coila*: Jayaram, 1962, *J. zool. Soc. India*, **14**(2), pp. 244–248 (systematic position, review).

P. I, 14–16; V 6; A. 58–71; C. 19.

*Diagnostic characters*.—Anal fin with 58 to 78 rays. Body silvery to dull brown colour, without any black blotch on caudal base, in preserved specimens.

*Colour*.—As above.

*Distribution*.—India, Pakistan, Bangladesh. Confined to rivers Indus, Jamuna, Ganga, Brahmaputra and Mahanadi.

*Size*.—Maximum size 250 mm TL.

*Fishery value*.—Inhabits freshwater rivers and connected waters. This is a surface or midwater fish and lives in shoals in larger rivers. It is captured with triangular nets lowered from boats for collecting small swimming forms. Considered excellent eating and is much esteemed as food.

*Type-specimen*.—Not known.

***Ailia punctata* (Day)**

*Ailichthys punctata* Day, 1871, *Proc. zool. Soc. Lond.*, p. 713 (type locality, Jamuna river at Delhi).

*Ailia punctata*: Jayaram, 1962, *J. zool. Soc. India*, **14**(2), pp. 244–248 (systematic position).

P. I, 13–15; V 6; A. 70–90; C. 17.

*Diagnostic characters*.—Similar to *A. coila*, but with anal fin having 70 to 90 rays. Body colour pale or dull whitish with a black blotch on caudal fin base and along upper third of body side, in preserved material.

*Colour*.—As above.

*Distribution*.—India, Pakistan. Rivers Indus, Jamuna, and Ganga.

*Size*.—Maximum size 100 mm. TL.

*Fishery value*.—Same as for *A. coila*.

*Type-specimen*.—Syntype, 1 ex., original of pl. 114, fig. 5 in *Fish India*., in ZSI, Calcutta.

### Genus **Pseudeutropius** Bleeker

*Pseudeutropius* Bleeker, 1862, *Versl. Akad. Amsterdam*, **14**, p. 398 (type species, *Eutropius brachyopterus* Bleeker).

*Pseudeutropius*: Hora, 1941, *Rec. Indian Mus.*, **43**, p. 100 (systematic position clarified).

*Description*.—Body elongate, compressed, herring-shaped, part of ventral surface more or less keeled; dorsal profile steep upto dorsal fin base, thereafter descending. Head short, compressed; snout sharp, conical, not pointed; jaws subequal, upper jaw longer; lips thin. Mouth subinferior, transverse, overhung by snout, moderately wide. *Teeth* small, villiform, in narrow bands on jaws and *palate*; those on latter in two small widely separated patches, occasionally connected by a linear series. *Eyes* large, ventro-lateral, partly below and behind level of cleft of mouth, with broad circular adipose lids, visible from underside of head. Four pairs of barbels; one each of maxillary, nasal and two of mandibular. Gill membranes slightly connected anteriorly, but free from isthmus. Branchiostegals 8 to 10.

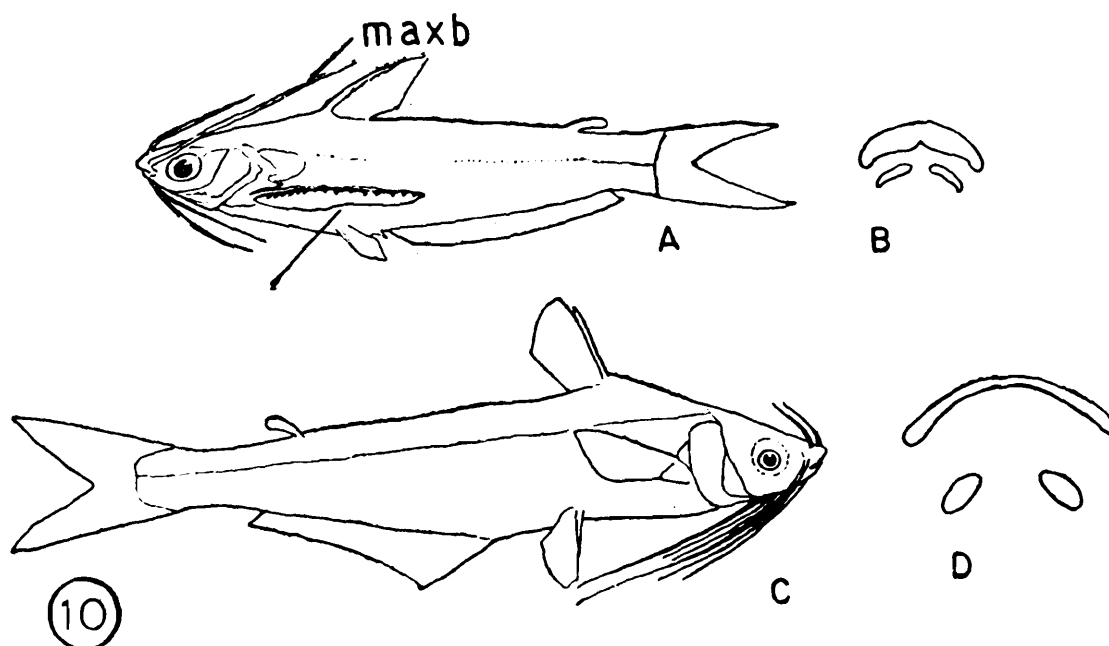
*Rayed dorsal fin* with five or six rays and a spine. *Adipose dorsal* short, posteriorly free. Pectoral fins with 7 to 9 rays and a spine serrated along both margins. Pelvic fins with 6 rays. Anal fin long, with 33 to 46 rays, not confluent with caudal. Caudal fin forked.

Air-bladder oval, slightly longer than broad, lying free in abdominal cavity, supported anteriorly by bony vertebral elements.

*Distribution*.—Throughout India, Pakistan, Bangladesh, Burma.  
Two species.

### KEY TO THE SPECIES

1. Eye diameter 2.5 to 3.0 in head length. Nape well elevated. Maxillary barbels reach anal fin base. Teeth on palate in two narrow, separate crescentic bands (see TF 10B) ... .. *P. atherinoides* (TF 10A)



Eye diameter 4.8 to 5.0 in head length. Nape slightly elevated. Maxillary barbels reach pectoral or middle pelvics. Teeth on palate in two small oval patches (see TF 10D) ... ..

*P. mitchelli*  
(TF 10C)

### ***Pseudeutropius atherinoides* (Bloch)**

*Silurus atherinoides* Bloch, 1794, *Ausland. Fische.*, **8**, p. 48, pl. 371, fig. 1 (type locality, Tranquebar).

*Pseudeutropius atherinoides*: Hora, 1941, *Rec. Indian Mus.*, **43**, p. 103 (systematic position clarified).

D. I, 5–6; P. I, 7; V 6; A. 33–46; C. 17.

*Diagnostic characters*.—Teeth on palate in two narrow separate crescentic bands. *Body silvery, greenish along back, with three or four longitudinal bands on sides formed by black dots; a pale golden stripe along lateral line ending in a round black spot at caudal fin base.* Sometimes the bands may be wanting. *Usually a black spot at nape and in front of dorsal fin base present. Area above pectorals translucent.*

*Colour*.—As above.

*Distribution*.—Throughout India, Pakistan, Bangladesh and Burma. Not so far recorded below the Cauvery system.

*Size*.—Maximum size 150 mm. TL.

*Fishery value*.—Considered to be of an inferior kind, this is not of much value as a food item, despite its wide distribution. However, its bright colour and small size attract the attention of aquarists.

*Type-specimen*.—Not known.

### ***Pseudeutropius mitchelli* Günther**

*Pseudeutropius mitchelli* Günther, 1864, *Cat. Fish. Brit. Mus.*, **5**, p. 59 (type locality, “Madras Presidency”).

*Pseudeutropius mitchelli*: Hora, 1941, *Rec. Indian Mus.*, **43**, p. 104 (systematic position).

