AN ACCOUNT

OF THE

FISHES OF THE GANGES.
AN ACCOUNT

OF THE

FISHES

FOUND IN

THE RIVER GANGES AND ITS BRANCHES.

BY

FRANCIS HAMILTON, (FORMERLY BUCHANAN,) M.D.

FELLOW OF THE ROYAL SOCIETIES OF LONDON AND EDINBURGH;
THE SOCIETY OF ANTIQUARIES, AND OF THE LINNÆAN SOCIETY OF LONDON;
AND OF THE ASIATICK SOCIETY OF CALCUTTA.

WITH A VOLUME OF PLATES IN ROYAL QUARTO.

EDINBURGH:
PRINTED FOR ARCHIBALD CONSTABLE AND COMPANY, EDINBURGH;
AND HURST, ROBINSON, AND CO. 90, CHEAPSIDE, LONDON.

1822.
ACCOUNT

TO THE

FISHES

OF THE RIVER CHANNES AND ITS BRANCHES

BY

FRANCES HAMILTON, ESQ. (Formerly Buchanan, M.D.)

WITH A VOLUME OF PLATES IN ROYAL QUarto.

EDINBURGH

ROBERT BURNS & SONS

1807
INTRODUCTION.

In this work I have described the Fishes found in the Ganges and its tributary streams. Notwithstanding the great variety of species here mentioned, I am persuaded, that the list is far from being complete. For the two last years, indeed, of my stay in India, and while engaged in countries remote from the sea, I met with but few species that I had not before described; but, previous to my departure for Europe, on returning to the vicinity of the numerous and large estuaries by which this enormous river enters the sea, I daily met with species which I had never before seen. Besides, it is probable, that, in the Alpine sources of the Ganges and its branches, there are a good many species which are not to be found in the rivers of the plains, nor in the torrents among the puny hills of the south. During a year's residence, however, near the capital of Nepal, I observed few species that I had not previously seen; but fishing is not a favourite art among the people of that country, so that my opportunities of investigation were not great. On the whole, I do not think, that, in the rivers above, where the tide reaches, more than one kind in five has escaped my notice;—while of those found in the estuaries I have not proba-
bly described above a half. This is the less to be regretted, as a great proportion of them has probably been described in the valuable work of Dr Russell.

In the arrangement of the fishes, I have followed the method of Linnaeus; for, although that of Cepede is more complete, the distinctions arising from the gill-covers and membranes are often traced with so much difficulty, as to occasion much doubt in practice. In arranging the genera and species, however, I have, for the most part, followed Cepede. I had finished the manuscript before I saw the valuable system of Cuvier; and the numerous changes which would have been required to adopt it, would have occasioned a trouble, for which the improvements, although considerable, would not, I think, be a sufficient counterbalance.

For the sake of my countrymen residing on the banks of the Ganges, to whom this work should be peculiarly useful, I have employed the English language, although the technical terms necessary to be used in describing natural objects appear more uncouth in a modern dialect than in the Latin tongue. I request the reader to observe, that, in speaking of the form of fishes, I use the terms high and flat to express their great or small vertical breadth, while their horizontal breadths are expressed by the terms wide and narrow. These terms are, therefore, applied differently in describing the flat fishes which swim on one side, to what they are in describing all the others, which swim with their bellies toward the bottom. In writing of the back and vent fins, by the terms long and short, I mean the great or small length which these organs occupy on the fishes' body; while by high and low I express the great or
small length of their rays. Again, in writing of the pectoral, ventral, and tail fins, the terms long and short are applied to their greater or less extent from their root to their end. In describing all fins, the term rounded implies that their upper edge, along the extremities of the rays, forms a curve projecting in the middle; and the term like a crescent, implies that this edge forms a curve receding in the middle. The English term oval implies the botanical Latin term ovatus, and not ovalis.

For the sake of those men of science to whom the English language is not familiar, I have annexed a Synoptical Table in Latin, following in this the example of Latham, in his excellent work on Birds.

To most of the species that I could not trace in authors, I have given trivial names, derived from some of those used by the natives of India, and altered as little as possibly consistent with avoiding that total barbarity into which La Cepede has so often fallen. In this I shall endeavour to imitate the venerable Rumphius, who, from the most barbarous materials, has given many names greatly more polished than the sesquipedalic compounds of the modern dealers in Greek.

In their proper places I have introduced an account of a few fishes observed in the rivers of the south of India; but to these I have prefixed no numbers in the Synoptical Table. These have only been annexed to the species found in the Ganges.

The words printed in capitals or italics are chiefly intended to assist the reader in finding more readily the objects which are described.
ERRATA.

Page 165, after Pimeiodus rita, Plate XXIV. insert and XXV.
Page 361, line first, expunge quod.
Plate I. for Mugil corsula read Pimeiodus; the Mugil Corsula being
delineated Plate IX. fig. 97.
A DESCRIPTION OF THE
GANGETIC FISHES.

ORDER FIRST.

FISHES HAVING A CARTILAGINOUS SPINE.

I. Genus.—Raia or Skate.

Fishes of the first order, which, on each side of the body beneath, have five or seven breathing apertures without gill covers or membranes; which have the mouth opening from below; and which have the body very flat, and terminated on the sides by a margin composed of the pectoral and ventral fins.

1st Species.—Raia fluviatilis.

Skates are very common in the Ganges, not only in the estuaries, but very far removed from the sea; for I have seen them at Kanpur, more than a thousand miles above the extent
of the tide. In these upper parts of the river’s course, and it is found also in the estuaries, the species most common has a strong resemblance to the *Raia lymma*; has nearly the same manners with the *Raia aquila*, and inflicts very dangerous wounds with the spine on its tail. It is, however, a very common fish, in the markets of Patna especially, and is not materially different in taste from a small skate or maiden ray, (*Raia batis.*) I always deferred taking a description, until I had an opportunity of having it drawn, and that opportunity never occurred. I cannot, therefore, give its specific character.

2d Species.—*Raia sancur.*

A *raia* with blunt teeth; with the body and tail unarmed, the latter provided with a fin; and with the head ending before in the segment of a circle.

The drawing of this fish was commenced, but never finished. It is common in the estuaries of the Ganges, both in fresh and salt water; but I have not seen it above where the tide reaches. It grows to nearly the same size with the skate, (*Raia batis,* and for the table has nearly the same qualities. Except in wanting the prickle on the tail, it has a strong resemblance to the first species.

The *shape* of the whole animal, including the fins, approaches that of a rhomb, the pectoral fins forming an angle near the centre of the body. Independent of the fins, the body is oblong, and thicker, in proportion to its size, than that of the skate. The *colour* is an ugly dark brown above, and white beneath.

The *head* terminates in a blunt soft smooth snout. Near this are the *eyes*, which are large; and immediately behind each is a large triangular aperture, analogous, I presume, to our *ear*. The *mouth* is not large. The upper *lip* is a fleshy
membrane arising from the fore part of the head, and ending behind in a semicircular sinus. Under the fore part of this membrane, at each side, is a large aperture in form of a crescent, probably a nostril. In both jaws there are various rows of blunt teeth, closely wedged together. The apertures for breathing consist of five slits placed behind each angle of the mouth, so as with it to form a kind of circle open towards the tail.

The body everywhere below, and towards the sides above, is quite smooth; but on the middle of the back is covered with small rough scales, The vent is behind the middle. The tail is more than twice the length of the whole body, and very slender. It is quite smooth, and tapers gradually from the root, which is flat, to the point, where it becomes like a thick thread. It is scabrous above; but is neither prickly nor armed with a spine.

There is no dorsal fin, but behind the head there is a light coloured hard protuberance, the rudiment probably of this organ. The pectoral fins edge the greater part of the body, and, forming a slight angle near the middle, are rounded behind. The ventral fins are much smaller than the pectorals, and edge the body between them and the tail. They are rounded behind, and their edges are indented. On the under side of the tail is placed a narrow fin without rays. It commences about three quarters the length of the body from the root, and runs along for about a space equal in length to the body.

II. Genus.—Squalus or Shark.

Fishes of the first order having on each side of the neck from five to seven breathing apertures, without gill-covers or membranes.

In the mouths of the Ganges sharks are exceedingly nume-
rous, and occasionally, but rarely, come up as far as Calcutta. There would appear to be many species, usually divided by our seamen into two kinds,—one, with rounded bodies, called merely sharks; and the other, with flattened heads and chests, called ground-sharks. I have only had an opportunity of ascertaining two of the species, both belonging to the first kind.

1st Species.—Squalus carcharias?

A shark with one anal fin; with no aperture behind the eye in place of an ear; with triangular teeth, cut like a saw on the edge; and with the tail fin deficient near the point below.

This animal resembles very much the figure of the S. carcharias, given by La Cepede, (Tome I. Planche VIII. fig. 1;) but differs considerably from the figures given by Bloch (Ichth. Tome IV. Pl. CXIX.) and by Bonnaterre in the Tableau Encyclopedique, (Plate VII. fig. 20;) in both of which the tail fin entirely surrounds that member, in place of being deficient on the under part, towards its point. I must, however, observe, that the Pala sorra of Dr Russell (Indian Fishes, Vol. I. p. 9, fig. 14,) is a fish resembling this shark very strongly indeed, yet its caudal fin surrounds entirely the tail. We may therefore suspect, if this mark does not denote the difference of sex, that we have two species agreeing with the specific character usually given of the S. carcharias, or common shark. The specimen from which I took the description was very small, and differed from the full account given by La Cepede in the few following particulars, which can scarcely perhaps be considered as adequate to constitute a new species.

The colour of the fish is above green, and beneath whitish, with somewhat of a silver gloss.
The nostrils are situated nearer the eyes than the end of the head. On each side two parallel rows of punctures run from the nape to the first aperture for breathing. Before each eye there is another row, in form of a crescent, with the horns turned towards the sides of the head.

There is no longitudinal furrow on the tail.

The insertion of the caudal fin above is much shorter than below. The hinder dorsal fin is much smaller than the anal, and is shaped somewhat like a sickle.

2d Species.—Squalus pectinatus.

A squalus with a long bony snout, armed on each side with about 34 narrow teeth.

Pristis pectinatus, Transactions of the Linnaean Society, Vol. II. p. 278.

Saw-fish of the English.

This animal is said by the fishermen to grow to the length of from six to seven and a half feet, and to live entirely on weaker fishes. It would be needless to describe farther a fish already well known to the naturalist.

III. Genus.—Tetron.

Fishes of the first order having projecting jaw-bones, each divided as it were into two teeth, but there are no real teeth; and having no scales; but the body is slimy, and is capable, at the will of the animal, of being inflated.

The fishes of this genus are eaten by the poor, but are considered as indifferent food; nor does their quantity anywhere occasion them to be of any importance.

All the species described below have five fins, of which the dorsal is placed far back opposite to the anal; and the pectorals,
which are small, are placed near the middle of the fish in respect to height.

The rays of all the fins, except the caudal, are so covered by a thick skin, and are so small, that they are numbered with difficulty and uncertainty, so that a great expectation of accuracy concerning the numbers stated should not be entertained. All these species have small horizontal mouths with fleshy lips, the vent behind the middle, and the gill aperture near the pectoral fins, and forming part of a circle.

1st Species.—_Tetrodon fluviatilis._ Plate XXX. Fig. 1.

A tetrodon with a body little compressed; with jaws of nearly equal length, but the superior by a little the longer; and with the back dusky-green divided, by yellow lines, into angular spaces like the plots in a garden.

This fish grows to about six inches in length, and is found in the fresh water rivers of the lower parts of Bengal. On this account it is called by the natives the river Patoka, to distinguish it from another found in ponds, and from another found in estuaries, for the term Patoka is generic.

This fish, as to form, when it inflates itself, has a moderately projecting belly, somewhat shaped like an egg, and tapering gradually to the tail. On the head, back, and belly, it is armed with small undivided prickles, which the animal can retract into some large pores in its skin. With respect to colour, the sides have large round spots, the lower parts are white. The fins are dusky, with two dark transverse bars across that of the tail. The eyes are yellow. When this fish has lived in dirty water, its belly becomes black, and its fins yellow.

The head slopes downward from the neck to the mouth, is shaped like an egg, is large and wider than the body, and ends bluntly. The jaw-bones do not protrude in opening.
The upper lip is rather the longest. The tongue adheres to the lower part of the mouth. The palate is covered with folds. The nostrils are far back, and separate. Each has a single aperture, with an erect leafy membrane, divided to the base into two blunt portions. The eyes are towards the upper and hinder part of the head, but far from each other. They are of a moderate size, and convex, with circular pupils. The gill-covers are overspread with flesh. I can only trace one ray in each of the membranes covering the gills, but this membrane is very thick.

The thorax is convex. The abdomen is capable of less distension than in most species of this genus. There is no lateral line.

The back fin is rounded, and contains sixteen rays, of which the first three are undivided; the second being shorter than the third, and longer than the first. The others are divided. The pectoral fins are rounded, and each contains seventeen divided rays. The anal fin is rounded, and contains fourteen rays. The tail fin is rounded, and contains eight divided rays.

2d Species.—*Tetrodon patoca*. Plate XVIII. Fig. 2.

A tetrodon with the body scarcely compressed, but armed with simple thorns, and above blackish, with numerous yellow spots, and with the upper jaw the longest.

This fish is found chiefly in the estuaries, and is considered by the natives as the prototype of their genus Patoka, on which account they call it the great Patoka, and I have, therefore, applied their name as specific, especially as the term great would be improper, many other species being larger, for our fish seldom exceeds a foot in length: in the Ganges, however, we have no species so large. This fish has a consider-
able resemblance to the *T. sprengleri* and *T. testudineus* of Bloch; but, from the first, it differs in wanting the lateral appendants, by which that fish is distinguished; and from the second it is known by wanting longitudinal stripes on the sides, by the yellow spots on the back, and by a more prominent belly. The *Tetrodon kappa* of Dr Russell (Indian Fishes, Vol. I. No. 25) has also a considerable affinity to the Patoca, but is less prominent on the belly, and more so between the eyes, while the spots on the back are pale blue its belly yellow, and its back only rough, and devoid of visible prickles.

The *colour* of the *Patoca* above is blackish, with numerous large yellow spots on the back; below it is white. The fins are inclined to olive. The back and belly are *armed* with simple retractile prickles.

The *head* is unarmed and large, and slopes gently down to the mouth. The *jaws* do not protrude in opening; the under one is provided with an erect membranous veil. The *nostrils* and *eyes* are similar to those of the last mentioned species.

The *back* is arched, and its edge is rounded. The *belly*, when inflated, forms half a sphere. There is no *lateral line*.

The *back fin* is rounded, and contains eleven rays, of which the two first are undivided, and the first is the shortest. The *pectoral* fins are sharpish above. Each contains about sixteen rays. The *anal fin* is rounded, and contains ten rays, of which the first is the shortest, and, together with the second, is undivided. The *tail fin* is rounded, and contains ten rays, of which one on each side is undivided.

3d Species.—*Tetrodon cutcutia*. Plate XVIII. Fig. 3.

A *tetrodon*, with the body very little compressed, entirely unarmed, green above, and irregularly variegated with dusky
and white below; with a large black circular spot on each side, where the tail commences, and with the under jaw the longest.

This fish seldom exceeds four inches in length, and is miserably tormented by idle children, who amuse themselves by inflating its belly. Every where watered by the Ganges and its branches, it is common enough in ponds and in small rivers.

The cutcutia is entirely smooth; and its belly, when inflated, forms more than half a sphere. The tip of the tail, fin, and the eyes, are red.

The head is rather flat and small, and ends bluntly. The nostrils are covered by undivided membranes. The eyes are large, and look downward. I can perceive no ray in the gill membranes.

The back slopes very gently from the middle of the fish in both directions, and is convex. There is no lateral line.

The back fin is rounded, and contains twelve rays. The pectoral fins are rounded, and each contains about twenty-one rays. The anal fin is rounded, and contains eleven rays. The tail fin is rounded, and contains eight rays, which project a little beyond the membrane.

4th Species.—Tetronon caria.

A tetronon with the body very slightly compressed, entirely unarmed, above green, with irregular dusky marks, and below black; and with jaws nearly equal in length.

This fish is found in the river Kosi, and differs so little from the cutcutia, that I cannot take upon myself to say, whether it is a distinct species or a mere variety. Besides the circumstances related in the specific character, it wants the large spot on the sides, by which the cutcutia is distin-
guished, and its sides are reticulated with narrow black lines. The head and back slope more. The nostrils are tubular, and capable of being retracted. The rays of the dorsal fin are about eleven, of each pectoral about eighteen, of the anal about ten, and of the caudal eight.

5th Species.—**Tetradon gularis.**

A *tetradon* with the body very slightly compressed and entirely unarmed, above green, irregularly varied with dusky, and beneath black, with a large black spot on each side, with a red mark on the throat, and with jaws nearly equal in length.

This fish is found along with the preceding species, and differs only from it in the particulars mentioned in the specific character. Its being, therefore, a mere variety, is still more probable. I have been under the necessity of translating the specific name given by the natives, *Kanthawaleh Phoksha*, being altogether inconvertible to any word of decent length.

6th Species.—**Tetradon tepa.**

A *tetradon* with a compressed prickly body, and with a tail fin of an equal crescent shape.

This fish is found in the estuaries, where it grows to be about a foot in length, and is a very distinct species from any above mentioned; but it has a very considerable affinity to the *T. sceleratus* of La Cepede, (*Hist. des Poissons*, Tome I. p. 476,) which is said to be poisonous; in fact, the natives of Bengal reject the *Tepa* in food. The accounts of the *T. sceleratus*, however, are still very imperfect. The name *Tepa*, (*Tengpa,*) it must be observed, is generic, but all the other fish to which it is applied have some other distinguishing appellation. I have therefore confined it to this species, as the prototype of the native genus *Tepa*. 
This fish in form is conical, compressed, and on the back and belly has a space surrounded by a margin, that contains undivided prickles capable of being retracted. When inflated, the belly forms a considerable segment of a sphere. The colour is olive above, and white below, with a golden gloss on the sides.

The head is very large, and very blunt at the nose. The jaws are sharp, and the under one is the shortest. Each nostril has two small openings placed in a circular depression, without any membranous appendant. The eyes are large, stand high up, and are of an oblong form.

The back slopes but little. The lateral line begins at the nostril, passes under the eye, ascends to the neck, and there forms an elevated ridge, which bounds the prickly portion of the back. At the dorsal fin it bends down, and runs through the middle of the tail, which is quadrangular.

The dorsal fin is falcated, and contains fourteen rays. The pectoral fins are small; and each contains fourteen rays, of which the extreme ones are undivided. The anal fin is falcated, and contains eleven rays, of which the two first are undivided, and the last is divided to the root. The tail fin consists of two sharp lobes, of which the upper is the longest, and contains thirteen rays, of which three on each side are undivided.

IV. Genus.—Syngnathus.

Fishes of the first order with a very small toothless mouth, situated at the extremity of a long cylindrical tube, composed of the jaws united.

All the fishes of this genus, which I have seen in the Ganges, are from seven inches to a foot in length, and not thicker than a strong goose’s quill. Being rather uncommon,
and of an uninviting appearance, they are seldom eaten, and in an economical view are of no importance. Their heads have no scales, and the tubes, in which they terminate, are slightly compressed, and nearly of the same length with the head. Their bodies are as it were jointed, each joint being encircled by a hard scale, which covers the whole. The number of angles in the body varies in the different species; but, in the tail, which tapers to a point, all have four acute angles. All the species which we have belong to the second division of La Cepede, having four fins, one on the back, two pectorals, and that on the tail.

1st Species.—Syngnathus cuncalus.

A syngnathus with four fins; and with seven angles on the body, which contains eighteen joints, while the tail has twenty-five.

I found the cuncalus in the estuaries near Calcutta. It has a strong affinity to the S. pelagicus of La Cepede, (Hist. des Poissons, Tome II. p. 40,) but differs in the number of joints and of the rays in the fins. In the month of September the female fish has her belly, from the throat to the vent, covered with eggs adhering fast to the scales.

The fish in colour is green above, and white beneath, with a gloss of silver on the sides. On the back several dusky lines, intersecting each other, form a net-work. On each side is a longitudinal stripe formed of numerous dots. The eyes are silvery.

The head is very small, and narrower than the body, compressed at the sides, and straight above. The nostrils are far back, and each contains one small aperture. The eyes are far up, globular and protuberant, with circular pupils. The mem-
brane of the gill-covers has two rays, and closes entirely the aperture, adhering firmly by its whole edge.

The back is straight and concave, edged on each side by a ridge, which is notched at each joint. The sides are edged in the same manner with the back, each forming an obtuse angle in the middle. The belly is straight, and like the sides has an obtuse angle in the middle. The four acute edges run along the tail, the three obtuse ones terminate at the vent, which is near the middle. On each side are two lateral lines, both straight, and one placed above, while the other is below the obtuse angle of the side. The former terminates at the end of the dorsal fin, the latter before the vent.

The back fin occupies three joints of the back and seven of the tail; and contains fifty undivided rays. The pectoral fins are very small, rounded, and near the middle of the side in respect to height. Each contains sixteen rays. The tail fin is rounded, and contains nine rays.

2d Species.—Syngnathus Carce.

A syngnathus with four fins, and seven angles on the body, which contains thirty-two joints, while the tail has eighteen.

This species I have observed only in the tide-ways. The natives call it the Crocodile’s Tooth-pick, or Tooth-cleaner.

The colour is greenish-brown, with some obscure pale transverse belts on the back, and ten or eleven spots on each side at the lower edge of the scales, by which the joints are surrounded.

The head is compressed, nearly straight, narrower than the body, small, and armed on the throat with a short blunt prickle. Each nostril contains two minute apertures, placed near the eyes, which are small, protuberant, and high on the
head. The pupils are circular. The rays of the *gill-covers* are very indistinct, and the *openings* of the gill-covers are very small, and placed on the sides of the neck.

The *back* is straight and concave, bounded on each side by an acute, very entire, angle or ridge. The *sides* have a blunt longitudinal ridge along their middle. The *belly* is straight, and an angle or ridge runs along its middle to the vent, where, dividing into two, its branches unite with the sharp ridges, separating the sides from the belly. On the fore part of each side there are two *lateral lines*, dotted with white. The *scales*, or *belts*, by which the animal is surrounded, are striated and sprinkled with dots.

The *back-fin*, placed near the middle of the fish, contains twenty-five rays. The *pectorals* and *tail fin* are rounded, and contain each ten rays.

3d Species,—*Syngnathus deocata*.

A *syngnathus* with a six-sided body, and four fins.

The *S. barbarus* is said, in their descriptions by Bonnaterre, (*Tabl. Encycl. p. 31, T. XXI. f. 74,* and by La Cepede, (*Hist. des Poissons, Tome II. p. 48,* to have no tail fin; but, in the figure given by the former, it is represented with that organ, and has a strong resemblance to our fish.

The *deocata* I have found in the Tista, Kuwarlayi, and other rivers of Puraniya, or Mithila, in the north of Bengal and Behar. It is of a brown *colour*, with the sides of the belly below the lateral lines beautifully variegated with red and blue; but, when the female breeds, these bright colours disappear, except on the margins of the belly, which become yellow, and are dilated, in order to receive two rows of globular yellow eggs, each row containing about twenty, which adhere to the belly, until hatched.
Syngnathus.  

GANGETIC FISHES.  

The head is not compressed. The gill-membrane adheres all round, and entirely closes the aperture.

The back is straight, and surrounded by a sharp ridge. An obtuse angle runs along each side. The belly is flat, and surrounded by a sharp ridge. The lateral lines are indistinct, but are in the middle of the upper face of the sides. The vent is near the middle. Before it are sixteen joints, and behind it thirty-two.

The dorsal fin occupies two joints of the back and four of the tail, and contains about thirty rays. The pectoral fins are rounded, and each contains about fifteen rays. The tail fin is oval, ends in a sharp point, and contains about seven rays; but their number cannot be distinctly traced.

ORDER II.

FISHES HAVING THE DORSAL SPINE OF BONE, AND WANTING VENTRAL FINS.

I. Genus.—Unibranchiapertura.

Fishés of the second order without pectoral fins; with a body shaped like a serpent, and having only one opening to the gills situated under the throat.

I have retained the name given to this genus by La Cepede, although it is both long and barbarous, and need not have superseded the Synbranchus given by Bloch, which, although far from harmonious, is at least shorter. The name of La Cepede
is, however, very significant, and expresses the chief mark by which the genus is distinguished.

1st Species.—**Unibranchapertura cucitia.** Plate XVI. Fig. 4.

An Unibranchapertura destitute of fins, and spotted with black.

The *Dondoo Paum* of Russell (Indian Fishes, Vol. I. No. 35) has a strong affinity to our fish; but has not the black spots, and may perhaps be the *Unibranchapertura laevis* of La Cepede, *(Hist. des Poissons, Tome V. p. 657.)*

This fish I found in the rivers and ponds of the south-east parts of Bengal. It is said to grow to two feet in length, and six inches in circumference: but those that I have seen were shorter and thinner in proportion to their length. Europeans eat the *cuchia* as an eel; but the natives reject it, and imagine that its bite is fatal to cattle, although less powerful on the human kind,—a supposition highly improbable.

The whole form of the animal, having no vestige of a fin, resembles strongly a serpent. This fish is cylindrical, devoid of scales, and lubricated with slime. The colour above is dark green, below a dirty pale red. On every part are scattered small round black spots, and short yellowish lines. Two parallel pale lines run forward from the shoulders, and at the eyes join, at an acute angle, two others coming from the sides of the chest. Parallel to the last are two others, one on each side beneath the lateral line.

The head is blunt and of a moderate size, but swells out when the animal is irritated. The snout is depressed, short, and retuse, projecting a little beyond the under jaw. The nostrils are near the end of the snout, very small, and each has only one aperture. The eyes are near the upper part of the head, and small, as is also the aperture to the gills.
The lateral line forms an arch before, and then runs straight along the middle of the side. The tail ends in a sharp point, is compressed, and has sharp edges above and below.

II. Genus.—Murænophis.

Fishes of the second order, with a body like a serpent, but without scales, and devoid of pectoral fins, with the fins of the back vent and tail united into one, and with an opening to the gills on each side of the neck.

The genus, of which I am now treating, by Bloch has been called Gymnothorax, which La Cepede was scarcely justifiable in changing to Murænophis; but, as the Muræna of the ancients belongs to this genus, the name might have been appropriated to it, while the name Anguilla might have been bestowed on the genus, which La Cepede calls Muræna, as the common and well known eel is no doubt the Anguilla of the Latins.

1st Species.—Murænophis Sathete.

A murænophis with the dorsal fin commencing at the neck, with sharp teeth placed at a distance from each other in both jaws, which are nearly of equal lengths, and with an unspotted body.

The sathete I have found in the estuaries near Calcutta. It is a very ugly eel, which grows to five or six feet in length, and is of a brownish black colour, with the under parts of the head of a dirty yellow.

The head is oval, and small. The nostrils are double, the foremost being tubular. The eyes are small, and far forward. The teeth are strong. The gill-membrane is thick, large, and striated with small rays, the number of which cannot be properly ascertained. The openings to the gills are small.
The body is very slender in proportion to the length, nearly round, and very slippery. The lateral line runs down the middle of the side. The only fin runs from the neck round the tail to the vent, and has such a thick skin that the number of rays cannot be ascertained.

2d Species.—Murænophis tile.

A murænophis with the dorsal fin commencing at the nape; with a row of remote sharp teeth in each jaw, and one large tooth in the palate; with the body divided by lines into small squares, and variegated with irregular yellow blotches and black dots; and with the under jaw shortest.

This is an ugly eel, seldom growing to above eighteen inches in length. It is found in the estuaries near Calcutta, and has the strongest affinity to the Gymnothorax reticulatus of Bloch, (Ichth. Tome XII. p. 71, f. 416,) or Murænophis reticularis of La Cepede, (Hist. des Poissons, Tome V. p. 628,) who state, however, that the palate is smooth, (uni Bloch, lisse La Cepede,) which I presume could not be said of the Gangetic fish, on account of the remarkable fang which it has, and by which it acquires a strong analogy with poisonous serpents. Owing to this circumstance, it has a great affinity with the Murænophis grisea of La Cepede, (Hist. des Poissons, Tome V. p. 629,) and with the Calamaia paum of Russell, Indian Fishes, Vol. II. No. 32.) Indeed, it agrees in most particulars with the description given by Dr Russell, but the figure differs in many points.

The head is small, oval, and blunt. The nostrils are double; the foremost are tubular, and placed near the jaw; the hinder are near the eyes. The teeth are strong, and bent backward. The mouth is large, reaching behind the eyes, which are small, round, and yellow. There are no gill-covers; but the mem-
brane is large, and very much dilatable. It is striated with several rays; but their number cannot be exactly ascertained.

The body is not compressed, but nearly round. It is slippery and naked, although numerous depressed lines, crossing each other, form it into little squares like scales. The lateral line runs straight down the middle of the side. The tail tapers to a point, is compressed, and has a sharp edge above and below.

The fin is broad, extends from the gill openings round the tail to the vent, and is so thick that the number of slender rays which it contains cannot be ascertained.

III. Genus.—Ophisurus.

Fishes of the second order, with indistinct pectoral, dorsal, and vent fins, but having no fin on the tail, and those on the back and behind the vent are very long and narrow, with a body formed like a serpent, and with an opening to the gills on each side of the neck.

The three species of this genus, which I have found in the Ganges, for eels are rather beautiful animals, and are eaten by many of the natives, most of whom reject the others, although all are used very indiscriminately by Europeans.

These three eels in form are very slender, and nearly cylindrical in the body, but taper to a point at both tail and head, this member terminating in a sharp snout, which projects considerably beyond the under jaw. Their nostrils are solitary tubes near the end of the snout. The eyes are small and far forward. The teeth in both jaws are small. The openings of the gills are small and close to the pectoral fins. No rays can be distinctly traced in the membrane covering the gills, which is thick. The gill-covers are flexible, and covered with skin. There are no
scales, but the body is not so slimy as that of the common eel. The vent is placed before the middle.

1st Species.—**Ophisurus hijala.** Plate V. Fig. 5.

An ophisurus with the upper jaw the longest, and with a row of pale spots on the fore part of the lateral line.

This I found in the rivers of Bengal, both salt and fresh. The natives have an imagination that it proceeds from the ear of the porpoise, and one of its names implies this circumstance. It does not grow to above eighteen inches in length.

The *colour* of the under parts is white; the upper are thickly covered with green dots, which, before the vent, descend lower than the lateral line, but towards the tail this line separates the dotted from the white part. The pale spots on the lateral line reach as far back as the vent, and are round and contiguous.

The *head* is as thick as the body. The *eyes* are high.

The *lateral line* is straight, and higher a little towards the shoulders than on the tail.

The *dorsal* fin extends from the head to within a tenth of an inch of the point of the tail, contains from two hundred and thirty to two hundred and forty undivided rays, nearly of an equal length, and can be lodged in a longitudinal furrow. The *pectoral* fins are very small and rounded, and are near the middle of the sides: each contains eight divided rays. The *anal* fin runs from the vent almost as far back as the dorsal, and contains about one hundred and seventy fine undivided rays, nearly of an equal length.

2d Species—**Ophisurus boro.**

An *ophisurus* devoid of spots or lateral line, with the upper
Ophisurus. \hspace{1cm} \textbf{GANGETIC FISHES.} 21

Jaw the longest, and with about three hundred and thirty rays in the back fin.

This fish I have found in the estuaries near Calcutta, where it grows to about eighteen inches in length.

The \textit{colour} is above black, with green dots; beneath very pale yellow. The \textit{eyes} are silvered.

The \textit{head} is wider than the body. The \textit{eyes} are near the middle of the head in respect to height.

The \textit{pectoral} fins are minute and rounded, and each contains about eleven rays. The \textit{anal} fin has about two hundred and seventy.

3d Species.—\textbf{Ophisurus harancha}.

An \textit{ophisurus} with upper jaw the longest; without spots, but having a lateral line; and with about three hundred and forty-five rays in the back fin.

This fish I found also in the estuaries near Calcutta, and it differs little from the \textit{Boro}.

The \textit{lateral line} runs straight along the middle of the fish. The \textit{vent} fin can be hid in a longitudinal furrow, and contains about two hundred and forty rays. The \textit{pectoral} fins end in a sharp point, and each contains about twelve rays.

IV. \textbf{Genus.}—\textbf{Muræna}.

Fishes of the second order with a serpent-like form; without scales, but covered with viscid slime; and having fins on the tail, sides, and back, and behind the vent, the two latter being unarmed.

I have already mentioned the impropriety of bestowing the name Muræna on a genus, to which the Muræna of the Latins does not belong: but I leave the correction to some publisher of a system.
In Bengal fishes of the eel kind are seldom eaten except by the lower classes of natives, and by Europeans; nor, in an economical point of view, are they of any considerable importance; as, although of uncommon variety, and found in every part of the Gangetic provinces, they are nowhere in such abundance as to be of consequence. Perhaps, however, the smallness of the number taken may be owing to the want of demand, and the consequent neglect of the fishermen. I have not been able to trace the source of what Pliny states (Hist. Mundi, L. IX. c. iii.) concerning the immense length of the eels in the Ganges, which he says are three hundred feet long. All that I have seen or heard of were of dimensions, that, in Europe, would be considered moderate; nor do I know any other animal in the Ganges of dimensions that could have given rise to such an exaggeration.

1st Species.—_Murnœa anguilla._

A _muraena_ with the under jaw the longest; with about a hundred rays in the anal fin, which is united with those of the tail and back; and without spots on the back or tail.

_Muraena anguilla_, La Cepede, Hist. des Poissons, Tome II. p. 225.

_Chowloo Pamoo_ or _Malgumaroo_, Russell’s Indian Fishes, Vol. I. No. 31.

This eel, which is exactly the same with the common eel of Europe, I found in the marshes communicating with the Tista. It is astonishing that La Cepede should make such a fuss about an animal which has every appearance of a serpent without the vivid colours, by which most of these reptiles are adorned. It is an irritable creature, swelling its head whenever angered; and constantly, when it can, buries itself in putrescent carcasses. In our Indian marshes its upper parts are of a dirty green
colour, variegated with paler and darker shades: beneath it is of a dirty yellow.

2d Species.—Murena maculata of La Cepede?

A murena with the under jaw the longest; with a green body variegated with black irregular marks; and with the back, tail, and anal fins, united into one.

La Cepede (Hist. des Poissons, Tome II. p. 265) can scarcely be excused for changing the name guttata given by Forskael to maculata. The eel, which these authors describe, is found in the Nile, and I found this in the Ganges, where that river passes through Behar. The description given by La Cepede is so imperfect, that I am uncertain whether the animal of the Ganges belongs to the same species with that of the Nile.

The Gangetic fish is a very ugly animal, and, when old, is said to grow very thick in proportion to its length; that is, when full grown, it is about two and a half cubits in length, and one cubit in circumference; but in this, I suspect, there is some mistake, as the largest which I procured, and which was three feet two inches long, was only six inches and a half round.

The colour of the lower parts is white.

The head is wider than the body. The under jaw is a little longer than the upper. The nostrils are double: the foremost are close to the jaw, being tubular. The hinder apertures are near the eyes, which are high.

There is no lateral line.

The back, vent, and tail fins are so thick, that the number of rays cannot be ascertained. Each pectoral fin contains twenty-four.
3d Species.—*Muræna vamos*.

A *muræna* with the upper jaw much longer than the under, with the back, tail, and anal fins united, and without any remarkable spots, or a lateral line.

This eel is found in the estuaries of the Ganges, and is said to grow to seven and a half cubits in length, although none that I saw exceeded half that dimension. Above it is of a dirty brownish green; below the colour is dingy white.

The *head* is oval, and broad in proportion to the body, being nearly twice as wide. The upper *jaw* is blunt, and projects far beyond the under, which is sharp-pointed. It has tubular *nostrils*. The *eyes* are small, and high up.

The *body*, in proportion to its length, seems slenderer than that of the common eel. The *lateral lines* can scarcely be traced.

The number of rays in the *fins*, owing to their slenderness, and to the thickness of the skin, cannot be ascertained. The *pectoral fins* are rounded, and very short.

4th Species.—*Muræna bagio*.

A *muræna* with the upper jaw by much the longest; with the back, tail, and anal fins united into one, and with the body of a dirty brown above, having no remarkable spots, but with a distinct lateral line.

This eel has a strong resemblance to the *Taleo paum* of Dr Russell, (Indian Fishes, Vol. I. No. 36,) in the disposition of the teeth, the mark by which eels can be best arranged, although I was not aware of the circumstance in time to avail myself of it in describing most of the species. Dr Russell’s fish is of a shining golden colour.

The *bagio* is found in the estuaries of the Ganges, and
grows to eighteen inches or two feet in length. The under parts are of a white colour, and, where this unites with the brown of the back, the sides are covered with dots.