D. I, 5–6; P. I, 9; V 6; A. 35–37.

*Diagnostic characters*.—Similar to *P. atherinoides* differing in having a smaller head, less elevated nape. *Body colouration plain.*

*Colour*.—In preserved material deep grey over head, body green, abruptly changing a short distance above lateral line where it becomes a beautiful silvery white, which is continued on to the abdomen; fins white, anal and caudal fins stained with grey at their bases.

*Distribution*.—India: Deccan and Malabar.

*Size*.—Maximum size 210 mm. TL.

*Fishery value*.—Not uncommon in the rivers of Malabar, it is of some limited local value.

*Type-specimens*.—Syntypes, 2 exs., from Madras presented by Mitchell No. 1863, 12. 18. 134–5, in BMNH, London.

*Remarks*.—There is some confusion regarding the systematic status of *P. mitchelli* Günther. This species was described by Günther (1864) from two juvenile specimens about 90 mm. long collected from the “Madras Presidency” Day (1865) synonymised this species of Günther with *P. sykesii* (Jerdon)

not knowing that Jerdon's *sykesii* is entirely different and is synonymous with *Hypophthalmus taakree* Sykes = *Proeutropiichthys taakree* (Sykes). Inasmuch as Jerdon's *P. sykesii* is a distinct species, vastly different from Günther's *mitchelli*, the latter has to remain as a separate species.

### Genus **Proeutropiichthys** Hora

*Proeutropiichthys* Hora, 1937, *Curr. Sci.*, **5**, p. 353 (type species, *Eutropius macrophthalmus* Blyth, by original designation).

*Proeutropiichthys* Hora, 1941, *Rec. Indian Mus.*, **43**, p. 105 (description, systematic position discussed).

*Description.*—Body elongate, compressed; herring-shaped, part of ventral surface more or less keeled; *dorsal profile* slightly rising up to dorsal fin, then *arched upto caudal base; abdomen more arched than back.* Head short, oval, compressed; snout broad, rounded, nearly on a line with level of back; jaw subequal; lower jaw broadly pointed in middle; lips thin. Mouth subterminal small, crescentic, cleft slightly ascending. *Teeth* small, villiform in bands on jaws and *in four oval patches forming a semilunar band on palate.* Eyes large, ventro-lateral, visible from underside of head, free. Four pairs of barbels, one each of maxillary, nasal, and two of mandibular. Gill membranes deeply notched, united with each other, free from isthmus. Branchiostegals five or six.

Rayed dorsal fin with six or seven rays and a spine. Adipose dorsal short, posteriorly free. Pectoral fins with 10 or 11 rays and a spine serrated along both margins. Pelvic fins with six rays. Anal fin long with 43 to 52 rays, not confluent with caudal. *Caudal fin* deeply forked, *bent downwards from caudal peduncle.* Lateral line complete, simple.

Air-bladder not extensive, moderate sized, lying free in abdominal cavity.

*Distribution.*—India: Deccan, Burma.

A single species.

### **Proeutropiichthys taakree** (Sykes)

*Hypophthalmus taakree* Sykes, 1841, *Trans. zool. Soc. Lond.*, **2**, p. 369, pl. 64, fig. 4 (type locality, Bhima river near Paargaon).

*Proeutropiichthys taakree:* Hora, 1941, *Rec. Indian Mus.*, **43**, p. 106, text-fig. 4 (description, systematic position).

D. I, 6–7; P. I, 10–11; V 6; A. 43–52; C. 17.

*Diagnostic characters.*—Belly arched, caudal fin bent downwards from caudal peduncle. *Eyes visible from underside of head. Snout nearly on a line with level of back.*

*Colour.*—In fresh condition silvery with a gloss of green along back and head. Caudal fin stained grey at edges.

*Distribution.*—India: West coast, Kerala, Maharashtra, Burma. Record from Calcutta, Bengal is doubtful.

*Size.*—Maximum size 430 mm. TL.

*Fishery value.*—Inhabits freshwater rivers and lakes and considered no means rare in the rivers of Malabar. It is of good taste and value.

*Type-specimens.*—In BMNH, London.

Genus **Neotropius** Kulkarni

*Neotropius* Kulkarni, 1952, *Rec. Indian Mus.*, **49** (3 & 4), p. 231 (type species, *Neotropius khavalchor* Kulkarni, by monotypy).

*Description.*—Dorsal profile rising steeply up to base of dorsal fin and thereafter descending. Head small, depressed; snout tapering, but not produced; *jaws unequal, upper jaw extending over the entire under surface of snout, excepting lips*; lips thin. Mouth ventral, semilunar, wide. Teeth small, sharp, villiform on jaws and palate in bands; *exposed on upper jaw*. Eyes large, *inferior, visible from underside of head*. Four pairs of barbels; one pair each of maxillary, nasal and two of mandibular. Gill membranes overlapping, free from each other and also from isthmus. Branchiostegals nine.

Rayed dorsal fin with six or seven rays and a spine. Adipose dorsal short, posteriorly free. Pectoral fins with seven rays and a spine serrated along inner margin, but with a blunt tip. Pelvic fins with six rays. Anal fin with 24 to 36 rays. Caudal fin forked. Lateral line complete, simple. Air-bladder large, free.

*Distribution.*—India: Krishna river system, Maharashtra and Andhra Pradesh.

*Remarks.*—Kulkarni (1952) established this new genus to accommodate a peculiar schilbeid fish from the Krishna river system. Tilak (1964) on the basis of certain osteological similarities thought that the creation of a new genus was not required. He suggested its accommodation under *Pseudeutropius* Bleeker.

The peculiar exposed nature of the dentition, free air-bladder, blunt pectoral spine tip, tapering snout, a euselachian type of jaw, and inferior eyes are morphologically significant to easily recognise this fish and justify its retention as a separate genus under Schilbeidae.

A single species.

**Neotropius khavalchor** Kulkarni

*Neotropius khavalchor* Kulkarni, 1952, *Rec. Indian Mus.*, **49** (3 & 4), p. 232 (type locality, Krishna river near Islampur, Satara dist., Panchganga river near Kolhapur, Maharashtra State).

D. I, 6–7; P. I, 7; V 6; A. 24–36.

*Diagnostic characters.*—As in the genus.

*Colour.*—In living condition silvery grey; in preserved material greyish or brown along back, with a triangular dark area on occipital region and an indistinct dark blotch at caudal base.

*Distribution.*—India: Krishna river system, Maharashtra and Andhra Pradesh.

*Size.*—Maximum size 60 mm. TL.

*Fishery value.*—Known as the scale-stealing fish, this is a lepidophagous species in its feeding habits. It is not desired in fishing operations.

*Type-specimen.*—Holotype, F. 647/2, in ZSI, Calcutta,

Genus **Clupisoma** Swainson

*Clupisoma* Swainson, 1839, *Nat. Hist. Fish. Animal.*, **2**, p. 306 (type species, *Silurus garua* Hamilton, by monotypy).

*Clupisoma*: Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(4), pp. 659–678 (review).

*Description*.—Body elongate, compressed, almost herring-shaped; *whole of abdominal edge with the part between pelvic fins and vent keeled*; dorsal profile nearly straight behind the rayed dorsal. Head moderate sized, oval, blunt; snout rounded; jaws equal; lips thin. Mouth subterminal, transverse, of moderate width, *not crowded, cleft extending to front edge of eye*. Teeth uniformly villiform in bands on jaws and palate. Eyes of moderate size, situated behind cleft of mouth, visible from underside of head. Four pairs of barbels; one pair each of maxillary, nasal and two of mandibular. Gill membranes deeply notched, united with each other, but free from isthmus. Branchiostegals six.

*Rayed dorsal fin with seven rays and a spine. A small adipose dorsal may be present or absent.* Pectoral fins with 11 or 12 rays and a spine serrated along inner edge with antrorse teeth or smooth. Pelvic fins with six rays. Anal fin moderately long with 29 to 44 rays. Caudal fin deeply forked. Lateral line complete, simple.

Air-bladder greatly reduced, thick-walled, flat; closely applied to the ventral surface of anterior vertebrae.

*Distribution*.—India, Pakistan, Bangladesh, Burma.

Three species are known, all are dealt here.

## KEY TO THE SPECIES

- |  |     |     |     |     |     |                               |
|--|-----|-----|-----|-----|-----|-------------------------------|
| 1. Nasal barbels not extending to front margin of eyes. Abdominal edge keeled between pelvics and vent (TF 11A); pectorals not extending to pelvics.       | ... | ... | ... | ... | ... | <i>C. garua</i><br>(TF 11A)   |
| Nasal barbels extending considerably beyond front border of eyes; pectorals reaching base of pelvics   | ... | ... | ... | ... | ... | 2                             |
| 2. Abdominal edge keeled throughout (TF 11B). Maxillary barbels reaching beyond pectorals; mandibular barbels reaching posterior margin of operculum.      | ... | ... | ... | ... | ... | <i>C. prateri</i><br>(TF 11B) |
| Abdominal edge rounded (TF 11C); maxillary barbels not reaching beyond middle of pectorals; mandibular barbels not reaching posterior margin of operculum. | ... | ... | ... | ... | ... | <i>C. montana</i><br>(TF 11C) |

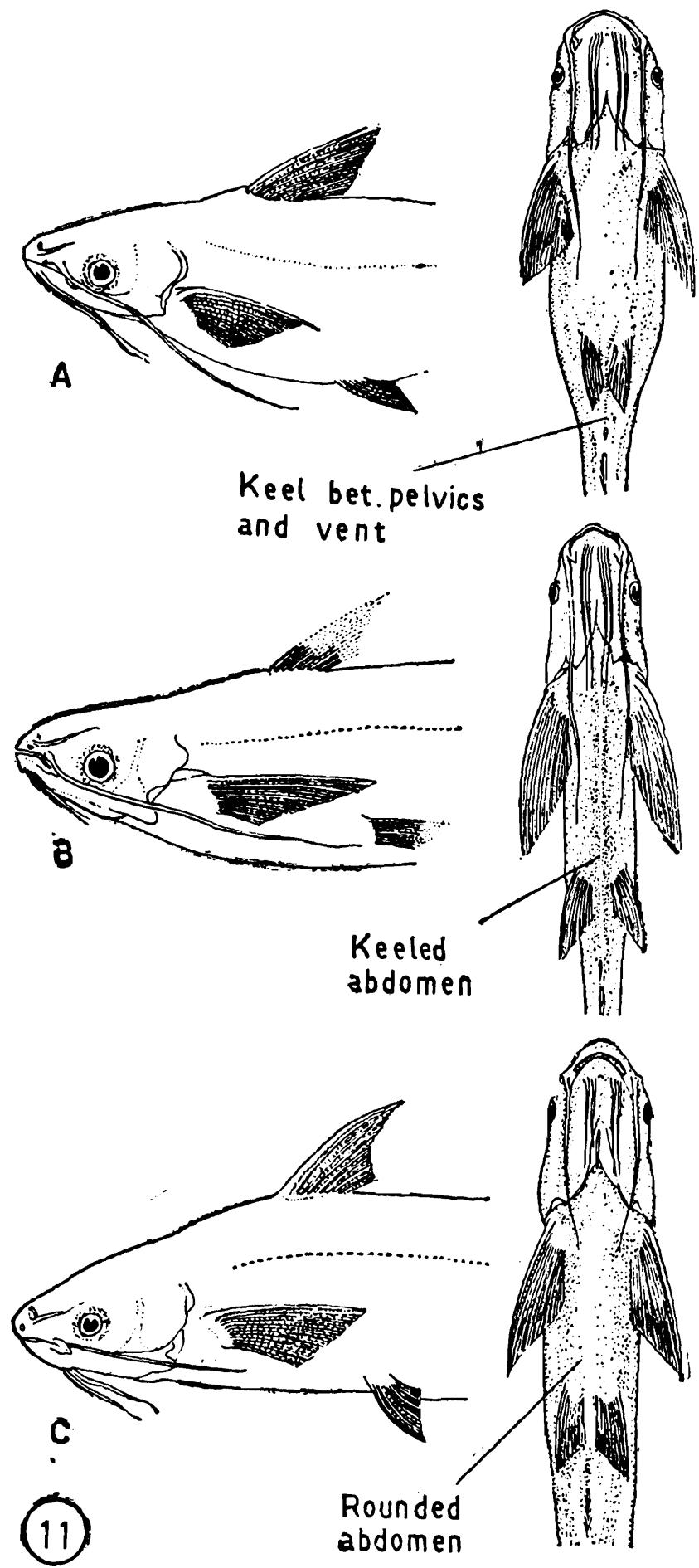
**Clupisoma garua** (Hamilton)

*Silurua garua* Hamilton, 1822, *Fish. Ganges*, pp. 156, 375, pl. xxi, fig. 50 (type locality, Gangetic provinces).

*Clupisoma garua*: Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(4), p. 606 (synonymy, description).

D. I, 7; P. I, 11; V 6; A. iii, 26–33; C. 17.

*Diagnostic characters*.—*Abdominal edge keeled between pelvics and vent. Pectorals not extending to pelvics.* Nasal barbels not extending to front margin of eye. Anal fin with 29 to 36 rays.



*Colour.*—Silvery with green on the back; fins stained grey; head and shoulder with a golden gloss, in fresh condition.

*Distribution.*—India: throughout north India, not recorded from south of Mahanadi. Pakistan, Bangladesh.

*Size*.—Maximum size 850 mm. TL.

*Fishery value*.—Inhabits large rivers and canals. It is a common fish but is favoured mostly by the poorer classes. Considered good eating and is preferred in Punjab and other areas, where it is considered a delicacy. The fish feeds on crabs, shrimps, fish, insects; the last being the dominant food item. It is a gregarious species, always caught in shoals. Shallow pools with sandy bottom attracts them to congregate. It spawns during monsoon months.

*Type-specimen*.—Not known.

### **Clupisoma montana** Hora

*Clupisoma montana* Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(4), p. 673 (type locality, Teesta river below Darjeeling).

D. I, 6–7; P. I, 12; V 6; A. 41–43; C. 17.

*Diagnostic characters*.—Abdominal edge rounded. Pectorals extending to pelvics. Nasal barbels extending considerably beyond front border of eyes. Anal fin with 41 to 43 rays.

*Colour*.—In spirit preserved examples head dull white, back grey, fading on sides, eyes greyish. Lower portion olivaceous.

*Distribution*.—India: Teesta river below Darjeeling. North Bengal; Jamuna and Sone rivers (recorded by Motwani and David, 1957).

*Size*.—Maximum size 240 mm. TL.

*Fishery value*.—A species not much recorded and as such of limited value.

*Type-specimen*.—Holotype, F. 12472/1, in ZSI, Calcutta.

### **Clupisoma prateri** Hora

*Clupisoma prateri* Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(4), p. 671 (type locality, Burma).

D. 1, 6–7; P. I, 11; V 6; A. 40–44.

*Diagnostic characters*.—Abdominal edge keeled throughout. Pectorals extending to pelvics. Nasal barbels extending considerably beyond front border of eyes. Anal fin with 40 to 44 rays.

*Colour*.—Brown above, silvery below lateral line in spirit preserved examples.

*Distribution*.—India: Teesta river, North Bengal; Sone river, Bihar; Allahabad, U.P., Bangladesh, Burma.

*Size*.—Maximum size 231 mm. TL.

*Fishery value*.—Same as for *C. garua*, but of local value. Not much is known about this species.

*Type-specimens*.—Holotype, Dup. Cat. 219, in ZSI, Calcutta. Not in a good state of preservation; paratype, I ex., F. 8709, Burma, F. Day coll.