The head is narrow and long, and ends in a sharp point. The mouth is very wide, and opens straight back. The jaws do not protrude in opening, and are blunt and covered by lips. In the fore part of each jaw are about six long sharp teeth. In the sides of the upper jaw there are none; but in those of the under jaw there are many small ones. In the middle of the palate there are three rows. The teeth in the side rows are small and irregularly crowded; in the middle row they are placed at a distance from each other, are large, compressed, and divided into lobes. The eyes are high, large, and oblong, with circular pupils. The nostrils are double, the anterior apertures being tubular. The gill-covers are small. The membrane which ties them down is long and thick, and streaked with several fine rays, which cannot be distinctly numbered, and which leave a small crescent-shaped opening below each pectoral fin.

The body is slightly compressed. The lateral line runs straight and high on the side, but highest before. The vent is before the middle.

The fin, composed of the dorsal, anal, and tail fins, extends from the nape to the neck, and has about two hundred and sixty rays above, and two hundred and twenty below. The pectoral fins are low, small, and sharp-pointed, each containing twelve rays.

5th Species.—Muræna raitaborua.

A muræna with the upper jaw longest; with the colour above purple with black dots; and with the back, tail, and anal fins distinct.
On account of the number of fins this eel is nearly allied to the fish described by Russell, (Indian Fishes, Vol. I. No. 34,) which wants the dots on the body, and has three apertures on each side of the nose.

This eel seldom exceeds a foot in length, and is less disgusting in appearance than most fishes of the kind. The under parts are white.

The head is small, oval, and sharpish. The mouth is small. In each nostril there are two apertures; neither of them tubular. There are strong teeth in both jaws. The eyes are small, high, and far forward. There are no gill-covers; but a very dilatable membrane, which is striated with some slender rays, that cannot be exactly numbered, and leave a small round opening at each pectoral fin.

The body is not compressed. The lateral line runs straight along the middle of the side. The vent is behind the middle. The tail tapers to a blunt end.

The back fin is behind the middle, and contains thirty-two rays of nearly equal length. The pectoral fins are minute and rounded, and each contains eight rays. The anal fin commences near the vent, and contains fifty rays of nearly equal length. The tail fin is rounded, and contains sixty rays.

V. Genus.—Macrognathus.

Fishes of the second order, covered with very minute scales, somewhat like a serpent, armed with prickles before the back and anal fins, and having a fin on the tail.

The fishes of this genus were formerly included among the Ophidiums; and, as the species of both were not very numerous, one genus might, perhaps, have included the whole without inconvenience. While there was only one genus, the specific names aculeatum and armatum, given to two species,
were very proper; because several other species were de-
void of prickles; but since the division, as all the species
of Macrognathus have numerous prickles, these names have
become absurd, and should be changed by the first systematic
writer.

The fishes of the Macrognathus genus have less of a dis-
gusting appearance than those called Muræna, and are more
sought after by the natives; the highest of whom in Bengal
make no scruple of eating them; and by Europeans they are
esteemed the best of the eel kind.

All the species of Macrognathus are long slender fishes,
considerably compressed at the sides. They are slippery,
with very minute smooth scales, and at both ends terminate
in a point.

The head is narrow, compressed, smooth, and lengthened
out into a snout, which tapers to a sharp end. Their mouths
are small, and situated under the snout, at some distance from
the extremity. Two of the species have small teeth in both
jaws; but in the third these organs are scarcely, if at all, ob-
servable. The eyes are small. There are always two tubular
nostrils near the extremity of the snout; and in some species
there are other two apertures towards the eyes. The gill-covers
are large and distinctly seen, and do not conceal their mem-
branes, which cover the sides of the throat. The openings to
the gills are large, and one is placed on each side of the neck.
The edges of the back and belly are convex; those of the tail
are sharp above and below. The lateral lines are placed high,
and are straight and smooth.

The back and anal fins are linear; and the former is placed
far back along tail. Before each are several prickles, capable of
being erected, or of being laid back into a furrow, by means
in general of a small membrane. Their number varies in dif-
ferent individuals of the same species, but is always by far the
greatest on the back. The pectoral fins are placed low, and are very short and rounded; as is also the case with the tail fin. The number of rays in the fins cannot, in general, be ascertained with exactness, owing to their slenderness, and to the thickness of the skin.

That part of the generic character given by La Cepede, (Hist. des Poissons, Tome II. p. 283,) which states the tail fin to be distinct from those of the back and vent, is objectionable, as in one of the two species, which he describes, the three fins are united.

1st Species.—Macrognathus armatus. Plate XXXVII.

Fig. 6.

A macrognathus with fins of the tail, vent, and back united; Macrognathus armatus, La Cepede, Hist. des Poissons, Vol. II. p. 286.

Ophidium simack, Walbaumii, editio Artedii.

This species, owing to the length of the body, and to its being less compressed than the others, approaches nearest the Muraenas. It is often found two feet in length, and is esteemed the best for eating. It is found in the rivers of Bengal, both salt and fresh.

The colour of this fish is green, variegated with many black spots and dots. In such as that from which the drawing was taken, being young, a winding longitudinal stripe runs back from the snout along the lateral line, uniting the spots into irregular transverse bands. The breast and back fins are spotted with black.

The head is half oval, and flat above. The mouth is larger, and the snout shorter than in the other species. The lips are thick, with scarcely any bone; the inferior one is very blunt. In both jaws, which do not protrude in opening, are many sharp teeth, nearly equal in size, and closely imbricated. The
tongue is blunt, and free from the under jaw. The palate is smooth. The nostrils are single. The eyes are far back in the middle of the head. The gill-covers are scaly.

The tail is blunt. The vent is near the middle. The prickles before the back fin are about thirty-seven; before the anal fin they are two in number.

The back, tail, and anal fins can only be distinguished by the rays of the tail being a little longer than the others. Those in the back part are from eighty-three to eighty-five, those in the tail seventeen, and those in the vent part from eighty-eight to ninety. Each pectoral fin contains twenty-one divided rays.

2d Species.—Macrognathus aculeatus.

A macrognathus with several eye-like spots on the back fin, which is distinct from that of the tail.

Macrognathus aculeatus, La Cepede, Hist. des Poissons, Tome II. p. 284.

Ophidium aculeatum, Bloch, Ichth. Tome IV. p. 60, Planche CLIX. fig. 2; Bonnaterre, Tabl. Encycl. page 41, Pl. XXVI. fig. 90.

This fish, if the native names are rejected, should be called M. ocellatus. Every where in the Gangetic provinces it is found in ponds, and grows from six to twelve inches in length. The colour of the upper parts is greenish with black dots, of the under yellowish. Above the lateral line, on each side, is a broad whitish stripe. At the roots of the dorsal fin are from three to seven eye-like spots, consisting of a black centre surrounded by a yellow ring. On the back and anal fins are scattered black dots, and two yellowish longitudinal stripes pass on the former, one on the margin, the other on the middle. The tail fin is spotted with yellow.

In neither jaw are there any teeth. The lips are fleshy, with
very minute bones. Each nostril has two apertures. The eyes are situated high. The gill-covers are scaly. The membrane contains about five rays.

The vent is behind the middle. Before the back fin are about twenty distinct prickles; before the anal fin there are three.

The back fin is arched, and contains about fifty-one rays. The pectoral fins are low, and each contains twenty rays. The anal fin is arched, and contains about forty-eight rays. The tail fin is distinct from both back and anal fins, and contains fourteen rays.

3d Species.—Macrognathus pancalus. Plate XVII. Fig. 7.

A macrognathus with the tail fin distinct; and with many black and white dots on the body.

This is a beautiful fish, which is found in tanks, and grows to from four to six inches in length. The colour above is green, and below white, marked on the sides with many black dots and small white spots. The hinder part of the back fin, and those of the vent and tail, are brownish with many black dots, forming transverse stripes.

The jaws contain minute teeth. Each nostril has only one aperture. The scales on the gill-covers are not visible. Each of the membranes covering the gills contains four rays.

The tail is sharp. The scales are very minute. The prickles before the back fin are about twenty-five; before the anal fin they are three in number.

The back fin is arched, and contains about forty rays. Each pectoral fin contains twelve; and the anal fin, which is arched, has about twenty-five.
VI.—Genus Trichiurus.

Fishes of the second order, with bodies very much compressed, and ending in a tail, which is drawn out to a long narrow point, and has no fin.

1st Species.—*Trichiurus lepturus.*

A *trichiurus* with the under jaw longer than the upper.

This fish, by the English in India, is called Bombelo, has a rich taste, is easily dried in the sun, and is found in great quantities in our estuaries. Bloch, (*Ichth. Planche CLVIII.*) Bonnaterre, (*Tabl. Encycl.*) and La Cepede, (*Hist. des Poissons, Tome II. p. 182, Pl. VII. fig. 1,) allow only one hundred and seventy rays in the dorsal fin of their *Trichiurus lepturus*, which frequents the fresh waters of South America; and La Cepede's figure represents the lower jaw as terminated by an acute turned-up point. This leads me to suspect that their fish and ours are different species, although no doubt very similar; and I suspect the same of Dr Russell's *Trichiurus lepturus*, (*Indian Fishes, No. 41,) which has one hundred and twenty rays in the back fin, and a sharp under jaw. Perhaps, therefore, three fishes have been included under one name; but this being uncertain, I think it unnecessary to multiply distinctions, and shall only add a full description, so that those who have an opportunity may judge how far any differences to be observed in different places may be adequate to distinguish these kindred fishes into different species.

Our Bengal fish is about a foot in length, very long, and much compressed, so as to resemble the blade of a very sharp-pointed sword. It is everywhere of a bright silver colour.

The head is very much compressed, and devoid of scales. The under jaw is the longest, and ends very blunt. In both
GANGETIC FISHES.  
Order II.

jaws are long distant teeth, and at the end of each are two longer than the others. The eyes are high. Each of the nostrils, which are near the eyes, has one aperture. The gill-covers are large, and are finely cut on the edges. The openings of the gills are large.

The body is without scales. The back is arched, and sharp-edged. The belly is straight, and blunt-edged. The tail has both edges sharp, beneath is indented with about seventy-four small prickles, and terminates in a very long slender point, which, towards its end, resembles a bristle. The vent is before the middle. The lateral line on each side is bent down from the nape, and is below the middle.

The back fin is very long, and contains one hundred and fourteen rays. The pectoral fins are sharp above, and very short, and each has eleven rays. There are no other fins.

VII.—Genus Cynoglossus.

Fishes of the second order, with both eyes on one side of the head, and with a flat body, formed for swimming on the side opposite to the eyes.

1st Species.—Cynoglossus lingua.

A cynoglossus with the eyes on the left, with no pectoral fins, and those of the back and tail united with that behind the vent.

This fish has the utmost affinity to my Achirus cynoglossus, which will be afterwards described, to the Achirus bilineatus of La Cepede, and to the Jeree poloo of Russell; but, as it totally wants the ventral fins, it must be placed in this order.

By the English of Calcutta it is called a Sole, and equals in quality and size this most valuable fish; but in that city it is
not very common, as it is found only in the estuaries that are strongly impregnated with salt. The specific name is a Latin translation of that given to it by the natives. The generic appellation is taken from its shape, which is long, oval, very much flattened. Above it is rough, and below smooth. The colour of the upper or left side is brown with some gloss of gold, and is clouded with irregular black spots. The right side is white.

The head, viewed from above, is oval, small, and blunt. The mouth is small, at some distance behind the extremity of the nose, and passes very obliquely towards the eyes. The lips are fleshy: the upper one is the longest, incurved, sharp, and without bones; the under one is blunt. There are no teeth. One nostril is placed between the eyes, and the other between the lower eye and mouth. The eyes are near each other and small.

The tail is sharp. On the right there is no lateral line, on the left there are two; one near the back, the other running straight along the middle. The vent is close to the throat, a little obliquely towards the right side.

There is only one fin, which extends from the crown of the head round the tail to a little before the vent, where it takes a slight bend to the left. A small elongation of rays marks in some degree the part belonging to the tail, which contains eight rays, while the part on the back contains about one hundred and forty, and that toward the vent has one hundred and eleven.
ORDER III.

FISHES HAVING THE DORSAL SPINE OF BONE AND THE VENTRAL FINS PLACED BEFORE THE PECTORALS.

I. Genus.—Batracoides.

Fishes of the third order, with a large depressed head, and with a very large mouth, which is surrounded by tendrils.

1st Species.—Batracoides gangene. Plate XIV. Fig. 8.

A batracoides with a body devoid of scales, but scattered over with short filaments; with three prickles on the back, and four on each side of the head.

This fish has a strong resemblance to the Batracoides tau of La Cepede, (Hist. des Poissons, Tome II. p. 452;) which, by Bloch, (Ichth. Tome II. p. 150, Pl. LXVII. fig. 2 and 3) has been classed in the genus Gadus along with the cod, haddock, whiting, &c. from which it has been most properly removed. I doubt much whether our fish be different from the Cottus gruniens, although the number of rays in its fins differs somewhat from that stated by Bonnaterre, (Tabl. Encyclop.) and although a Cottus should have the ventral fins placed behind the pectorals; but in Bloch's figure of the Cottus gruniens the fins are placed as in the fish I am now describing.

The gangene is found in the salt-water estuaries of the Ganges, is an ugly animal, does not exceed a span in length, and when frightened emits a remarkable creaking noise. It is of a conical shape, slippery, and its colour is variegated with black and brown as it were in clouds. The fins are yellowish-brown variegated with black. The eyes are reddish.
The head is depressed, blunt, very large, and has scattered on it many soft short filaments, of which those nearest the jaws are longer and branched. At the upper angle of the gill-covers, on each side, are four recumbent prickles. The gap of the mouth, situated at the extremity of the head, is very wide. The jaws are depressed, do not protrude in opening, and the under one is the longest. The lips are fleshy. In each jaw there is a belt of numerous teeth set close without order. The tongue is smooth. The eyes are high and far forward; they are remote from each other, small and circular. The nostrils are not distinguishable. The gill-covers are small and covered with skin. Their membranes are very long, and each contains four rays. The apertures are of moderate size, and close to the pectoral fins.

There is no lateral line nor scales, but over the body are scattered many short soft filaments. The vent is near the middle.

There are two fins on the back: the first is small, and contains three prickles; the hinder one is long, and contains nineteen soft rays. The pectoral fins are rounded, and inserted into a projecting fleshy process: each contains twenty-two soft rays, every one of which is twice divided into two. The ventral fins are situated on the throat, are distinct from each other, and commence under the membranes of the gill-covers: each contains one strong prickle and five soft rays. The vent fin has sixteen rays. The tail fin has about fourteen, and is rounded.
ORDER IV.

FISHES HAVING THE DORSAL SPINE OF BONE, AND VENTRAL FINS PLACED IMMEDIATELY UNDER THE PECTORALS.

I. Genus.—Gobioides.

Fishes of the fourth order, with the two ventral fins united into one, with a fin on the tail, and with only one fin on the back.

The two species of this genus, which I have seen in the Ganges, are pretty common, but are in little request among the natives, especially among the Hindus, most of whom abstain from eating them. They grow to about a foot in length, and have a strong affinity to the Gobioides anguilliformis of La Cepede, or the Gobius anguillaris of Linnaeus. Both, indeed, differ very much from the description of the Gobius anguillaris given by Walbaum in his edition of Artedi, (Vol. II. p. 200;) but this excellent ichthyologist confesses, that the fish which he meant was different from that of Linnaeus. The differences between our Gangetic fishes and the Gobioides anguilliformis of La Cepede (Hist. des Poissons, Tome II. p. 577) will be best seen by comparing the descriptions.

Both our Gangetic species have long slender eel-like bodies, stained more or less with red. Their fins are without spots.

Their heads are small, blunt, and devoid of scales. Their mouths are large, and descend obliquely backward, the under jaw being somewhat the longer. Their eyes are minute, and on the summit of the head. Their gill-covers consist of single
Goboides.  GANGETIC FISHES.  67

plates, are quite entire on the edges, are covered with a thick smooth skin, and move freely. The membranes of the gills project under the covers, and leave on each side a moderate aperture.

The lateral line is in the middle of the side, and is straight. The vent is before the middle.

There are six fins. The dorsal runs nearly the whole length of the back, and all its rays are nearly equal to each other in length. The pectoral fins are very short, and rounded. The ventral fin, composed of two united, is concave below, short, and rounded. The anal fin extends the whole length of the tail, and its rays are nearly equal in length to each other. The tail fin is oval, and ends in a very sharp point.

1st Species.—Gobioides rubicundus. Plate V. Fig. 9.

A gobioides with the back, tail, and anal fins united, and with forty-six rays in the first, and forty in the last.

This fish is found in the estuaries of the Ganges. It is of a lurid appearance, and faint colours; dirty brown above, and red below.

The head is wider than the body, and marked near the snout with a kidney-shaped depression. The upper jaw in opening is protruded; the under ends in a point turned inwards. In each jaw is a row of long sharp uncovered teeth, which project forward. On the inside of these large teeth are many small ones, scattered without order. The tongue is smooth, fleshy, blunt, and tied down its whole length. The palate is smooth. Each nostril consists of one small aperture near the eye. The gill membrane contains five rays.

The throat projects a little. The lateral line is sunk, and sends off veins, as it were, towards each side. There are no scales. The tail is like a wedge.
The back fin contains forty-six rays, each divided into two. The pectoral fins are near the middle, and contain many minute rays, which I cannot number. The ventral fin contains twelve divided rays. The anal fin contains forty rays. The tail fin, although united with the dorsal and anal, is readily distinguishable from both. The number of its rays I cannot satisfactorily ascertain.

2d Species.—Gobioides ruber.

A gobioides with dorsal and anal fins distinct from that of the tail, the former containing fifty-five rays, and the latter fifty-two.

This fish I have found in the estuary below Calcutta. The whole is of a strong but dirty red colour.

The head is rather narrower than the body. Both jaws contain teeth, which are concealed by fleshy lips; nor, when opened, does the upper protrude. The nostrils are not distinguishable. The rays of the gill membrane are not to be seen, owing perhaps to its thickness.

The body is covered with small remote scales.

Each of the pectoral fins has twenty rays. The ventral has ten. The rays of the tail fin are sixteen.

II. Genus.—Gobius.

Fishes of the fourth order, with the ventral fins united into one, and with two fins on the back.

This genus, of which I have observed twelve species in the Ganges, may be divided into three kinds, differing a good deal in their appearance and manner of life.

1st, Such as resemble eels in the form of their bodies.
2d, Such as have their pectoral fins inserted into a muscular
protuberance, analogous somewhat to the shoulder in quadrupeds.

3d. Such as have short compressed bodies, without the above mentioned protuberance.

Of the first division I have found three species. They have a very strong affinity to the two fishes last described, and by the natives are considered as belonging to the same genus, which those of Bengal name Changua; but the Changuas belonging to the genus Gobius are not near such ugly looking animals as the Gobioides, and are considered as excellent eating by all ranks of the natives. When alarmed, these fishes, like eels, very suddenly disappear in the sand or mud, in which they dig with great facility. I have heard of two other fishes (no doubt species of gobius) that have similar manners; but I had no opportunity of examining them, nor of knowing whether they belonged to this division, or to one of the other two. The one is named Baliya kadi, and, from its name, should belong to the third division. The other is named Kadi changua, and, from its name, should belong to the first. The general characters belonging to this division are as follows:

They are small fishes, from six inches to a foot in length, very slender, like eels, and variegated with numerous spots or dots.

The head is blunt, slopes much from the eyes, and is small. The mouth is low in the head, and opens horizontally rather wide. The upper jaw is the longest, and does not protrude in opening. Both contain a single row of teeth turned forward; and at the end of the under one there is a tubercle containing two teeth larger than the others. The eyes are on the summit of the head. The gill-covers are smooth, and move freely. The membrane is distinctly visible, and its rays may be
readily numbered. The openings of the gills are of moderate size.

The lateral line is in the middle of the side, and straight. The vent is before the middle.

There are seven fins. On the back are two, of which the hindmost is by much the longer, and its rays are nearly of equal lengths; neither has prickles. The pectoral fins are short and round. The ventral fin contains twelve rays. The anal fin runs almost the whole length of the tail, nearly opposite to the hindmost on the back, and its rays are all nearly of equal length. The tail fin is oval, and ends in a sharp point.

These fishes have a strong affinity to the Gobius lanceolatus of Bloch, (Ichth. Tome II. p. 7, Plate XXXVIII. Fig. 1,) but are abundantly distinct species.

1st Species.—Gobius bato. Plate XXXVII. Fig. 10.

A gobius with an eel-like body, with five rays in the first dorsal fin, twenty-one in the second, and twenty-two in the fin behind the vent.

This small fish is found in the estuaries of the Ganges. The body is slippery, above of a pale green colour, with numerous black dots, and beneath white, with a silvery gloss on the sides. The whole is somewhat diaphanous, so that the muscles are visible, their divisions forming, as it were, veins which proceed from the lateral lines. The upper fins are dotted. The eyes are golden coloured.

The mouth is very large. The upper lip is fleshy; the under scarcely observable. The teeth are sharp, and many of them have a double point. The tongue is blunt, its root is covered with tubercles, and it is of a green colour, with a golden gloss. What I take to be the nostrils, are two minute tubercles on the
sides of the upper lip. The eyes are rather small and globular, but do not project from the head: their pupils are circular. Each of the gill-covers consists of two plates: their membranes contain three rays.

The tail is wedge-shaped. There are no scales.

The dorsal fins are slightly united. The first is no higher than the second, and is rounded: its rays are undivided, and bent back at their ends; those of the second are split into two, and recurved at the ends, the last being divided to the root. The pectoral fins are near the middle, and each contains twenty-one rays. The ventral fin forms a kind of oblique hood, is oval, and ends in a sharp point. The rays of the anal fin are recurved, and the last is divided to the root. The tail fin contains about twenty-two rays, some of which on each side are very short.

2d Species.—Gobius changua. Plate V. Fig. 10.

A gobius with an eel-like body, with five rays in the first, and thirty-one in the second back fin, and with twenty-nine in that behind the vent.

This species is found in the estuaries of the Ganges.

The body is slippery, above of an olive colour, clouded with black dots, and beneath white. The tail fin is beautifully spotted with black. The eyes are white.

The head is devoid of scales. Both lips are fleshy: the upper one, on each side, has a sharp projection, perhaps the nostrils? The teeth are straight, and rather blunt. The tongue is blunt and smooth. The eyes are small and protuberant, and approach close to each other: their pupils are circular. The gill-covers are simple; each of their membranes contains four rays.

The tail ends in a rounded wedge. The gill-covers and
body are covered with minute remote *scales*, which adhere firmly.

The *first dorsal fin* is rounded, slightly connected with the second, and no higher: its rays are undivided and recurved; those of the second are recurved, and branch at the tops. The *pectoral fins* are situated low, and are of an oval form, each containing eighteen branched rays. The *ventral fin* is of an obliquely hooded form, and oblong shape. The rays of the *anal fin* are branched; the *tail fin* contains eighteen.

3d Species.—*Gobius viridis*. Plate XXXII. Fig. 12.

A *gobius* with an eel-like body, with five rays in the first, and twenty-six in the second dorsal fin, and with twenty-six in that behind the vent.

This perhaps may be the *Gobius pectenirostris* of La Cepede, (*Hist. des Poissons*, Tome II. p. 542,) but the description which he gives is so short, that I cannot ascertain the point.

This small fish is found in the estuaries of the Ganges.

The *body* is smooth, above of a dark green *colour*, spotted with black, beneath white. The back and tail fins are coloured like the back, and of the former the first, and the latter are edged with black. The *eyes* are golden coloured.

The *lips* are fleshy: the upper is double, the outer having a sharp projection on each side; while the inner of the upper and the under lips are fringed, as it were, with short tendrils. The *teeth* are remote, blunt, and parallel to each other. The *nostrils* are near the *eyes*, which are quite contiguous to each other, and the animal possesses the power of protruding them very far, and of again drawing them within the level of the head. They are small, and have oval pupils turned towards the side of the head. The *gill-covers* consist of one plate without scales, and each of their *membranes* contains three rays.
The belly is rather protuberant, and the tail is compressed. There are very minute scales on the body and upper part of the head.

The first dorsal fin is quite separate from the second, and at least three times higher. It is in form of a wedge, and supported by soft undivided rays, the middle one of which is much the longest, and the two outer ones by much the shortest. They are situated close together, with scarcely any intervening membranes. The rays of the second fin are subdivided at the ends, and the last is divided to the root. The pectoral fins are situated low, and are rounded; each contains nineteen rays. The ventral fin is plain and oval. The rays of the anal fin are divided, the last being split to the root. The tail fin is oblique, and contains sixteen rays.

Of the second division of the genus gobius, one species only, the G. schlosser, was known to La Cepede; but in the Ganges I have seen five species, all perhaps distinct from that described by the French naturalist. It seems to be of this division of fishes that Pliny writes, (Hist. Mundi, Lib. I., Cap. 19,)

"Exit in terram—et in Indiae fluminibus certum genus piscium, ac deinde resiliit."

In fact, the fishes of this division are found in the estuaries, and, while the tide is retiring, remain on the mud which the water has just left, and on which they move, with considerable ease, by means of the muscular protuberances in which their pectoral fins are inserted. While on the mud, they have an excellent opportunity of seizing the small aquatic animals that are returning to the river with the last drainings of the tide. At the same time, these fishes, which are quite defenceless against birds, keep always so near the water, that, with one spring, they can throw themselves into it, in which operation, also, they are powerfully assisted by the muscular protuberances
above mentioned. The habit which these fishes have of remaining on the wet mud, not only is a means of more readily procuring food, but secures them from numerous fishes of prey, to the attacks of which their defenceless size would expose them; and they are singularly enabled to watch against the attacks of all their enemies, by the structure and position of their eyes, which entirely resemble those of the *Gobius viridis* above described, a fish which has also the habit of passing much of its time in the air, and serves to connect the two first divisions of the genus *gobius*.

Besides the muscular protuberances, and the singular position of the eyes, by which this second division of the genus *gobius* are remarkable, all the species which I have seen agree in the following particulars.

They are small fishes, seldom exceeding three or four inches in length, although occasionally they are found a foot long. They are found in great numbers, but are little sought after by the natives, and never used by the Europeans. Their general colour is dull, so as much to resemble that of the mud in which they delight; but their fins, when spread, possess very considerable beauty. As to form, the transverse section of their bodies is nearly circular; but, although long in proportion to their thickness, they have nothing of that flexibility which distinguishes eels or serpents. Their tails are compressed, and end in the form of a wedge.

Their heads rise up gently from the first back fin to the eyes, and then slope down suddenly to the mouth: they are small in proportion to the animal, and covered with scales. Their mouths are large, and situated low in the head, parallel to its lower part. The under jaw is the shortest. The lips are fleshy. The teeth vary in the different species, but all have a single row in each jaw. Each nostril has one small aperture
close to the eyes. The gill-covers move freely, and expose the membrane to view. The aperture of the gills is of moderate size.

The vent is nearly in the middle. There are small scales all over the body, and on the greater part of the head.

The dorsal fins are quite distinct. The rays of the first are undivided, but not prickly, and are longer than those of the second; all of which are nearly equal in length. In all the species that I have seen, all these rays are separated by distinct wide membranes; in which respect they differ from the Nettee Kunla Motah of Russell, (*Indian Fishes*, Vol. 1. No. 54,) a fish nearly allied to them; but, as Dr Russell says, that the rays of the first dorsal fin unite into a setaceous thread, his fish has also a strong affinity to my *Gobius viridis*, although it belongs, no doubt, to this second division of the genus. The pectoral fins are situated low, and are rounded. The ventral fin always contains twelve rays; but differs in shape in different species. The anal fin is placed opposite to the second on the back, and is of a similar form. That of the tail is very oblique, and always undivided, ending in a sharp point.

4th Species.—*Gobius plinianus*. Plate XXXV. Fig. 13.

A gobius with the pectoral fins inserted into a muscular protuberance; with five rays longer than the membrane in the first fin of the back; and with twenty-six rays in the second fin of the back, as well as in that behind the vent.

This being the most common species, and all the native names of these fishes being generic, I have named it after Pliny, to commemorate the care which this distinguished Roman bestowed on the investigation of nature.

This fish above is of a brownish colour, and beneath whitish, with many irregular and incomplete transverse black belts. All
over the head are many little tubercles, which, on the lower parts, are white or bluish. The dorsal fins are beautiful: the first is yellow, with bluish spots, and the second is dusky, with incomplete belts of white and blue, edged with black. The pectoral and tail fins are edged with black.

The head is wider than the body. The under jaw, which wants a lip, has, in its middle, a protuberance containing two erect teeth. On each side of this protuberance are many teeth, parallel and near to each other, and projecting forward. In the upper jaw are about six sharp teeth, remote from each other. The upper lip is pendulous, and on each side has a sharp projection. The tongue and palate are blackish. The gill membrane on each side contains three rays.

The scales on the head and back are remote from each other, and circular; on the sides and belly they approach near, and are quadrangular; on the tail they are imbricated. There is no lateral line.

The first dorsal fin is rounded, the two outer rays being the shortest, and the one in the middle the longest. It is more than twice the length of the rays of the second fin; and all exceed the membrane by about a third of their length. The first five rays in the second back fin are undivided, the next seventeen are divided into two, and the last four are more subdivided. The pectoral fins are indented on the edge, each containing seventeen bifid rays. The ventral fin forms a kind of oblique hood, nearly circular: one ray on each side is simple, the others are compound. The fin of the tail has seventeen rays, of which some of the lower are very short.

5th Species.—Gobius Septemradiatus.

A gobius with the pectoral fins inserted on a muscular protuberance, and with seven short rays in the first dorsal fin,
thirteen in the second, and fourteen in that behind the vent.

This comes nearest the *G. schlosseri* of La Cepede, but differs somewhat in the number of rays in the fins; and in other respects his description is so short, that no one can be certain whether or not this and his fish are of the same species.

With respect to colour, the black belts, very conspicuous on the fourth species, on this little fish are scarcely observable; and it has very few white or blue spots on its body, nor any tubercles on its scales. The first dorsal fin is black, with a transparent edge; the second is transparent, with two black longitudinal stripes. The pectoral fins are entirely transparent.

The under jaw, which is covered by a lip, has no protuberance in its centre, and contains a few erect teeth, while there are many in the upper jaw. The upper lip is double, the outer one having a sharp process on each side, while the inner consists of two lobes. The tongue and palate are white. Each membrane of the gill-covers contains two rays.

There are no lateral lines, and all the scales are imbricated.

The first back fin slopes gradually down from the first ray, which is the longest; but, like the others, scarcely exceeds the membrane in length. The first nine rays of the second fin are undivided, the tenth is bifid, and the three last are branched. In each of the pectoral fins are thirteen rays. The ventral fin is almost plain. The rays of the anal fin are undivided. The tail fin has seventeen rays, of which two or three below, and five or six above, are very short.

6th Species.—*Gobius novemradiatus.* Plate II. Fig. 14.

A gobius with the pectoral fins inserted into a muscular
protuberance, with nine rays in the first dorsal fin, fourteen in the second, and fifteen in that behind the vent.

This little fish, like the last, has no tubercles on its scales, and scarcely any traces of the black coloured belts by which the *G. plinianus* is distinguished; but it has some white spots on its lower parts. The first back fin is black edged with white, with red membranes between the first three rays, and with some intermixture of white behind. The second fin is white, with two longitudinal black belts. On the centre of each pectoral fin there is a large rusty spot.

The upper lip is double, the outer having on each side a sharp projection, and the inner consisting of four lobes. There are many parallel close set teeth in the upper jaw, six large teeth in the middle of the under one, and many small ones in its sides. I can observe no rays in the membranes of the gill-covers.

The lateral line may be traced running straight in the middle of the side.

The first dorsal fin slopes gradually down from before, and its first ray is double the length of the membrane, while the others scarcely exceed it. The last ray of the second dorsal fin is divided to the root. Each pectoral fin contains thirteen rays. The ventral fin is in no way concave below; but consists of two blunt lobes, the innermost ray of each being divided to the root into four. The last ray of the anal fin is divided to the root into two. The tail fin contains thirteen rays, some of which on each side are short.

7th Species.—*Gobius tredecemradiatus.*

A gobius with the pectoral fins inserted on a muscular protuberance; with thirteen rays in the first, and fourteen in the second back fin; and with twelve in that behind the vent.
This little fish, like the two preceding, wants the tubercles and belts, which distinguish the *G. plinianus*. The back and belly are of a brownish colour, the sides blackish, with many small green spots. The back fins are black at the bottom, and blue towards the edges, which are dotted with red. The pectoral fins are olive, with blue membranes. The vent fin is dotted with black.

There is a tubercle shaped like a crescent between the eyes and mouth. The lips resemble those of the *G. septemradiatus*. There is no tubercle on the middle of the lower jaw. The teeth in both are strong, erect, and distant from each other. The tongue and palate are white. Each membrane of the gill-covers contains three rays.

All the scales are imbricated. The lateral lines cannot be traced.

The two back fins approach close to each other. The first slopes gradually backward, and its first ray is double the length of the membrane, while the others are no longer. The first ray of the second fin is undivided, the others are bifid, and the two last stand very near each other, and might be reckoned as one. In each pectoral fin there are twelve rays. The ventral fin has no cavity below, and is very deeply divided into two lobes. The fin behind the vent contains twelve simple rays; the tail fin has fourteen, besides some very short ones on its under side, which cannot be distinctly numbered.

The third division of the genus *Gobius* is better known to naturalists than the two former, most of the species that they describe coming under this head. I have found five species in the waters tributary to the Ganges, all of them distinguished by the following circumstances.

They approach in form the *G. niger* of Bloch, (*Ichth.* Tome II. Pl. I. fig. 2, 3, 4, et 5,) the sea gudgeon or pink of the English. Their bodies are long in proportion to their thickness,
but have nothing of the eel-like flexibility. They are slightly compressed, and their tails are shaped like a wedge. The back slopes gradually and slowly from the first fin to the mouth.

Their heads have no scales, and are blunt. They have teeth in both jaws. Their eyes are placed high up, but not near each other; nor do they project from the head. They are rather small.

The scales on the body are rather large in proportion to the size of the fish.

The back fins are quite distinct from each other. The pectoral fins are inserted directly into the side without the intervention of a muscular protuberance.

8th Species.—Gobius Gutum.

A gobius with eleven rays in the second back fin, which is nearly as broad as the first; with thirteen rays in each pectoral; and with a diaphanous body clouded with black dots.

This fish I found in the lower parts of the Padda or Padma River, which Major Rennell calls the Great Ganges. It is three or four inches in length, and is neither very common nor much sought after. Like the following, it has a very strong affinity to the Gobius eleotris, (La Cepede, Hist. des Poissons, Tome II. p. 537.)

The body is rough, and of a greenish colour, with many black dots, clustered into irregular spots, resembling clouds in form. The fins of the back and tail are spotted.

The head is small, and narrower than the body. The mouth is situated low, and is large, the under jaw being the shortest. The teeth are sharp; the eyes small, with greenish irides, within which a white circle surrounds the pupil. In the membrane of each gill-cover there are three rays.

The lateral lines can scarcely be traced. The scales adhere firmly, and are rough. The vent is before the middle.
The first back fin contains six undivided rays, of which the two first are not separated by a membrane. The first ray of the second fin is undivided, and the others branched. The pectoral fins are rounded; the ventral is circular, and contains ten rays. The fin behind the vent has eleven rays, and that of the tail has seventeen, and is rounded.

9th Species.—Gobius giuris. Plate XXXIII. Fig. 15.
A gobius with ten rays in the second dorsal fin, twenty-two in each pectoral, and nine in the fin behind the vent.

In describing the 8th Species, I have already mentioned the affinity of this to the *G. eleotris*, but that fish has no spots on the body. The *Giuris* has a strong affinity also to the *Koker* of Dr Russell, (Indian Fishes, Vol. I. No. 51,) but differs in having much larger fins, and in the number of rays which they contain.

In all the ponds and fresh water rivers of the Gangetic provinces this is a very common fish, and it is a light well-flavoured food, much in request among the natives. It is from six to twelve inches in length.

The body is rough, of a dirty pale-green colour, with some gloss of gold on the sides, and rather diaphanous below. On the back and sides there are numerous black dots, forming large irregular spots, shaped somewhat like clouds. The second back fin, and that of the tail, are spotted with black in many rows.

The head is rather wider than the body. The mouth is very large, and descends backward. The jaws are flattened, the under one being the longest, and the upper, in opening the mouth, is protruded. The teeth are sharp, distant from each other, recurved, and large, but unequal in size. The tongue is smooth, is split in two at the end, and fastened its whole
length. The palate is smooth. Each nostril consists of two apertures placed midway between the eyes and mouth. The eyes are far back, and of moderate size. The gill-covers move freely, and conceal their membranes, each containing five rays, the three middle ones of which are very near each other. The gill openings are large.

The lateral line runs straight in the middle of the side. The vent is near the middle. The tail is rounded at the end. The scales are imbricated, terminate in an angle behind, and adhere firmly.