*Remarks*.—Hora (1937: 671) stated that the species will be described in detail when fresh material from Burma became available which it seems never materialised. A good description is overdue for this species.

Genus **Eutropiichthys** Bleeker

*Eutropiichthys* Bleeker, 1862, *Verst. Akad. Amsterdam*, **14**, p. 398 (type species, *Pimelodus vacha* Hamilton):

*Eutropiichthys*: Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**, pp. 431-446 (review).

**Diagnostic characters.**—Rayed dorsal fin present with a spine; adipose dorsal fin present. Anal fin long with 38 to 54 rays. Mouth wide, ascending; its cleft reaching below orbit or slightly beyond. Teeth villiform, crowded, in broad, deeply curved, laterally produced bands on jaws and palate.

**Description.**—Body elongate, compressed, almost Indian-trout shaped; dorsal profile arched. Head of moderate size, conical, snout pointed, sharp but may be blunt occasionally; jaws subequal; lips thin. Mouth subterminal, transverse, ascending, wide, its cleft reaching below orbit or slightly beyond. Teeth small, uniformly villiform on jaws and palate, teeth bands very closely set, bands on jaws laterally produced. Eyes moderately large, lateral. Four pairs of barbels; one pair each of maxillary, nasal and two of mandibular. Gill membranes deeply notched, free from isthmus. Branchiostegals 5 to 11.

**Rayed dorsal fin with seven rays and a spine.** Adipose dorsal short, posteriorly free. Pectoral fins with 10 to 16 rays and a smooth spine. Pelvic fins with 6 rays. Anal fin long, with 38 to 54 rays. Caudal fin deeply forked. Lateral line complete, simple.

Air-bladder greatly reduced, transverse, closely applied to ventral surface of anterior vertebrae forming a circular loop, incomplete anteriorly; not enclosed by bone, but supported on dorsal surface by bony extensions of transverse processes of anterior vertebrae.

**Distribution.**—India, Pakistan, Bangladesh, Burma, Thailand. In India the southern limit is the Krishna river system.

Three species are known, all are dealt here.

KEY TO THE SPECIES

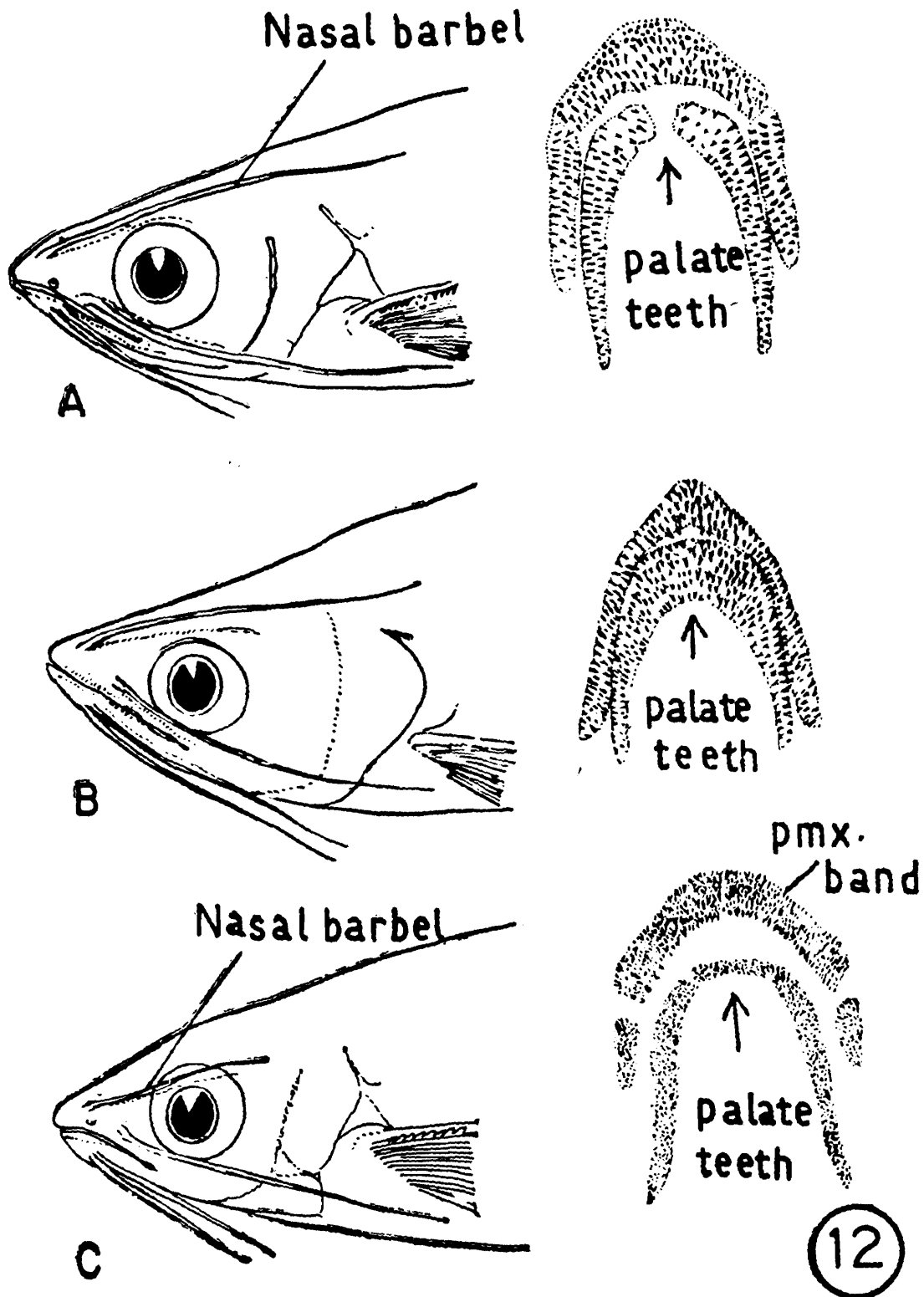
- |   |                               |
|---|-------------------------------|
| 1. Teeth on palate continuous. Nasal barbels shorter than or equal to head length. ... ..   | 2                             |
| Teeth on palate interrupted in the middle. Nasal barbels longer than head length, reaching dorsal fin base. ... ..  | <i>E. goongwaree</i> (TF 12A) |
| 2. Teeth on palate in a band wider than premaxillary band. Nasal barbels reach hind border of head or slightly beyond. ... ..                             | <i>E. vacha</i> (TF 12B)      |
| Teeth on palate in a band narrower than premaxillary band or just equal to it. Nasal barbels reach a short distance behind posterior edge of eyes. ... .. | <i>E. murius</i> (TF 12C)     |

**Eutropiichthys goongwaree** (Sykes)

*Hypophthalmus goongwaree* Sykes, 1841, *Trans. zool. Soc. Lond.*, **2**, p. 369 (type locality, Mutha Mula river, Poona).

*Eutropiichthys goongwaree*: Hora, 1937, *J. Bombay nat. Hist., Soc.* **39**(3), p. 435 (included under *Eutropiichthys*, key, figures, no description).

D. I, 7; P. I, 13; V 6; A. iii, 51; C. 17.



*Diagnostic characters.*—Teeth on palate interrupted in the middle; teeth on upper jaw in a long curved band without any patch below. Maxillary barbels reach anal fin.

*Colour.*—Silvery, greenish along back in spirit preserved specimens.

*Distribution.*—India: South India upto Krishna river system.

*Size.*—Maximum size 640 mm. TL.

*Fishery value.*—Inhabits rivers and canals. Esteemed as good eating.

*Type-specimen.*—In BMNH, London.

*Remarks.*—Day in his preface to the *Fishes of India* (1878) stated that some of Sykes' specimens were transferred to the British Museum in 1860 from the India Office. The type of Günther's *Pseudeutropius longimanus* may be one of these specimens. This was perhaps the original of Sykes' *Hypophthalmus goongwaree*.

**Eutropiichthys murius** (Hamilton)

*Pimelodus murius* Hamilton, 1822, *Fish. Ganges*, pp. 196, 378 (type locality, Mahananda river).

*Eutropiichthys murius*: Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(3), p. 435 (included under *Eutropiichthys*, key, figures, no description).

D. I, 7; P. I, 10; V 6; A. iii, 35–40; C. 17.

*Diagnostic characters*.—Teeth on palate in a continuous band, narrower than or just as wide as premaxillary band. Two patches on side below band on upper jaw. Maxillary barbels reach pectoral base.

*Colour*.—Silvery, darker along back; dorsal, pectoral and caudal fins darkest at margins in spirit preserved specimens.

*Distribution*.—India, Pakistan, Bangladesh. The southern limit in India is the Mahanadi river system.

*Size*.—Maximum size 200 mm. TL.

*Fishery value*.—Inhabits rivers. Commercially important though not caught extensively.

*Type-specimen*.—Not known.

**Eutropiichthys vacha** (Hamilton)

*Pimelodus vacha* Hamilton, 1822, *Fish. Ganges*, pp. 196, 378, pl. 19, fig. 64 (type locality, Gangetic provinces).

*Eutropiichthys vacha*: Hora, 1937, *J. Bombay nat. Hist. Soc.*, **39**(3), p. 346 (see for synonymy, description).

D. I, 7; P. I, 13–16; V 6; A. iii–iv, 41–47; C. 17.

*Diagnostic characters*.—Teeth on palate in a continuous band, wider than premaxillary band. No patch below upper jaw teeth band. Maxillary barbels reach slightly beyond eyes.

*Colour*.—Body silvery, with back greyish, a neutral tint of cobalt blue. Patches of vermilion of different shades on jaws, orbit, gill cover, ventral edge of body may be present in fresh specimens.

*Distribution*.—India, Pakistan, Bangladesh, Burma, Thailand. The Mahanadi forms the southern limit in India.

*Size*.—Maximum size 280 mm. TL. Recorded to grow to 15 kgs., and over in weight.

*Fishery value*.—An excellent fish for the table. It is caught in large numbers from rivers and canals. Fetches a good price in the markets. It is a voracious feeder and feeds mainly on smaller fish or insects of the surface areas of the aquatic media. Fishes are however, the dominant food item, followed by insects and other animal matter. It is easily acclimatised to lakes, large tanks and bheels.

*Type-specimen*.—Not known.

**Genus *Silonia*** Swainson

*Silonia* Swainson, 1839, *Nat. Hist. Fish. Animal.*, **2**, p. 305 (type species, *Pimelodus silondia* Hamilton, by subsequent designation).

*Silonia*: Hora, 1938, *J. Bombay nat. Hist. Soc.*, **40**(2), pp. 137-147 (review).

*Silonopangasius* Hora, 1937, *Curr. Sci.*, **5**, p. 352 (type species *Ageniosus childreni* Sykes, by original designation).

*Silonia*: Silas, 1952, *Proc. nat. Inst. Sci. India*, **18**(5), p. 433 (*Silonopangasius* synonymised).

**Description.**—Dorsal profile arched; in full grown specimens ventral profile gently arched. Head moderate sized, compressed, anteriorly rounded; snout obtusely rounded; jaws subequal; lips thin. Mouth anterior, wide, obliquely directed upwards. *Teeth large, caniniform on jaws, villiform on palate; jaw teeth project outside mouth opening.* Eyes moderate sized, situated laterally behind angle of mouth, visible from above and underside of head. *Two pairs of barbels; one of maxillary, small, in a groove; one of mandibular; either of the pair may become vestigial or absent.* Gill membranes deeply notched, united with each other, free from isthmus. Branchiostegals 11 or 12.

Rayed dorsal fin with seven rays and a spine. Adipose dorsal short, posteriorly free. Pectoral fins with 11 to 13 rays and a strong spine serrated along both edges. Pelvic fins with 6 rays. Anal fin long with 40 to 46 rays. Caudal fin deeply forked. Lateral line complete, indistinct.

Air-bladder generally reduced, thick-walled, not enclosed in bone.

**Distribution.**—India, Pakistan, Bangladesh, Burma.

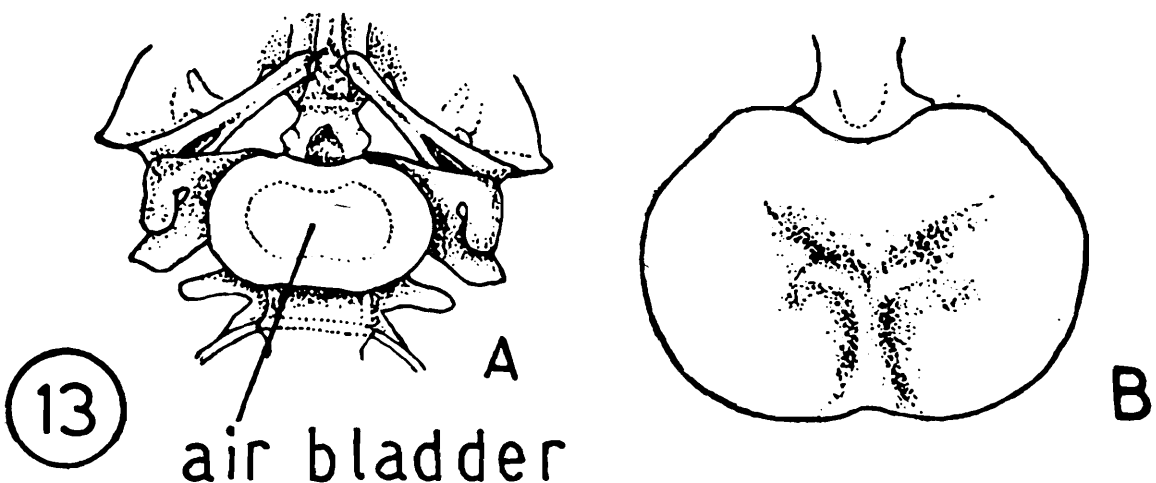
Inhabits estuaries, ascending large rivers.

Two species.

**Remarks.**—Hora (1937) proposed a separate genus *Silonopangasius* to accommodate *S. childreni* (Sykes) from peninsular India. The new genus was differentiated from *Silonia* by its possessing four barbels and a larger sized air-bladder. Majumdar (1951) recorded the presence of four barbels in *S. silondia* also. In a series of specimens he found the mandibular barbels embedded in the skin. Silas (1952) accordingly synonymised *Silonopangasius* with *Silonia*.

### KEY TO THE SPECIES

Air-bladder greatly reduced. (North India, Burma, Pakistan) ... .. *S. silondia* (TF 13A)



Air-bladder large, longer axis transversely disposed. (Deccan), ... .. *S. childreni* (TF 13B)

**Silonia childreni** (Sykes)

*Ageniosus childreni* Sykes, 1841, *Trans. zool. Soc. Lond.*, 2 p. 375 (type locality, Deccan).

*Silonopangasius childreni*: Hora, 1937, *Curr. Sci.*, 5, p. 352.

*Silonia childreni*: Silas, 1952, *Proc. nat. Inst. Sci. India*, 18(5), p. 433 (as a synonym of *Silonia*).

D. I, 7; P. I, 11-13; V i, 5; A. 42-46; A. 17.

*Diagnostic characters*.—As in the key.

*Colour*.—More or less similar to *S. silundia*.

*Distribution*.—India: Mostly South India, Deccan plateau.

*Size*.—Maximum size 635 mm. TL.

*Fishery value*.—This species is a major fishery in the Tungabhadra reservoir being a shoaling fish.

*Type-specimen*.—No information available.

**Silonia silundia** (Hamilton)

*Pinelodus silundia* Hamilton, 1822, *Fish Ganges*, pp. 160, 375, pl. 7, fig. 50 (type locality, Gangetic estuaries).

*Silonia silundia*: Hora, 1938, *J. Bombay nat. Hist. Soc.*, 40(2), p. 141 (description).