The first back fin is scarcely higher than the second, and contains six undivided strong rays, a little longer than the membranes, which are interposed between every two: the first is a little shorter than the second, which is the longest; the others gradually diminish in length. The rays of the second fin are nearly of equal lengths, and the fin behind ends in a sharp point. Its first ray is undivided, the others are branched, and the last is divided to the root into two, so that some may choose to say that there are eleven rays. The pectoral fins are large and round, and their rays are branching. The ventral fin is small, and forms a kind of hood below. It contains twelve branched rays. The fin behind the vent resembles the second of the back, and the first and last of its rays are simple, while the others are branched. The tail fin is rounded, and contains fourteen branched rays, besides both above and below several short undivided ones, the number of which cannot be accurately ascertained.

10th Species.—**Gobius sadanundio.**

A gobius with eight rays in the hinder fin of the back. This fish is found in the estuaries near Calcutta, and grows
to about the length of a man’s finger. The specimens I saw were somewhat putrid.

The form tapers to the end of the tail. The colour is greenish, spotted with black, and having some white on the belly. The hinder fin of the back, with those behind the vent, and on the tail, are spotted with black.

The head is oval, and broader than the body. The mouth descends obliquely backward. Each nostril has only one aperture.

The edge of the back forms an arch. The lateral lines are faint. The vent is nearly in the middle. The foremost dorsal fin slopes backward, and has six undivided rays, of which the third is the longest. The pectoral fins are rounded, each containing eighteen rays. The ventral fin has nine rays. The tail fin is rounded, and contains twenty-three rays, of which three on each side are short, and almost united.

11th Species.—Gobius chuno.

A gobius with seven rays in the second fin of the back.

This minute fish, which is from one to one and a half inch in length, is found in the estuary below Calcutta, and is of no value either for quantity or quality.

The colour is whitish and diaphanous, with some dots on the head.

The head is wide and large. The mouth descends backward, the under jaw being the longest. The structure of the teeth in such a minute animal cannot be readily ascertained, although these organs evidently exist. The eyes are far forward.

The lateral line is straight. The scales, although large, are so thin that they cannot be seen without a magnifying glass. The vent is near the middle.
The first fin of the back has five rays shorter than those of
the second, which slopes down toward the tail. The pectoral
fins are sharp above, and each contains ten rays. The ventral
fin contains five, and the fin behind the vent, which slopes
down towards the tail, has ten rays. The tail fin ends in a
slight crescent, and contains about eighteen rays.

12th Species.—Gobius Nunus.
A gobius with five rays on the second fin of the back.
This fish is found along with the former in the river below
Calcutta, and is still more minute. It is of a green colour on
the back, and below shines like silver. It has six irregular
black belts; one passing through the eyes, a second on the
gill-covers, the third at the pectoral fins, the fourth at the vent
fin, the fifth behind the second back fin, and the sixth at the
end of the tail.

The head is oval and wide. The mouth descends backward,
the under jaw being the longest. The teeth, owing to the mi-
nuteness of the creature, are scarcely discernible. The eyes
are far forward.

The lateral lines are scarcely distinguishable.

The first back fin contains six undivided rays. The pectoral
fins are sharp-pointed, and each contains ten rays. The ventral
contains the same number. There are seven in the anal
fin; and that of the tail, which is rounded, contains about
eighteen.

III. Genus.—Cheilodipterus.
Fishes of the fourth order with the ventral fins distinct, with
two fins on the back, and with the gill-covers quite entire and
unarmed, leaving a large aperture on each side.

These fishes, perhaps, should have been considered as be-
longing to the genus *Gobiomorus* of La Cepede, the affinity of the two first species to the last division of the genus *Gobius* being so great, that they are considered by the natives as belonging to the same genus, which they call Bele, or Baliya. The first species has no teeth, and the rays of its first dorsal fin are soft; but the second species, which has teeth and prickles on its back, connects it strongly with the third species, very nearly allied to several species of *Perca*. This, joined to all the species having large openings to the gills, and eyes remote from each other, has induced me to place the whole under the genus *Cheilodipterus*. Perhaps, however, by following a division of which La Cepede has not availed himself, and by separating the thoracic fishes with prickly fins from those which are unarmed, the first of the three following fishes should be separated from the other two, and should be immediately followed by the genus *Ophiocephalus*, to which it has a considerable affinity.

The circumstances common to these three fishes, besides what is contained in the generic character, are as follows:

Their length, in proportion to their thickness, is considerable, and their bodies are very slightly compressed. The head, gill-covers, and body, are covered with scales. The eyes are small and high, but at a distance from each other. There are eight fins, and the two on the back are quite distinct.

1st Species.—*Cheilodipterus culius*. Plate V. Fig. 16.

A *cheilodipterus* with the tail fin rounded, and with six soft rays in the first fin of the back.

This small fish, which grows to three or four inches in length, is pretty common in the ponds and ditches of Bengal, but is little valued. It is tenacious of life, and is remarkable for the colours above being lighter than those on the belly. In dirty
stagnant pools, overgrown with weeds, it is, indeed, almost entirely black; but, in cleaner water, the back is ash-coloured. The fins on the back and tail, and behind the vent, are diaphanous, not inelegantly variegated with black spots. There is a very dark black spot on each side, at the insertion of the upper edge of the pectoral fin.

The tail ends in form of a wedge.

The head is blunt, and forms half an oval, the upper part being flat, and the under convex. It is of a moderate size. The mouth descends obliquely backward, and has fleshy lips, the inferior being rather the longest. There are scarcely any teeth, except a slight roughness in the jaws. Each nostril has two apertures, of which the foremost is tubular. The gill-covers are dotted, covered with muscles, and move freely. They leave exposed their membranes, each of which contains four rays.

The back is nearly straight, and the belly arched. There are no lateral lines. The vent is near the middle. The scales are imbricated, of a moderate size, adhere firmly, and are dotted, but are quite smooth on the edge.

The rays in the first fin of the back are undivided, recurved, and nearly of equal lengths. The second fin is arched, blunt at both ends, and contains ten rays, of which the first is undivided, and the others branched; but the two last approach at the base, and may be considered as one. The pectoral fins are near the middle of the body, and rounded: each contains seventeen rays. The ventral fins are small and sharp, and each contains six rays. The fin behind the vent is opposite to and shaped like the second dorsal, and contains eleven rays, of which the first is very short and undivided, and the others are branched. The tail fin contains twenty-seven rays, about six of which on each side are short and undivided.
2d Species. — Cheilodipterus butis.

A cheilodipterus with a rounded tail fin; and with six prickles in the first fin of the back.

This fish is found in the river below Calcutta, but not in great numbers. It does not exceed a span in length, and is of a blackish colour, with the hinder fins spotted with red, and the ventrals with black. There are two red spots at the roots of the pectoral fins.

The head, viewed from above, is blunt, and slopes considerably downwards, so that the jaws are flattened, the under one being the longest. In both jaws are small teeth almost like bristles. Each nostril has only one aperture near the eye. The eyes are black. The gill-covers end in a point, and in each of their membranes there are seven rays.

The back is arched, the belly is straight. The lateral lines are not observable. The vent is nearly in the middle. The tail is a little compressed, and rounded at the end. The scales on the body are large in proportion, and their edges are beset with short, stiff, hair-like incisures.

The back fins are near the middle. The first is arched, and its prickles are slender. The second fin is sharp behind, and contains nine rays. There are eighteen in each of the pectoral fins, which are short and rounded. The ventral fins are rather more forward than the pectorals, are sharp pointed, and each contains five rays. The anal fin is on the fore part of the tail, ends sharp behind, and contains nine rays. The tail fin contains eight long rays, and about seven short ones, closely compacted.

3d Species. — Cheilodipterus panius.

A cheilodipterus with the tail fin ending in a straight line; and
with the first fin of the back containing nine prickles, of which the second reaches to the end of the tail.

This fish is pretty common in the estuaries of the Ganges, and affords a rather light and well flavoured diet. It grows to about a foot in length, and has a considerable affinity to the *Perca asper* and *Perca zingel* (Bonnaterre, *Tabl. Encycl.* p. 126, Pl. CXXVI. fig. 206, 207; ) but their backs are straight and their bellies protuberant, just the reverse of the case in our Gangetic fish. This is of a greenish colour, with a gloss of silver changing to purple.

The back slopes from the first prickle towards each end.

The head is long and half oval, being flat above, and the jaws depressed. The lower part is diaphanous. The upper jaw, which is the longest, in opening the mouth, is protruded. The mouth is of moderate size and horizontal. The jaws have scarcely any lips; but the bones of the upper are pretty large, and at their lower ends terminate as if cut straight across. In both jaws is a single row of small conical teeth remote from each other. The nostrils are near the eyes, each having two apertures. The eyes are yellow, with circular pupils. The membranes of the gill-covers are half exposed on the throat, each containing five rays.

The lateral line in its fore part is double; but the two branches join towards the end of the tail. The scales are of a moderate size, adhere firmly, and are edged with bristly incisures. Near the commencement of the upper branch of the lateral line is a space surrounded by a margin, which is indented like a saw. The vent is before the middle.

The first dorsal fin slopes backward, and its first prickle is very short, but the second projects far beyond the membrane, and reaches to the end of the tail. The second fin contains twenty-eight rays, of which those in the middle are shorter
The pectoral fins are short and somewhat sharp, and each contains twenty rays. The ventral fins are very short, and each contains six rays, of which the first is a short strong prickle, while the others are branched. The fin behind the vent extends along most of the tail, and contains twenty-eight rays. The tail fin contains nineteen large rays, besides some short closely compacted ones on each side.

IV. Genus.—Ophiocephalus.

Fishes of the fourth order with large scales on the head and gill-covers, which are smooth edged and unarmed; with a body very long in proportion to its thickness, and little compressed; with one long unarmed fin on the back; and with two ventral fins.

This genus of Indian fishes, first noticed by Bloch, contains a considerable number of species, all having a very strong affinity to each other, and rather difficult to distinguish by satisfactory characters, owing, in a great measure, to the number of rays in the fins being liable to a considerable variation in different individuals of the same species. The colours also vary considerably at different ages, and, I suspect, in different circumstances affecting variously the animal's health, although on this last point I cannot be certain.

All of them, that I know, afford a light and wholesome but rather insipid diet, and are very tenacious of life. In so much, that in China they are often carried alive in pails of water, and slices are cut for sale as wanted, the fish selling dear while it retains life, while what remains after death is considered as of little value.

Besides the characters mentioned as generic, all those fishes, although their colours are variegated and sometimes bright, have a lurid appearance. They have the head rounded before,
and flattened towards the jaws; and it is short in proportion to the body. The mouth is large, and descends backward, the under jaw being the longest. The lips are fleshy, with a small bone belonging to each side of the upper. In both jaws are many small teeth crowded together, with some large sharp conical ones intermixed in certain places. The tongue is smooth, and not tied down. Each nostril has two apertures; one tubular near the jaw, and the other circular near the eye. The eyes are of moderate size, and placed at a distance from each other, but rather high. The gill-covers move freely, and leave a large aperture. Their membranes cover the throat, and are there half exposed to view. They are thick; but, although the rays are concealed by the covers, these do not prevent the number of rays which they contain from being ascertained.

The body is slippery. When there are lateral lines they commence on the shoulders, suddenly bend down behind the pectoral fins, and from thence run along the tail in the middle of its depth. Some of the species, however, have no lateral lines.

There are seven fins, of which the dorsal extends from the head to near the end of the tail, and that behind the vent extends from this organ as far as the dorsal does. Both are very high, and their rays are of nearly equal lengths, but rather longer behind than before. The pectorals, which are low down, and the tail fin, are rounded. The former are shorter than the head, and the ventral fins, which are near each other, are still smaller.

1st Species.—Ophiocephalus wranlii Pl. XXXI. Fig. 17.

An ophiocephalus with from forty-three to forty-six rays in the dorsal fin; with many irregular black belts surrounding the body; and with the hinder parts of the back and anal fins spotted with black.
Although La Cepede (Hist. des Poissons, Tome III. p. 552) would seem to know this genus merely from the writings of Bloch, yet his description of the colours of the wrahl can by no means be reconciled with that given by Bloch (Ichth. Tome X. p. 117, Pl. CCCLIX.) of his O. striatus, which La Cepede considers as the same with his wrahl. This is a most barbarous name, which, were the two species the same, should, on every account, be rejected for the classical name given by Bloch; but there is reason to believe that the fishes of the two authors are different; for that of Bloch, which I have never seen, has the back of an uniform dusky colour, which, on the sides, is irregularly indented with the white of the belly; while the back and vent fins are obliquely striped, throughout their whole extent, with broad dusky lines. I doubt much of the name wrahl being Malay, as La Cepede states, because the missionary John, by whom this name was transmitted to Europe, so far as I know, had no knowledge of the countries where the Malay language prevails; nor has the word any resemblance to the soft sounds of that tongue. After the word wrahl, or what was read as such, John probably put the letters Mal. intended as a contraction for Malabar, the vulgar name by which the Tamul language is called by the Europeans in India. His European correspondents, not aware of this, have probably considered the letters Mal. as a contraction of Malay. I must, however, confess, that, in the dialects of the Tamul, which I heard, as well as in the Bengalese, the fish is called Sola, or Sol; and Wrahl is probably an erroneous reading of what John wrote.

The wrahl, or sol, is found in the ponds and rivers, both fresh and salt, of every part of India that I have visited, and grows to about two feet in length. Its upper parts are of a brownish-green colour, variegated with irregular black belts. Below the lateral lines, the sides are variegated with dark and
yellow belts, and the belly is white. The hinder extremities of the vent and back fins are yellowish, with many black spots between the rays.

The head is broader than the body, with large angular scales, on which are, irregularly scattered, several small circular cavities. On the lower part of the head are scattered many dots, collected into irregular clusters. The upper jaw has a notch at the end, and is protruded, when the mouth opens; both have a membranous veil, as it were, on their inside. The teeth are imbricated in a double row in each jaw, with many large conical ones intermixed. There are folds on the palate. The gill-covers end in a point, and each of their membranes contains six rays.

The lateral lines are plainly distinguishable. The vent is rather behind the middle. The scales on the body are imbricated, orbicular, large, and smooth on the edge, but rather rough on the surface.

The rays of the back fin are all jointed: the foremost are undivided, but nine or ten behind are branched. Each pectoral fin contains seventeen dichotomous rays. Each ventral fin contains six rays. The anal fin contains from twenty-six to twenty-eight rays like those of the back. The tail fin contains fourteen long rays, with some short ones on each side.

2d Species.—Ophiocephalus chena.

An ophiocephalus with from forty-three to forty-six rays in the back fin; with the back of an uniform colour, and with no spots on the back and anal fins.

This is no doubt the Muttah of Dr Russell, (Indian Fishes, Vol. II. No. 162,) which he considers as the same with the Ophiocephalus striatus of Bloch; but its colours differ much both from those of that author, and from those of the sol,
which by La Cepede is considered as the *Ophiocephalus striatus*. I should, however, have taken the *sol* and *chena* for fishes belonging to the same species, had not the fishermen of Goyalpara, where both are very common, considered them as distinct fishes.

Except in *colour* the *chena* differs in nothing essential from the *sol*; and, as it has been described by Dr Russell, I need not enter into any farther detail.

3d Species.—*Ophiocephalus lata*. Plate XXXIV. Fig. 18.

An *ophiocephalus* with about thirty rays in the back fin, and with many dark belts on the back, descending to a longitudinal dark irregular stripe, which passes through the eye to the tail.

Except in colours this fish differs little from the *O. punctatus* of Bloch, (*Ichth. Tome X. p. 114, Pl. CCCLVII*) which name La Cepede (*Hist. des Poissons, Tome III. p. 554*) has most wantonly changed to the barbarous *Karrowey*, that does not differ from *Gorayi*, the name given in Bengal to the young fish, while the adult is called *Lata*. The *colour* of the fish, as described by La Cepede, being of an uniform dirty white, with many small spots, can neither be reconciled to that of the *Lata*, nor to that of the *O. punctatus* of Bloch, which has its back of an uniform black colour; and in the account both of La Cepede and of Bloch the jaws are stated to be of equal lengths, which is not the case in any *ophiocephalus* that I have seen.

The *Lata* of Bengal, in the Tamul language, was called *Mota* by those whom I consulted; but the *Mutiah* of the Telingas, evidently the same name, is referred by Dr Russell to the *O. striatus* of Bloch, while the *O. punctatus* of the latter author is referred by Dr Russell to his *sowarah*, (Indian Fishes, Vol.
II. No. 163,) but the tail fin of the *sonar ah* ends in a sharp point, which is by no means the case with that of Bloch, nor with any species of *ophiocephalus* that I have seen.

Having premised these difficulties, I now proceed to state, that the *Lata* of Bengal is found in the ponds of all parts of India that I have visited; that, so far as I know, it never exceeds a foot in length; and that, for eating, it is considered far inferior to the sol.

The back is of a dirty green colour, and the under parts of a pale yellow, the two colours being separated by a broad irregular dark stripe running through the eye to the tail. Across the back, to this stripe, there run many irregular dark belts. On the sides of the adult fish are generally scattered many small black round spots, especially if the water in which the fish has lived is full of dirty weeds. These spots are always wanting in the fish when young. The back and anal fins in the adult are edged with white, and several rows of black spots extend all their length, which is also the case in the young fish, the tail fin also of which is spotted in a similar manner.

The head is wider than the body, and is covered with large angular scales, on which are irregularly scattered several small round cavities. In opening the mouth the upper jaw is very little protruded, and the bones of the upper lip are minute. In both jaws the fore teeth are crowded and small; the hinder ones are in a row, remote from each other, large, and conical. The tongue is sharp. The palate is smooth behind, but contains many small teeth adjacent to those in the jaw. The eyes are far forward. The gill-covers end in a point, and each of their membranes contains five rays.

The lateral lines are with difficulty distinguished from others formed by an elevated line, ending in a raised point, which runs along the centre of most of the scales; but the scales on
the true lateral lines end in a notch. The scales are large, adhere firmly, are smooth, and have entire edges. The vent is before the middle.

The back fin is rounded at the posterior end, and its last ray is very deeply divided into two. Each pectoral fin contains sixteen rays, of which one on each side is simple, the others are branched. Each ventral fin contains six rays, of which the first is undivided, and the others are branched. The anal fin is rounded behind, and contains about twenty branched rays: that of the tail contains twelve that are long and distinct, besides some short compacted ones at each side.

4th Species.—Ophiocephalus marulius. Plate XXII.

An ophiocephalus with from fifty-two to fifty-four rays in the back fin, and six in each ventral, and with an eye-like spot on the fin of the tail.

In all parts of India that I have visited, this fish is found in ponds and fresh water rivers; and although often found within the tide-way, so far as I know, it never frequents places where the water is salt. It is found three feet in length; but is not considered so good for eating as the Sol. In the lower parts of Bengal, the persons dedicated to religion, from some old prejudice, think it unlucky to say that it is either good or bad.

The adult fish is of a greenish colour above, with several dark irregular belts crossing the back, and terminating below the lateral lines in large black irregular spots. The under parts are whitish. There are many white spots scattered over the sides, and on the fins of the back, vent, and tail. At the root of the latter, and near its upper side, is a fine black spot, surrounded, like the pupil of the eye, by a white ring. In the
young fish the colours are very different. An orange-coloured stripe runs from the eye to the tail, parallel to the back. The dark belts descend no lower than this, nor are there any white spots on the sides, nor fins. The eye-like spot, however, is always observable on the fin of the tail; but, in the young fish, the black of the centre is surrounded by an orange-coloured ring. The fin of the back, towards its posterior part, has several pale stripes, descending obliquely backward.

The head is rather narrow. In opening the upper jaw is protruded, and its lip on each side is provided with a bone, which is dilated downward. In the whole extent of both jaws there are many small clustered teeth, with a single row of larger ones. The tongue ends in a sharpish point. The palate near the jaws has many small teeth collected in three clusters, the middle one of which, connecting the other two, is in form of a crescent. The eyes are far forward, and rather large, and have circular pupils. The gill-covers end in a sharp point, and each of their membranes contains four rays.

The lateral lines are evidently distinguishable. The vent is before the middle. The scales on the head are very large and angular: on the body they are of moderate size, smooth, and dotted; and, in general, are marked on the centre by a longitudinal elevated line.

The back fin is rounded behind, and its rays near the fore part are bifid, while those towards the tail are branched. Each pectoral fin contains nineteen rays, of which one on each side is simple, while the intermediate ones are branched. The ventral fins are sharp-pointed, and each contains one short undivided ray, and five branched ones. The anal fin is rounded behind, and contains from thirty-one to thirty-five rays. The rays in the fin of the tail are fifteen in number.
5th Species.—Ophiocephalus Barca. Plate XXXV.

Fig. 20.

An ophiocephalus with about fifty-two rays in the back fin, and five in each ventral.

This fish I found in the Brahmaputra river, near Goyalpara, where it inhabits perpendicular banks in holes dug like those of the Martin, (Hirundo.) In these it lurks watching for its prey with its head out; and, notwithstanding its strong and variegated colours, is an ugly animal. It is found three feet long, and is considered by the natives as excellent food.

The upper parts are of a dark-green colour, the sides yellow, and the under parts white. On the head, back, and sides, are many black irregular spots, with a few red intermixed. Some of those on the head are clustered round a common centre, so as to resemble the rays of a star. The back, tail, and anal fins are yellowish-olive, with numerous black spots, and the two first are edged with red. The pectoral fins are reddish, spotted with black.

The head is nearly of the same width with the body. In opening the mouth the upper jaw is protruded. The small teeth in the upper jaw are not intermixed with larger, but there is a row of the latter in the lower jaw. Immediately behind the jaw there is a line of teeth on the palate. The tongue is blunt. The eyes are far forward, and rather small. The gill-covers are blunt, and each of their membranes contains four rays.

There is no distinct lateral line. The vent is before the middle. The scales are large and smooth.

The back fin terminates behind in a sharp point, and all its rays are divided at the end. Each pectoral fin contains sixteen rays, the anal has thirty-five, and that of the tail nineteen.
68 GANGETIC FISHES. Order IV.

6th Species.—Ophiocephalus gachua. Plate XXI.

Fig. 21.

An ophiocephalus with about thirty-six rays in the fin of the back, and five in each ventral; and with irregular dusky belts across the back.

This fish, which sometimes grows to a foot in length, but seldom exceeds a span, is very common in the ponds and ditches of Bengal, and is one of those which are supposed to fall with the rain from heaven. In fact, with the first heavy showers of the season, it has been often seen leaping and wriggling among the grass; and both by natives and many Europeans is supposed to have fallen with the rain. I have, however, no doubt, that the animal, when thus discovered, has been in search of a more commodious abode. During the dry season it has suffered much from being pent up in half putrid stagnant pools, so that, when the first heavy rains fall, it is eager to enjoy the grateful supply of fresh-water, and wriggles among the moist grass in search of more room, and of the food, which must have been nearly exhausted in the pools that it formerly occupied.

The body above is of a greenish colour, and below of a dirty white. Several dark belts run across the back to the lateral lines, descending obliquely forward. The throat and insertions of the pectoral fins are bluish. The fins of the back and tail are greenish, edged first with black, and then with dirty red. The pectorals are pale brick colour, with several rows of blue spots. The anal fin is of a dirty pale bluish-green, edged with black, and then with white.

The head is wider than the body. The upper jaw, in opening, is little, if at all, protruded. The only long teeth are in the fore part of the upper jaw. The tongue is rather sharp. The gums project behind the teeth, nor has the palate any of
these organs. The eyes are placed forward. The gill-covers end in a sharpish point, and each of their membranes contains five rays.

The shoulders ascend a little from the fin. From the shoulders the lateral lines are distinct, and consist on each scale of three small elevated points with a line interposed. The vent is rather before the middle. The scales are large, imbricated, and striated.

The fin on the back is rounded behind, and its rays at the top are divided into two or more branches. Each of the pectoral fins contains fifteen divided rays, and each of the ventrals five. The anal fin contains about twenty-two divided at the tops, and that of the tail has about twelve.

7th Species?—Ophiocephalus aurantiacus. Plate XXIII.

Fig. 22.

An ophiocephalus with about thirty-four rays in the back fin; and with the colour of every part of the fish like that of an orange.

This fish I found in a pure mountain stream near Goyalpara, on the N. E. frontier of Bengal. The bottom of the torrent consisted of stones. I have put it down as a distinct species with doubt, because the fishermen gave it the same name with the last described species; and, on a close examination, I could find no essential differences between the two, except in the colours. These, indeed, are so different, that I can scarcely persuade myself that they originate entirely in a difference of the situation in which the two animals have lived.

The only difference in form that I observe is, that in the O. aurantiacus the back does not rise as in the O. gachua; nor is the head so wide in proportion, while the lateral lines cannot be distinctly traced.
The colours are, however, most widely different, the whole body and fins of the *O. aurantiacus* being of the colour of orange-peel, with some irregular stains of a redder hue, especially on the sides of the head, and on the pectoral and tail fins.

V. Genus.—*Labrus*.

Fishes of the fourth order, with the jaws protruded in opening the mouth; with the gill-covers smooth edged and unarmed; with one fin on the back; with a compressed body; and with prickles in some of the fins.

The two following species I refer to the genus *Labrus*, although their almost total want of teeth would, perhaps, require their forming a distinct genus. Notwithstanding the form of their tail fins, they approach nearer the *Labrus malapterus* of Bloch (*Ichth. Tome IX. p. 26, Pl. CCXCVI. Fig. 2*) than to any other fish described by that author. They have so strong an affinity to each other, that, among the fishermen, they are usually called by the same name; but, in the eye of the naturalist, they are abundantly distinct.

1st Species.—*Labrus Badis*. Plate XXV. Fig. 23.

A *labrus* with seventeen recurved simple rays, and eight branched in the back fin; and with three prickles and seven branched rays in that behind the vent.

This small fish, which seldom exceeds three inches in length, is found in the ponds and ditches throughout the Gangetic provinces; but is no where so common, nor is its quality so good as to render it an object of any importance.

The fish is inclined to an oval form, but is rather too long to be exactly such, and is much flattened on the sides. The scales at the base shine like silver; in other respects, the colour is subject to much variation. In young fishes, especially
those living in clear water, the body is variegated with alternate transverse belts of black and dirty green; but, in old fishes, especially if they have lived among dirty weeds, they are irregularly variegated with black and dirty red, as in the figure. On each shoulder there is always a small round blue spot, surrounded by a black ring. The back fin is blue, variegated with black; and when the fish is very dark, the same variegation extends also to the fins of the tail, and behind the vent, and even to the ventrals.

The head is of moderate size and covered with scales, slopes gradually down to the mouth, ends in a blunt form, and is nearly oval. The mouth is small, and, when shut, descends almost vertically. The jaws contain no teeth, unless a little roughness be considered as such. The tongue is smooth, and rather sharp. The palate is smooth. There are two openings to each nostril, the foremost being a short tube. The eyes, placed near the middle height of the head, are of moderate size, and convex. The gill-covers move freely, end in a point, and are covered with scales. They conceal their membranes, each of which contains five rays.

The back and belly are arched. The lateral line, near the end of the back fin, is completely separated into two portions, the foremost being high up and parallel to the back, while the hinder runs straight along the middle of the tail. The vent is rather behind the middle. The scales are rounded, and finely cut on the edges; in proportion to the fish, they are rather large.

The fin on the back reaches from near the head to near the tail, and is rounded behind. The pectoral fins are placed low, and are short and rounded, each containing twelve rays. The ventral fins are small, and each contains six rays, of which the first is short and undivided. The prickles of the anal fin are
short, strong, and separated by membranes. The tail fin is shaped like a fan, quite entire, and contains sixteen rays, of which one on each side is very short.

2d Species.—Labrus Dario.

A labrus with fourteen spinous rays, and eight branched ones in the back fin; and with three prickles and seven soft rays in that of the vent.

This fish is found in the ponds and rivers of the northern parts of Bengal and Behar, and is neither larger nor more valuable than the badis.

The colour in general is silver, with several black transverse belts; but, in dirty water, the black colour extends all over the body. The form is rather narrower than in the badis.

The head is entirely like that of the badis. The mouth descends obliquely. The under jaw is rather the largest; neither contains any observable teeth. The eyes are high, with the longest axis of the pupils horizontal. The gill-covers are rounded and scaly, and move freely, covering entirely their membranes, the rays of which I could not exactly number.

Both back and belly are arched. The vent is behind the middle. There are no lateral lines. The scales are small.

The back fin ends behind in a sharp point, and extends almost the whole length of the back. Its prickles are slender. The pectoral fins are low, and rounded: each contains nine rays, and each ventral six. The anal fin is sharp behind. The tail fin is circular; the number of its rays I could not ascertain.

I am now to treat of fishes, in arranging which all naturalists have felt the utmost difficulty; nor, so far as I can judge, does
La Cepede's arrangement appear either natural or easy; that is to say, the species included under each genus have no strong general resemblance to distinguish them from those included in other genera; and there occurs the most puzzling difficulty in determining what fishes have only one fin on the back from those having two, and those which have the bones of the head armed with spines from those which have them merely indented on the edges,—the toothlets on the edges, in many cases, being in fact strong spines, while all intermediate degrees of strength may be observed, until, in many species, the toothlets are very short and blunt. I shall here, therefore, leave La Cepede as a guide, and lest a misapplication of the names given by him or Bloch might mislead, I prefer a division of these fishes into three genera, adopted pretty generally by the Bengalese fishermen, adding to each genus a few species, which these men consider as distinct, although they have a strong resemblance to the fishes with which I have classed them.

All the fishes to which I here allude, in both jaws, have either strong conical distinct sharp teeth, or many small sharp teeth crowded together; some of the bones of their heads are distinctly indented on the edges; some of their fins are armed with prickles; and each of their ventral fins contains six rays.

VI. Genus.—Bola.

Fishes of the fourth order with strong distinct sharp teeth in each jaw; with some of the bones in the head indented on the edge; with prickles in some of the fins, and six rays in each ventral; and with opaque bodies compressed to a ridge on the back, but widening gradually towards the belly, so that a transverse section at the shoulders is somewhat triangular.

The fishes of this kind afford a very light, easy digested ali-
ment, but rather insipid; and, from these qualities, especially when of a similar size, they are usually called whittings by the English of Bengal; although they have no other affinity to that fish, the Gadus merlangus of naturalists.

Besides the circumstances mentioned in the generic character, the fishes of this genus, which I have observed in the Ganges, agree in the following particulars.

In proportion to either width or thickness, their form is long, and their tail tapers much, gradually above, but rather suddenly below, and is of considerable length. Their backs are arched, and their bellies nearly straight. The body, head, and gill-covers, have large scales, which, on the body at least, are finely indented on the edge, and communicate a rough feel. The vent is behind the middle.

The head is oval and blunt. The jaws, in opening, are protruded, and are covered with fleshy lips, the upper of which is provided on each side with a moderate-sized bone, which widens considerably downward. The tongue is not tied down, and is blunt and smooth. On the palate are some naked bones, and some of them contain teeth. Each of the nostrils has two apertures without tubes. The eyes are high, but distant from each other, and are of a good size. The gill-covers move freely, and leave large apertures; and a great part, if not the whole, of their membranes is visible, each containing seven rays, that are readily distinguishable.

The lateral lines run parallel to the back, and in their fore parts are high, but behind they pass along the middle of the tail.

The two fins of the back are united, but the division is very distinctly marked. The foremost consists of slender prickles, rather longer than the membranes by which they are separated, and growing gradually shorter from either, the first, se-
cond, or third, one of which is the longest. The second fin is longer than the first, although not so high in general as the longest of its rays. It commences with one prickle, longer than the last of the first fin, but shorter than the following rays, which are branched, and grow a little longer toward the tail, where the fin is rounded. The pectoral fins are low and shorter than the head. The first ray of each ventral is either simple and rather hard, or is a slender prickle; and the others are branched. The fin behind the vent is much shorter than the second of the back, and is situated forward on the part where the tail suddenly contracts. It contains two or three prickles closely united without any intervening membrane, and several branched rays forming an arch. The tail fin is entire, and approaches more or less to the form of a lozenge.

1st Species.—Bola coitor. Plate XXVII. Fig. 24.

A bola with ten prickles in the first back fin, and one with twenty-six or twenty-seven branched rays in the second; with two prickles and six or seven branched rays in the fin behind the vent; with the first branch of the second ray in each ventral fin very long, and in form of a bristle; and with the snout projecting beyond the mouth.

This fish is found in the Ganges, from the sea up as far at least as Kanpur, and in the Jumna (Yamuna) as far as Agra. It is, however, much more common where the tide reaches; although its quality improves in the upper parts of the river, especially where the shores are rocky. It seldom exceeds a foot in length, and a span is its more usual size. The fish, which Dr Russell has described in his Indian Fishes, (Vol. II. No. 110,) but to which he has given no name, has a considerable affinity to the Coitor; but differs somewhat in the number of rays in the fins, and in the form of that of the tail.
The general colour is silver, with a greenish brown, changing to purple and gold on the back. The fins of the back and vent are dotted and edged with black. On each side behind the pectoral fin there is an irregular brown spot. The sides are indistinctly marked with narrow dotted lines, ascending upward behind.

The head is of a moderate size. The mouth, which is large, descends in a curve. The under jaw is the shorter. The upper lip is double with the outer divided into five. There are many small teeth crowded among the row of large ones in each jaw. The palate is smooth, and near the throat has two bones covered with teeth. The hinder openings of the nostrils are oblong, and near the eyes; the fore ones are at some distance, and are round. The eyes are rather large and plain, with their longest axis horizontal, while that of the pupil is vertical. In the gill-covers on each side are four bones; the foremost of which is indented with short blunt teeth, the intermediate ones are very small, and the hinder one ends in a sinus bounded by two sharp points. The bones of the gills have on the inside a row of tubercles covered with little teeth.

The lateral lines are smooth, and may be traced to the end of the tail fin. The scales of the head are entire on the edge.

The first prickle of the foremost back fin is very short, and joined to the second, which is the longest, without any intermediate membrane. The fourteen or fifteen rays next the prickle, in the hinder back fin, are bifid at the top, and those remaining are branched, the last being divided to the root into two. The pectoral fins, each having seventeen rays, are covered at the root with scales, and are rather blunt, but the upper rays are longer than the lower. The ventral fins are small, and near each other. Their prickle is short and slender, and the bristle-like division of their second ray is recurved.
at the top. The fin behind the vent is scaly, and contains two strong prickles, the first of which is very short, while the second is shorter than the branched rays, which are six or seven in number, the last being divided to the root into two. The fin of the tail ends in a sharp point, is covered with scales, and contains seventeen distinct rays, with some short ones compacted on each side.

2d Species.—\textit{Bola chaptis}. Plate X. Fig. 25.

A bola with ten prickles on the first fin of the back, and one prickle with twenty-five soft rays in the second; with two prickles and seven soft rays in the fin behind the vent; with the first branch of the second ray in each ventral fin lengthened in form of a bristle; and with the lower jaw extending to the extremity of the head.

This fish has some affinity to the \textit{Bodianus stellifer} of Bloch, (\textit{Ichth.} Tome VII. p. 41, Pl. CCXXXI. fig. 1;) but in that species the two back fins are not near so well separated as in ours, while it wants the indented edges of the gill-covers, and its head is armed with several spines. Our fish should rather be a \textit{Centropomus}, according to La Cepede, than a \textit{Bodianus}. It is found in the estuaries of the Ganges, seldom exceeds a foot in length, and is reckoned but poor eating.

The \textit{Chaptis} is silver coloured below, while its back is green, with a purple gloss, but without any intermixture of gold. The back and tail fins are dotted and edged with black. On the sides are many lines ascending behind, and consisting of a small elevation on the centre of each scale.

The head is rather small and narrow. The two jaws are nearly equal in length, and reach to the extremity of the head, extending far backward in a straight horizontal line. In both jaws are some sharp long teeth intermixed with some small
ones. In the fore part of the palate are four naked bones. The nostrils are near the eyes, which stand far forward, are large, and have their longest axis horizontal, while the pupil is circular. The gill-covers contain each four plates, of which the foremost is indented round the edges; the two intermediate ones are very small; and the hinder one ends in a sinus, with a blunt point on each side.

The lateral lines may be traced to the end of the tail fin, and are smooth. The scales are rather small.

The first prickle of the first back fin is very short, as is also the prickle of the second fin. The pectoral fins are blunt, although the upper rays are the longest. Each contains nineteen rays, of which the two first and the last are simple, and the intermediate ones are branched. The ventral fins entirely resemble those of the Coitor. The prickles of the fin behind the vent are strong. The tail fin is blunt, and contains seventeen distinct rays, besides some short compacted ones at each side.

What I consider as a mere variety of the above mentioned fish is called Nuria by the fishermen of the Yasor (Jessore, Rennell) district. It grows to three feet in length; but on carefully comparing it with the above description, I see no other difference, except that it has one ray less in the hinder fin of the back, (having one prickle and twenty-four soft rays,) which, in this genus, is of very little consequence, the number being liable to more considerable differences in individuals, allowed by all to belong to the same species.

3d Species.—Bola coibor.