D.I, 7; P. I, 11-13; V 6; A. 40-46; C. 17.

*Diagnostic characters*.—As in the genus and key.

*Colour*.—When fresh, head and back dusky green, sides and belly silvery, iris of orange colour, opercle and body sides orange and yellow. Caudal fin with a band of light Indian red tint.

*Distribution*.—India, Pakistan, Bangladesh, Burma. Ascends estuaries of large rivers. Record from Burma doubtful. In India confined to North India only.

*Size*.—Maximum size 900 mm. TL.

*Fishery value*.—A very common food fish in the Gangetic estuary and caught in large quantities. A voracious feeder and is harmful to fisheries. Feeds on prawns, fish etc. Mainly a riverine fish, but inhabits tanks and reservoirs as well, and is caught on line and hooks. This is a gregarious species moving in shoals, and breeding during the monsoon months. Occasionally it migrates along the tributary stream. It is considered good eating as it prefers strong, well oxygenated streams and clear deep waters.

*Type-specimen*.—Not known.

## Family PANGASIIDAE

Large sized fishes with a compressed body. Teeth on premaxillaries, mandible and prevomer. Nostrils widely separated, anterior ones wide, situated along front border of snout, posterior with a lip situated at some distance behind anterior nostrils. Barbels four, moderately developed. Gill opening wide, extending to above base of pectoral fin.

Rayed dorsal fin inserted in advance of pelvics, above tip of pectoral fin. Adipose dorsal fin smooth, not confluent either with rayed dorsal or with caudal. Paired fins inserted laterally. Pectoral fins with a strong, serrated

spine. Anal fin long, not confluent with caudal. Caudal fin forked. Lateral line complete, simple.

Air-bladder large, free in the abdominal cavity; consists of two parts, a large anterior portion, broad in front, oval behind, a small tubular part extending into kidney.

Lateral ethmoid facet for articulation of palatines more ventral than lateral. Palatines rod-like, edentate. Endopterygoid present. Ectopterygoid edentate. Metapterygoid suturally articulating with hyomandibular. Autosphenotics alone provide whole of articular facet ventrally for hyomandibular. Post-temporals present, connected to skull by sutures. Inferior limb of post temporal moderately developed. An elastic spring apparatus formed by anterior part of 4th parapophyses present.

*Type-genus.*—*Pangasius* Hamilton.

*Distribution.*—India, Pakistan, Bangladesh, Burma, Thailand, Laos, Viet Nam, Malaya, Java, Sumatra, Borneo.

*Remarks.*—This family is known by its single genus *Pangasius*. Many authors such as Regan (1911), Weber & Beaufort (1913), Jordan (1923) kept Pangasiidae as a separate family. Hora (1938) considered it as inseparable from Schilbeidae. Smith (1945), Misra (1962) followed Hora.

Tilak (1964) showed on the basis of osteological characters, Pangasiidae as standing independently apart from Schilbeidae. Greenwood *et al.* (1966) kept Pangasiidae as separate.

### Genus **Pangasius** Valenciennes

*Pangasius* Valenciennes, 1840, *Hist. Nat. Poiss.*, **15**, p. 45, (type species, *Pimelodus pangasius* Hamilton, by original designation).

*Pangasius*: Hora, 1938, *J. Bombay nat. Hist. Soc.*, **49**(3), pp. 355–366 (review).

*Description.*—Dorsal profile almost straight. Head moderate sized, exceptionally granulated, blunt; snout more or less prominent, rounded or bluntly pointed; jaws subequal, upper jaw slightly longer; lips thin. Mouth subterminal, horizontal or slightly ascending. Teeth small, villiform in bands on jaws, in four patches on palate, separate or variously united, occasionally dentition poorly developed. Eyes large, behind corner of mouth, a part of eye being below horizontal through corner of mouth. Two pairs of barbels, one each of maxillary and mandibular. Gill membranes deeply notched, united, free from isthmus. Branchiostegals 7 to 11.

Rayed dorsal fin with six or seven rays and a spine. Adipose dorsal short, posteriorly free. Pectoral fins with 9 to 12 rays and a strongly serrate spine. Pelvic fins with six rays. Anal fin long, with 30 to 34 rays. Caudal fin forked. Lateral line complete, simple.

*Distribution.*—India, Pakistan, Bangladesh, Burma, Thailand, Malaya, Viet Nam, Indonesia.

One species and two subspecies. No key is given as the two subspecies are mere geographical local populations.

### **Pangasius pangasius pangasius** (Hamilton)

(Text-figure 14)

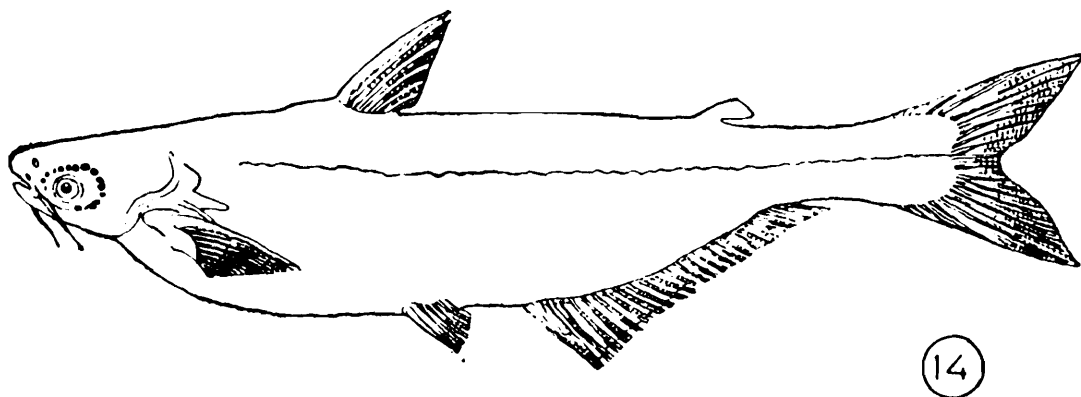
*Pimelodus pangasius* Hamilton, 1822, *Fish. Ganges*, pp. 163, 376 pl. 33, fig. 52 (type locality, estuaries of Bengal).

*Pangasius pangasius*: Hora, 1938, *J. Bombay nat. Hist. Soc.*, **40**(3), p. 362 (synonymy, description).

D. 6-7; P. I, 9-12; V. 6; A. iv-v, 27-29; C. 19.

*Diagnostic characters.*—As in the genus.

*Colour.*—When fresh, dusky or yellowish green, bluish mauve above, white below, purple gloss along sides. Sides of head golden yellow, fins light reddish-yellow.



*Distribution.*—India, Pakistan, Bangladesh, Burma, Thailand, Malaya, Java.

*Size.*—Maximum size 1200 mm. TL.

*Fishery value.*—Inhabits large rivers and estuaries. It is an important food fish, though not favoured much by the richer section of the community as it is considered a fowl feeder. It feeds on molluscs, prawns and other animal matter. The flesh is very white, fine-grained and sweet. It is common in the Gangetic estuaries and is brought in large quantities to Calcutta during July-August.

*Type-specimen.*—Not known.

### ***Pangasius pangasius godavarii* David**

*Pangasius pangasius godavarii* David, 1962, *Proc. Indian Acad. Sci.*, **56**, p. 151 (type locality, Godavary river, Rajahmundry).

D. I, 6; P. I, 10-12; V. 6; A. v, 25-29; C. 19.

*Diagnostic characters.*—Similar to the nominate form, but differing in larger eyes, shorter dorsal and pectoral spines and shorter barbels. Anal fin with 30 to 34 rays.

*Colour.*—When fresh, deep dusky green on upper half of body, with sides mauve, milky white below. Fins generally pinkish or reddish-yellow.

*Distribution.*—India: Godavary river system, Andhra Pradesh.

*Size.*—Maximum size 184 mm. TL.

*Fishery value.*—Same as for *P. pangasius pangasius*.

*Type-specimen.*—With the author Dr. A. David, C/o. Central Inland Fisheries Res. Inst., Bangalore.

### ***Pangasius pangasius upiensis* Srivastava**

*Pangasius pangasius upiensis* Srivastava, 1968, *Fishes of Eastern Uttar Pradesh*, p. 97, fig. 60 (type locality, River Rohini, Gorakhpur dist., U.P.).

D. I, 7; P. I, 12; V i, 5; A. 31-34; C. 19.

*Diagnostic characters.*—Similar to the nominate species but differing from it in respect of length of barbels, absence of rugosities on dorsal profile of head and in morphometric characters.

*Colour.*—Silvery, grey along back, cheeks and surface of head golden. Barbels, lips and all fins deep red.

*Distribution.*—India: Rivers Rohini and Rapti, U.P.

*Fishery value.*—Same as for *Pangasius pangasius pangasius*.

*Type-specimen.*—Holotype, in Zoology Museum, Gorakhpur University. Paratype, 1 ex., in Zoology Museum, Gorakhpur University, Gorakhpur, U.P.

### Family AMBLYCIPITIDAE

Diminutive loach-like fishes with body depressed anteriorly upto pelvic fins, strongly compressed and rectangular behind. Teeth on premaxillaries and mandible, palate edentate. Nostrils close together separated by nasal barbel. Barbels eight, moderately developed. Gill openings very wide, extending far forward on ventral surface.

Rayed dorsal fin inserted anteriorly above pectoral fin, enveloped in thick skin. Adipose dorsal fin smooth, not confluent with either rayed dorsal or caudal. Paired fins inserted horizontally, enveloped in skin. Pectoral fins with a sharp spine. Anal fin short, enveloped in skin, not confluent with caudal. Caudal fin subrounded, truncate or slightly emarginate. Lateral line entirely absent.

Air-bladder greatly reduced, divided into two lateral chambers, partially enclosed in bone.

Palatines rod-like. Endopterygoid absent. Mesopterygoid elongate, extending from palatines to hyomandibular. Metapterygoid reduced. Post-temporals absent. Parapophyses of fourth vertebra form on each side a semi-cylinder incomplete below, in the form of an inverted cup.

Vertebrae 36 to 45.

*Distribution.*—Freshwaters of Asia.

*Type-genus.*—*Amblyceps* Blyth.

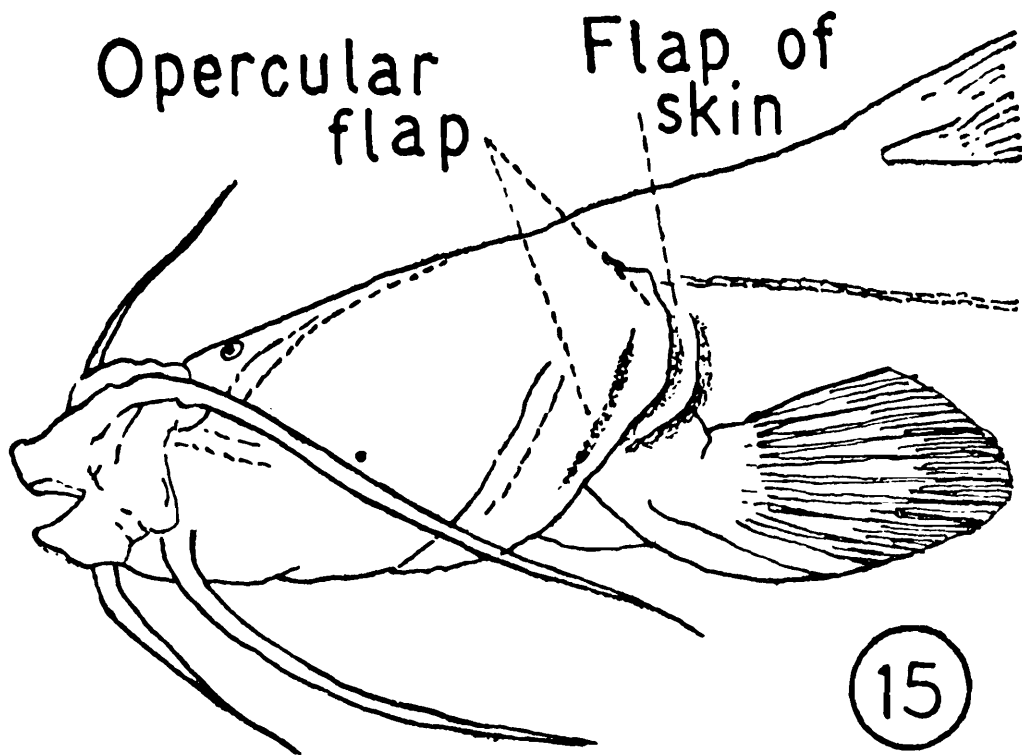
*Remarks.*—This family was proposed by Regan (1911) and includes two genera: *Liobagrus* Hilgendorf and *Amblyceps* Blyth. It is closely allied to Bagridae from which it is derived. Only *Amblyceps* is found in our waters.

### Genus *Amblyceps* Blyth

*Amblyceps* Blyth, 1858, *Proc. Asiat. Soc. Bengal*, **27**, p. 282 (type species, *Pimelodus margois* Hamilton).  
*Amblyceps*: Hora, 1933, *Rec. Indian Mus.*, **35**, pp. 607-621 (synonymy, revision).

*Description.*—Dorsal profile slightly arched. Head small, broad, depressed covered with thick skin; snout broadly rounded, or subtruncate; jaws subequal, either upper or lower jaw being slightly longer; lips fleshy. Mouth anterior. wide, transverse. Teeth small, villiform in bands on jaws; *palate edentate*. Eyes small, superior. Four pairs of barbels; one pair each of maxillary, nasal, two of mandibular; maxillary barbels with broad bases. Gill membranes united with each other but free from isthmus. *A fold of skin above and anterior*

to pectoral fin base, and immediately behind gill opening present (TF 15). Gill membranes rest on this skin fold when gill opening is closed. Branchiostegals 12.



*Rayed dorsal fin* with five or six rays and a *weak spine*. Adipose dorsal of variable length, smooth, usually low. *Pectoral fins* with seven rays and a smooth, *weak spine*. *Pelvic fins* with six rays. *Anal fin* with 8 to 11 rays. *Caudal fin* truncate or emarginate. Lateral line absent.

*Distribution*.—India: along the foot-hills of the Himalaya from Kangra valley in Punjab to Assam, Krishna river system, S. India, Bangladesh, Burma Thailand, Laos.

A single species.

### ***Amblyceps mangois* (Hamilton)**

*Pimelodus mangois* Hamilton, 1822, *Fish Ganges*, pp. 199, 379 (Type locality, Northern Bihar).

*Amblyceps mangois*: Hora, 1933, *Rec. Indian Mus.*, **35**, p. 617 (synonymy, revision).

*Amblyceps murray-stuarti* Chaudhuri, 1919, *Rec. Indian Mus.* **16** p. 272 (type locality, Putao plains, Northern frontier of upper Burma).

D. I, 5–6; P. I, 7; V i, 5; A. ii–iii, 6–8; C. 19.

*Diagnostic characters*.—As in the genus.

*Colour*.—Preserved specimens dark grey on body and sides, becoming lighter beneath, live specimens darkish, flesh colour, deeper above and lighter beneath. Hamilton (1822) observed that the colour “is everywhere of an uniform lurid brown colour, including to olive”

*Distribution*.—India: along the rapid streams of the foot-hills of Himalaya. Bangladesh, Burma, Thailand. David *et al.* (1969) recorded a single specimen from the Tungabhadra river of the Krishna river system. Further collection of this species would alone confirm this zoogeographically interesting find. Common in hill-streams at base of Darjeeling Himalaya.

*Size.*—Maximum size 150 mm. TL.