A bola with nine prickles in the first dorsal fin, and one prickle, with twenty-four soft rays in the second; with three prickles and seven soft rays in that behind the vent; with no bristle on the ventral fins; and with all the lower parts yellow.
This is a very beautiful fish, found in the larger estuaries of the Ganges. I saw only one specimen, which was four feet in length; but it is said to grow considerably larger. At the time, I omitted to take a full description, and only noted the differences between the coibor and the description of the pama, which follows; and I had no opportunity afterwards of supplying the omission. It may, perhaps, be the Lutianus chinensis of La Cepede, (Hist. des Poissons, Tome IV. p. 255,) although it ought more properly to belong to his genus Centropomus.

The coibor, in proportion to its length, is of a thicker form, and it tapers less at the tail than the pama. The colour on the back is similar, but the sides shine like bright gold, and the belly, and lower and tail fins, are of a deep yellow.

The fore aperture of each nostril is very small; and behind the row of large tusks in the upper jaw there is a belt of small compacted teeth. There are several strong teeth on the inside of the bones, which support the gills.

The first prickle of the fin behind the vent is minute.

4th Species.—Bola pama. Plate XXXII. Fig. 26.

A bola with nine prickles in the first fin of the back, and one prickle, and from forty-one to forty-five soft rays in the second; with two prickles and seven soft rays in the fin behind the vent; with no bristle on the ventral fins; with both jaws extending to very near the end of the snout; and with the sides silvery.

At Calcutta, this fish, when from twelve to fifteen inches in length, is that most commonly called Whiting, and is a very light wholesome food, if eaten soon after it is caught; but it soon becomes soft. It sometimes grows to a large size, and is found between four and five feet long. It is caught in great numbers
in all the estuaries of the Ganges, but does not ascend higher than the tide.

The colour of the body is entirely similar to that of the Cōitor. The back and tail fins are dotted, and the first of the former is edged with black. When the fish dies all the extremities soon become yellow.

The head is rather deep, but not wide. The mouth extends to very near the end of the snout, but still is situated low, and is arched backward almost in a horizontal direction. The jaws are nearly equal in length. On the inside of the under one is a ridge. In each jaw is a single row of large, crooked, conical, sharp teeth, of unequal sizes. In the fore part of the palate are four naked bones, and at the throat it is beset with teeth. The eyes are lengthened out in a horizontal direction, with the greatest length of the pupils vertical; and are rather small. Both apertures of each nostril are circular, and are near the eye. The gill-covers consist of three plates, and end behind in one point. The foremost plate, at its angle, is indented with remote incisures. The inferior one is very small. The bones supporting the gills along their inner sides have a double row of denticulated projections.

The lateral lines are covered with many small scales, and may be traced to the end of the tail fin. The scales on the head are long, and of various sizes.

The first prickle in the foremost back fin is rather longer than the second, and is separated from it by a membrane. The prickle of the second fin is short: the first soft ray is undivided, and the others are branched. The pectoral fins are sharp above, and each contains seventeen rays. The ventral fins are small, and near each other. They want the bristle-like division of the second ray by which the Cōitor is distinguished. The fin behind the vent is slightly arched at the end, and its prickles
are short, the first soft ray being undivided, while the others are branched. The tail fin is sharp-pointed, and contains seventeen distinct rays, besides some on each side closely compacted together.

5th Species.—Bola cuja. Plate XII. Fig. 27.

A bola with ten prickles in the first back fin, and one prickle with twenty-eight soft rays in the second; with two prickles and seven soft rays in the fin behind the vent; with the first branch of the second ray in the ventral fins lengthened like a bristle; with the under jaw rather the longer; and with the sides variegated longitudinally with black interrupted stripes.

This is a large fish, growing to between four and five feet in length, and is found in the estuaries of the Ganges. By the fishermen it is not classed with the Bolas, but with the Vakti, a fish which will be described among those belonging to the next genus. It, however, belongs to the genus Bola, as I have defined it, while the other Vakti belongs rather to the genus Coiis.

The Cuja is in colour a very beautiful fish, shining like silver, with a slight tinge of green on the back, while its sides are finely variegated with black spots, disposed in longitudinal stripes. The back fins are finely spotted with black.

The head is rather narrow, and slopes suddenly at the eyes. The mouth extends to the very extremity of the head, the under jaw being rather the longest, and descends a little backward. The upper lip is double. In each jaw is a single row of sharp conical teeth, nearly straight, and equal in size. In the fore part of the palate are four oblong naked bones. In the throat are two circular ones covered with teeth. The nostrils are near the eyes, the hinder openings being oval, and the fore ones circular. The eyes are round, and of moderate size,
and have circular pupils. The cheek-bones and spaces on the nape are indented round the edges as if with short bristles. The fore gill-covers are indented on the edges with wider incisures, while the hinder plate terminates in a sinus, bounded by two points. The bones supporting the gills are lined with a single row of tubercles, of which some are cylindrical and smooth, and others conical and indented.

Although the ridge of the back is sharp, and the edge of the belly is rounded, the sides do not slope outward so much as in the fishes of this genus before described; still the transverse section is triangular. The lateral lines may be traced to the end of the tail fin. The scales fall easily off. Above each ventral fin is a long scale-like appendant.

The prickles of the back fin are strongish; the first is very short, and the third is the longest. The prickle of the second fin is short; the first soft ray is undivided, and the others are branched. The pectoral fins are sharp above, and each contains seventeen rays, of which the first and two last are undivided, and the intermediate ones are branched. The ventral fins entirely resemble those of the coitor, but have stronger prickles. The anal fin slopes gradually from before backward; its prickles are very strong, and its soft rays branched. The tail fin is blunt, and contains seventeen distinct rays, besides some short ones, closely compacted at each side.

6th Species.—Bo.la? coioides.

A bola? with eleven prickles and fifteen soft rays in the back fins, which are united; with three prickles and eight soft rays in the fin behind the vent; and with the body spotted with round red and black spots.

This fish agrees so well with the description of the Medina bontoo of Dr Russell, (Indian Fishes, Vol. II. No. 128,)
that I do not think them different species, although Dr Russell says, that the Madinawa bontoo never reaches a great size. This I attribute to the large Gangetic estuaries being the proper abode of the fish, and to their affording it a full nourishment, while its growth may be stinted in the ocean, where it was observed by Dr Russell.

The different fishes called Jacob Evertsen by the Dutch seamen, and Jew-fish by the English of the West Indies, have a great affinity to that of which I am now treating; but all, I believe, belong either to the genus called Sparus, or to that called Bodianus; while this should be a Holocentrus, as that genus is defined by Bloch. I am inclined, however, to believe, that many of the circumstances related by this author (Ichth. Tome VII. p. 26, Pl. CCXXIV.) concerning his Bodianus guttatus, should be actually referred to the fish I am now describing; although the figure which he gives probably represents another fish.

I have referred this fish to the genus Bola with a mark of doubt, because, in the description, which I took long before I had the present arrangement in view, I have omitted to notice whether it possessed the characters by which the Bola is distinguished from the following genus called Coïus. Its back fins no doubt resemble those of the latter genus; but the essential character has not been placed in these; while the native fishermen place it among the Bolas; and although, as will appear from the following description, it has very numerous characters in common with this genus, yet its affinity with the genus Coïus is so strong, that this term is applied by these people as its specific appellation, making the whole name, as pronounced by them, Côibola or Côibor.

The Côibola is found in the larger salt-water estuaries of the Ganges, is usually between four and five feet in length, is an
excellent fish for the table, and possessed of great beauty. The 
colour on the back and sides approaches to olive, and on the 
belly is white. It has large dusky irregular marks like clouds; 
and besides many round well defined spots, partly black, partly 
rust colour, are scattered on the surface.

The head is large and wider than the body, and ends in de-
pressed jaws, of which the under one is the longer. The mouth 
is very large, and descends backward in a straight line. The 
bones of the upper lip are very blunt, as if cut transversely 
across. In both jaws, and in the adjacent parts of the palate, 
are many crowded sharp teeth, straight, but of unequal lengths. 
Some of these, toward the fore part of the jaws, are consider-
able longer than the others, and are bent backward. On the palate, at the throat, there are two round bones. The openings 
to each nostril are both near the eyes; the foremost being small. 
The eyes are far forward, and are round with oblong pupils. 
The cheek-bones end behind in a straight line, and round their 
edges are indented with toothlets, some of which at the angle 
are long. Each gill-cover consists of three plates, of which the 
hindmost terminates in three broad and very strong spines. 
The bones supporting the outer gills are covered on the out-
side with teeth like a comb; those farther in are covered with 
a row of tubercles.

The fish in form is very thick near the shoulders, but slopes 
toward both extremities; and the tail is very slender; but I 
have omitted to state the form of its sides.

There is properly only one back fin, the two of which it con-
sists being fully united, although they may be distinguished, 
as the first is nearly of the same height throughout, while the 
second rises higher in form of an arch: the first of its rays is 
undivided, and the others branched, the last being divided to 
the root. The pectoral fins are low, short, and blunt, each con-
taining eighteen rays, of which the first and last are undivided. The ventral fins are near each other, and the prickle in each is strong. The fin behind the vent is rounded, and its prickles are strong, while the first of its soft rays alone is undivided, and the last is divided to the root into two branches. The tail fin is rounded, and contains sixteen distinct rays, besides some short compacted ones at each side.

VII. Genus.—Coius.

Fishes of the fourth order with strong distinct sharp teeth in both jaws, or with teeth disposed in many rows, with some of the bones of the head distinctly indented on the edges, with prickles in some of the fins, and with opaque bodies, the sides of which are nearly vertical, so that a transverse section is either elliptical, or in form of a lens equally convex on both sides.

The fishes of this kind also afford food of easy digestion, and in general more sapid than that of the preceding genus.

Besides the circumstances mentioned in the generic character, most of the species which I have observed in the Ganges agree in the following particulars; and every species below described, where it is not otherwise specified, possesses these characters.

These fishes are not so long in proportion as the Bolas, and their tails taper as suddenly above as below. Their heads, at least in part, and their gill-covers and bodies, are covered with scales. The vent is behind the middle.

The head slopes gradually from the commencement of the back fin to the jaws, which are protruded in opening the mouth. This is rather large, and has fleshy lips, the upper of which has a bone on each side. Each nostril has two apertures placed far back. The eyes are high, but at a distance from each other,
and are of a good size. The gill-covers move freely, and leave large openings.

The lateral lines are high, and arched in a line parallel with the back.

In the species that are well defined, although the two fins of the back, strictly speaking, are united into one, they may be readily distinguished, by the second being higher than the first, and it is shorter, occupying only the sudden slope of the tail, while it consists of soft rays, and those of the first fin are prickles. In some species, however, the back fins resemble those of the Pamas, being more distinct; but the second, in proportion to the first, is always shorter than in that genus. The pectoral fins are low. Each ventral fin contains six rays, of which the first is a prickle, and the others are branched. The fin behind the vent contains some prickles, separated by membranes, and generally more numerous soft branched rays. In several species, both back and anal fins are capable of being received in a furrow, lined on each side with scales; and the edges of the hinder fin of the back, and of that behind the vent, owing to their being placed on the slopes of the tail, are nearly vertical.

As I ended the last genus with some ill-defined species, approaching somewhat to this, so I shall commence the account of this genus with some species that resemble the Bolas.

1st Species.—Coius vacti. Plate XVI. Fig. 28.

A Coius with the tail fin shaped like a fan, with two back fins nearly distinct, the first containing seven prickles, and the second one prickle and eleven soft rays; and with three prickles and eight soft rays in the fin behind the vent.

This fish, by the vulgar English of Calcutta, is called Cockup, and is one of the lightest and most esteemed foods brought
to table in that city. It has no doubt the utmost affinity to the *Pandoo menoo* of Russell, (Indian Fishes, Vol. II. No. 131,) which he supposes to be the *Cockup* of Calcutta; but, if his delineation of the *Pandoo menoo* be correct, the two fishes are abundantly distinct, as it belongs to La Cepede's genus *Perca*, while the *Vacti* of Calcutta is a *Centropomus*. Besides, the *Pandoo menoo* would appear to be a fish very inferior in quality to the *Vacti*.

The *Vacti* abounds in all the mouths of the Ganges, which it ascends as far as the tide, and follows this into marshes, ditches, and ponds; but those found in salt-water are of by far the best quality, as are those about two feet in length. It is often caught five feet long; but, when it approaches this size, the taste becomes strong, and, when small, it is rather insipid.

The form is rather thick from the back downward; but it is much compressed at the sides, which are nearly vertical. The upper parts are of a green *colour*, with a gloss of gold and purple, and have some ill defined longitudinal dotted lines, not, however, to be distinguished in all lights. The lower parts are silvery. The fins are pale dusky. The eyes are white, with amethyst-coloured pupils.

The head is rather sharp, and its slope forms a curve at the eyes. The space before the eyes is free of scales. The cheek-bones are indented on the lower edge. The mouth descends obliquely backwards. The jaws are within lined by a membranous veil: the under one is the longest, the upper one terminates in a notch. The bones of the upper lip widen much below. There are numerous small sharp teeth crowded on both jaws, and also on the tongue and palate. The tongue is sharp and free. The palate has two bones at the throat, and three behind the jaw, all covered with teeth. Of the latter
bones the central is in form of a crescent, and the lateral ones are linear. The foremost opening of each nostril is circular, the hinder one is vertically oblong. Each gill-cover consists of three plates, of which the foremost is indented on the hinder edge, and the hindmost ends in a sharp point. Each of their membranes contains seven rays. The bones supporting the gills are covered with prickles.

The back rises high, and the belly is nearly straight. On each side of the nape is an oblong space, surrounded by a broad smooth margin. The scales on the lateral lines end in a notch. The scales are quite entire on the edges, in which this fish differs from all those nearly allied to it that I have described. On each side above the ventral fin is a long scale-like appendant.

The back fins are slightly united. The prickles of the first are strong, all separated by membranes, and a little longer than these, the edge of each membrane being concave. The two first prickles are very short, the third is the longest, and the others diminish gradually in length. The second back fin is scarcely so high as the first, extends along the back some way before it suddenly slopes, and forms an arch. The pectoral fins are short and rounded, and each contains seventeen rays. The ventral fins are of moderate size, and the prickle in each is very strong. The fin behind the vent forms an arch; that of the tail is scaly, and contains about eighteen rays.

2d Species.—Coiius datnia. Plate IX. Fig. 29.

A coius with the tail fin bifid; with twelve prickles and ten soft rays in the united fins of the back, and three prickles and eight soft rays in that behind the vent; and with the first
branch of the second ray in each ventral fin produced into a bristle.

Some fishermen reckon this a species of Coiuss, others call it a Vacti, and it has no doubt a considerable affinity to the last described species. Others, however, consider it as forming a distinct genus, and I have adopted the name which these give it. The Calamara of Russell (Indian Fishes, Vol. I. No. 92) has a very great affinity to our Datnia; but has a thicker body, and wants the bristle-like elongations in the ventral fins, and the spot on the fin behind the vent.

This is a very beautiful fish, from six to ten inches in length. It is found in all the mouths of the Ganges, and is common in the Calcutta market; but is not near so good for eating as the vacti.

The datnia, in proportion to its length, is a thick fish, and its general colour is silver, with faint interrupted longitudinal stripes, which above are green, with a gloss of gold, and below pearly. The first back fin is edged, and the second and tail fin are stained with black. On the fin behind the vent there is a large irregular black spot.

The head and back descend in the segment of a circle. The former is oval, somewhat sharp, of a moderate size, and covered with scales to the eyes, before which it is naked. The mouth is of a moderate size and terminal, and passes almost directly backward. The under jaw is rather the shorter. The bones of the upper lip are minute. The anterior teeth in both jaws are sharp, conical, of unequal size, and placed in a single row: the posterior ones are blunt and crowded together. The tongue is sharp, and slightly tied down. The palate is smooth, and, behind the teeth, has a short membranous veil. The posterior aperture of each nostril is oblong; the anterior is provided with a short tube. The eyes are rather large. Each gill-cover con-
tains three plates, of which the foremost, together with the cheek-bone, is indented on the edge; and the last terminates in a very strong sharp point. Each of their membranes contains six rays: they are concealed by their covers, and are of a thick substance.

The back is much arched, and has a furrow for receiving the fin; and the belly is rather straight. The sides are much compressed. The scales are large, indented on the edge, and adhere firmly. Above each ventral fin is a long scale-like appendant.

All the prickles of the back fin are strong and separated by membranes, the fore part of each of which is attached to the point of the prickle, while the hinder part is attached considerably below the point, rendering the edge of the fin like that of a saw. The first soft ray of the back fin is undivided, and the last is divided to the root into two. The pectoral fins are longer than the head, and sharp above: each contains fifteen rays, of which the first and second are short and undivided. The ventral fins are rather short, and their prickle is strong: the bristles of their second rays are recurved. The vent fin is composed of two fully united; but the first is supported by strong prickles, of which the middle one is the longest; the second contains soft branched rays, the first of which is longer than the third prickle, while the others gradually diminish in length. The tail fin consists of two short blunt lobes, of which the under one is the shortest. It contains seventeen distinct rays, besides some short compacted ones at each side.

3d Species.—Coius catus. Plate XXXVIII. Fig. 30.

A coius with the tail fin ending in a slight concavity, with the back fins united, and containing ten prickles and fourteen soft rays; with three prickles and eight soft rays in the fin be-
hind the vent; with the first branch of the second ray in each ventral fin lengthened into a bristle; and with a black diffuse spot on each side.

This fish is very nearly allied to the Doondianah of Dr Russell, (Indian Fishes, Vol. I. No. 97,) which has twenty-five rays in the dorsal fins. It is also nearly allied to the Mungi mupudee of Dr Russell, (Indian Fishes, Vol. II. No. 110,) which has five bluish longitudinal stripes, and several rows of crowded teeth in each jaw.

The Anthias Johnii of Bloch, (Ichth. Tome IX. p. 97, Planche CCCXVIII.) or Lutianus Johnii of La Cepede, (Hist. des Poissons, Tome IV. p. 235,) is also very nearly allied to our fish, and differs chiefly in all its head being covered with scales, and in the form of the back and ventral fins.

The catus is as large as the vacti, but is inferior in quality for eating. It is found in the larger estuaries of the Ganges, and is a very beautiful fish in colour, shining with a silvery gloss, and being striped longitudinally on the sides with many rows of black spots, each occupying the middle of a scale. There are, besides, on the back three irregular dark marks, of which the two foremost are indistinct; but the last, placed below the hinder prickles of the back fin, is pretty well defined. The hinder fins are edged, or tinged, with pale red.

The head is sharpish, and narrower than the body, but rather large, and of half an oval form. Before the eyes there are no scales. The mouth passes straight back parallel to the under part of the head. The under jaw is rather the shorter. The bones of the upper lip are rather large, and end as if cut transversely. In both jaws is a single row of sharp conical unequal teeth. The tongue is blunt and free. The palate, on its fore part, has three bones, of which the two foremost are smooth, and the other covered with very minute teeth. The
The bones at the entrance of the throat are also covered with teeth. Both apertures of each nostril are oblong. The eyes are large. The bones of the cheek are indented round the edge, with some of the toothlets at the angle rather long. In each gill-cover are three plates quite entire on the edge; and the posterior one ends in a point. The membrane of each gill-cover is not concealed, and contains seven rays.

The back is much arched, and has a furrow for receiving the foremost fin. The belly is nearly straight. The edge of the scales is minutely indented. The scales are large, and separate easily. Above the commencement of each lateral line is a scaly space surrounded by an indented margin. Above each ventral fin is a short scale-like appendant.

The two dorsal fins, although fully united, are easily distinguishable, each forming an arch. The edge of the first, as in the preceding species, resembles that of a saw. It has strong prickles, all separated by membranes, and the fifth is the longest. The second fin is scaly at the base, and the first of its rays, all of which are soft, is undivided, and the last is divided to the root into two. The pectoral fins are not so long as the head, and are very sharp above. Each contains seventeen rays, of which the first, second, and seventeenth, are undivided, and the first and last are very short. The ventral fins are near each other, and are rather short. In form they entirely resemble those of the Datnia. The fin behind the vent is arched, its prickles are strong, and the first of its soft rays is undivided. The tail fin ends in a small concavity, and is blunt at both extremities. It has seventeen distinct rays, besides some short compacted ones at each side.

4th Species.—Coius trivittatus.

A coius with the tail fin bifid, with eleven prickles and ten
Coitus. GANGETIC. FISHES. 93

soft rays in the dorsal fins; with three prickles and eight soft rays in the fin behind the vent; and with three longitudinal black stripes on each side.

The affinity of this fish with the last is so strong, that, by the natives, both are called by names radically the same, although, as species, they are very distinct. This kind also is found in the mouths of the Ganges, but seldom exceeds six inches in length.

The fish is of a long form, flattened at the sides, scaly, and rough to the feel. Except the stripes, it is of a silvery colour. The dorsal fins are marked with several black stains, and that of the tail with some longitudinal stripes. The eyes are yellow.

The head is blunt, oval, small, and scaly. The mouth is low, and extends horizontally backward. The jaws are nearly of an equal length. The bones of the upper lip end blunt, as if cut transversely. The tongue is blunt, and tied down. In each jaw are crowded many teeth, with a single row of remote large ones intermixed. There are none on the palate. Both apertures of each nostril are circular; the foremost is surrounded by a margin. The cheek-bones are indented on the lower edge. The anterior plate of the gill-covers is also indented, with the four lower toothlets larger than the others. The hinder plate of the gill-covers terminates in a long strong spine. The membranes of the gill-covers are exposed, and each contains six rays.

The back has a furrow for receiving the fin. The scales are small, and finely indented on the edge, and adhere firmly. On each side of the nape is a scaly space, the margin of which, behind, is indented. Above each pectoral fin is a scale-like appendent, indented on its hinder edge.

The back fins are united but distinguishable, the edge of each forming an arch. The foremost contains ten strong prickles;
the hinder one prickle and ten soft rays, of which the last is divided to the root into two. The *pectoral* fins are small and acuminated above, and each contains thirteen rays. The *ventral* fins are large and remote, and each contains one prickle and five soft rays. The edge of the *vent* fin is rounded. It contains eleven rays, of which the three first are strong prickles, the others are divided, and the last is bifid to the root. The *tail* fin is forked, with blunt ends, and contains eighteen distinct rays, besides some short compacted ones at each side.

5th Species.—*Cotus gudgutia*.

A *cotus* with the tail fin terminating in a straight line; with the united back fins containing twelve prickles and fourteen soft rays; with three prickles and seven soft rays in the fin behind the vent; and with the first branch of the second ray in each ventral fin lengthened in form of a bristle.

This fish is found in the mouths of the Ganges, and grows to about six inches in length. It is rather wide in proportion to its length, and much compressed, and its colour above is greenish, with faint longitudinal stripes, while below it is silvery. The back fins have faint black spots. The eyes are like silver.

The *head* is oval, bluntish; of a moderate size, and rough. The *mouth*, when shut, extends directly back. The under *jaw* is the shortest. The bones of the upper *lip* are small, and end blunt as if cut across. The *teeth* in both jaws are slender and crowded. The *tongue* is sharp, fleshy, and dotted. The *palate* is smooth. The apertures of the *nostrils* are oblong. The *eyes* are rather large, with the shortest axis across the length of the fish, while that of the pupil is in the contrary direction. The hinder edge of the *cheek-bones* is indented. Each *gill-cover* is rounded behind, covered with scales, and consists of two smooth
edged plates. The membrane attached is not entirely hid, and contains seven rays.

The back is arched and rounded on the edge. The belly is flat. The scales are large, adhere firmly, and are indented on the edge. Above each ventral fin is a short scale-like appendant.

The first fin of the back slopes gradually behind from the point of the third ray, the two first being short, and contains eleven strong prickles. The edge of the second fin forms an arch. It contains one short prickle and fourteen soft rays, of which the first is undivided, and the last split into two to the bottom. The pectoral fins are of moderate size and sharp above, and each contains seventeen rays, of which the first, second, and seventeenth, are undivided. The prickle of each ventral fin is slender. The fin behind the vent slopes towards the tail; its foremost prickle is small, and its last soft ray is very deeply divided into two. The tail fin contains seventeen distinct rays, besides some short compacted ones at each side.

6th Species.—Coius porora. Plate XXXVIII. Fig. 31.

A coius with the fin of the tail fan-shaped; with twelve prickles and an equal number of soft rays in the back fins; with three prickles and nine soft rays in the fin behind the vent; and with the second ray of each ventral fin elongated into two bristles.

This fish is found in the estuaries of the Ganges, but is not very common, nor is it considered good for eating. It is very tenacious of life.

The form is short, much compressed, and high-backed. The whole is scaly and rough to the feel. When of the ordinary size of four or five inches in length, it is of a very pale-green colour above and white below, is marked longitudinally
with many fine waved shining lines, and transversely by eight broad black belts, of which the foremost forms an angle at the eye. When it is found of a large size, that is, a foot in length, the transverse belts are faintly marked, the longitudinal lines disappear, and each scale on the sides is marked with an oblong vertical white spot.

The head descends with a concavity above the eyes, and is narrow and scaly. The mouth is low, passes back horizontally, and is of moderate size. The under jaw is rather the longest. In each jaw is a row of sharp teeth, of unequal sizes. The tongue is sharp, free, and rough, and the palate is smooth. The hinder aperture of each nostril is oblong, the foremost is circular. The eyes are large and protuberant. The first plate of the gill-covers is indented on the edge, the hinder one ends in a point. The membrane of each gill-cover is half exposed, and contains six rays.

The back is much arched, and is furrowed for receiving the prickers of the fin. The belly is straight. The scales are large, adhere firmly, and are indented on the edge. The shoulder bones are indented.

The back fins are united, but distinguishable, each forming an arch, of which the first, as in the third and fourth species, is edged like a saw, and contains eleven prickers; the second arch contains one pricker and twelve soft divided rays. The pectoral fins are short and rounded, each having nineteen rays. The ventral fins are approximated with a strong pricker. The edge of the fin behind the vent forms an arch, and its prickers are strong. The tail fin contains seventeen distinct rays, besides some very short ones.

7th Species.—Coius nandus. Plate XXX. Fig. 32.
A coius with the fin of the tail fan-shaped; with thirteen
prickles and twelve soft rays in the united fins of the back; with three prickles and eight soft rays in that behind the vent; and with the body clouded with irregular dark marks.

In the ponds of the Gangetic provinces this fish is very common, seldom exceeds six inches in length, is very tenacious of life, and is considered by the natives as good for eating.

In proportion to its thickness, this fish is of a long form, and it is high-backed, and much compressed at the sides. The general colour is pale-green, with a silvery gloss, on which are scattered many large irregular marks, of a dark colour, inclining to olive. All the fins, except the pectorals, are spotted with the same colour.

The head is blunt, descends in a straight line, and is nearly oval, and large, but narrow. It is covered with scales to the lips, and between the eyes there runs a furrow. The mouth is low, and descends backward parallel to the lower jaw, which is rather the longest. The lips are thinner than in any species of this genus that I have seen. The bones of the upper one terminate very bluntly, as if cut across. On the jaws, palate, and tongue, are numerous small teeth crowded together; and intermixed with these, in each jaw, are several sharp teeth of a larger size. The tongue is sharp and free, and marked by two longitudinal ridges. On each side of the palate, at its fore part, there is a bone. Each gill-cover has four bony plates, of which the foremost is indented on the edge, and the uppermost ends in two sharp approximated points. The membranes of the gill-covers are partly exposed, and each contains seven rays. The bones of the gills are marked by a row of tubercles, of which the upper are covered with teeth.

The belly is straight, the back high. Where the tail becomes small, the lateral line is broken into two portions. The scales
are finely indented on the edges; and on those of the sides each has on its centre a longitudinal mark.

The fins of the back are united, but readily distinguishable, the edge of each forming an arch. The first contains twelve strong prickles, and is indented like a saw on the edge; the second contains one prickle and twelve soft rays, of which the first is undivided, and the last split to the root. The pectoral fins are short and rounded, and each contains fifteen rays. The ventral fins are without bristles, and are short, and approximated to each other. The prickles of the fin behind the vent are strong and short. The tail fin contains in all sixteen rays, of which two on each side are undivided.

8th Species.—Coius cobojuus. Plate XIII. Fig. 33.

A coius with the fin of the tail nearly rounded; with seventeen prickles and eight soft rays in the united fins of the back; with ten prickles and ten soft rays in the fin behind the vent; and with faint black belts transversing the sides.

This fish is the Lutianus scandens of La Cepede, (Hist. des Poissons, Tome IV. p. 242,) who seems to have borrowed his account from that given of the Perca scandens by Captain Daldorf; (Linnæan Transactions, Vol. III. p. 62,) a Danish, and not an English officer, as La Cepede supposes. He was a worthy man, very incapable, I believe, of advancing any thing that he thought untrue, and able enough to describe what he saw; but he did not possess those faculties which enable a man to reason on what he observes, or to take into account the collateral circumstances that might lead to an explanation of any thing extraordinary. Accordingly, he gravely assures us, that he saw one of these fishes climbing a palm-tree, and advancing up by the same means that are employed in moving along the ground. The French naturalist, to my utter astonishment,
seems to think the circumstance merely curious; nor does he appear to have any doubt concerning the fish possessing the power of climbing trees. Nature, it is true, often gives faculties to animals, by which they are led to actions highly dangerous and pernicious to themselves; and moralists, and other dealers in trash, have therefore often declaimed against the ways of Providence, without reflecting, that these same faculties enable animals to procure the highest enjoyments of which their natures are capable. To what enjoyment this dangerous faculty of climbing trees could lead a wretched fish, I am totally at a loss to imagine, and I therefore believe that Daldorf was mistaken; but to what circumstance, neglected to be noticed in his narrative, the error should be attributed, I cannot take upon myself to say. The palm, as is often the case with those of its species, (Borassus flabelliformis,) may have been growing with its lower parts nearly horizontal, and the fish may have then moved along it, as well as on the land: or the palm may have been covered with the knobs, often left by the cultivators when they remove the branches, (stipites,) and the fish may have been left among these knobs by some bird, and might, no doubt, have continued wriggling among them.

Of all that I know, the cobojius is the fish most tenacious of life in the air; and I have known boatmen to keep them for five or six days in an earthen pot without water, and daily to use what they wanted, finding the fish as lively and fresh as when caught. In fact, the Calcutta market is chiefly supplied from extensive marshes in the Yasor district, and about one hundred and fifty miles distant. From thence boat loads are brought, and kept alive without water until sold.

This is one of the fishes supposed to fall with rain from the heavens; and I endeavour to explain the circumstances giving rise to this opinion, in the same manner as the similar suppo-
sition respecting the Ophiocephalus gachua, (page 68,) both fishes living in exactly similar situations, and both being possessed of great tenacity of life in the air, with a considerable facility of progressive motion on land.

The cobojius, which by the natives is considered as the prototype of their genus coi, from whence the name Coius is derived, seldom exceeds six inches in length, and is found everywhere in the marshes, ponds, and ditches of India. Although it abounds in sharp bones, the natives of Calcutta especially use it much in diet, the women thinking that it increases their milk, and the men imagining that it possesses great powers to invigorate.

The form of this fish is longer in proportion to its thickness than that of any coius which I have seen, and is less compressed at the sides, although this circumstance is abundantly evident. It is covered with rough scales, and above is of a dusky-green colour, and below of a pale yellow, with several transverse blackish bars on each side. The throat is tinged with blue. Sometimes, but not always, there is an irregular spot at the end of the gill-covers, and another at the end of the tail. Except the first fin of the back, the others have a reddish tinge. In dirty marshes the whole fish becomes nearly black.

The head is oval, blunt, little compressed, wider than the body, but of moderate size, and is covered entirely with scales. Before and beneath each eye is a bony process, indented on the lower edge, and ending before in a sharp point, which the animal can at pleasure turn out, and which is an organ of progressive motion, when it is on land. The mouth is near the middle of the head, passing backward with a curve. The jaws terminate the head, and are nearly equal in length. The outer teeth in each jaw are disposed in a row, remote from each other, and are large and conical. Within these are crowded many small ones. The tongue is smooth, blunt, and free. The palate is
smooth. The foremost aperture of each nostril is tubular. The eyes are placed very far forward, and are reddish. Each gill-cover consists of three plates, the two hindmost of which are indented with numerous strong parallel spines; and, while the fish is on land, are powerful organs of locomotion. The membranes of the gill-covers are mostly exposed, and are so thick, and covered with scales, as to conceal the rays, if they contain any. The bones of the gills are provided on the inside with a row of tubercles.

The back and belly are nearly equally prominent, the former having a furrow for the first fin, as has the tail for the fin behind the vent. The lateral lines are broken into two portions, opposite to the hinder prickles of the back and vent fins. The vent is rather behind, but very near the middle. The scales are large, dotted, and indented round the edge.

The back fins, although fully united, are distinguishable. The foremost has throughout nearly the same height, and an edge indented like a saw, and contains all the prickles which are strong. The second ends somewhat sharply behind. The pectoral fins are blunt, but longest above, and each contains sixteen branched rays. The ventral fins have no bristles, and are short. The fin behind the vent consists of two united; the foremost having an arched indented edge, and being supported by prickles; while the hinder is higher, ends in a sharpish point, and contains the soft rays. The tail fin is nearly round, approaching a little to the fan-shape, and contains about fourteen rays.

9th Species.—Coius chatarœus. Plate XIV. Fig. 34.

A coius with the tail fin ending in a concave edge; with one back fin containing five prickles and twelve soft rays; with three prickles and sixteen soft rays in the fin behind the vent;
and with a silvery body, having on the back large black spots.

This fish, which is rather anomalous, is found in the mouths of the Ganges, grows to about a foot in length, and is considered as very poor eating. Contrary to what happens in the form of all the other species, the greatest width is behind the middle, and it is more prominent below than above. It is much compressed on the sides. The greater part is of a bright silvery colour, with a little green on the back, where, on each side, there are five or six large oblong irregular black spots. The back fin approaches to an olive colour, and at the hinder end has a large black spot. The fin behind the vent toward the edge is blackish. The eyes are silver coloured.

The head is oval, sharpish, and small; above smooth, and below rough. The cheek-bones are indented on the lower edge. The mouth is very large, and, when shut, descends obliquely backward. The under jaw is the longest, and is covered with scales, as are also the bone of the upper lip, which are narrow. The teeth in both jaws are sharp, slender, very short, and crowded in great numbers. The tongue is sharpish, osseous, rough, and free. The palate is covered in part by three rough bones, of which the two at the sides are very large and parallel. There are two round bones at the entrance into the throat. The foremost aperture of each nostril is tubular, the hinder one circular. The eyes are large and circular, with the greatest axis of the pupil in a vertical position. The gill-covers are rounded behind, each consisting of two smooth edged plates. Their membranes are partly exposed to view, each containing seven rays.

The back descends very gently. The belly is very prominent, and its ridge is sharpish. The vent is near the middle. The scales on the upper parts are large and smooth edged; on the
lower parts they are smaller and indented. Above each ventral fin is a very large scale-like appendant ending in a sharp point.

There is only one dorsal fin placed far back, and covered half way up with scales. Its edge forms an arch deeply indented on the fore part, the membranes intervening between the prickles extending to the point of the prickle before, and only to about the middle of that behind. The prickles are strong, and the last of the soft rays is very deeply divided. The pectoral fins are very short and sharp above, each containing twelve rays, of which the first and last are undivided. The ventral fins are small, and placed so near each other as almost to unite. They are indented, the edge of each membrane forming a concavity. The prickle in each is strong, and almost as long as the divided rays. The edge of the fin behind the vent, which is covered with a scaly skin, forms an arch indented at the prickles, which are strong. The tail fin is blunt at both extremities, with a concave edge between, and contains seventeen distinct rays, besides some short compacted ones at each side.

VIII. Genus.—Chanda.

Fishes of the fourth order, with sharp teeth scattered in both jaws, with some of the bones of the head distinctly indented on the edge; with prickles in some of the fins; and with bodies more or less diaphanous, and much compressed, the sides being nearly perpendicular.

The fishes of this genus are all very small and of little value, although in many places abundant, and used in considerable quantities; but as food they are insipid, and filled with small bones, for which defects their size does not compensate. They form a very natural arrangement, and the first has the
strongest affinity to the *Zeus insidiator*, so that all of them, no doubt, belong to the same genus with that fish, although I cannot help thinking, that, to include them in the same genus with the *Zeus ciliaris* and *Zeus faber*, is an unnatural arrangement. Owing to the smallness of several species, the teeth are minute, and in some are more distinguished by a feel of roughness than by being visible to the naked eye; but, in proportion to their size, they are thick at the base, and end in a sharp point.

Besides the circumstances mentioned above, and in the generic character, all the species, which I have described, have the following in common.

The *head* is devoid of scales, except a very few on its hinder part, which may be observed in some species. The *jaws* are protruded in opening the mouth, and, in most species, when thus opened, form a kind of *trunk*. Each of the membranous covers of the gills contains six rays.

The *back* slopes from the fin to the nape, where there is generally a concavity, the slope of the head being less than that of the back. The edges of the scales, where there are any, are not indented.

Where there are two distinguishable *back fins*, the first contains seven prickles, and the last one. Each of the *ventral fins* contains six rays, of which the first is a prickle. The fin behind the *vent* always contains three prickles, besides soft rays.