*Fishery value.*—An inhabitant of pebbly beds in swift currents at base of hills, it is capable of sustaining vicissitudes of water current and velocity. It is a voracious feeder, feeding on aquatic insects and insect larvae. It is only of local importance and their diminutive size does not fetch a good price. It bites viciously and can live out of water for sometime.

*Type-specimen.*—Not known.

*Remarks.*—This is a highly variable species. Hora (1933) discussed the range of variation. Many species such as *A. murraystuarti* Chaudhuri, *A. caecutiens* Day, *A. tenuispinnis* Day are such variations which have been correctly synonymised with this species.

### Family AKYSIDAE.

Small, more or less elongate fishes with head, anterior part of body depressed. Teeth on premaxillaries, and mandible; palate edentate. Nostrils widely separated, anterior tubular on front border of snout, posterior with a circular rim, the front border of which carries the nasal barbel. Barbels eight, well developed. Gill openings narrow of moderate width, extending to base of pectoral fin or above.

Rayed dorsal fin inserted anteriorly between pectoral and pelvic fins. Adipose dorsal fin present or absent, when present, smooth, not confluent either with rayed dorsal or caudal. Paired fins inserted horizontally. Pectoral fins with a strong spine. Anal fin short, not confluent with caudal. Caudal fin truncate or deeply emarginate. Lateral line present, complete or incomplete.

Air-bladder much reduced, not free in abdominal cavity, in the form of two ovoid thin-walled sacs, laterally situated.

Osteology not known.

*Type-genus.*—*Akysis* Bleeker.

*Distribution.*—Burma, Thailand, Malaya, Java, Sumatra, Borneo.

*Remarks.*—This family established by Hora (1936) comprises three genera: *Acrochordonichthys* Bleeker, *Akysis* Bleeker, and *Breitensteinia* Steindachner. None of these are found in India, Pakistan or Ceylon. *Akysis* is the only one genus which is dealt here, occurring as it is in Burma.

### Genys **Akysis** Bleeker

*Akysis* Bleeker, 1858, *Ichth. Arch. Indici*. I, *Siluri*, p. 234 (type species, *Pimelodus variegatus* Bleeker, by original designation).

*Akysis*: Hora, 1936, *Rec. Indian Mus.*, 38, pp. 199–209 (revision).

*Description.*—Dorsal profile somewhat arched. Head small, anteriorly depressed with or without prominent ridges. Skin covered with roundish granules or tubercles which are sometimes arranged in longitudinal rows. Snout broadly rounded; jaws subequal, upper jaw slightly projecting beyond lower; lips fleshy, papillated. Mouth subinferior, transverse, of moderate width, overhung by upper jaw. Teeth small, villiform in bands on jaws; Palate edentate. Eyes small, dorsal, looking upwards. Four pairs of barbels; one pair each of maxillary, nasal, two of mandibular. Gill membranes united with each other and isthmus; Branchiostegals six.

Rayed dorsal fin with five to eight rays and a *strong spine*. Adipose dorsal short, posteriorly free. *Pectoral fins* with 5 to 8 rays and a *spine strongly serrated along inner edge with antrorse teeth, longitudinally furrowed, covered with thick skin, with a cartilaginous filament*. Pelvic fins with six rays. Anal fin with 8 to 11 rays. Caudal fin emarginate with lower lobe better developed.

*Distribution*.—Burma, Thailand, Sumatra, Java, Borneo.

A total of six species are known, of which two are dealt here.

### KEY TO THE SPECIES

- |                           |                            |     |     |     |                    |
|---------------------------|----------------------------|-----|-----|-----|--------------------|
| 1. Anal fin with 11 rays. | Pectoral fins with 8 rays  | ... | ... | ... | <i>A. prashadi</i> |
|                           | ...                        | ... | ... | ... | (TF 16)            |
| Anal fin with 9 rays.     | Pectoral fins with 7 rays. | ... | ... | ... | <i>A. pictus</i>   |

### **Akysis pictus** Günther

*Akysis pictus* Günther, 1883, *Ann. Mag. nat. Hist.*, (5) **11**, p. 138 (type locality, Tennasserim, Burma).

D. I, 6; P. I, 7; V 6; A. 9.

*Diagnostic characters*.—Head greyish with minute black spots; irregular band along posterior part of body and caudal fin running at middle, in preserved specimens. Dorsal fin with a black band.

*Colour*.—As above.

*Distribution*.—Burma: Tennasserim.

*Size*.—Maximum size 35 mm. TL.

*Fishery value*.—Nil.

*Type-specimens*.—Two exs., Syntypes, Nos. 1880.12.1.25–26, in BMNH, London, from Tennasserim, presented by Wood-Mason.

*Remarks*.—This species has not been recorded subsequent to its first description.

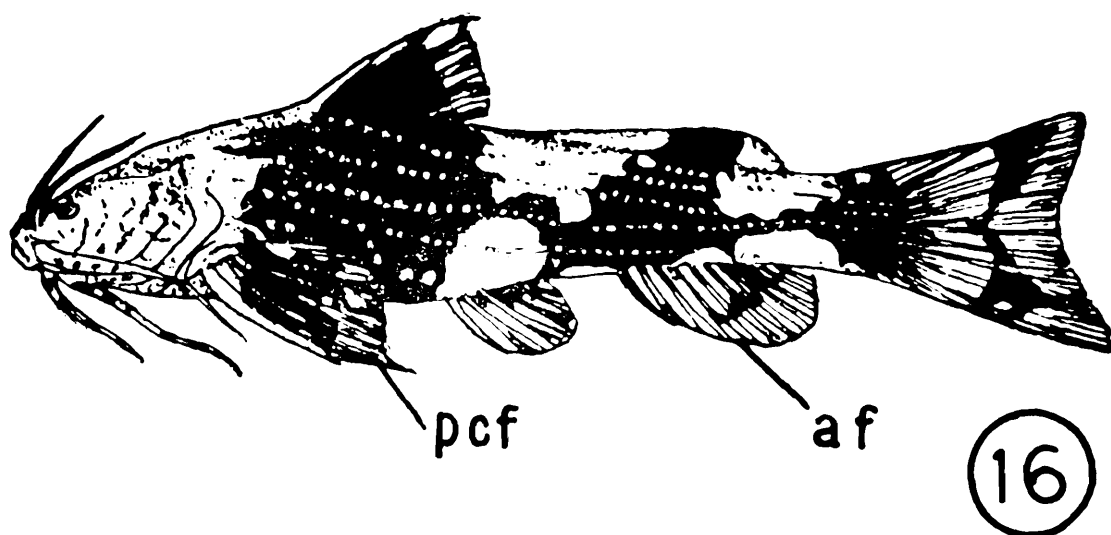
### **Akysis prashadi** Hora

*Akysis variegatus* sub. sp. *variegatus* Prashad & Mukerji, 1929, *Rec. Indian Mus.*, **31**, p. 180, pl. viii, figs. 1 & 2 (type locality, Indawgyi Lake and round about Kamaing, Myitkyina dist., Upper Burma).

*Akysis prashadi* Hora, 1936, *Rec. Indian Mus.*, **38**, p. 200 (discussion, description).

D. I, 7; P. I, 8; V 6; A. 11; C. 16.

*Diagnostic characters*.—Nasal barbels long, maxillary barbels shorter than *A. pictus*. Rayed dorsal fin more anteriorly situated.



*Colour*.—In preserved specimens head greyish with irregular black markings. *Body marked with three black areas separated by paler zones*; first in front of pelvics, second above anal, third at base of caudal, these zones united by a narrow longitudinal streak. *A broad, black band in middle of caudal, pelvic and anal fins present.*

*Distribution*.—Burma: Indawgyi Lake, Upper Burma.

*Size*.—Maximum size 50 mm. TL.

*Fishery value*.—Nil.

*Type-specimen*.—Holotype, F. 10873/1, in ZSI, Calcutta.

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*Abbreviations used in text-figures.*—af=anal fin; pcf=pectoral fin.