As in the genera already described there are, as it were, certain intermediate species, so in this the two first, which I have described, together with the *Zeus insidiator*, have but little of the transparency, which forms part of the generic character, but the resemblance to those which follow is so strong, that all natives give them a common appellation.
1st Species.—Chanda ? setifer.

A chanda? with one back fin containing ten prickles, and nine soft rays; with seven soft rays in the fin behind the vent; with the first branch of the second ray in each ventral fin lengthened out in form of a bristle; and with scales on the body, which is almost opaque.

This species is ill defined, and might, perhaps, be placed as a colius.

This fish grows to about four inches in length, and is found in the estuaries of the Ganges. It is narrower than the ruconius, of a green colour above, and silvery below, and has no spots.

The head is oval, sharp, small, and behind covered with scales. The under jaw is rather the shortest. There is some appearance of lips. There is a roughness on both jaws in place of teeth. Each nostril has two circular apertures. The eyes are lateral, large, and somewhat oblong, with circular pupils, and silvery irides. The bones under the nose, as well as those of the cheeks, are indented on their lower edges. Each gill-cover is rounded behind, and consists of two plates, that have smooth edges. Their membranes are half uncovered.

The back is prominent, and has a sharp ridge. It is provided with a furrow for lodging the fin of the back. The belly is straight. The lateral lines are arched parallel to the back. The vent is behind the middle. The scales are large, and adhere firmly. Above each ventral fin is a scale-like appendant, of moderate size.

The edge of the back fin forms an arch, with an indent at the end of the part supported by prickles, the first of which is very short. There are nine soft rays, and they are branched at the top. The pectoral fins are low, very long, and acuminated above; each contains sixteen rays, of which the two first and
last are undivided and short. The ventral fins are short and near each other: their prickle is strong. The fin behind the vent is high before, and toward the end gradually becomes lower: besides the prickles, of which the first is very short, it contains seven branched rays, of which the last is split to the root. The tail fin is deeply divided, and contains seventeen distinct rays, besides some short compacted ones.

2d Species.—Chanda ruconius. Plate XII. Fig. 35.

A chanda with one dorsal fin, containing eight prickles and sixteen soft rays; with fourteen soft rays in the fin behind the vent; and with the body covered with scales slightly diaphanous, and of a silver colour, having transverse dotted black bars across the back.

This may perhaps be the Zeus kleinii of Walbaum in his edition of Artedi, a fish which I cannot trace in Bloch or La Cepede. It has also a strong resemblance to the Komah karah of Russell, (Indian Fishes, Vol. I. No. 63;) but the latter has more of a rhomboidal form, yellow bars on the back, and larger teeth; nor does Dr Russell mention, that any of the bones of the head are indented on the edge.

The Ruconius or Ruconi chanda of the natives is found in the estuaries of the Ganges, and is very nearly allied to the Zeus insidiator, which the natives of Bengal call Ectuntia chanda. It is a very beautiful fish, seldom exceeding three inches in length. It is oval, but rather sharp at both ends, and is short and narrow in proportion to its height. The whole, except the fins, which are clear and unspotted, is of a bright silver colour, with many transverse black bars, formed of numerous dots, and descending to the middle of each side. Although the bright colour of the scales conceals the ribs, the muscles are visible.
The head is small, oval, naked, and above each eye is armed with two small prickles. The lower edge of the cheek-bone is indented. The mouth is nearly terminal, and when opened, the jaws form a conical trunk half as long as the head. The nostrils are near the eyes, and each has only one aperture. The eyes are large, and stand high. Each gill-cover consists of four plates free from scales, and rounded behind, the uppermost of the two before having its edge indented. The membranes of the gill-covers are entirely concealed.

A sharp-pointed naked bone runs down the slope of the back. Both back and belly are very prominent. The vent is before the middle, and the tail above and below is indented at each ray of the fins. The lateral line is high, and there is an appearance of other lateral lines formed by the union of the muscles which act in contrary directions. The scales are minute and smooth, and adhere firmly. Above each ventral fin is a long scale-like appendant.

On the back there is only one fin, which grows gradually lower and lower from the second ray, which is about twice as long as the last; the first is short; the prickles are strong, and the fore part of the third and fourth is indented. The pectoral fins are low, short, and sharp above; each contains sixteen rays, of which the first is undivided. The ventral fins are close to the vent, and short. The fin behind the vent is shaped like that of the back, and the third prickle is indented on the fore side. The fin of the tail is divided into two bluntish lobes, and contains seventeen distinct rays, besides some short compacted ones on each side.

3d Species.—Chanda nalua. Plate VI. Fig. 36.

A chanda with the back fins united, the second containing eleven soft rays; with ten soft rays in the fin behind the vent;
with the head naked; and with the body covered with large scales.

If this fish be different from the Centropomus ambassis of La Cepede, (Hist. des Poissons, Tome IV. page 252,) it is certainly a very similar species.

The Nalua is found in the fresh water rivers of the lower parts of Bengal, and is high in proportion to its length, although not so much in degree as the second species is; and its back projects more than the belly, although both are prominent. Above it is of a pale green colour, and below is diaphanous with a purple gloss, so that the back-bone is discernible. The cavity of the belly is lined with a silvery membrane, visible through the sides; and the same colour shines on the head and eyes. The first fin of the back in its fore part is dotted with black, and over the back-bone are five or six black spots disposed in a row.

The head is oval and rather narrow, and between the eyes there runs down a ridge, which, toward the mouth, divides into two. The mouth, when shut, descends almost vertically, and is large. The jaws are protruded in opening, but scarcely form a trunk; the lower is the longest. The teeth, though small, are distinctly visible. The bones of the upper lip are pretty large, and widen below. The tongue is sharp, and moves freely. Each nostril has two apertures, the hinder one oblong. The eyes are high, large, and circular. The bone under the nose, and that of the cheek, is indented on the edges. The gill-covers are devoid of scales, and each consists of four plates, of which the two foremost are indented on the edge. They conceal their membranes.

The back is arched, and forms a sharp ridge. The lateral lines are high, and arched parallel to the back. The vent is nearly in the middle. The scales are large, and adhere firm-
ly; those on the back are dotted round the edges; while, on the belly, owing to their pellucidity, they are scarcely visible.

The two fins of the back, although in some degree united, are very readily distinguishable. The first is rather the highest, and is supported by seven strong prickles rather longer than the intervening membrane. The first prickle is very short, the second is the longest, and the subsequent ones gradually diminish, so that the last is not above half the length of the prickle of the second fin, of which the soft rays are branched, and grow shorter and shorter to its end, which is rather sharp. The pectoral fins are rather small, situated low, and sharp above: each contains thirteen rays. The ventral fins are short. Their prickle is strong, and the membranes intervening between the rays do not reach to their ends. The first prickle of the fin behind the vent is short, the second is the longest, and the length of the other rays gradually diminishes, as in the second fin of the back. The tail fin contains fifteen distinct rays, besides some short compacted ones on each side.

4th Species.—Chanda nama.

A chanda with two back fins united, the second containing sixteen soft rays; with fifteen soft rays in the fin of the vent; and with the body long, and devoid of scales.

This fish is common in ponds throughout Bengal, and seldom exceeds three or four inches in length. The back and belly form arches nearly equal, and slope gradually to the mouth, and end of the tail. In respect to colour, the upper part of the head, the back, belly, and tail, are diaphanous, so as to discover the ribs and back-bone, a silver line running along the latter, and the former being seen over a silvery membrane that lines the visceral cavity. The lower parts of the head,
especially the gill-covers, are opaque and silvery. Over the back and its fins, together with those of the tail and vent, are scattered black dots, which, on each shoulder, are collected into an oblong mark, and into another on the summit of the back fin.

The head is oval, and rather small. The mouth, when shut, descends very obliquely, and is large. When open, the jaws protrude only a little; the under one is by much the longer. The bone under the nose is not indented on the edge; but the cheek-bone has some teeth at its hinder angle. The lips are somewhat fleshy, with scarcely any bones in the upper. In both jaws large conical teeth are scattered at a distance from each other. Each nostril has one aperture in the middle between the eye and jaw. The eyes are large, high, and far forward. Each gill-cover consists of four plates, of which the foremost has an indented edge. The membrane covering the gills is exposed to view.

The ridge of the back is sharp. The tail, at the fins of the back and vent, is indented on the edges. There is no lateral line. The vent is near the middle. There are two back fins united, but clearly distinguishable. The prickles of the first, in number seven, project a little beyond the intermediate membranes. The first is very short; the second is the longest; and the others diminish suddenly in length to the last. The second fin contains one prickle, and its soft rays are branched, gradually shortening from the prickle, which is the longest, and three times the length of the last ray of the first fin. The pectoral fins are low, short, and sharp above: each contains eleven rays, of which the first and second are undivided, and the former is very short. The ventral fins are short, and have even edges. The prickles of the fin behind the vent become gradually longer and longer to the third, from whence the divided
rays gradually shorten to the last. The lobes of the tail fin are sharpish, and contain seventeen distinct rays, besides several short compacted ones on each side.

5th Species.—Chanda phula.

A chanda with two back fins united, the second containing fourteen soft rays; with thirteen soft rays in the fin behind the vent; and with the body long, transparent, and devoid of scales.

This fish, which is found in the ponds and rivers of the north-eastern parts of Bengal, strongly resembles the Nama last described, but seldom exceeds two inches in length. The colours, however, are exactly the same, even to the small collection of dots on each shoulder; nor, indeed, except in the number of rays which support the fins, is there any considerable difference between the two species. I shall only, therefore, state these little differences.

The head is half oval, being nearly horizontal above. When open, the jaws protrude considerably. The nostrils are near the eyes. The edges of the cheek-bones are not indented. The rays of the membranes covering the gills are so minute, that I am not certain as to their number, although I think that I could count six.

The vent is before the middle.

The lower lobe of the tail fin is longer than the upper.

6th Species.—Chanda bogoda.

A chanda with two back fins united, the second containing sixteen branched rays; with seventeen soft rays in the vent fin; and with a long transparent body devoid of scales.

This species, which is also found in the north-eastern parts of Bengal, and is no longer than the phula, differs in nothing remarkable from the two former, except in the number of soft
rays contained in the back and vent fins, and in that contained in the pectorals, each of which has twelve.

7th Species.—CuanDA baculis.

A chanda with two fins of the back united, the second containing thirteen soft rays; with an equal number in the fin behind the vent; with the body short, transparent, and devoid of scales; and with a yellow mark on the nape.

This species, which is also found in the north-eastern parts of Bengal, connects strongly the three preceding fishes with the two which follow, resembling the former in colour, and the latter in shape. It seldom exceeds an inch and a half in length, is much compressed, and, in proportion to its length, is higher than the three preceding species, being nearly oval. In regard to colour, it is so diaphanous that the muscles are visible, forming transverse bars on the sides; but, in other respects, differs little from the three preceding species, only there are no dots on the body, except in a large yellow spot on the nape of the neck.

The head is of moderate size, narrower than the body, oval, and sharp. The mouth is small and high, and when it opens, forms a short trunk, the upper jaw being the shorter. The teeth are minute, the nostrils have double apertures, and the eyes are high and circular. The bone under the nose has its lower edge indented, as is also the case with the anterior plates of the gill-covers.

The ridge of the back is sharp, and the tail has a sharp ridge at the insertions of the back and vent fins. The vent is before the middle.

The two back fins are united, but most clearly distinguishable. The first slopes gradually from the second to the seventh and last prickle, the first being very short. The first
ray of the second fin is a long prickle. Each pectoral fin has about ten rays. That of the tail has seventeen rays, besides some short compacted ones on each side.

8th Species.—Chanda ranga. Plate XVI. Fig. 38.

A chanda with two back fins united, the first indented on the edge, and the second containing one prickle and twelve soft rays; with fifteen soft rays in the fin behind the vent; and with a short body covered with scales.

This is a beautiful little fish, about an inch and a half long, and is found in the fresh waters of all parts of the Gangetic provinces. It is of a rhomboidal form, and, with regard to colour, has a bright green and silver gloss. The whole, except the gill-covers, which are silvered, is diaphanous, showing the muscles, five ribs on each side the back-bone, a silver stripe accompanying the latter, and a silvery membrane that lines the cavity of the abdomen. The upper parts are dotted with black.

The head is oval and small. The mouth is small, and, when shut, descends obliquely. The jaws, when protruded, form a short trunk; the under one is the longest: neither has lips. The lower edge of the bones under the nose is indented, as is that of the cheek-bones. In both jaws there are minute teeth. There is scarcely any tongue. The fore part of the palate is tuberculated. Each nostril has two circular apertures in the middle, between the eyes and nose. The eyes are large and high. Each gill-cover has four plates, of which the foremost has indented edges. The membranes covering the gills are exposed.

The back has a sharp ridge; both it and the belly are equally prominent, and slope gradually to the head and tail, but more suddenly to the former. The lateral line is more distinct than in the four preceding species, and forms a small arch
above the ventral fins, behind which it descends to the middle of the fish. The scales on the body and fins are minute, and so transparent, that they can scarcely be seen without a magnifying glass: they are marked with concentric lines.

There are two back fins united, but most readily distinguishable. The prickles in the first, seven in number, are longer than the intermediate membranes, and gradually become shorter and shorter from the second, which is the longest, and much longer than the first. The edge of the second fin forms an arch, its prickle is twice as long as the last of the foremost fin, and the soft rays are branched. The pectoral fins are short, sharp above, and low on the sides. The ventral fins are short. The edge of the fin behind the vent is arched, but the membrane between the prickles is short. The fin of the tail contains eighteen distinct rays, besides some small compacted ones at each side.

9th Species.—Chanda lala. Plate XXI. Fig. 39.

A chanda with two back fins united, the first being even on the edge, and the second containing from twelve to fourteen soft rays; with fifteen soft rays in the fin behind the vent; and with a short scaly body.

This fish is found along with the last described, and is still more beautiful: indeed, nothing can exceed the delicacy of its tints; but it differs more in general appearance than in any part of its general structure from which a satisfactory specific character could be drawn; especially as, in young individuals, the colours of the two species are faint and ill defined. In the adult lala the gloss is golden, and the dots are orange. The sides have several transverse bars, alternately of dusky and of gold, with a green gloss.

The most remarkable difference in the structure is, that the
rays of the back and vent fins in this species are longer in proportion than those of the *ranga*, and slope more toward the tail, while the intervening membranes in the first fin of the back have an even edge, equal in length to the rays.

**IX. Genus—Trichopodus.**

Fishes of the fourth order, with only one bristle, in place of each ventral fin.

The six following fishes are evidently of the same genus with the *Trichopodus trichopterus* of La Cepede, *(Hist. des Poissons, Tome III. p. 129,)* from which they differ in having the end of the tail fin rounded; but form a very natural well defined genus, which agrees with the last described in every thing, except the form of the ventral fins. These in reality are placed before the pectorals; so that, in strictness, this genus should be placed among the *jugular* fishes next to the *Oligopodus* of La Cepede, *(Hist. des Poissons, Tome II. p. 311.)* From its strong affinity, however, with the three preceding genera, and with that which follows, I have imitated La Cepede in placing it in the *thoracic* order.

The species of *trichopodus*, which I have seen, are all very beautiful, and are common in the ponds, marshes, and ditches of the Gangetic provinces; but they are all small, are nowhere found in great quantity; and, therefore, although eaten by all ranks using fish, and thought palatable, they are not of consequence. They all possess the following characters.

They are of an oblong form, but have a considerable height, while their sides are much compressed, and nearly vertical. They are rough to the feel, opaque, and variegated with bright and agreeable colours.

Their *heads* are oval, rather small, and covered with scales even on the throat, while some of the bones have indent-
ed edges. The mouth is small and high, and, when shut, has a great descent: when open, the jaws protrude far, so as to form a kind of trunk. The teeth are either altogether wanting or very minute, so as, in general, to be a mere roughness, distinguishable more by the feel than by sight. Each nostril has a double aperture. The eyes are high on the sides of the head, and generally far forward. The gill-covers are scaly, move freely, and leave an ample opening at each side.

The back and belly are both nearly equally and regularly arched, nor, in general, is there any sudden contraction from the mouth to the tail fin; but the greatest width is before the middle of the fish. The vent is far before the middle. The edges of the scales are finely indented.

The back fin extends from the apertures of the gills to near the fin of the tail, and rises gradually from the first prickle to near the end. It consists of two parts, distinguished by the nature of their rays, but not separated by any division or interruption. The first part, which is the longest, is supported by prickles, and is indented on the edge like a saw: the second part, which is the highest, is supported by soft rays. The pectoral fins are fan-shaped, and short. The ventral fins have no membrane, are placed before the pectorals, and each consists of one soft ray, shaped like a bristle, and very long, extending near, at least, to the commencement of the tail fin. The fin behind the vent resembles in structure that of the back, and extends almost the whole length of the tail. The fin of the tail is fan-shaped; but, in some species, has more or less of a concavity on its hinder edge.

The Bengalese give to all the species the generic name *Colisa*, (*Kholisha;*) but the first, being considered as the prototype of the genus, receives this name without addition, while each of
the others receives a specific appellation prefixed to the generic name.

1st Species.—*Trichopodus colisa.* Plate XV. Fig. 40.

A *trichopodus* with the fin of the tail fan-shaped; with transverse bars on the sides of green and pale yellow; and with the back fin rounded behind.

This species is sometimes found five inches long. Above it is of a fine green colour, below whitish, with many pale brass-coloured bars descending obliquely back along the sides. The vent fin is edged with red, and it is variegated with black, green, and white. The back and tail fins are spotted with black, and on the hinder part of the former are an intermixture of red spots. On each gill-cover there is a green spot. The eyes are red.

The head is blunt, and under each eye is armed with a sharp-pointed bone indented on the lower edge, the fore end of which the animal can at pleasure turn outward. The lower edge of the cheek-bone is indented. The teeth are very minute. The tongue is scarcely observable. The palate is smooth. The nostrils are circular. The eyes are of a moderate size, with circular pupils. Each gill-cover consists of two plates, ends in a point behind, and is indented on the lower edge. The membrane of the gill-covers is exposed on the throat. I can observe in it no rays, owing, perhaps, to its thickness. The bones of the gills are smooth on the inside.

The back and tail have a furrow for receiving the prickles of their fins. The lateral line is high and straight, and, opposite to the last prickle on the back, is broken into two parts. The scales are large, adhere firmly, are dotted before, and marked towards the ends with diverging rays.

The back fin contains sixteen strong prickles, and eleven
branching rays. The pectoral fins are near the middle height of the side, each containing ten rays. The ventral fins reach to the root of the tail fin. The fin behind the vent contains seventeen strong prickles and an equal number of branched rays. The tail fin has sixteen rays, with a very short one at each side.

2d Species.—Trichopodus Bejeus.

A trichopodus with a notch in the edge of the tail fin; with many transverse bars on the sides of green and pale yellow; with the head armed beneath each eye by an indented sharp bone; and with the end of the back fin sharp.

I have not seen this fish longer than four inches. The upper parts are of a dusky green colour, and the lower are white, while the sides are transversely marked by the green and copper-coloured bars. The back fin is greenish, with black spots on its fore part, and red spots behind. The fin behind the vent is spotted like that of the back, and edged with red. The tail fin is spotted with black and red, and the eyes are silver-colour, stained with red. On the whole, it has the strongest resemblance to the first species.

The head is blunt, and armed with a bone below each eye, as in the first species. The edge of the cheek-bone is indented. In both jaws there are very minute, but observable teeth. The eyes are of moderate size. The gill-covers are rounded, and indented on the edges. Their membranes are concealed, each containing about three rays.

There are no proper lateral lines; but each scale having on its centre a long elevation, these give an appearance of several lateral lines.

The back fin terminates behind in a sharp point, and contains seventeen prickles and nine soft rays, of which the third
is the longest. Each pectoral fin contains nine rays. The ventral fins reach to the end of the tail fin. The fin behind the vent ends behind in a sharp point, and contains sixteen prickles and seventeen soft rays, of which the seventh is the longest. The tail fin is shaped like a fan; but in the centre of its edge there is a notch. It contains sixteen long rays, and a short one at each side.

3d Species.—Trichopodus cotra.

A trichopodus with the fin of the tail fan-shaped, and with transverse bars on the sides of green and blue.

I have not seen this fish longer than two inches. Above it is of a green copper colour: beneath it changes with copper and silver glosses, and on the tail is added a gloss of purple. On the sides are many transverse blue bars. The back and tail fins have dusky spots; that of the vent has blue spots and a red edge.

The head is sharp, and, before the eyes, unarm'd, and the edges of the cheek-bones are not indented. No teeth are observable. The eyes are rather small, but protuberant. The foremost plate of the gill-covers has an indented edge. Their membranes are concealed, with about four rays in each, but the rays are indistinctly seen.

At the nape there is a kind of concavity, the slope being there somewhat sudden. The belly terminates in a ridge. There are no lateral lines.

The back fin contains seventeen prickles and eight soft rays. Each of the pectoral fins has nine rays. The ventral fins extend to the last prickle of the back. The fin behind the vent contains nineteen prickles and sixteen soft rays. The tail fin contains seventeen rays.
4th Species.—**Trichopodus lalius**.

A *trichopodus* with the fin of the tail fan-shaped, and with transverse red bars on the sides.

This most beautiful fish is no larger than the third species, and is of a green *colour*, with many transverse red bars on the sides, and with a silver-coloured gloss on the breast and gill-covers. The hinder fins are spotted with red. The eyes are red with a dusky transverse bar.

The *head* is blunt and unarmed, and the edges of the *cheek-bones* are not indented. There are no *teeth*, except a roughness on the jaws. The *eyes* are of a moderate size. The edge of the foremost plate in each *gill-cover* is indented. The *membranes* are concealed, each containing about four rays.

There is no *lateral line*.

The *back* fin contains sixteen prickles and eight branched rays. The *pectoral* fins are low, and each contains nine rays. The *ventral* fins reach to near the end of the fin behind the *vent*, which contains eighteen prickles and fifteen branched rays. In the *tail* fin there are sixteen distinct rays, with some short compacted ones on each side.

5th Species.—**Trichopodus sota**.

A *trichopodus* with the edge of the tail fin slightly concave; and with the upper and hinder parts brownish red, and the fore and lower parts silver-coloured, with a blue gloss.

This fish seldom if ever exceeds an inch and a half in *length*. Its upper and hinder parts are of a dusky reddish *colour*, very faintly marked with longitudinal brownish lines. The lower and fore parts are silver-coloured, with a blue gloss. The body has many dots, but no considerable spot. The hinder part of the vent fin is edged with red.
The head is sharp and unarmed before the eyes. The edges of the cheek-bones are not indented. There are no teeth. The eyes are small, but protuberant. The foremost plate of each gill-cover is indented on the lower edge. The membranes covering the gills are concealed, and each contains about four rays.

There are no lateral lines.

The fin of the back contains eighteen prickles and eight branched rays. The pectoral fins are low, and each contains nine rays. The ventral fins extend to the end of the fin behind the vent, which contains nineteen prickles and eleven soft rays. The fin of the tail contains about sixteen rays, and its hinder edge forms a slight concavity.

6th Species.—Trichopodus Chuna.

A trichopodus with the edge of the tail fin concave behind; and with a longitudinal black stripe, glossed with gold on each side.

This fish is about the size of the fifth species. It is above of a brownish-green colour, and below whitish, with a purple gloss on the tail; while, from the eye to the end of the tail, on each side, there runs a longitudinal stripe consisting of black dots, and shining with a golden gloss. The eyes above are scarlet. The fin behind the vent is edged with red.

The head is sharp and unarmed. The foremost plate of each gill-cover is indented on the edges.

The fin of the back contains seventeen prickles and seven soft rays. The pectoral fins contain each nine rays. The ventral fins are as long as the tail. The fin behind the vent contains nineteen prickles and eleven soft rays. The hinder edge of the tail fin ends in a slight concavity; it contains fifteen distinct rays, besides some short ones at the sides.
X. Genus.—Chaetodon.

Fishes of the fourth order, with the edges of all the bones of the head smooth; with the sides much compressed, covered with scales, and high in proportion to the length of the body, and having in each jaw a single row of slender teeth parallel and close to each other.

1st Species.—Chaetodon pairatalis. Plate XIV. Fig. 41.

A chaetodon with the tail fin rounded at the end; with eleven prickles and sixteen soft rays in the back fin; with the body spotted; and with a bristle-like elongation from each ventral fin.

I should have supposed this fish to be the Cheetodon argus of naturalists, were it not for the following circumstances: These authors take no notice of the bristle-like production from the ventral fins. They represent the posterior edge of the tail fin as having the form of a crescent, with a slight convexity in the middle, so that it may almost be said to be trifid. Dr Russell (Indian Fishes, Vol. I. No. 78) represents the colour of the argus to be brownish, with a brighter gloss below, and a yellowish breast; and the spots on his fish are fewer in number, and smaller, than on ours. In the figures given by Bonnaterre, (Encyclop. Method.) and by Bloch, (Ichth. Planche CCIV. Fig. 1,) the spots resemble those described by Dr Russell, and in Bloch are made to extend over the fins of the back, and behind the vent, which, in our fish, have no spots. The figure of Bloch besides represents the gill-cover as devoid of scales.

The Pairatalis is found in the mouths of the Ganges, and, when newly caught, is a fish of great beauty, easy digestion, and excellent flavour; but, after death, it soon becomes soft and strong tasted. It grows to a foot in length, is very narrow in
proportion to both height and length, and is somewhat of a quadrangular form, sloping very suddenly both before and behind, and its height being little short of its length. Its colours vary much in different individuals; but in all cases the sides, so far down as the pectorals and lower part of the tail fin, are covered with fine round black spots, larger than the spaces that intervene. The most common colour of the adult fish is blue, with a tinge of green on the back, and a silvery gloss on the sides, especially on their lower parts; and the hinder fins are yellow. In many individuals, however, the back is green, and the lower parts ash-coloured, changing to purple, with a gloss of silver. In young individuals, again, the whole is green, with a bright golden gloss. The eyes are black, with a narrow golden ring surrounding the pupil.

The head is small, oval, and blunt, with a convexity between the eyes. The mouth is small, and extends horizontally back from the extremity of the head. The jaws are nearly equal in length. The lips are fleshy, and without bones. The palate is smooth. The nostrils are in the middle, between the eyes and jaw, each containing two apertures, of which the foremost is circular and open, and the hindmost is oblong, and covered by a reflected membrane. The eyes are high, on the sides of the head, are of moderate size, and circular, with oval pupils, pointing forward. The gill-covers have minute scales, end in a point behind, and on each side leave a large aperture. Each consists of two plates, and exposes to full view its membrane, which contains four rays.

The fore part of the back descends very rapidly on the head. Behind it contains a furrow for receiving the prickles of the fin. The belly forms an arch less prominent than the back. The tail, both above and below, slopes very rapidly near the end, and before the slope has a furrow for receiving the prickles of
the vent fin. The vent is behind the middle. The lateral lines are high, and run parallel to the back. The scales adhere firmly, and are small on the body, and minute on the head; but all have indented edges.

The back fin consists of two united, but distinguishable. The foremost contains ten strong prickles, and is indented like a saw on the edge. The prickles from the first, which is very short, increase rapidly in length to the fourth, which is the longest; and from thence they decrease gradually in length to the last, which is but little longer than the first. The posterior fin, covered half way with scales, occupies the slope on the tail, and with its ridge forms a vertical arch, its rays shortening very gradually towards the end of the tail: the first is a short prickle, which is not much more than half the length of the next, that is undivided; the remaining sixteen are branched. The pectoral fins are low, short, and blunt, but their upper rays are the longest. Each contains eighteen rays, of which the first, second, and eighteenth, are undivided. The ventral fins are near each other, each having six rays, of which the first is a very strong prickle, and the others are branched, the first branch of the second ray being lengthened out into a long awl-shaped flexible appendant. Behind the vent there are two fins slightly united into one. The edge of the foremost forms a concavity between every two prickles, and slopes gradually towards the end. It contains three strong prickles, of which the second is rather longer than the first. The hinder fin is covered half way with scales, and placed on the slope of the tail; and its rays decrease gradually backward from the second, which is the longest. The first is a short prickle; the second is soft, but undivided; and the other thirteen are branched. The tail fin is fan-shaped, and contains fourteen distinct rays, besides some short compacted ones at each side.

When employed in taking an account of Malabar, I had an
opportunity of describing another species of *Chætodon*, of which I shall here insert an account.

**Chætodon canis.**

A *chætodon* with a slight concavity in the posterior edge of the tail fin; with eighteen prickles and fourteen soft rays in the fin of the back; with the upper parts green and the under white; and with five broad yellow bars transversing each side.

This fish has a considerable affinity to the *Chætodon suratensis* of Bloch, (*Ichth. Tome VII.* p. 1, Planche CCXVII.) but that fish is purple and brown, where the *caris* is green and yellow. Besides, its tail fin is rounded at the end; its mouth is more prominent; and it has only thirteen rays in the back fin.

The *caris* is found in the clear rapid streams of Malabar, grows to about a span in length, and is tolerably good for eating. It is very much compressed, and in form resembles an ellipsis. Besides the colours mentioned in the specific character, numerous small white spots are scattered on the body, and behind each pectoral fin there is a large black spot.

The *head* is scaly, oval, short, and rather wider than the body. The *mouth* projects very little, extends directly back, and is of moderate size. The *jaws* are nearly equal in length, when open are protruded, and the upper *lip* has no bones. The *nostrils* are in the middle, between the eyes and jaw, and each has two small apertures. The *eyes* are high, and rather far back, protuberant, of moderate size, and round, with oblong pupils. The *gill-covers* have scales, and are arched behind, each consisting of three plates, and exposing half its *membrane*, which is thick, and contains five rays.

From the beginning of the *back* fin to the mouth slopes suddenly, with an arch much more considerable than that from
the mouth to the ventral fins. The back and tail have furrows for receiving the parts of the back and vent fins, that are supported by pricks. Near its end, the tail, both above and below, slopes very suddenly. The lateral lines are ill defined, but seem to be high, and to form an arch parallel to the back. The scales adhere firmly, and are large, smooth, and entire on the edge. Above each ventral fin is a short scale-like appendant. The vent is before the middle.

There is only one back fin, which rises gradually higher from the first prickle to the sixth soft ray, which is the longest, and then is rounded into a vertical end, the hinder rays gradually growing shorter to the last. The edge of the part supported by pricks is indented like a saw. The pectoral fins are low, short, and blunt; but their upper rays are the longest: each contains seventeen rays, of which the first is very short. The ventral fins are small and near each other, and each contains six rays, of which the first is a short prickle, and the others are branched. The fin behind the vent is shaped exactly like that of the back, the sixth soft ray being the longest. It contains thirteen strong pricks and eleven branched rays. The fin of the tail is shaped like a fan; but the middle of its hinder edge forms a very slight concavity. It contains sixteen distinct rays, besides some short compacted ones at the sides.

XI. Genus.—Pleuronectes.

Fishes of the fourth order, with both eyes on one side of the head, and with pectoral fins.

1st Species.—Pleuronectes nauphala.

A pleuronectes with eyes on the left side; with the fin of the tail sharp-pointed; with about seventy-three rays in the back
fin, and fifty-five in that behind the vent; and with a long body devoid of tubercles on the upper side.

From the description of La Cepede, (Hist. des Poissons, Tome IV. p. 598,) it would appear, that the nauphala has some affinity to the P. dentatus: but the accounts of the latter are imperfect; and, from its being a native of North America, it may be presumed different from our Indian kind. This has also some affinity to the P. rhombus, or pearl, of the English; but is longer in the shape, like the P. hypoglossus, or holybut.

The nauphala is found in the Gangetic estuaries, grows to about eight inches in length, and was rejected with loathing by the natives, among whom I saw it. The fish is narrow in proportion to its length, being shaped like the iron of a lance, while its greatest width is before the middle. Its upper or left side is rough, and of a greenish-brown colour, on which are scattered some black spots. The under side is whitish and smooth.

The head is oval, sharp, small, rough, and covered with scales. The mouth is large, and, when shut, forms an oblique arch. The jaws, when open, are protruded, and the under one is the longest, and on each side without has a sharp ridge. The lips are somewhat fleshy, and the bones of the upper are dilated at the lower ends. In each jaw is a single row of sharp awl-shaped large teeth, nearly equal in size, and placed at equal distances from each other. The tongue is narrow, sharp, and small, and moves freely. The palate is smooth. The nostrils are in the middle between the eyes and jaw, each having two small apertures. The eyes are oval, with pupils of a kidney form. The gill-covers are scaly, somewhat arched behind, and move freely. Each consists of four plates, and conceals its membrane, which is thin, and contains seven rays
inserted into a bone, serving as a support common to the whole.

The lateral lines run straight along the middle of the sides, but, in their fore part, send off a branch, which, forming an arch forward, is then bent up to the back. The vent is far before the middle. The scales adhere firmly; those on the upper side are finely indented on the edge, those below are smooth.

There are seven distinct fins. That of the back is slightly arched, and contains seventy-three undivided flexible rays, a little longer than the membrane. The pectoral fins are near the ventral, and are very small and sharp above. That on the left is rather the longest, and contains twelve rays, of which the third, fourth, and fifth, are bifid; while that on the right contains eleven undivided rays. The ventral fins surround that organ, and are very small. Each has six rays, of which the third and fourth are bifid, and the others undivided. The fin behind the vent is slightly arched, and contains fifty-five undivided flexible rays, a little longer than the membrane. The fin of the tail is undivided and sharp-pointed, and contains seventeen rays, of which two on each side are undivided, and the others are branched.

2d Species.—Pleuronectes arsius.

A pleuronectes with the eyes on the left; with the fin of the tail quite entire, with eighty-one rays in the back fin, and fifty-five in that behind the vent; with a long body; and with two eye-like spots on the upper lateral line.

This species has a strong affinity with the last, and also with the Noree nalaka of Dr Russell, (Indian Fishes, Vol. II. No. 77;) but this last may be readily distinguished by the number of rays in the fins. In Dr Russell's fish there are besides three
eye-like spots; one on the lateral line, a second above, and a third below that organ.

The *arsi* is a small fish which I found in the estuary below Calcutta. Its *shape* entirely resembles that of the *nauphala*; but it is smooth on both sides. The upper or left is of a greenish *colour*, with several brown cloud-like spots, and two that resemble eyes on the lateral line. The centre of these spots is black, and each is surrounded by an interrupted white circle. The under side is white. The fins are clouded.

The *head* is oval, sharp, small, and covered with scales. The *mouth* is large, and, when shut, forms an oblique arch. The *jaws* in opening are not protruded; the under one is the shortest. The bones of the upper *lip* are dilated at their lower ends. The *teeth* in both jaws are placed in a single row, taper to a sharp point, are large, and nearly equal in size, and stand at some distance from each other. On the left side there are two small *nostrils* in the middle between the jaw and eyes. The *eyes* are green and convex, with kidney-shaped pupils. The *gill-covers* are scaly, move freely, and conceal their *membranes*, each of which contains three or four rays.

The *lateral lines* behind are straight, and in the middle; over the pectoral fins they are arched, and, dividing on the head into two branches, which reunite at the nose, include a space which, on the left, contains the eye next the tail. On the right a third branch turns off to the back. The *vent* is very far forward. The *scales* are minute, and, so far as I can judge, smooth on the edge.

There are seven distinct *fins*. That of the *back* reaches from the eyes to the end of the tail, forming an arch. The *pectoral* fins placed near the middle of the sides are small and sharp, each containing ten rays. Each *ventral* fin has six
rays. The edge of the fin behind the vent is arched. The tail fin is rounded behind, and contains sixteen rays.

3d Species.—*Pleuronectes pan*. Plate XXIV. Fig. 42.

A *pleuronectes* with the eyes on the right; with the fins of the back, tail, and vent, united into one; with a short body; and with five bristle-like rays in each pectoral fin.

This fish has all the marks mentioned by Linnaeus in his specific character of the *Pleuronectes plagiusa*; yet it would be strange if the same species should be found inhabiting the mouths of rivers in India and Carolina, where the *P. plagiusa* lives. The accounts of this last fish in the *Tableau Encyclopédique*, and in La Cepede, (*Hist. des Poissons*, Tome IV. page 597,) are so short, that much reliance cannot be placed on what is there stated, although I see nothing very materially different in our fish from what is mentioned in the above works. The *P. plagiusa* is said to be oblong, but our fish is rather oval, that is to say, is wider than the term oblong would imply. Besides, the *Pán* has pectoral fins of the singular structure observed in the *P. trichodactylus*, which derives its name from this circumstance; nor is it mentioned, that the fins of the *P. plagiusa* are of so remarkable a structure.

The *Pán* abounds in the eastern estuaries of the Ganges from Dhaka downwards, and is a delicious small fish, from four to six inches in length. It is nearly of an oval form, very much flattened, and rough on both sides, swimming on the left, which is white. The upper side is of a brown colour, and marked with many dots, irregular black spots, and five or six transverse short lines falling at right angles on the upper side of the lateral line.

The head is blunt, small, very short, and covered with scales. At the right angle of the upper lip there is a short blunt
tendril. The mouth is behind the nose, is small, and, when shut, forms a curve. The jaws do not protrude when open, and contain no teeth. The lips are fleshy; the upper one rather the longest and sharp; the under one has a slight notch at the end. The palate and tongue are smooth, and the latter is sharp. I can observe no nostrils. The eyes are convex and small, and even the irides are covered with scales. The gill-covers are simple, scaly, and rough, move freely, and their posterior edge forms a kind of arch, leaving a small opening at the throat, and concealing their membranes, each of which contains four rays.

The lateral line is straight, and in the middle. The vent is far before the middle. The scales are minute, oblong, and indented at the end with five or six little spines.

There are only five fins, those of the back, tail, and vent, being completely united into one, which extends from the vent to within less than a quarter of an inch from the mouth; nor are the parts distinguishable. The rays are shortest at both terminations, and lengthen gradually to the centre of the tail, which is rather sharp. The whole fin is scaly, and has one hundred and fifteen undivided rays, of which sixty-four are above, and fifty-one below. The pectoral fins are near the vent, blunt and minute, each containing five hair-like rays, of which the second is the longest. The ventral fins are very small, surround the vent, and approach very near, each containing four rays.

XII. Genus.—Acirrus.

Fishes of the fourth order, with both eyes placed on one side, and destitute of pectoral fins.
1st Species.—Achirus cynoglossus.

An achirus with the eyes on the left; with the fins of the back, tail, and vent united, but distinguishable; the first containing one hundred and two rays, the second twelve, and the third seventy-eight; and with the left side dotted with brown.

The only species of this genus, which I have found in the Ganges, is usually called a Sole by the English, on account of its having very exactly the excellent taste of that valuable fish. The native name being somewhat harsh, I have translated it into the dialect of Greece. It has the utmost affinity to the Achirus bilineatus of La Cepede, (Hist. des Poissons, Tome IV. p. 659,) which, in its quality, is equally valuable. It has also a strong resemblance to the Jeree potoo of Dr Russell, (Indian Fishes, Vol. I. No. 73,) which differs in the number of rays supporting the fins. Nor is the resemblance less strong between it and the Cynoglossus lingua, described in the Second Order, (p. 32.) Indeed, the two species are so like, as to demonstrate, that the arrangement, founded on the absence or situation of the fins, however convenient, is totally unnatural.

This fish is found in the mouths of the Ganges as high as the tide reaches, but is not common, except where the water is strongly impregnated with salt, and seldom grows to above six inches in length.

The Cynoglossus sweems on the right side, is very flat, of a long oval form, and covered with scales even on the head. The left, or upper side, is of an uniform brown colour, dotted towards the edges. The right is white. The fins are brown, dotted with black.

The head, viewed from above, is oval, small, and blunt. The mouth is small, placed at some distance below the extremity of the nose, and passes very obliquely towards the eyes. The lips
are fleshy; the upper one is the longest, and is incurved, sharp, and without bones; the under one is blunt. There are no teeth, except a very slight roughness on the jaws. I have not been able to observe any nostril, unless it be concealed in a small membrane proceeding from the upper jaw, and below the under eye. The eyes are small. The gill-covers are flexible, and move freely. Their membranes contain no rays.

The lateral line, on the left side, is double; the superior running near the back, and the inferior straight along the middle. On the right the lateral line is bifid, with the branches separating wide, one running towards the back, and the other near the belly. The vent is immediately behind the throat, inclining towards the right, or under side. The scales are indented on the edge, and adhere firmly. The tail is blunt.

There are properly only two fins: one runs from the crown of the head, round the tail, to the vent; but the rays of the tail fin are longer than those of the back and vent fins; and thus the three may be distinguished, although the fins of the back and vent are joined to that of the tail for the whole length of their last rays. There is only one ventral fin, which is very small, and placed longitudinally towards the left side, opposite to the vent. It contains four soft rays.

XIII. Genus.—Calliomorus.

Fishes of the fourth order, with the head armed with spines, but with the edges of its bones unindented; with the body depressed, and covered with scales; and with two back fins.

1st Species.—Calliomorus chaca.

A calliomorus with a spine before each eye, and with the hinder bone of the gill-covers unarmed.

If this fish be a distinct species from the Calliomorus indicus
of La Cepede, (Hist. des Poissons, Tome II. p. 344,) as the differences in the position of the spines on the head, and in the number of rays, would seem to indicate, it has the utmost affinity to that fish, which is the Callionymus indicus of Linnaeus, Bonnaterre, (Tabl. Encycl. p. 44,) and Russell, (Indian Fishes, Vol. I. No. 46.) Bloch was sensible of its belonging to a very different genus from the Callionymus, and called it Platycephalus spathula, (Ichth. Tome XII. p. 90, Planche CCCCXXIV.) La Cepede was of the same opinion; but, with his usual desire of appearing new, changed Bloch’s name into one more objectionable, and gave it a wrong place in his system; for, as Dr Russell justly observes, the ventral fins are not placed before, but opposite to the pectorals; and, although it has an affinity with the Callionymus Uranoscopus, and Trachinus, as Linnaeus rightly observes, it also strongly resembles the Cottus. It has also some resemblance to the genus Gobius; and one of its native names signifies that it is a flattened Gobius; while another that I have adopted denotes its affinity to the next fish that will be described, although that belongs to the order of abdominal fishes.

The Chaca is a rough long flattened fish, with its tail ending like a wedge. Above it is of a green colour, clouded with broad irregular black bars. Beneath it is whitish. The fins of the back and tail are variegated with black.

The head is blunt, wedge-shaped, a little wider than the body, horizontal above, much depressed, rough, and covered with scales. Along it run nine ridges, of which that in the midst, after a short interruption, is divided into three at its fore part; the two next run from above the eyes to the nape; the two next from the posterior angles of the eyes to the beginning of the lateral lines; and two run from each corner of the mouth to the end of the cheek-bones. Above the anterior
angle of each eye is a recumbent strong short prickle. At the posterior angle of each cheek-bone are two strong awl-shaped thorns. The mouth is large, and descends obliquely in a straight line. The jaws, when open, are protruded; and the upper, which is the shortest, has a ridge in the middle. The lips are fleshy, the upper one double, and without bones. On the lower jaw is a line covered with many crowded teeth. In the upper jaw is a similar line, which, towards each corner, grows narrow; and in the middle, among the small sharp crowded teeth, are intermixed some large ones. On the fore part of the palate is a bone in form of a crescent, and covered with teeth; and behind this, on each side, is a row of erect parallel teeth, placed close to each other. The tongue is smooth, broad, and ends in a concavity. The eyes are on the crown of the head, but far from each other, and far forward. They are small, with heart-shaped pupils; and the animal possesses the power of withdrawing them to the level of the head, and of then again rendering them protuberant. The gill-covers consist of one plate, rounded behind, with a sinus above and below. They move freely, leave a large opening, are covered with scales and rough, and do not conceal their membranes, each of which contains seven rays.

The back is straight, rounded across, and provided with a furrow for lodging the foremost back fin. The lateral lines are high, straight, and elevated to a ridge. The vent is before the middle. The scales are small, indented on the edge, and of an oblong form, and adhere firmly.

On the back there are two distinct fins. The first contains eight prickles, and slopes down from the third, which is the longest, the two first being very short. The second fin is indented on the edge, and contains thirteen rays, of nearly equal length; the first being undivided, and the others branched.
The pectoral fins, placed near the middle of the side, are short, and rounded at the end: each contains eighteen rays, of which two on each side are undivided. The ventral fins are inserted far from each other, on two naked bones, which form the lower edge of the body. Each contains six rays, of which the hindmost are bifid and the longest, while those before are branched. The fin behind the vent is indented on the edge, and contains thirteen branched rays, nearly of equal length. That of the tail is rounded behind, and contains about eighteen rays.

ORDER V.

FISHES WITH THE DORSAL SPINE OF BONE, AND HAVING THEIR VENTRAL FINS BEHIND THE PECTORALS.

Several genera belonging to this order, although often distinct enough in general appearance, are very difficult to be distinguished by well-defined characters. The most careless observer, for instance, would have little difficulty in distinguishing the species belonging to the genus Cobitis from those constituting the genus Cyprinus, or the genus Silurus; yet I must say, that I find it almost impossible to state any well-defined marks, by which the Cobitis can be distinguished, on one hand, from the Cyprinus, and, on the other, from the Silurus. But these genera must be considered by all as the fishes of this order most distinct from each other; the Linnaean genera Salmo, Mugil, Atherina, Esox, and Clupea, being interposed in the scale of gradation. It must be farther observed, that different spe-
cies of *Cyprinus* have very strong affinities with each of these intermediate genera, while the *Silurus* has very little affinity with any of them, except the *Salmo*. In this view, the whole of these genera, with their subdivisions, as detailed by La Cepede, forms a connected circle, which, contrary to the order of writing, has neither beginning nor end. In treating of them, therefore, systematically, the naturalist, with equal propriety, may begin with any genus; but he must finish with one nearly allied to the genus with which he commenced. This will serve my purpose, as including all the *genera* of this order which I have observed in the Ganges, although authors describe several that are quite anomalous, and that have no affinity to any of those connected in the circle.

I begin with the *genera*, comprehended by Linnaeus under the term *Silurus*, very properly subdivided by La Cepede, as comprehending too many species. The fishes of this kind may be distinguished by having a very slimy skin, destitute of scales, and by having either two fins on the back; or, if they have only one fin, it is either united to that of the tail, or is destitute of rays, or placed far forward, or is very long. The genus *Cobitis*, allied to these fishes, has only one short fin on the back, and it is supported by rays, and placed either on the middle of the back, or immediately behind it.

Besides these general characteristic marks, there are some peculiarities to be observed in many of the species, although all are not common to every species.

None of these fishes have the bones in the upper lip called *mystaces* by some authors. Some, indeed, in place of these bones, have small cartilaginous elongations, but they are of such trifling dimensions as to attract little or no notice. In none of these fishes do the jaws protrude in opening, and all of them have two apertures in each nostril. All these fishes
have moveable gill-covers, leaving a large opening on each side.

In many species, there are one or more bones on the palate adjacent to the jaw, and, like this, covered with numerous crowded teeth. And the same is the case with four bones, two above and two below, which many species have at the entrance into the throat. In a few species, there are either no teeth, even in the jaws, or these organs are extremely minute.

Although the surface of these fishes has always an uncommon number of pores for the secretion of slime, and although they are destitute of scales properly so called, some of them have their sides more or less cased in bony plates; but, as none of these are among the fishes here described, I shall not dwell any farther on this subject. Many species, however, have no skin on considerable portions of the bony plate, which covers the head, and sends processes along the shoulders and fore part of the back; nor on a bone, which is placed before the first fin of the back; nor on a bone analogous to our *scapulae* or shoulder-blades, which extends along the side above the pectoral fin; nor, finally, on the bone of the breast or sternum. All of these bones, instead of being concealed under the skin, have no covering but a thin cuticle, through which they are distinctly visible, and they are usually marked by various elevated ridges, and numerous waved lines intersecting each other in different directions, or disposed as if radiating from different centres.

Under the lower jaw, and before the *os hyoides* on the throat, many of these fishes have a transverse slit, resembling somewhat a second mouth. It usually forms an angle or curve, with the two extremities turned backward. The slit penetrates from a tenth to a half inch in depth, in proportion to the size of the fish; but is lined by a smooth cuticle, nor has
it any communication with the throat, mouth, or any considerable gland; nor, so far as I could observe, does it ever enlarge within into any thing like a hollow sack. This slit, although somewhat differently situated, has an affinity with the subocular sack of some species of the ruminant quadrupeds, although I cannot state the use of such an organ in either class of animals.

Several species have two apertures in the vent, one probably an organ of procreation, and the other of digestion. I do not, however, know that both sexes of the same species have this double aperture; and suspect that it belongs only to the male, as I have several times observed a fleshy substance protruded from the foremost aperture, which I considered to be a kind of penis, although I never ascertained the point by dissection; nor did I notice it in every individual that I observed with two apertures.

A great many species are provided with a strong prickie in the first fin of the back, and in each pectoral fin. These prickles are no doubt formidable weapons of defence, as they are capable of inflicting severe wounds on any enemy that attempted to seize the animal which they guard; yet in general, every time that they are employed, the animal must suffer considerably, as, in most of the species, these prickles terminate in a flexible substance resembling somewhat whalebone; and, before the prickie can penetrate an enemy, this flexible point, which supports part of the membrane, must be broken. Although, therefore, it is probable, that, in case of such accidents, the flexible part may be soon reunited to the prickie; yet it is not likely that the animal should have recourse to the use of such a weapon, except in emergency, and perhaps never as a weapon of attack. These weapons are indeed so formidable, not only from their strength, but from their being in
general barbed on the edge, so as to occasion very painful punctures, that every enemy probably attacks with great caution, and that few even ever make the attempt, except such as, from an enormous difference in strength, art, or organization, are little exposed to danger. Man, therefore, is almost the only enemy which most species of these fishes have to dread.

I. Genus.—Platystacus.

Fishes of the fifth order, with a very slimy skin, destitute of scales, but provided with numerous soft projections; with a mouth surrounded by tendrils; with one short back fin placed before the middle; with the tail much shorter than the trunk, and not compressed; and with prickles in the pectoral and dorsal fins.

The genus Platystacus constituted by Bloch consisted of two species, but has not been adopted by La Cepede. One species he has united with the Silurus, while the remaining species, which he could not unite with that genus, he calls Plotosus. As I think that the species which he has placed in the genus Silurus not only differs very much in appearance from those placed in the last mentioned genus, I shall retain Bloch’s name, Platystacus, and apply it to the Silurus verrucosus of La Cepede, (Hist. des Poissons, Tome V. p. 56,) or the Platystacus verrucosus of Bloch, (Ichth. Tome XI. p. 61, Pl. LXXXIII. fig. 3,) and to the species which I am now about to describe. This genus has much of the manners of the Cottus uranoscopus, and other lurking fishes.

1st Species.—Platystacus chaca. Plate XXVIII. Fig. 43.

A platystacus with the fin of the tail extending much farther on the upper than on the under edge of the tail.
The Chaca is found in the rivers and ponds of the north-eastern parts of Bengal; grows to about a span in length; but is so ugly, that all reject it for food with loathing. It is of a depressed form, ending behind in a tapering tail. All over the skin are scattered little fleshy projections, ragged on the surface. Above it is clouded with green and black, and below with the latter colour, and yellow; but all its colours are dirty and ill defined. The fins are spotted with black.

The head is much flattened, very blunt, and wider than the body. Down its middle runs an oblong cavity, surrounded by an ill defined ridge, from which there proceed nine others, diverging as if from a common centre. There are six tendrils, much shorter than the head, four from the sides of the under jaw, and from each corner of the mouth one, which is connected with a short membrane indented with three points. The mouth is terminal, but high, and of enormous size. The under jaw is the longest, and is provided with a membranous veil. The lips are very thick, and indented on the edge. In both jaws are crowded many sharp minute teeth, those in the upper jaw being confined to two long spaces. On the palate are four spaces covered with similar teeth. The tongue is very broad, and has a notch at the end. Each nostril consists of a minute tube on the edge of the lip. The eyes are forward on the crown of the head, but far from each other, and are small, protuberant, and covered by the common skin. The pupils resemble slits. Each gill-cover consists of a single plate, which does not conceal the membrane; but this is so thick, that no rays can be distinguished. The skin under the lower jaw does not form a sack.

The body is depressed, and the tail tapers without being compressed. The lateral lines descend along the sides, and are smooth. The vent is behind the middle.

The fins are covered with a thick skin. That of the back is
very short, and rather before the middle. It contains a strong sharp prickle, indented on the fore side, and three soft rays. The *pectoral* fins are small and rounded, each having about nine rays, of which the first is a very strong sharp prickle, having the outer edge covered with tubercles. The *ventral* fins are larger than the pectorals, and remote from each other; a little behind the back fin. Each contains eight rays. The fin, placed half way between the *vent* and end of the tail, is very short and rounded, and contains eight rays. The *tail* fin, on the upper side, extends beyond the vent fin, but below reaches only near it. It is rounded at the extremity, and contains about thirty-eight rays.

II. Genus.—*Plotosus*.

Fishes of the fifth order, with a smooth slimy skin, destitute of scales, with a mouth surrounded by tendrils, with the hinder back, tail, and vent fins, united; and with the tail much longer than the head and body.

1st Species.—*Plotosus canius*.

A *plotosus* with the back of an uniform colour, and with the prickle of the back fin smooth.

*Plotosus anguillaris*, La Cepede, *Hist. des Poissons*, Tome V. p. 130?

*Platystacus anguillaris*, Bloch, *Ichth.* Tome XI. p. 49, Pl. CCCLXXIII. fig: 1?

Ingeeelee, Russell’s Indian Fishes, Vol. II. No. 166?

In the fishes described by these three authors, the sides are marked by longitudinal white stripes, which are wanting in the *Canius*. The two first authors mention five stripes in all on a purplish brown ground; while they state, that the prickle in the back fin is smooth, and the tendrils longer than the head, as in our fish; but theirs has a much longer and slenderer tail
Plotosus.  **GANGETIC FISHES.**  143

than the *Canius*. Russell again mentions, that the *Ingellee* on each side has three stripes on a copper-coloured ground, the prickle of the back fin indented, and the tendrils shorter by one half than the head. I am therefore inclined to believe, that there are three species of this genus, which is exceedingly well marked, and totally different in its habits from the *Platystacus*, although very nearly allied to the three fishes that will be next described.

The *Canius* (*Kani magur*) is found in the rivers of the southern parts of Bengal; and, although a very ugly animal, and rejected by Europeans, is considered by the natives as excellent food. It is often found three feet long, and sometimes between four and five. It is a long fish, with somewhat of the eel form, although not quite so flexible, and is of a lurid uniform dark olive colour, with a tinge of violet. It is quite smooth, slippery, and devoid of scales.

The head is long, flattened, rather wider than the body, very blunt, and smooth. Round the mouth are eight awl-shaped tendrils, of which the six uppermost are nearly the length of the head, and the two under the chin are a little shorter. The mouth is of a moderate size, and the upper jaw is the longest. The lips are fleshy. The foremost aperture of each nostril is adjacent to the upper lip, and tubular; and the hinder, in the middle between the eyes and nose, is oblong. The eyes, placed on the crown of the head at a distance from each other, are rather small, and of an oblong form.

The fore part of each lateral line ascends a little on the shoulder. The vent is near the middle. The trunk is short and rounded; the tail is compressed, ending in a sharp point.

The six fins are covered with so thick a skin, that the number of rays which each contains could not be ascertained. The fore fin of the back, placed on the middle of the trunk, is very
short, and somewhat triangular. It contains a very strong sharp prickle, smooth on the edges. The pectoral fins are low, small, and sharp above. Each contains a very sharp strong prickle, indented backward on the outer edge. The ventral fins are very small, and rounded. That of the tail extends above and below the whole length of that organ, and is evidently composed of a posterior back fin, united with those of the tail, and behind the vent, but no separation of parts can be observed: its extremity is sharpish.

III. Genus.—Macrorreronotus.

Fishes of the fifth order, with a smooth slimy skin, destitute of scales; with the mouth surrounded by tendrils; with one long fin on the back; with prickles in the pectoral fins; and with the tail wedge-shaped.

The two species of this genus, that I have seen, are found in ponds and ditches, and, as these dry up, are caught nestling among the mud. They are very ugly dirty-looking animals, on which account, probably, they are seldom, if ever, used by Europeans; but the natives consider them as wholesome invigorating diet, and employ a broth made of them in curing those troubled with pains in the abdomen. They grow from a foot to a foot and a half in length. Besides the circumstances mentioned in the generic character, these fishes have in common the following appearances:

Although shorter in proportion, less flexible, and more flattened at the tail, they approach a good deal to the eel in form.

The head is blunt, depressed, broader than the body, but short and smooth. The mouth is surrounded by eight awl-shaped tendrils, of which some are a little longer, and others a little shorter than the head. The mouth extends directly back-
ward, and is rather small. The under jaw is shortest. The lips are fleshy, and the upper has no bones. In both jaws are numerous crowded sharp granular teeth. The tongue is blunt, smooth, and tied down. The foremost aperture of each nostril, placed at the end of the nose, is tubular; the hinder one is half way between the former and the eye. The eyes are placed forward on the crown of the head, but far from each other, are small and round, with circular pupils. The gill-covers move freely, consist of one plate covered with skin, smooth, and ending in a point behind. The membranes of the gill-covers are exposed to view, but are so thick, that the number of rays, which each contains, cannot be exactly determined. Under the lower jaw is a transverse slit.

The sternum, or breast-bone, is naked, and marked with transverse lines like the teeth of a comb. The lateral lines run straight along the middle of the side, and are smooth. The vent is before the middle.

There are seven fins covered with thick skin, but their rays are visible. That of the back reaches from very near the head to very near the end of the tail. Its rays, which are soft, branched, and recurved at the end, gradually lengthen a little toward the posterior end, which is rounded. The pectoral fins are low, small, and blunt, although their rays are longest above the middle. The first ray in each is a strong sharp prickle, not indented on the edge. The ventral fins are small and near each other, and each contains six soft rays. The fin behind the vent extends from near that organ to the end of the tail, and resembles that of the back. The tail fin is rounded.

1st Species.—Macropteronotus jagur.

A macropteronotus with the back fin united to that of the tail.
This species is rather the largest. Above it is of a blackish green colour, and below whitish, while the sides are slightly variegated with clouds. The fins are of the same colour with the parts on which they are inserted.

On the crown of the head is one oval concavity. The two tendrils at the hinder apertures of the nostrils are as long as the head; the two at the angles of the mouth are a little longer; of the four under the chin, the two outer ones are a little longer than the inner, and reach to the back of the head. The palate has no teeth. The eyes are convex. I can observe two strong rays in each membrane of the gill-covers.

Although the back fin is connected with that of the tail, the two are easily distinguishable, the former containing fifty-three rays, and the latter about fourteen. Each pectoral fin has seven branched rays and the prickle. Each ventral fin has four branched rays, with an undivided one at each side. The fin behind the vent contains fifty rays.

2d Species.—Macropteronotus magur. Plate XXVI.

A macropteronotus with the tail and back fins distinct; with sixty rays in the former, and forty-four in that behind the vent; and with the edge of the pectoral prickles unindented.

This species, if it be distinct, has the utmost affinity to the Macropteronotus batrachus of La Cepede, (Hist. des Poissons, Tome V. page 84,) or the Silurus batrachus of Bloch, (Ichth. Tome XI. page 34, Pl. CCCLXX. fig. 1.) The fish, indeed, described by these authors differs from ours in the number of rays supporting its fins, but, owing to the thickness of the skin, no great reliance can be placed on the accuracy of this mark; and besides, these authors describe their fish as of an uniform brown colour, and state, that the prickle of each pectoral fin is strongly indented behind.
Silurus. GANGETIC FISHES. 147

The Magur is shaped somewhat like the head of a lance, and is of an olive green colour above, and dirty yellow below. Its fins are edged with red.

The crown of the head is covered by a naked bone, in which are impressed many hollow dots and two concavities; the foremost, between the eyes, is long; and the other, above the pectoral fins, is circular. The two tendrils at the nostrils are shorter than the head; the two at the corners of the mouth are almost twice as long as the head; and of the four under the chin, the two middle ones are as long as the head, and the two outer ones are a little longer. In the fore part of the palate is a crescent-shaped bone covered with teeth. In each membrane of the gill-covers I reckoned nine rays, without being sure of having seen the whole.

There are one prickle and nine soft rays in each pectoral fin, the former being very short and strong. Each ventral fin has one undivided and five branching rays. The fin of the tail fifteen, of which one on each side is undivided.

IV. Genus.—Silurus.

Fishes of the fifth order, with a smooth slimy skin, destitute of scales; with the mouth surrounded by tendrils; with a long and compressed tail; with one very short back fin, placed on the shoulders, and supported by rays; and either with prickles in the back or pectoral fins, or with more than three rays in the membranes of the gill-covers.

1st Species.—Silurus singio. Plate XXXVII. Fig. 46.

A silurus with a rounded tail fin; with eight tendrils; and with the prickles of the pectoral fins barbed on both sides.

This fish, if really different, is most nearly allied to the Silurus fossilis of Bloch, (Ichth. Tome XI. p. 36, Pl. CCCLX.)
Their fish is of a chocolate colour; its lateral lines ascend towards the shoulder; and the number of rays in its fins is somewhat different from that of the fish in Bengal. The most marked differences, however, to judge from the figure in Bloch, are, that he represents the prickles of the pectoral fins as slender, and without barbs.

The Singio (Singgi) resembles, in manners, appearance, and qualities, the three last described fishes; but, being reckoned highly nutritious, so that it is eagerly sought after by nurses, and by men worn out with too great an indulgence of their passions, it is seldom found fully grown. On account of its qualities, perhaps, many of the Pagans abstain from it, when about to perform any religious ceremony.

The Singio is occasionally found a foot and a half in length; but a foot is its more ordinary dimensions. It has much of the eel in its form, and is of a dirty green colour, with reddish fins. On each side it has a faint yellowish longitudinal stripe above the lateral line, and another below that organ.

The head is very blunt, slopes a little toward the mouth, and is small, depressed, and covered by a smooth bone, which terminates behind in three sharp points, of which the middle one is by much the smallest. On its summit are two oblong cavities, the foremost of which, placed between the eyes, is the longest. All the tendrils are awl-shaped, and longer than the head; the two from the corners of the mouth, and the four from the chin, extend to about the end of the pectoral fins; but the two at the hinder nostrils are shorter than the others. The mouth is of a moderate size, and extends directly backward. The jaws are nearly equal in length. The lips are fleshy. In each jaw are crowded many minute sharp teeth. The tongue is blunt, and smooth. The foremost aperture of each nostril, situated at the
lip, is tubular; the hinder one is oblong, and in the middle between the eye and jaw. The eyes are small, and high. Each of the gill-covers consists of one plate, very sharp behind. Its membrane is fully exposed on the throat, but is so thick, that its rays, if it contains any, are not visible. Under the lower jaw is a slit.

The sternum is exposed to view, and is striated with converging lines. The lateral line passes straight along the middle of the side, but is faint. The vent is far forward. The tail forms a sharp ridge above and below.

The back fin is rounded at the end, and contains seven rays, of which the first is simple, but not a prickle: the others are branched. The pectoral fins are low and blunt, but longest above: each contains eight rays, of which the first is a strong sharp prickle, indented on both edges with barbs pointing downward. The ventral fins are small, approach near each other, and each contains six branched rays. The fin behind the vent reaches close to that of the tail, but is not united to it, and, forming a slight arch with its edge, contains about sixty-one rays; but the skin is so thick, that the number of rays cannot be satisfactorily ascertained. The fin of the tail is rounded, turned obliquely downward, and contains about twelve rays, besides some short ones at each side.

Subgenus.—Silurus Callichrous.

The following five species for this tribe of fishes are rather handsome, and have little or nothing of that lurid appearance by which many kindred species are distinguished. They are all very rich fine-flavoured food, and grow to from nine to twelve inches in length. As they all have the strongest resemblance to each other, I shall content myself with describing the first species only at length, and shall afterwards point out the
chief circumstances in which the others differ. In the first four
species I did not ascertain whether or not the jaws protrude in
opening; in the fifth species they do not.

2d Species.—Silurus Pabda. Plate XXV. Fig. 47.
A silurus with the fin of the tail divided into two blunt lobes,
with four tendrils, of which the two upper reach beyond the
pectoral fins; with the prickle in each of these smooth on the
edges; with fifty-four rays in the fin behind the vent; and
with the sides clouded with irregular black marks.
This fish is found in the ponds and rivers of Bengal. It is
of a long lance-shaped form, and much compressed at the sides.
The colour above is greenish, and below white, with a longitudi-
dinal stripe of yellow, changing to purple, above the lateral
line. The clouds on the sides consist of black dots. Above
each pectoral fin is an irregular dark mark peculiar to this spe-
cies. The sides are somewhat diaphanous, so that the divisions
of the muscles can be perceived.
The head is blunt, oval, slightly flattened, and a little wider
than the body, but very short. The upper tendrils proceed
from above the nostrils; the lower from under the chin; and
these are shorter than the head. The mouth is large, and
slopes a little downward, the upper jaw being considerably the
shortest. The lips are fleshy. In both jaws are crowded
many small unequal reflected sharp teeth; and there are some
similar on the palate. The tongue is blunt, thick, smooth, and
marked transversely by three pair of veins. The apertures of
the nostrils are round, and in the middle, between the eyes and
jaw, but above the former. The eyes, which are small and
round, are on the side of the head, and near its middle. Each
gill-cover consists of one sharp plate, and leaves exposed to view
a transparent membrane, containing nine rays. Under the lower jaw is a slit.

The back slopes from the fin to the head, and the belly projects as much. The lateral line runs straight from the upper angle of the gill-covers to the end of the tail, and is smooth. The vent is placed very far forward. The tail is straight, tapers gradually, and is rounded above, with a sharp edge below. No naked bony plates are exposed to view.

The back fin contains four soft rays, of which the first is not divided. The pectoral fins are low and short, but are longest above the middle, although they are rather blunt: each contains twelve rays, of which the first is a smooth, rather slender prickle, with its extremity of a substance resembling whalebone. The ventral fins are minute, and near each other, and each has eight rays. The fin behind the vent reaches close to that of the tail, but is not joined to it; and its rays are all soft, and of nearly equal lengths. The tail fin contains seventeen rays.

3d Species.—Silurus Canio.

A silurus with the fin of the tail divided into two sharp lobes; with four tendrils, of which the two upper reach almost to the middle of the fish; with sixty-nine rays in the fin of the vent; with the prickle of each pectoral fin smooth-edged; and with the sides unspotted.

This fish has a very strong resemblance to the Silurus bimaculatus of Bloch, (Ichth. Tome XI. p. 17, Pl. CCCLXIV.) and of La Cepede, (Hist. des Poissons, Tome V. p. 57;) but the tips of its tail fin are not black, a circumstance to which Bloch’s fish owes its name. Besides, in Bloch’s fish the first ray of each pectoral fin is a very strong indented prickle.

The Canio (Kani pabda) I found in ponds in the north-east
parts of Bengal. It differs from the *Pabda* in having no clouds on its sides.

Behind the upper jaw there are two bones covered with teeth; and in each membrane of the gill-covers there are about twelve rays.

Each pectoral fin contains thirteen rays; the first is only hard at the very bottom. The fin of the tail contains eighteen rays.

4th Species.—*Silurus Duda*.

A *silurus* with the fin of the tail divided into two sharp lobes; with four tendrils, of which the two upper reach almost to the middle of the fish; with seventy-three rays in the fin behind the vent; and with the first ray of each pectoral fin smooth-edged.

The *Duda* (*Dudha pabda*) differs in nothing from the *Canio* except in the number of rays in the fin behind the vent; but the fishermen allege that they are different species. It is found in the river Kusi.

5th Species.—*Silurus chehra*.

A *silurus* with the fin of the tail divided into two blunt lobes; with four tendrils, of which the two upper reach to the end of the back fin; with sixty-seven rays in the fin behind the vent; with the prickle in each pectoral fin indented behind; and with the sides marked with cloud-like spots.

This species I also found in the Kusi river. The general colour is silver, with some dusky green on the back, and cloud-like spots on the sides, but without the yellow stripe along the sides that the *pabda* has. On each pectoral fin is a large black spot.

Like the *Canio*, this has a bone covered with teeth on each
side of the palate, contiguous to the jaw. The rays in the membrane of each gill-cover are about thirteen.

The first ray of the back fin is almost twice as long as any of the others. The first ray of each pectoral fin is a strong prickle, indented on the hinder edge. The rays in the vent fin are about sixty-seven in number, but I am not satisfied that this was exactly determined.

6th Species.—Silurus Pabo. Plate XVII. Fig. 48.

A silurus with the fin of the tail divided into two lobes, with four tendrils all shorter than the head, and with seventy-three rays in the fin of the vent.

This fish I found in the Brahmaputra river, towards Asam. It differs more from the Pabda than the intermediate species; but still a full description will be unnecessary. Above it is of a purple colour, with a green gloss; below the colour is silver, with a purple gloss. The belly is of a livid red. The head and sides are dotted with black.

The upper tendrils are close to the middle of the upper jaw, and reach only to the eye. There are two small bones in the upper lip. On the palate are six bones covered with teeth, two adjacent to the jaw, and four at the throat. The tongue wants the transverse marks, which that of the Pabda has. The gill-covers are rounded behind, and their membranes contain each about thirteen rays. There is no slit under the throat.

The back slopes with a considerable convexity. The lateral line forms an arch above the pectoral fin. The end of the tail is bent downward.

In the back fin are five rays, and sixteen in each pectoral, the hind part of the prickle being indented on the edge, while it is much stronger than in the Pabda; but, as in that fish, it terminates in a substance like whalebone. Each ventral fin con-
tains ten rays. The fin behind the vent is separated by half an inch at least from that of the tail, and is covered half its height with scales, a very rare occurrence in this genus. The number of its rays is about seventy-three; but I cannot count them with certainty. The two lobes of the tail fin have their points turned much from each other, and are rather sharp. The whole contains nineteen rays.

7th Species.—Silurus boalis. Plate XXIX. Fig. 49.

A Silurus with the fin of the tail divided into two lobes, with four tendrils, of which the two upper extend to the middle of the fish, with the pectoral fins unarmed, and with the edges of the first ray in the back fin smooth.

The Wallagoo of Dr Russell (Indian Fishes, Vol. II. No. 165) differs little from the Boalis; but has ninety-one rays in the fin of the vent, a mouth which descends obliquely, nostrils near the nose, lateral lines running parallel to the back, unspotted sides, and the first ray of the back fin strongly indented on the edge.

The Boalis is a very common fish in the rivers not only of the Gangetic provinces, but all over India, and is occasionally found in ponds. It grows to a large size, being sometimes found six feet in length, and is considered good eating by the natives; but has such a forbidding aspect, that few, if any, Europeans have ventured to taste it. The appearance of the fish is much more disgusting than the figure represents; yet, in other respects, it has a strong resemblance to the five preceding species. It is not, however, so high in proportion to its length, the slope from the back fin to the end of the nose being small and uniform all the way. Above it is of an olive shade with a golden gloss, and below white with clouded spots, consisting of numerous black dots; but the vent and tail fins are blackish, and
over the whole fish is spread a livid hue, which rapidly in-
creases after it is taken out of the water, and soon covers the
whole.

The head is short, blunt, flattened, and wider than the body. The upper tendrils arise from the middle of the upper jaw: the under ones from the throat, and these are shorter than the head. The mouth is immense, and extends straight back from the end of the nose to behind the eyes. The under jaw is rath-
er the longest. The lips are scanty. The teeth in both jaws, and in a line parallel to each side of the upper on the palate, are crowded in great numbers, sharp, and reflected. The tongue is tied down, smooth, cartilaginous, and blunt. The apertures of the nostrils are round, and placed in a hollow line in the middle between the eyes and jaw. The eyes are high and small, with circular pupils. Each gill-cover consists of one rounded plate, which leaves exposed a thick membrane, containing nineteen rays. On the throat is a slit.

The lateral line is arched before, runs high along the side, and behind is smooth and porous. The vent is before the mid-
dle. The tail ends in a notch.

The fin of the back is indented on the edge, and contains five soft rays, diminishing rapidly in length from the first, which is undivided, and smooth on the edges, but jointed. The pectoral fins, which are short, low, and sharp above, have each fifteen soft jointed rays, of which the first, and perhaps the last, are un-
divided. The ventral fins are very small, and nearly approxi-
mated; and each has ten soft rays, of which the first is undiv-
ided. The fin behind the vent is rounded behind, and quite distinct from that of the tail, although it reaches very near it. The number of its rays, all nearly equal in length, is eighty-six, of which the first and second are undivided, and short. The tail fin is divided into two unequal lobes, the upper being long-
est, and contains seventeen distinct rays, with two minute ones at each side.

8th Species.—*Silurus garua*. Plate XXI. Fig. 50.

A *Silurus* with the fin of the tail divided into two lobes; with eight tendrils; and with eight rays in the back fin, and twenty-nine in that of the vent.

The *Garua* is common in the fresh water rivers of the Gangetic provinces, often grows to two feet in length, and by the natives is considered as good eating. It has little or none of that lurid appearance to which many kindred fishes are liable, but differs more than the *Boalis* from the *Pabda*. The prevailing *colour* is silver, with green on the back. The fins are diaphanous, that on the back and the pectorals being dotted, and that of the tail being edged with black. The head and shoulders have a golden gloss. The fish is compressed at the sides, and of a long lance *shape*, tapering very gradually both to head and tail.

The *head* is oval, blunt, of a moderate size, and rather wider than the body, but by no means flattened above. Between the eyes there is a longitudinal cavity extending to the nostrils. There are eight *tendrils*; one pair, from above the hinder apertures of the nostrils, extend only to the eyes; the second pair, from the sides of the upper jaw, extend to the end of the ventral fins; the other two pair, coming from the chin, extend to the end of the head. The *mouth*, placed a little below the end of the nose, is large, and extends straight backward. The upper *jaw* is rather the longest. The upper *lip* has two small cartilages. The *teeth*, in both jaws, are granular, and crowded together. On the fore part of the palate is a kidney-shaped bone, covered with teeth like those in the jaws. The *tongue* is blunt, tied down, and smooth. The foremost aperture of each
nostril is close to the jaw, and circular; and the hinder one is higher up, and oblong. The eyes are placed in the middle, are large, and look downward; and the longest axis of their pupil is vertical. Each gill-cover contains three plates, and leaves exposed its membrane, which contains eight rays.

The back slopes very little, and is not so protuberant as the belly; before the fin it has a sharp ridge. The hinder part of the belly, and all the lower side of the tail, have also sharp edges. The end of the tail is rounded, and a little dilated. The lateral line is above the middle, and is straight and smooth. The vent is near the middle.

The back fin slopes very suddenly from the first ray, which is a prickle, indented behind, and terminated by a substance like whalebone; there are, besides, seven branched rays. The pectoral fins are low, sharp above, and of moderate length: each contains twelve rays, of which the first is a prickle, indented on both edges; the others are branched. The ventral fins are very small, and at a distance from each other: each contains six soft rays, of which the first is undivided. The fin behind the vent does not approach that of the tail, and, near the body, is covered by a thick skin. It contains twenty-nine soft rays, of which the first four are undivided and contiguous to each other, and increase much in length from the first, which is very short. The other twenty-five rays decrease gradually in length to the end, which is rather angular, and are branched. The tail fin is long, and deeply divided into two sharp lobes. It contains seventeen distinct rays, with some short ones at each side.

V. Genus.—Malapterurus.

Fishes of the fifth order, with a smooth slimy skin, destitute
of scales, with the mouth surrounded by tendrils, and with one fin on the back, placed toward the tail, and destitute of rays.

1st Species.—Malapterurus coila.

A malapterurus with eight tendrils.

This fish is found in the fresh water rivers of Bengal, and grows to about a span in length. It is not an ugly animal, and, by the natives, is considered good eating. It is shaped somewhat like the blade of a knife, being long, tapering, much compressed at the sides, blunt on the back, and sharp on the under edge. The whole almost is of a silver colour, with some black on the back and on the fin of the tail.

The head is oval, small, but wider than the body, and blunt. There are eight tendrils, slender, nearly equal in length, and reaching to about the middle of the fish. The mouth is small, and extends straight back, the under jaw being the shortest. The lips are fleshy. The nostrils are circular, and near the jaw. The eyes are of a moderate size, near the middle, round, and protuberant. The gill-covers expose part of their membranes; but I could not exactly ascertain the number of rays which each contains. Under the lower jaw there is no slit.

The back forms a smaller arch than the belly. The tail is very long, and its end is bent down. The vent is far forward. On each side are three smooth lateral lines.

The back fin is small and oval, with its widest end uppermost. The pectoral fins are low, and sharp above, and extend beyond the vent: each contains sixteen rays, of which the first is undivided, flexible, and smooth-edged; the others are branched. The ventral fins are minute, each containing seven rays, of which one on each side is undivided. The fin behind the vent contains seventy-one rays of nearly equal length, the first, second, and third, being undivided, and the others bifid.
Ageneiosus. Gangetic Fishes.

The tail fin is divided into two sharp lobes, of which the under is the longest, and contains sixteen distinct rays, besides many small compacted ones.

VI. Genus.—Ageneiosus.
Fishes of the fifth order, with a smooth slimy skin, destitute of scales; with the mouth devoid of tendrils; and with two fins on the back, the hinder one having no rays.

1st Species.—Ageneiosus mino.
An Ageneiosus with eight rays in the back fin, and twenty-one in that behind the vent.
This fish is found in the upper part of the estuaries, that is, where the water possesses little or no saltiness. It grows to about a foot and a half in length, and by the natives is considered good to eat. Its lower part is silver coloured; its upper parts green, changing to purple; but all its colours are lurid. In proportion to its breadth it is very long, and is but little compressed on the sides.
The head is of a moderate size, flattened above, blunt, and smooth; but the bone on the upper part is almost bare, and on its middle is a long deep furrow. On the nape is a bone marked with lines. The under jaw is the longest. The mouth is very large, and extends straight back from the extremity of the nose. The lips are fleshy, and, towards the corners, are reflected. The teeth in both jaws, and in a belt parallel to each side of the upper one, are crowded, conical, and blunt. Both apertures of the nostrils are circular. The eyes are far forward on the sides of the head, and their longest axis is horizontal, while that of their pupils is vertical. The covers of the gills are rounded behind, and do not conceal their membranes, each of which contains five rays. There is no slit under the lower jaw.
The back, from the fin to the head, descends much, and is covered with a bony plate marked with lines, and extending to the nape. At each side it is divided into two processes, the foremost of which descends to the opening of the gills. The shoulder-bones are almost naked, and end in a sharp point. The lateral lines are bent downward. The vent has two openings, and is behind the middle.

The first fin of the back is before the middle, and has eight rays, of which the first is a very short thick bone; the second is a very strong prickle, indented with blunt teeth before, and with sharp ones behind; the other six rays are branched, and the last of them is divided to the bottom into two. The second back fin is far behind the middle. The pectoral fins are small, and each contains nine rays, of which the first is like the second of the back fin. The rays in each ventral fin are six in number, and of the fin behind the vent twenty-one, of which the first six are undivided, and gradually lengthen from the first; the last fifteen are branched. The tail fin is divided into two sharp lobes, containing nineteen distinct rays, with some small compacted ones at the sides.

VII. Genus.—Pimelodus.

Fishes of the fifth order, with a slimy skin, destitute of scales or fleshy warts; with the mouth surrounded by tendrils; and with two back fins, of which the hinder one has no rays.

1st Species.—Pimelodus silondia. Plate VII. Fig. 50.

A Pimelodus with two tendrils, and an opaque body.

This fish is very common in the Gangetic estuaries, and is considered by the natives as good for eating. It commonly grows to three feet in length, and occasionally to twice that
size. In proportion to its breadth it is very long, and is much compressed at the sides, with the upper edge rounded, and a great part of the lower edge sharp, somewhat like a knife. The back is of a dusky green colour; and, although the sides are like silver, the fish has a dirty lurid appearance, with a shade of livid hue. The back and tail fins are greenish, the others are white.

The head is short, thick, but not flattened, oval, with little slope, smooth, and covered with skin. On its summit is a longitudinal furrow. A tendril proceeds from each side of the upper jaw, but scarcely reaches farther than the corner of the mouth. The mouth is of a moderate size; and, when shut, descends backward. The under jaw is rather the longest. The lips are fleshy. The teeth in each jaw, and on a crescent-shaped bone on the fore part of the palate, are sharp, of unequal size, numerous, crowded, and of moderate size: on the four bones at the throat, they are very small and imbricated. The tongue is tied down, smooth, and blunt. The nostrils are small and circular; the foremost aperture is close to the jaw, and the other near it. The eyes are far forward, high, and convex; the greatest axis of their pupil is vertical. Each gill-cover is rounded behind, and exposes to view its membrane, which has ten rays. Under the throat is a slit.

On the body there are no naked bones. The back descends very little, and projects less than the belly, which is blunt-edged to the ventral fins. The tail diminishes gradually, and is sharp-edged below. The lateral line descends in a curve, with its concavity towards its back. The vent is rather before the middle.

The first fin of the back is far forward, and diminishes rapidly backward from the second ray, which is the longest; the first is a strong compressed prickle, with blunt knobs be-
fore, and sharp teeth behind; there are besides seven branched rays; but the two last approach near each other at their root. The hinder fin is far back, and oval, with its widest end most remote from the body. The pectoral fins are low, sharp above, and rather shorter than the head; each contains fourteen rays, of which the first is a prickle like that on the back. The ventral fins are still shorter than the pectorals, and are remote from each other; each has six rays, of which the first is undivided. The fin behind the vent ends at the back in a sharp point, and slopes very gradually from the fifth ray, which is the longest, those before it shortening very quickly, and like it being undivided, while the other thirty-six are branched. The fin of the tail is somewhat triangular, with the end like a crescent. It contains seventeen distinct rays, besides several short compacted ones on each side.

2d Species.—Pimelodus Chandramara.

A Pimelodus with two tendrils, and a diaphanous body.

This little fish, which seldom exceeds an inch and a half in length, I found in the Atreyi river. It has some affinity to the Pimelodus guttatus of La Cepede, (Hist. des Poissons, Tome V. p. 96.) It is of a long form, flattened at the sides, and has a prominent belly. Except where the viscera are enclosed by a shining silver coloured membrane, and along the spine, which is blackish, it is every where diaphanous, here and there marked with clusters of black dots; and on each side is a golden stripe accompanying the lateral line.

The head is blunt, of a moderate size, and smooth. The tendrils are so minute as to be scarcely visible without a lens; but one proceeds from each corner of the mouth, and is shorter than the head. The eyes are large and protuberant. The gill-covers leave exposed their membranes, which contain rays,
but, on account of their slenderness, their number cannot be ascertained. There is no slit under the throat. The nostrils and teeth are too minute for observation.

The shoulder-blades are naked.

The foremost back fin contains eight rays, of which the first is a smooth-edged prickle. The hinder fin is dotted. The prickle of each pectoral fin is indented behind. Each ventral has six rays, and the vent fin has seventeen. The fin of the tail is divided into two lobes.

3d species.—PIMELODUS PANGASIUS. Plate XXXIII. Fig. 52.

A Pimelodus with four tendrils; with the tail fin bifid; and with the prickles of the back fin and pectorals very little longer than the membrane.

This fish is common in the estuaries of Bengal, and often grows to three feet in length. It is eaten by all ranks of natives that use fish, but is not considered as of the best quality. It is of a lurid appearance, long in proportion to its breadth, and flattened at the sides, and slopes gradually from the beginning of the foremost back fin toward both extremities. The colour above is dusky green, and below white, with a purple gloss on the sides. The fins are whitish.

The head is oval, short, rather wide, a little depressed, and blunt, with a notch on each side of the nose. On each side of its summit is a bony ridge slightly tuberculated. Two of the knobs on each are conspicuous, one at the fore end, and the other opposite to the eye. Two of the tendrils, from the middle of the upper jaw, are nearly as long as the head; and two still shorter proceed from under the chin. The mouth is moderate, and below the extremity of the nose, and extends straight back. The upper jaw is the longest. The lips cover the jaws. The teeth, both on the jaws and palate, are sharp,
equal in size, very small, and crowded together. The fore part of the palate has a crescent-shaped bone covered with teeth, and divided into four lobes. At the throat there are four bones covered with teeth; the two above are half spheres; the under ones diverge, are narrow, and end in a point. The openings of the nostrils are circular; the foremost at the notch above the jaw, and the other nearer the jaw than the eye. The eyes are half way up the head, far forward, flat, and of a moderate size. The gill-covers have one plate with little covering, and are marked with waving lines, end in a point, and expose to view a thick membrane, containing ten rays on each side. Under the throat there is no slit.

The ridge of the back before the fin is rather sharp, and is covered by a waved bone, which, on each side, sends down a process to join the shoulder-bone, and this projects with a point over the pectoral fins. The sides slope outward. The lateral line is high up, straight, and smooth; and the skin, although opaque, is marked by the muscles, the marks uniting at the lateral line. The vent is nearly in the middle. The tail, near its end, is a little dilated, and divided into two lobes.

The foremost back fin is near the head, and slopes rapidly from the end of the second prickle to that of the last ray. It contains nine rays, of which the first is a very short triangular bone, the second a long strong prickle, ending in a substance like whalebone, and being indented on both edges; the other seven rays are branched. The hinder fin is far back, and somewhat of a hooked form, but blunt. The pectorals are low, nearly as long as the head, and sharp above; each contains twelve rays, of which the first is like the second in the back fin; the others are branched. The ventral fins are much smaller than the pectorals, and are separated some distance from each other: each has six soft rays, of which the first is
undivided. The fin behind the *vent* ends sharp behind, and contains thirty-one rays, of which the foremost five are undivided, and rapidly increase in length from the first, which is very short; the others are branched, and slowly diminish in length to the last, which is deeply divided into two portions. The *tail* fin is divided into two sharp lobes, containing seventeen distinct rays, besides several short compacted ones at each side.

4th Species.—*Pimelodus rita*. Plate XXIV. Fig. 53.

A *Pimelodus* with six tendrils shorter than the head; with the tail fin two-lobed; with eight rays in the foremost fin of the back, the great prickle of which is smooth-edged; with twelve rays in the fin behind the vent; and with an opaque and unspotted body.

This fish is common in the estuaries of Bengal, grows to three or four feet in length, and is a clumsy lurid animal, which many of the Hindus will not eat. It is of a long conical *shape*, very little compressed, and tapers gradually toward both ends from the commencement of the foremost back fin. The upper parts are of a dusky *colour*, with a greenish gloss, changing to gold and purple, but of very dirty shades. The under parts are whitish. The fins are stained with red. The eyes are yellow.

The head is short, wide, depressed, oval, blunt, and covered with a slimy skin. Two very short *tendrils*, compressed at the root, proceed from before the hinder openings of the nostrils; two, a little shorter than the head, and having at their root a short membrane, proceed from the sides of the upper jaw; and two, of nearly the same length, proceed from the throat. The *mouth*, placed below the extremity of the nose, is of moderate size, and extends straight backward. The *lips* are fleshy. The *teeth* in both jaws, and on the palate, are granular, blunt, and.
crowded. In the jaws the anterior ones are the largest. On
the fore part of the palate are two large oblong bones, covered
with teeth. Both apertures of each nostril are circular: the one
close to the jaw is large, and surrounded by a margin; the
other, half way between the eye and jaw, is smaller. The eyes
are above the middle of the cheek, and forward; both orbit and
pupil are oblong, with their longest axis horizontal. Each gill-
cover consists of one small smooth plate, leaving exposed a
thick membrane, which contains many rays very indistinctly
seen. There is no slit under the throat.

The ridge of the back is blunt, and is covered by two rough
bones; the foremost is large and oblong, with three blunt pro-
cesses toward the head, the largest in the middle; the other
bone, adjacent to the fin, is heart-shaped. On each shoulder,
also, is a rough bone of an oval shape, from which the lateral
line descends straight to the end of the tail, which is dilated
and rounded at the end, where it is slightly compressed. The
shoulder-blades are naked, and very long, but blunt. The vent
is behind the middle.

The posterior fin of the back is higher than the body, and
slopes very suddenly backward. The foremost of its rays is a
very short rough triangular bone; the second is an enormous
smooth-edged prickle, tapering to a sharp point, and without
any tip of the substance like whalebone; the other six rays are
branched; and the last is divided to the root. The hinder fin
is almost as long as that behind the vent, to which it is oppo-
site, rises very gradually, and toward the tail ends abruptly.
The pectoral fins are low, about as long as the head, and sharp
above: each has twelve rays, of which the first is a very strong
flat prickle, indented on both edges, and terminating in a sub-
stance like whalebone; the teeth on its fore edge are turned to-
ward the point, those behind toward the root. The ventral fins
are smaller than the pectorals, and each contains eight rays, of which the first and last are undivided. The fin behind the vent is somewhat rounded, but slopes more behind than before: its first four rays are undivided, and the others are branched, the last being divided to the very root. The fin of the tail consists of two unequal lobes, the upper being the longest and sharpest. It has fifteen distinct rays, besides some short compacted ones at each side.

5th Species.—**Pimelodus gagora.** Plate X. Fig. 54.

A *Pimelodus* with six tendrils shorter than the head; with the tail fin divided into two lobes; with nine rays in the first fin of the back, which has no elongation beyond its membrane; but its prickle is indented on both edges; with eighteen rays in the fin behind the vent; and with the sides unspotted, and opaque.

The *Gagora* has a considerable affinity to the *Pimelodus barbus* of La Cepede, (*Hist. des Poissons*, Tome V. p. 106,) a fish of South America, and therefore probably different from that of India. It is common in the estuaries of Bengal, grows to about three feet in length, and is considered good eating by the natives. The form is long, conical, little compressed at the sides, and rather more prominent above than below. From the beginning of the back fin it slopes gradually to both ends, but below the tail diminishes rather suddenly at the fin behind the vent. The colour above is a dusky purple, and below white. The sides have a gloss like silver. The back fins are dotted with black, the dots on the hinder fin forming a faint large spot. The fin behind the vent, that of the tail, and the ventrals, are white, stained with red.

The head is short, but thick, oval, lightly depressed, and rises with a convex slope from the jaw to the nape; and this slope continues to the back fin. From this organ there extends for-
ward a large bony plate, which covers the fore part of the back and the hind part of the head, and is marked with waved lines. On the nape, as from a centre, there diverge, in different directions, several straight lines. On the centre of the fore part of this plate is an oblong cavity, sharp at each end; and behind the eye the plate forms into four separate ridges, one of which, on each side, passes to the nostril, and the other two re-unite on the nose. Behind the plate has also four short processes, one on each side, running down the shoulder, and another on each side of the first ray of the back fin. The two tendrils, from the sides of the upper jaw, are almost as long as the head, and the four from the chin are shorter. The mouth is of moderate size, placed under the extremity of the nose, and extending straight backward. The under jaw is the shortest, and in its middle has a slight longitudinal ridge. In each jaw are many granular teeth. On the palate are two bones covered with sharp crowded teeth. The apertures of the nostrils are near each other, and about half way between the eyes and jaw. The foremost aperture is circular; the hinder crescent-shaped, and covered by a reflected membrane. The eyes are of moderate size, high, and forward; and the pupils are oblong. Each gill-cover consists of one plate, which exposes to view a membrane containing four flattened bones. Under the chin is a slit.

The back forms a sharp ridge. The sides slope outward, and on each shoulder, above the blade, which is naked, there is an oblong protuberance. The lateral line descends from the upper side of this protuberance, is smooth, and very distinctly marked. The vent is behind the middle. The tail is dilated at the extremity, and ends in a notch.

The first fin of the back is far forward, and slopes very rapidly from the point of the second ray to the end. The first of its rays is a very short bone; the second is a strong prickle,
terminating in a substance like whalebone, and indented on both edges, and the others are branched. The second fin is almost as long as that of the vent, and rises gradually to the end, where it is rounded above, but sharp below. The pectoral fins are shorter than the head, and low: each contains twelve rays, of which the first is a prickle like that of the back; the others are branched. The ventral fins are shorter than the pectorals, and near each other: each contains six rays, of which the first is undivided. The fin behind the vent is nearly triangular, sloping much, both before and behind, from the sixth ray, which is the longest; the first five are undivided. The fin of the tail is divided into two lobes, of which the upper is rather the longest and sharpest: it contains eighteen distinct rays, besides some short ones on each side.

6th Species.—Pimeleodus sagor.

A Pimeleodus with six tendrils, rather shorter than half the fish, with the fin of the tail divided into two lobes, with nine rays in the back fin, which has no elongation beyond its membrane, but its prickle indented on both edges; with eighteen rays in the fin behind the vent; and with opaque sides transversely barred above the lateral line, which is single.

The Diddi Jellah of Dr Russell (Indian Fishes, Vol. II. No. 169) is very like the Sagor, but has two lateral lines on each side. The Silurus Herzbergii of Bloch (Ichth. Tome XI. p. 24, Pl. CCCLXVII.) has also a considerable affinity to the Sagor, but differs in colours, being brown above and silver below, and also in having only thirteen rays in the fin behind the vent.

The Sagor is found along with the Gagora, is nearly of the same size, and the two differ more in appearance than in structure. So like in this respect are they, that here I shall only men-
tion the circumstances in which the Sagor differs from the description given of the Gagora.

The Sagor above is of a green colour, with a golden gloss, and adorned with several golden belts, descending to the lateral line. The naked bone covering the head is distinct from that on the back, is rounded before, and terminates behind in four lobes. The bone on the back consists of two rounded lobes. On each gill-cover are two naked bones, roughened with tubercles; the foremost being long and sharp at each end. The two upper tendrils reach to the middle of the pectoral fins, and the two outer ones on the chin are only a little shorter. There is only one bone on the palate, and it is divided into four lobes. The lateral line, in its fore part, is covered with tubercles. The pectoral fins have only eleven rays each. The first seven rays of the vent fin are undivided. In the tail fin there are only sixteen distinct rays.

7th Species.—Pimelodus arius.

A Pimelodus with six tendrils not longer than the head; with the fin of the tail divided into two lobes; with eight rays in the back fin, the prickle being indented on both edges, and ending in a flexible point much longer than the membrane; with twenty-two rays in the fin behind the vent; with teeth on the palate; and with the sides unspotted and opaque.

This is another fish, so like the Gagora, that, besides the circumstances mentioned in the specific character, I shall only notice what it differs in from the description of that animal.

The Arius (Ari gagora) is found in the same places with the Gagora, but seldom exceeds two feet in length. Its colours are similar to those in the description; but the spot on the second back fin is more distinct, nor have any of the back fins a tinge of red. On its palate are two triangular bones, thinly
covered with blunt teeth. The membrane of each gill-cover contains five rays. The first ray of the back fin is very short, and the last is divided to the very root. There are eleven rays in each pectoral fin; the first seven of those in the fin behind the vent are undivided. There are only fifteen distinct rays in the fin of the tail.

8th Species.—Pimelodus jatius.

A Pimelodus with six tendrils not longer than the head; with the fin of the tail divided into two lobes; with eight rays in the back fin, the prickle being indented on both edges, and ending in a flexible point much longer than the membrane; with twenty-one rays in the fin behind the vent; with no teeth on the palate; and with opaque sides.

The Jatius (Jat gagora) is a third species, which differs so little from the Gagora, that I shall only mention the few particulars, besides those contained in the specific character, in which it differs from the description of that fish.

The Jatius is found in the same place, grows to the same size, and has similar colours with the Gagora, only the spot on the hinder back fin is more distinct. On the palate there are no bones covered with teeth; but there is a kind of membranous veil behind the upper jaw. There is no slit on the throat. The first fin of the back, the pectorals, and the fin behind the vent, entirely resemble those of the Arius just described, only the last contains one ray less.

8th Species.—Pimelodus nenga.

A Pimelodus with six tendrils longer than the head; with the tail fin divided into two lobes; with nine rays in the foremost back fin, the prickle being indented on both edges, and ending in a flexible point, much longer than the membrane; with
twenty rays in the fin behind the vent; with teeth in the palate; and with opaque sides marked with short transverse lines.

The *Nenga* (*Nenga gagora*) is a fourth species equally allied to the last four as they are to each other, and found in the same places. Besides the circumstances mentioned in the specific character, it differs from the *Gagora* as follows:

The colour is golden, with a dusky shade on the back. All the fins are yellowish, stained with black. On each side, above the lateral lines, are some short vertical marks. The bones, covered with teeth, are situated on the middle of the palate, close to each other. The tendrils extend beyond the pectoral fins. The bony plate on the head and shoulders wants the ridges that go to the nostrils, and its hinder branches are shorter. The foremost seven rays of the fin behind the vent are undivided.

9th Species.—*Pimelodus sona*.

An *Pimelodus* with six tendrils longer than the head; with the tail fin divided into two lobes; with nine rays in the first fin of the back, the prickle being indented on both sides, and ending in a flexible point much longer than the membrane; with eighteen rays in the fin behind the vent; and with opaque spotless sides.

This is still another kind found in the same places, and so nearly allied to the above, that, besides the differences mentioned in the specific character, I shall only notice the circumstances in which it differs from the description of the *Gagora*.

The gloss on its sides is golden. The two upper tendrils, and the two outer of those below the chin, reach to the end of the pectoral fins. The teeth are sharp. The eyes are oblong, with
the longest diameter horizontal, while the longest diameter of
the pupil is vertical.

10th Species.—*Pimelodus viridescens*. Plate XI. Fig. 56.
A *Pimelodus* with six tendrils; with the tail fin divided into
two lobes; with seven rays in the foremost fin of the back, the
prickle having both edges smooth; with thirteen rays in the
fin behind the vent; with the back reddish-brown, crossed by
three green bars; and with opaque spotless sides.

This small fish is found in the rivers of the northern parts of
Bengal. It is depressed in the fore part, and conical behind.
The sides are silver coloured, the belly livid, and the fins of the
back and tail spotted.

The head is very large, depressed, and blunt. On its summit
are two longitudinal bony ridges, with a cavity between. The
two tendrils, from the sides of the upper jaw, are about as long
as the head; and the four from the chin are somewhat shorter.
The mouth, situated a little below and behind the extremity of
the nose, is large. The jaws are covered by lips. There are no
teeth, except a slight roughness on the jaws. The apertures of
each nostril are close to each other, and half way between the
eyes and jaw. The eyes are high, of moderate size, and oblong.
The gill-covers expose their membranes, each of which contains
six very slender rays. Under the throat is a slit.

On the fore part of the back there are two rough bony plates,
the foremost of which is the largest, and behind very deeply di-
vided into three lobes. Each shoulder-bone sends a double
naked process above the pectoral fin. The lateral line is
straight, and high on the side. The vent is behind the middle.

The foremost fin of the back contains seven rays, of which
the first is a very short thick bone; the second is a strong
sharp prickle, obliquely striated, but not indented on either
edge; the other five are branched, the last being divided to the root. The hinder fin is nearly triangular. The pectoral fins are low, and each contains about nine rays, of which the first is a very strong prickle, indented behind. The ventral fins are shorter than the pectorals, and near each other; and each contains six rays. The fin behind the vent contains thirteen rays: the three first are simple, and increase gradually in length from the first, which is very short. The tail fin is divided into two lobes nearly equal: it contains about twenty distinct rays.

11th Species.—Pimelodus centa. Plate XXXI. Fig. 57.

A Pimelodus with six tendrils not longer than the head; with the tail fin divided into two lobes; with eight rays in the back fin, the prickle in which has smooth edges; with thirteen rays in the fin behind the vent; with the sides silvery; and with the back marked with four black transverse bars.

This fish, which is about three inches in length, is found in the northern parts of Bengal, where it frequents rivers. It is long in proportion to its breadth, of a compressed form, and slopes with a gentle curve, above and below, from the commencement of the first back fin to both extremities. The general colour is silver, with some dusky on the back, and the bars descending to the lateral lines. The end of the tail is black; and the first fin of the back, and that of the tail, are stained with the same colour. The eyes are silver-coloured.

The head is much shorter, and no wider, than the body, and slopes very suddenly from the nostrils to the extremity. On the nape is a bony plate, which sends seven ridges diverging from thence as a centre: the two foremost run forward near each other between the eyes; two short ones run toward each side; and the seventh runs to the back fin. The two tendrils proceeding from the upper jaw are as long as the head, flattened, and
Pimelodus.  

GANGETIC FISHES. 175

joined to the corner of the mouth by a short membrane: the four proceeding from the chin are very short. The mouth is below and behind the extremity of the nose, and is small; and, when it opens, the jaws protrude more than usual in fishes allied to this, but only a very little. The middle of the upper jaw has a longitudinal ridge, which is received in a notch of the under one. The lips are fleshy. The teeth are scarcely perceptible, and each nostril has its apertures near each other, and in the middle between the eyes and jaw. Both are circular, and the pupils of the eyes are oblong. The eyes are high and forward, and are of moderate size. The membrane of each gill-cover is exposed, and contains five rays. There is no slit under the throat.

The back is rounded across, and, before the fin, has a small triangular bony plate. The lateral line runs straight along the middle of the side, which is marked by the separations of the muscles. The vent is near the middle.

The first fin of the back is far forward, and slopes much behind. The first of its rays is a very short bone; the second is a strong prickle, striated on the sides, but smooth on the edges; and the others are branched. The second fin is very low, and nearly triangular. The pectoral fins are very low, as long as the head, and sharp above; each contains nine rays, of which the first is a strong prickle, streaked on the sides, and indented behind. The ventral fins are much smaller than the pectorals, and remote from each other; each contains six rays, of which the first is undivided. The fin behind the vent slopes much backward. The three first of its rays are undivided, closely joined, and lengthen gradually from the first, which is very short; the ten last are branched, and the last of them is split to the bottom. The tail fin is divided into two very sharp equal lobes.
12th Species.—Pimelodus rama. Plate III. Fig. 55.

A Pimelodus with six tendrils shorter than the head; with the fin of the tail divided into two lobes; and with a diaphanous body.

This small fish, which I found in the Brahmaputra river, so strongly resembles the Chandramara, already described, (page 162,) that I shall only mention those circumstances in which it differs from the description of that species.

The colour is yellowish, without dots. On the nape is a large black spot, divided into four lobes. The six tendrils are distinctly visible, and are thicker than the two which the Chandramara has. In the fin behind the vent there are fifteen rays.

13th Species.—Pimelodus tengana. Plate XXXIX. Fig. 58.

A Pimelodus with eight tendrils all shorter than the head; with the tail fin bifid; with a diaphanous body dotted on the upper parts; and with fourteen rays in the fin behind the vent, and eight in the foremost on the back.

This is a pretty little fish, which grows to about three inches in length, and is found in the Brahmaputra river. It is long in proportion to its breadth, more prominent on the back than below, and compressed on the sides; and tapers gradually to both ends from the commencement of the first fin on the back. The body is diaphanous, with a silver coloured membrane investing the viscera and spine, and with a gloss of gold on the sides. On the back are many black dots, which are collected into a spot above each pectoral fin, and also on the crown of the head. The fins of the back and tail also are dotted, so that the edge of the last is black, and several spots are formed on the first.

The head is short, rather thick, oval, and a little sharp, with
Pimelodus. GANGETIC FISHES. 177

a slight ridge above each eye. The mouth, extending straight back, is small, and beneath and behind the extremity of the nose. The eyes are high, and of moderate size. Both openings of each nostril are circular, with a tendril between them. The membrane of each gill-cover contains six rays. Under the lower jaw there is no slit.

The back slopes considerably from the first fin to the end of the nose, and forms a sharpish ridge, covered with a narrow bone, which is divided behind, to surround the first ray of the fin. The shoulder-bones are naked, and the lateral lines straight. The vent is near the middle, and the belly is a little prominent, and convex across.

The foremost dorsal fin slopes much backward. The first of its rays is a very short bone; and the second is a strong prickle, with smooth edges. The second fin is much shorter than the fin behind the vent, and somewhat rounded. The pectoral fins are shorter than the head, low, and sharp above: each, besides soft rays, has a strong prickle, indented behind. The ventral fins are still smaller than the pectorals, and each contains six rays. The fin behind the vent slopes backward, and contains fourteen rays, of which the three foremost are undivided. The tail fin is divided into two equal sharp lobes.

14th Species.—Pimelodus urua.

A Pimelodus with eight tendrils longer than the head; with the tail fin bifid; with a diaphanous body dotted above; and with forty-three rays in the fin behind the vent, and five in the foremost on the back.

This is a little fish, very similar to that last described, and it seems to have some affinity to the Pimelodus atherinoides of La Cepede, (Hist. des Poissons, Tome V. p. 96.) I found it in the rivers and ponds of the northern parts of Bengal. It grows
to about three inches in length, and is diaphanous, with black
dots on the upper parts of the body and head, while a silver
coloured membrane invests the viscera and spine.

The head is very short, but wider than the body, and rather
flat. On the nape is a naked dotted plate, which sends for-
ward two ridges, terminating at the end of the nose, and, back-
ward, a third ridge, which extends to the commencement of
the foremost dorsal fin. The two tendrils between the nos-
trils, and the four from under the chin, are a little longer
than the head; while the two from the sides of the upper
jaw are longer than the pectoral fins. The mouth is below
the end of the nose, extends straight back, and is of mo-
derate size. The jaws, in place of teeth, have a roughness on
their edges. The eyes are globular, high, and of moderate
size. The gill-covers end in a point, and expose their mem-
branes, each of which contains about nine very slender rays.
There is no slit under the throat.

The fore part of the back slopes toward the head. The
belly is prominent. The vent is before the middle. The lateral
lines are faint, and run straight along the centre.

The foremost fin of the back has five or six rays, of which
the first is a prickle, indented behind: the hinder fin is very
small. The pectoral fins are low, and shorter than the head,
and each contains about ten rays, of which the first is a very
strong prickle, barbed on the hinder edge. Each of the ventral
fins contains about seven rays; but so slender, that I cannot be
certain of the number. The same is the case with those of the
fin behind the vent, which are about forty-three in number.
The fin of the tail is divided into two equal sharp lobes, and
contains about twenty-four rays.
15th Species.—Pimelodus barasio. Plate XXIII. Fig. 60.

A Pimelodus with the fin of the tail bifid; with eight tendrils shorter than the head; with a diaphanous body, having on each side two stripes dotted with black; with sixteen rays in the fin behind the vent; and with nine in that of the back.

This small fish I found in the river Tista. It grows to about three inches in length, and its skin is smooth. The cavity containing the viscera is lined with a silver coloured membrane; and, besides the two stripes, the fish has on each shoulder a spot composed of black dots. The first back fin is spotted, the second is dotted.

The head is oval, small, and covered with skin, and along its summit there runs a cavity. There are eight tendrils, much shorter than the head. The mouth is small, and extends directly backward from below, and from a little behind the extremity of the nose. The lips are fleshy. The teeth in both jaws are minute and crowded. The nostrils are in the middle between the jaw and eyes, which are small and high. The gill-covers expose part of their membranes, which are diaphanous, and each contains about six rays. There is no slit under the throat.

The back slopes down from the fin to the head, forms a sharp ridge, and, on its fore part, is covered by a bony plate, shaped like a heart, and marked by a longitudinal cavity. On each side, above the pectoral fin, is an oblong tumour. The shoulder-bones are naked, and end in a sharp point. The lateral lines run straight along the middle of each side. The belly is straight, and transversely obtuse. The vent is near the middle of the fish, and a furrow runs from it to the commencement of the fin.

The first ray of the foremost fin of the back is a very short bone; the second is a strong prickle, smooth on both edges, and
the others are branched. The hinder fin is oblong. Each pec-
toral fin contains a very strong prickle, indented behind. Each ven-
tral fin has six rays. The three first rays of the fin behind the vent are undivided, and lengthen gradually from the first, which is very short. The tail fin is divided into two equal lobes, and contains about twenty rays.

16th Species.—Pimelodus Angius. Plate XXIX. Fig. 59.

A Pimelodus with the fin of the tail bifid; with eight tendrils longer than the head; with the body somewhat diaphanous, and having on each side three dotted longitudinal stripes; with forty-two rays in the fin behind the vent; and with seven in that of the back.

This fish is found in the rivers of Bengal, is very beautiful, and grows to four or five inches in length. It is long in proportion to its breadth, and very much flattened on the sides. The belly is more prominent than the tail, which is rather bent downward at the end, so that the fish has a strong affinity in structure to the Silurus Pabo. The body is smooth, and somewhat diaphanous, and has a bright gloss, changing from gold to purple. A silvered coloured membrane lines the visceral cavity. There are seven longitudinal stripes, composed of black dots, one on the back, and three on each side: of these the undermost has two branches at its fore end. Along the lateral line is a pale golden stripe, ending at the tail in a round black spot.

The head is very small, oval, and little compressed, and along the crown has two ridges. The two tendrils from between the nostrils, and the four from under the chin, are a little longer than the head; the two from the corners of the mouth extend to the ventral fins. The mouth is small, and below the extremity of the nose, and extends straight back: the upper jaw is the longest. The nostrils are near the jaw, with the foremost
aperture circular, and the hinder one oblong. The eyes are large, and circular; but the pupils have their longest diameter placed vertically. The gill-covers are rounded behind, move freely, and contain one smooth bony plate. Their membranes are exposed to view, and contain rays, the number of which I could not exactly ascertain. There is no slit under the throat.

The back, forming a ridge, slopes from the first fin to the head. The belly is prominent, and rounded. The tail tapers gradually, and below is sharp-edged. The lateral line is high, straight, and smooth. The vent is before the middle.

The first fin of the back slopes very rapidly backward, so that its edge is almost vertical. Its first ray is a strong smooth prickle, and the others are branched. The second fin is higher than its length along the back, and it widens towards the point, which is reflected. The pectoral fins are sharp above, and about as long as the head: each has seven rays, of which the first is a strong prickle, barbed on the hinder edge; the others are branched. The ventral fins are much smaller than the pectorals, and stand near each other: each contains six rays, of which the first is short, and undivided. The edge of the fin behind the vent forms a slight arch. It contains about forty-two rays, of which the first three are undivided. The fin of the tail is divided into two divaricating lobes, nearly equal in length, and convex on their posterior edge.

17th Species.—Pimelodus carcio.

A Pimelodus with the tail fin bifid; with eight tendrils, of which two only are longer than the head; with the body nearly opaque; with four dotted longitudinal stripes on each side; and with fourteen rays in the fin behind the vent, and eight in that of the back.

This fish I found in ponds in the northern parts of Bengal.
It is about three inches in length, long in proportion to its breadth, smooth, flattened on the sides into the shape of a wedge, and tapers rather suddenly at the second fin of the back, and at the fin behind the vent. The sides are transversely marked by the muscles. The colour is yellowish, with a gloss of silver, which predominates on a stripe along the lateral line. The four stripes on each side consist of black dots crowded together; and above the shoulder-bone is a large dark spot. The belly is white; and the fins on the back, and behind the vent, are dotted. The eyes are silver-coloured.

The head is short, wider than the body, oval, blunt, and not compressed. On its crown is a rough bare bone, which sends an angle down to the beginning of the lateral line, and a narrow process to the first fin on the back. Along its middle, between the eyes, is a long cavity. The two tendrils, from the corners of the mouth, extend beyond the end of the pectorals, but not to the end of the first fin on the back; the six others are shorter than the head. The mouth is small, and extends straight back, the jaws being nearly equal in length. The lips are fleshy; the teeth crowded and minute. One aperture of each nostril is close to the jaw, and the other half way to the eye. The eyes are high and small, and have circular pupils. The gill-covers are smooth, consist of one plate, and expose their membranes, each of which contains about six rays. There is no slit under the throat.

The back is rather more prominent than the belly, has a considerable slope from the fin to the head, and its ridge is formed by the process from the bony cover of that member, which terminates in a fork, surrounding the root of the prickle. The lateral line descends straight from the shoulder to the end of the tail. The vent is nearly in the middle.

The first fin of the back slopes considerably backward. Its
first ray is a very short bone, the second a strong prickle, barbed behind, and the others are branched, the last being split to the root. The hinder fin is oblong, and rises gradually to near the end, which is very blunt. The pectoral fins are low, shorter than the head, and sharp above. Each contains about seven rays, of which the first is a very strong prickle, deeply indented behind. The ventral fins are still smaller than the pectorals, and each contains six rays. The fin behind the vent slopes backward. Its first four rays are undivided, and lengthen gradually from the foremost; the others are branched, and the last is divided to the bottom. The tail fin consists of two very sharp lobes, the posterior edges of which are convex.

18th Species.—*Pimelodus tengara*. Plate III. Fig. 61.

A *Pimelodus* with the tail fin bifid; with eight tendrils, whereof four are longer than the head; with a smooth opaque body, having four dotted stripes on each side; with ten rays in the fin behind the vent; and with eight in that of the back.

The *Silurus vittatus* of Bloch (*Ichth. Tome II. page 40, Pl. CCCLXXI. Fig. 2*) has some affinity to the *Tengara*, but the prickle on the back is indented behind.

The *Tengara* is very common in the ponds of India, and by the natives is considered good eating. It is a beautiful little fish, from four to six inches in length. It is higher in proportion to its length than most species of *Pimelodus*, a good deal compressed at the sides, and its back is much more prominent than its belly. The upper ridge of the tail contracts rather suddenly at the end of the second fin. The upper parts are of a green colour, changing to purple, the under white. On each side are four longitudinal stripes, covered with black dots,
and separated by the lateral line, and three pale yellow stripes. On each side above the pectoral fin is a large dark spot.

The head is very blunt, of moderate size, and half oval, sloping much more above than below. It is covered above by a bone, waved irregularly with many lines, and having a long hollow between the eyes. This bone terminates behind in three long processes; one in the centre, reaching up the back to the first fin, and one on each side, extending to the shoulder-bone, and ending in a point turned backward. The two tendrils, from between the nostrils, are much shorter than the head; the two intermediate ones from the chin extend to the end of the gill-covers; the two outer ones from under the chin extend a little farther; and the two from the upper jaw reach to the end of the tail. The mouth is below, and a little behind the end of the nose, is of a moderate size, and extends straight back. The upper jaw has a membranous veil behind the teeth, which, in each jaw, are minute and granular. The tongue is blunt, and tied down. The foremost aperture of each nostril is tubular, the other is nearly in the middle, between the jaw and eye. The eyes are small, round, and high. The gill-covers end in a point, are naked, and waved with lines, and each consists of one plate. Their membranes are exposed to view, and thick, each containing about six rays. There is a slit under the throat.

The back slopes, in the same line with the head, to the first fin; on each side of this is a small bony plate. The shoulder-bone is naked, and ends in a point. The lateral line runs straight along the middle of the side. The vent is behind the middle.

The foremost dorsal fin slopes gradually back, and its first ray is a short sharp prickle, smooth on both edges; the others are branched. The hinder fin is longer than that behind the
vent, rises gradually backward, and terminates in a very blunt vertical end. The pectoral fins are low, shorter than the head, and sharp above. Each contains a strong prickle barbed behind, and seven soft rays. The ventral fins are still shorter than the pectorals, and each contains six rays, of which the first is undivided. The fin behind the vent slopes a little backward, and its three first rays are undivided, and lengthen gradually from the foremost, which is very short. The tail fin is divided into two equal sharp lobes.

19th Species.—*Pimelodus telchitta.*

A *Pimelodus* with the fin of the tail divided into two nearly equal lobes; with eight tendrils shorter than the head; with an opaque, rough, reddish body, having on each side one faint stripe; with thirteen rays in the fin behind the vent; and with eight in the first of the back.

This fish frequents the fresh water rivers of Bengal and Behar, grows to about a span in length, and, when taken out of water, is tenacious of life. It is long in proportion to its breadth, tapers gradually to the tail, and is scarcely compressed at the sides. The colour is reddish, with a golden gloss, having a brownish back, and, on each side, a longitudinal stripe of the same colour. The fins are diaphanous.

The head is small, oval, and sharpish. Above it is covered with bony plates, variously furrowed, of which the hindmost is divided into three parallel processes, extending almost to the first fin of the back. The two tendrils from the nostrils, and the four from under the chin, are very short. The two from the corners of the upper jaw, although longer than the others, are shorter than the head, and have a short membrane connected to their hinder edge. The mouth, placed under and behind the extremity of the nose, opens directly back. The
lips are fleshy. There are no visible teeth. The apertures of each nostril are nearer the jaw than the eye, and are separated only by the tendril. The eyes are high and far back, and are minute with circular pupils. The gill-covers are rough, with small tubercles. Each membrane contains four or five very slender rays. There is no slit under the throat.

The back slopes very little toward the head. On the sides are scattered many small tubercles. The lateral line runs nearly straight along the middle of the side. The vent is rather behind the middle.

In the foremost fin of the back, the first ray is a very short bone; the second is a prickle smooth on the edges, and the others are branched. Each of the pectoral fins has ten rays, of which the first is a prickle indented behind. Each ventral fin contains six rays. The three first rays of the fin behind the vent are undivided, and lengthen gradually from the first, which is very short. The tail fin has nineteen distinct rays, besides some that are compacted.

20th Species.—Pimelodus Bagarius. Plate VII. Fig. 62.

A Pimelodus with the tail fin divided into two very long-pointed unequal lobes; with eight tendrils not longer than the head; with a scabrous opaque body, variegated with black irregular marks; with thirteen rays in the fin behind the vent; and with eight in the foremost fin of the back.

The Bagarius (vaghari) grows often to a large size, and is sometimes above six feet in length. It is a very ugly animal, with lurid colours. The fish is very long in proportion to its breadth, and rather flattened, but more prominent above than below. It tapers gradually to the end of the tail from the first fin of the back. The skin above, although slimy, has many small tubercles, that give it a scabrous feel. The colour is
greenish ash, very pale below; and not only on the body, but on the fins, are scattered large irregularly shaped black marks. The eyes are golden-coloured.

The head is very flat, large, and blunt. It is covered by a rough bone, which terminates behind in three narrow processes, whereof the middle one is the longest, and extends along the back to near the fin, while the two outer ones reach to the beginning of the lateral lines. The two tendrils, which separate the apertures of the nostrils, and the four from under the chin are very short; the two from the corners of the upper jaw are about as long as the head, and have behind a narrow membrane, extending to more than their middle. The mouth, placed below and behind the extremity of the nose, is large, and extends straight backward. The under jaw is the shortest, and has a longitudinal ridge on the centre. The lips are fleshy. In each jaw are crowded many teeth of unequal sizes, and some of them large. On the hinder part of the palate are two bones covered with teeth. There is no tongue. Both apertures of each nostril are large; the foremost, however, being smallest and lowest, and they are separated only by a tendril nearer the jaw than the eye. The eyes are very small, are far up and back, and have a pupil shaped like the ace of hearts. The gill-covers end in a long point, with a sinuosity below it, and consist of one scabrous plate. Each of their membranes contains eleven rays. There is no slit under the throat.

The back, before the fins, has a very slight declivity to the head. Before the first fin is a small rough bony plate, which sends a short branch along each side. The lateral line is straight, and descends from the shoulder to near the end of the tail, where it divides into two branches. The vent is behind the middle. The tail is a little compressed, and dilated towards the end, where it forms two small lobes.
The first fin of the back slopes backward, with a slightly concave edge. The first of its rays is a very short bone. The second is a prickle, smooth on both edges, and terminates in a long point, flexible like whalebone, which extends far beyond the membrane uniting the other six rays, which are branched. The second fin is rather shorter than that behind the vent, and is nearly triangular. The pectoral fins are low, sharp above, and longer than the head. Each has thirteen rays, of which the first is a strong prickle, smooth on both edges, and terminated by a flexible point, that extends far beyond the membrane joining the other rays, the two last of which are undivided. The ventral fins are much shorter than the head, and their edge forms a slight concavity. Each has six rays, of which the first is undivided. The three first rays of the fin behind the vent are undivided, and lengthen gradually from the first, which is short. The remaining ten are branched, and their ends form a concave edge. The tail fin is very long, and is divided into two lobes, of which the uppermost is the longest, and bent like a hook. Each ends in a long slender point; and, in the whole, there are seventeen distinct rays, besides some compacted ones on each side.

21st Species.—Pimelodus cavia.

A Pimelodus with the fin of the tail divided into two lobes, the undermost of which is the longest; with eight tendrils not longer than the head; with an opaque scabrous clouded body; with nine rays in the fin behind the vent; and with five in the foremost of the back fins.

This fish may possibly be the same with the Pimelodus cous of La Cepede, (Hist. des Poissons, Tome V. p. 110,) for the description given by him is so short, that one cannot be satisfied on the subject. What he states, however, respecting the co-
The Cavia is found in the northern rivers of Bengal, where it grows to about six inches in length, and retains life long after it is taken from the water. It is neither common, nor is it held in peculiar esteem for eating. It is flattened before, conical behind, and all its upper parts are scabrous from elevated spots. The colours are lurid, and the back is variegated with brown dots, collected into cloud-like marks, while the sides have a gloss like silver, changing into the hue of copper. The belly is of a dirty livid appearance. Across the tail are two transverse bars, and on the tail fin a third, all of which have fewer dots than the adjacent parts. The eyes are white.

The head is very large, a good deal flattened, blunt, and covered above with bony plates, forming various ridges. The two tendrils between the nostrils are very short; the two from the upper jaw are nearly of the same length with the head, the four under the chin are shorter. The mouth, placed below and considerably behind the extremity of the nose, is very large, and extends straight back. The lips are fleshy. Except a slight roughness on the jaws there are no teeth. The nostrils are nearer the jaw than the eyes, which approach each other, are small, and have oblong pupils. The gill-covers are rough, and expose their membranes, but these are so thick that the number of rays which they contain cannot be exactly ascertained; each, however, has about six. There is a slit under the throat.

Between the first fin and the head the back has two bony plates, of which the foremost is the largest, and behind is divided into two. The shoulder-bones are naked, and each sends a long process above the pectoral fin. The lateral line runs
straight along the middle of the side. The vent is near the middle.

The first ray of the foremost fin of the back is a strong blunt prickle, rough, but not indented on the foreside. The hinder fin is small and scabrous. The pectoral fins are low, and each contains about seven rays, the first of which is a very strong prickle, indented on both sides. Each ventral fin contains six rays, and that of the tail about thirteen.

22d Species.—Pimeleodus Hara.

A Pimeleodus with the end of the tail fin like a crescent; with eight tendrils, of which two are a little longer than the head; with an opaque scabrous brown clouded body, and some transparent spots on the fins; with ten rays in the fin behind the vent; and with seven in the foremost on the back.

This fish I found in the river Kosi. It is an ugly creature, of little or no value, and seldom exceeds three inches in length. The body is conical, of a lurid brown colour, with a copper gloss, and is clouded with several irregular black marks. The fins are of a similar colour, but have some parts transparent, somewhat similar to what occurs in the wings of certain moths. The four upper tendrils have numerous black rings.

The head is large, depressed, and blunt. It is covered by bony plates, with various ridges and furrows, and the largest of these plates is deeply divided into three narrow portions, which run along the back almost to the fin, and parallel to each other. The two tendrils between the nostrils, and the four under the chin, are very short; the two from the upper jaw are longer than the head, and near the root have a short membrane from the hinder edge. The mouth is below, and considerably behind the extremity of the nose, and is of moderate size. The lips are fleshy. The only teeth consist in a roughness on each
Pimelodus.  

GANGETIC FISHES.  

191

Jaw. The eyes are minute and high, and have circular pupils. The gill-covers have a scabrous skin, as have their membranes, which, although exposed to view, are so thick that their rays cannot be counted. There is no slit under the chin.

The back slopes to the head. The belly is prominent. The lateral line slopes downward, and between its commencement and the back fin are four tubercles approaching to the form of prickles. The vent is behind the middle.

The edge of the back fin is indented, and its first ray is a very strong prickle, covered with tubercles. The pectoral fins are far forward, under the gill-covers: each has eight rays, of which the first is a strong prickle, indented behind. Each ventral fin has six rays. The fin behind the vent is rounded. That of the tail ends in a crescent, the horns of which are sharp, and nearly equal in length.

23d Species.—Pimelodus Conta.

A Pimelodus with the tail fin divided into two unequal lobes, the upper terminating in a long slender point; with eight tendrils shorter than the head; with an opaque brown scabrous body; with transparent spots on the fins; with ten rays in the fin behind the vent; and with five in the foremost of the back.

I found the Conta (Khongta) in the river Mahananda. It is an ugly animal, of little or no value, which grows to from three to five inches in length. It is long in proportion to its breadth, tapers gradually to the end of the tail, and is scarcely compressed. The general colour is a lurid brown, with some gloss of copper. The same colour extends over the fins, but these are spotted with black, and have some pellucid portions. The four larger tendrils have black rings.

The head is small, oval, sharpish, and covered above with bony plates variously furrowed. The hindmost plate is very
deeply divided into three narrow parallel processes, which extend along the back almost to the first fin. The two tendrils from the nostrils, and two from the chin, are very short; the four from the corners of the mouth are longer; and each from its hinder side has a short membrane. The mouth is small, and behind and below the extremity of the nose. The lips are fleshy. The jaws have no perceptible teeth. The apertures of each nostril are separated only by the tendril, and are nearer the jaw than the eye. The eyes are far back, and high, and are very small, with circular pupils. The gill-covers are tuberculat-ed, as are their membranes, which are so thick that the number of their rays cannot be ascertained. The apertures of the gills are small. There is no slit under the throat.

The back slopes very little toward the head. The belly is pro-tuberant, and has two longitudinal blunt ridges, which are smooth, all the rest of the fish being rough with tubercles. The lateral lines are straight, and high on the sides. The vent is nearly in the middle.

The first ray of the foremost back fin is a very strong two-edged prickle, barbed before and behind. The hinder fin is minute. Each pectoral fin, placed under the openings of the gills, contains eight rays, of which the first is a strong prickle, indented on both edges, but most deeply behind. Each ventral fin has six rays, of which the first is short and undivided. The three first rays of the fin behind the vent are undivided, and gradually lengthen from the first, which is very short. The fin of the tail contains about sixteen rays, the uppermost of which is produced into a long bristle-like point.

24th Species.—PIMELODUS BOTIUS.

A Pimelodus with the fin of the tail divided into two equal lobes; with eight tendrils shorter than the head; with an
opaque brownish scabrous body; with eleven rays in the fin behind the vent, and with six in the foremost of the back.

I have found this fish in the northern rivers of Bengal. It grows to about six inches in length, and is considered unfit for eating. It is long in proportion to its breadth, sharp at both ends, and scarcely compressed. Its colour is a lurid brown, with a little yellowness intermixed; and it is covered with a thick very rough skin. The fins are dotted.

The head is small, oval, rather blunt, and free from osseous plates, but it is covered with a very rough thick skin. All the tendrils are shorter than the head, and four of them proceed from under the chin, two from the nostrils, and two from the corners of the mouth. The mouth is below and behind the extremity of the nose. The lips are fleshy. The jaws are rough on the edge, but have no teeth. The nostrils are nearer the jaw than the eye. The eyes are high, and near each other. They are minute, and have oblong pupils. The gill-covers are small. Their membranes are so thick as to conceal the rays. There is no slit under the chin.

The lateral lines descend towards the tail. The vent is near the middle of the body. No naked bones project on the surface.

The first ray in the foremost dorsal fin is a prickle ending in a soft point, and smooth on the edges. The hinder fin is scabrous, and terminates abruptly behind. Each pectoral fin contains about eight rays, of which the first is a prickle, indented behind, and terminated by a soft point. Each ventral fin has five rays. The fin of the tail contains about eighteen distinct rays, besides small compacted ones on each side.

25th Species.—*Pimelodus nangra*. Plate XI. Fig. 63.

A *Pimelodus* with the fin of the tail divided into two equal
lobes; with eight tendrils, two of them reaching to the vent; with a smooth body, nearly opaque, and neither spotted nor striped; with nine rays in the fin behind the vent; and with eight in that of the back.

This small fish, growing to three or four inches in length, I found in the Kosi river. It is very long in proportion to its breadth, slightly compressed, and both above and below slopes very gradually to each extremity from the commencement of the foremost back fin. Its colours are rather agreeable, being silver, with some green on the back, and a faint brown streak across the foremost back fin, and another across the fin of the tail.

The head is sharp, long, oval, not wider than the body, and not compressed. On the nape is a small bony plate, from which two slight ridges run to the nose. The two tendrils from the nostrils, and the four from the chin, are nearly as long as the head, the two from the corners of the upper jaw reach nearly to the vent. The mouth, situated below and behind the extremity of the head, is large, and extends straight back. The lips are fleshy. The jaws are rough with very minute crowded teeth. The two apertures of each nostril are separated only by a tendril, and are placed nearer the jaw than the eye. The eyes, which are high up, are small and circular. The gill-covers terminate in a point. Each of their membranes contains about six very slender rays. There is no slit under the throat.

The back forms a ridge covered by a bony plate, which, behind, is bifid. The shoulder-bones are covered. The lateral lines are straight and high. The vent is behind the middle.

In the foremost fin of the back, which slopes much behind, the first ray is a minute bone; the second a short prickle, smooth on both edges, and ending in a substance like whale-
bone; the others are branched. The pectoral fins are low, sharp above, and shorter than the head. Each contains about nine rays, of which the first is a prickle indented behind. The ventral fins are smaller than the pectorals, and each has six rays, of which the first is undivided. The fin behind the vent slopes much backward. The first three of its rays are undivided, and gradually increase in length from the first to the third. The lobes of the tail fin are sharp, and contain about sixteen distinct rays, with some short compacted ones at each side.

26th Species.—Pimelodus murius.

A Pimelodus with the fin of the tail bifid; with eight tendrils not longer than the head; with the body opaque, smooth, and green above; with forty-two rays in the fin behind the vent; and with eight in the foremost of the back.

The Murius (Muri vacha) is about four inches long. I found it in the Mahananda river, and it is reckoned by the natives as belonging to the same genus with the following fish. It is long in proportion to its breadth, compressed at the sides, green on the back, and silver coloured below. The fin of the tail is blackish.

The head is blunt, oval, and furrowed between the eyes with a longitudinal cavity, surrounded by an elevated margin. Of the tendrils, none of which are longer than the head, two proceed from the nostrils, two from the corners of the mouth, and four from the chin. The mouth is of moderate size, and descends obliquely from the extremity of the head. There are scarcely any lips. The upper jaw is a little longer than the under. In each jaw are crowded many teeth. The nostrils are nearer the jaw than the eyes, which are large, with the longest diameter of the pupils vertical. The gill-covers are
rounded behind. Each of their membranes contains about five rays.

The back slopes upward from the head to the foremost fin, between which organs there is a longitudinal furrow. The belly is prominent. The shoulder-bones are not visible. The lateral lines are straight and high. The vent is before the middle.

In the first dorsal fin the foremost ray is a prickle nearly smooth on the edges, and the last is divided to the root. The second fin is minute. Each pectoral fin has eleven rays, of which the first is a prickle. The ventral fins are much smaller, and each has six rays. The first four rays of the fin behind the vent are undivided, the first being very short, and the subsequent ones gradually longer. The lobes of the tail fin are sharp.

27th Species.—Pimelodus vacha. Plate XIX. Fig. 64.

A Pimelodus with the tail fin divided into two equal lobes; with eight tendrils nearly about the length of the head; with the body nearly opaque and smooth, and green above; with fifty rays in the fin behind the vent; and with seven in the foremost of the back.

The Vacha is common in all the larger fresh water rivers of the Gangetic provinces, grows to about a foot in length, and is an excellent fish for the table. It is long in proportion to its breadth, a good deal compressed, slopes gradually toward each extremity from the beginning of the first back fin, and is nearly equally prominent above and below. The colour above is green, with some black dots, which extend over the fin of the back; on the sides and below it is silver.

The head is oval, sharp, rather narrow, and smooth. Two of the tendrils proceed from the nostrils, two from the sides of the
upper jaw, and four from the chin. The mouth is very large, and descends, with a little obliquity, from the extremity of the head below the eyes. There are scarcely any lips. The upper jaw is rather the longest. In both are crowded numerous small sharp teeth, of which there are none on the palate. The apertures of the nostrils are nearer the jaw than the eyes, which are high and of moderate size, and have the longest diameters of their pupils vertical. Each gill-cover consists of two bony plates, smooth, and rounded behind, and leaves exposed a thin membrane, containing ten rays. There is no slit under the throat.

The back is transversely rounded. The lateral line descends from the shoulder. The joinings of the muscles may be traced to the lateral lines, although the fish cannot be considered as diaphanous. The vent is before the middle.

The foremost fin of the back slopes very much, so that its edge is nearly vertical; and the first ray is a slender prickle, slightly indented behind, and terminated by a point like whalebone: the last is divided to the root. The hinder fin is recumbent, narrow at the root, and thickening upward. The pectoral fins are low, sharp above, and shorter than the head. Each contains sixteen rays, of which the first is a strong prickle, indented behind, and ending in a point like whalebone. The ventral fins are much smaller, and stand at a distance from each other. Each has six rays, of which the first is undivided. The fin behind the vent slopes to each end from the fifth ray, rapidly before, and slowly behind; the first five rays being undivided, and the others branched. The lobes of the tail fin have convex edges, and contain seventeen distinct rays, besides some compacted ones at each side.

28th Species.—Pimelodus gagata. Plate XXXIX. Fig. 65.

A Pimelodus with the fin of the tail divided into two equal
lobes; with eight tendrils, of which two only are a little longer than the head; with a smooth opaque yellowish body; with seventeen rays in the fin behind the vent; and with eight in the foremost of the back.

The *Gagata* grows to about a foot in length, and is pretty common both in the fresh water rivers and estuaries of Bengal; but it is full of small bones, and of a very indifferent flavour. It is not very long in proportion to its depth, but a good deal compressed, and much more prominent above than below, and contracts somewhat suddenly at the hinder fin of the back, and at that of the vent. The back is of a purplish-brown colour, the sides yellow, and the belly white. The fins are edged with black.

The head is half oval, straight below, and a little arched above. It is blunt, and its upper part is covered by a bony plate, in most parts variously waved with intersecting lines, and extending along the back and sides in three processes. The process on each side is divided into two branches, embracing a soft oblong tumour. From the nose back to the end of this bony plate there is a cavity surrounded by a smooth ridge, and each ridge has, adjacent to its outer side, two smooth spaces. Above and below each eye there is also a ridge, the upper terminating at the nostril, and the lower at the jaw. The two tendrils from the nostrils, and the four from the chin, are much shorter than the head; but the two from the sides of the upper jaw are rather longer, and have a membrane extending half way along their hinder edge. The mouth is small, and a little behind and below the extremity of the nose. The under jaw has a slight ridge in the centre. The lips are fleshy. In both jaws are crowded many minute teeth. The tongue and palate are smooth. Both apertures of each nostril are circular, are nearer the jaw than the eye, and are separated only by the tendril.
The eyes are high and far back. Their longer diameters, as well as those of their pupils, are horizontal. Each cover of the gills consists of one smooth plate, ending behind in a point; and they do not conceal their membranes, which are thick. Each contains five rays. There is a slit under the throat.

The back slopes with the same curve as the head, and, before the first fin, has a bony plate, waved like that on the head. It sends a branch on each side of the fin. The sides slope outward toward the belly, and each above the shoulder-blade, which is exposed, has an oblong tumour. The lateral line descends from the shoulder to the end of the tail, which terminates in a notch. Perpendicular to each lateral line are several single rows of pores. The vent is behind the middle.

The fins are covered with a thick skin. The first dorsal slopes much behind with a concave edge, terminated by two sharp points. The first of its rays is a very short thick bone; the second is a strong prickle, smooth on the edges, and terminated by a substance like whalebone; the others are branched. The hinder fin is almost triangular, and nearly as long as that behind the vent. The pectoral fins are low, longer than the head, and sharp above. Each contains ten rays, of which the first is a strong prickle, barbed behind, and ending in a substance like whalebone. The ventral fins are much smaller than the pectorals, and each contains six rays, of which the first is undivided. The fin behind the vent slopes each way from the fifth ray, before very suddenly, behind more slowly; but it terminates there in a point. Its first five rays are undivided. The lobes of the tail fin are sharp, deeply divided, and contain eighteen distinct rays, besides compacted ones.

29th Species.—Pimelodus mangois.

A Pimelodus with the tail fin divided into two unequal lobes;
with eight tendrils, all a little longer than the head; with a smooth brownish olive body; with eight rays in the fin behind the vent; and with seven in the foremost fin on the back.

The Mangois (Manggoi) I found in the tanks of Northern Behar. It is from three to four inches in length, little compressed before, but wedge-shaped toward the end of the tail. It is everywhere of an uniform lurid brown colour, inclining to olive.

The head is small, blunt, fleshy, and smooth. Two tendrils proceed from the nostrils, four from the corners of the mouth, and two from the chin. The mouth extends straight from the extremity of the nose, and is large. The under jaw is rather the longest. The lips are fleshy. The only teeth consist of a slight roughness on the edges of the jaws. The nostrils are near the jaw. The eyes are minute, high, far forward, and near each other. The gill-covers are smooth, their apertures large, and their membranes exposed to view, but so thick that the number of rays cannot be readily determined; there seems, however, to be about eight in each. There is no slit under the throat.

There are no naked bony plates on the shoulder, nor are the shoulder-bones visible. There are no lateral lines. The vent is near the middle.

The first ray of the foremost dorsal fin is a strong prickle, smooth on the edges, and ending in a point like whalebone; the others are branched. The second fin is small and oblong. The pectoral fins are low, and shorter than the head, each containing eight rays, of which the first is a strong prickle, terminating in a substance like whalebone. The ventral fins are smaller than the pectorals, each having six rays. The first three rays of the fin behind the vent are undivided, and gradu-
ally lengthen from the first, which is very short. The others are branched. The lobes of the tail fin are sharp, the upper is the longest, and both in all contain twenty-six rays.

30th Species.—Pimelodus gulio. Plate XXIII. Fig. 66.

A Pimelodus with the fin of the tail divided into two nearly equal lobes; with eight tendrils, of which two extend to the end of the foremost dorsal fin, and four of the others are longer than the head; with an opaque smooth body, above of a dark-brown colour, with fifteen rays in the fin behind the vent; and with eight in the fore fin of the back.

The figure is taken from a bad copy of the original drawing, which was accidentally lost.

The Gulio (Guli) is found in the higher parts of the Gangetic estuaries, where the water is not very salt. It grows to about six inches in length, and is a poor fish for eating. It is long in proportion to its breadth, but somewhat compressed on the sides. It is more prominent above than below, and slopes to each extremity from the commencement of the first fin on the back, the slopes at the second fin, and at the fin behind the vent, being great. The colour above is dusky, with many dots; below it is of a dirty white; and the sides have a faint gloss of gold. All the fins are dotted.

The head is short, flat, and blunt. It is covered above by a smooth thinly-covered bony plate, ending behind in three short processes, and marked by an oblong cavity between the eyes. The two tendrils from the nostrils are shorter than the head; the two from the sides of the upper jaw extend to the end of the first fin on the back; the four from under the chin are all longer than the head; but the intermediate pair is rather shorter than the others. The mouth is a little below, and behind the end of the nose. The lips are fleshy. In each jaw are

\[\text{c c}\]
crowded numerous sharp teeth. There is scarcely any tongue. On the fore part of the palate is a bone shaped like a crescent, and covered with teeth. Both apertures of each nostril are nearer the jaw than the eyes; the foremost is somewhat tubular; the hinder is small and circular. The eyes are high, circular, and of moderate size. The gill-covers end behind in a blunt point, are marked with diverging rays, and leave exposed their membranes, which are thick, and contain many rays, the number of which, however, cannot be accurately ascertained. There is a slit under the throat.

The back slopes in the same slight curve with the head, and before the fin has a small thinly-covered bone, which, on each side, sends back a process. The shoulder-bones are thinly covered. The lateral lines descend from each shoulder with a curve parallel to the belly, and are porous. Several single lines of pores cross them at right angles. The vent is behind the middle, and has two apertures. The end of the tail is slightly divided into two rounded lobes.

The foremost dorsal fin slopes very much backward, so that its edge is almost perpendicular. The first of its rays is a very short bone, and the second a strong prickle, barbed on both sides, and ending in a substance like whalebone; the others are branched. The hinder fin is oblong, recumbent, and rounded at the end. The pectoral fins are low, shorter than the head, and slightly sharpened above. Each has nine rays, of which the first is a strong prickle, indented behind, and ending in a substance like whalebone; the others are branched. The ventral fins are smaller than the pectorals, are distant from each other; and each has one undivided and five branched rays. The edge of the fin behind the vent forms an arch, ending behind in a point: the four first of its rays are undivided, and gradually lengthen from the first; the others are branched.
The upper lobe of the tail fin is by a little the longest and sharpest. It has eighteen distinct rays, besides some compacted ones.

31st Species.—Pimelodus Menoda.

A Pimelodus with the fin of the tail divided into two nearly equal lobes; with eight tendrils, of which two reach to the end of the first back fin, and four others beyond the head; with a smooth opaque body, of a dark colour above; with thirteen rays in the fin behind the vent, and with nine in that of the back.

This fish, which is found in the Kosi, Mahananda, and other rivers in the north of Behar and Bengal, has so strong a resemblance to the Gulio now described, that I need only mention the few particulars in which they differ, and which may perhaps be considered as insufficient to distinguish them as species, although my people from the South would not allow the Menoda to be the same with their Gulio, and reckoned it a species of Gagora, while the Gulio they class with the Tengara.

The Menoda has a large black spot on the hinder fin of the back.

The head is still flatter than that of the Gulio.

The prickle of the back is barbed only behind.

There are five undivided, and only eight branched, rays in the fin behind the vent.

32d Species.—Pimelodus Cavasius. Plate XI. Fig. 67.

A Pimelodus with the fin of the tail divided into two unequal sharp lobes; with eight tendrils, of which two reach beyond the tail; with a smooth nearly opaque body, brownish above; with thirteen rays in the fin behind the vent; and with eight in the foremost of the back.
The Cavasius (*Kavasi tenggara*) is found in the larger fresh water rivers of the Gangetic provinces, and grows to about six inches in length. It is long in proportion to its breadth, more prominent above than below, tapers gradually to both extremities from the commencement of the back fin, and is compressed at the sides, especially toward the end of the tail, which terminates in a notch. The upper parts are dotted, and are of a brown colour, with a green gloss, changing to purple; the lower parts are white. The form and junctions of the muscles may be discerned on the skin. All the fins, except that behind the vent, are dotted.

The head is oval, very little compressed, bluntish, and covered above with a bony plate, along the centre of which is a furrow. This plate is also divided into four radiated portions, the rays of the two foremost portions proceeding from their hinder edge, and those of the two hinder portions proceeding from their centres. The plate, besides, terminates behind in three narrow processes, one extending along each shoulder, and one reaching to the commencement of the back fin. The two tendrils from the nostrils are shorter than the head; the two from the corners of the mouth reach beyond the tail, but not to the end of its fin; of the four under the chin, the two outer reach the ends of the pectoral fins, the two inner are a little shorter. The mouth is small, and a little below and behind the extremity of the nose. Both apertures of the nostrils are nearer the jaw than the eye. The eyes are large and high. The gill-covers end in a sharp point, and conceal in part their membranes, each of which has about seven rays, but, on account of the thickness of the membranes, their number cannot be precisely ascertained. There is a slit under the throat.
The back slopes forward in the same curve with the head. The sides slope outward to the belly. The lateral lines run with a little curvature along the middle of the fish. The shoulder-bones are naked and sharp. The vent, which is near the middle, has two apertures.

The foremost fin of the back slopes much behind, its edge forming a concave curve. Its first ray is a short prickle, with smooth edges. The second fin is much longer than that of the vent, occupying almost the whole space between the first fin and that of the tail. Its edge forms an arch, very low before, and higher behind. The pectoral fins are low, shorter than the head, and sharp above. Each has about eleven rays, of which the first is a strong prickle indented behind. The ventral fins are rather shorter than the pectorals, and each contains six rays, of which the first are simple. From the fifth ray the fin behind the vent slopes both ways, before quickly, behind gently; the four first of its rays are undivided. The upper lobe of the tail fin is considerably the longest, has its edge more convex than that of the lower, and its end drawn out to a slender point.

33d Species.—PIMELODUS AOR. Plate XX. Fig. 68.

A Pimelodus with the fin of the tail divided into two very unequal lobes; with eight tendrils, of which two reach to the fin of the tail, and two to the end of the head; with a smooth body, nearly opaque, and brownish above; with twelve rays in the fin of the vent; and with nine in the foremost of the back.

The Aor is common in the rivers of Bengal, and in the upper parts of the Gangetic estuaries, where the water is not very salt. It grows to two or three feet in length, and is a lurid animal; but, by the natives, is considered very good eating.
It is very long in proportion to its breadth, and rather more prominent above than below; very slightly compressed before, but more so behind. It tapers gradually from the commencement of the back fin to both extremities; but the tail tapers somewhat suddenly at the fin behind the vent, and then enlarges toward the end, where it forms two blunt lobes. The colour above is purplish brown, the sides have a tinge of green, and below is white, with a silver gloss on the sides of the belly. The back fins are dotted with black, and, near the end of the hinder one, there is a fine round black spot. The lower lobe of the tail fin is stained with black and yellow.

The head is very blunt, long, oval, flat, and rather wider than the body. Above it is covered by a bony plate, roughened with little lines, which, behind each eye, diverge from a common centre, but, in other parts, are irregularly disposed. It has on its middle a longitudinal furrow, with a ridge from each eye to the nostril, with three short processes on each side, and a long narrow one extending up the back. The two tendrils from the nostrils are much shorter than the head. The two from the upper jaw extend to about the middle of the tail fin. Of the four under the chin, the two outer extend to the extremity of the gill-covers, and the two inner are a little shorter. The mouth is behind and below the extremity of the nose, extends straight back, and is large. The lips are fleshy. The teeth, both in the jaws and palate, are minute, sharp, and crowded. The tongue is smooth, and tied down. On the fore part of the palate is a crescent-shaped bone, covered with teeth, as are the four bones at the throat; those above are oblong; those below are parallel to each other. The foremost aperture of each nostril is tubular, and close to the jaw; the hindermost is circular, and nearer the jaw than the eye. The eyes are high and of a moderate size. The gill-covers consist of two plates, and are sharp behind.
They leave exposed their membranes, each containing fourteen rays. There is a slit under the throat.

The declivity of the shoulders is small. The sides slope outward. There is a small bony plate before the back fin. The shoulder-bones are visible. The form of the muscles is discernible through the skin. The lateral lines slope a little downward, and are straight. The vent is behind the middle.

The foremost dorsal fin slopes behind. Its first ray is a very short bone; the second is a prickle, smooth on the edges, and pointed by a substance like whalebone; the others are branched. The hinder fin is much longer than that behind the vent, and its edge forms an arch, rising highest behind. The pectoral fins are very low, shorter than the head, and sharp above. Each has eleven rays, of which the first is a strong prickle, indented behind, and ending in a substance like whalebone; the others are branched. The ventral fins are nearly as large as the pectorals, and each has six rays, of which the first is undivided. The fin behind the vent slopes quickly forward from the fourth ray, and slowly backward, and its three first rays are undivided. The lobes of the tail fin are sharp, and the upper is by much the longest and most pointed, and is bent in form of a sickle. In all, the fin has seventeen distinct rays, besides several compacted ones on each side.

IX. Genus.—Sisor.

Fishes of the fifth order, with a slimy skin, destitute of scales or plates on the side of the tail; with the mouth surrounded by tendrils; and with two fins on the back, the hinder one having one ray.

The Cataphractus of La Cepede differs in having bony plates on each side of the tail.
1st Species.—*Sisor rabdophorus*.

Of this genus there is only one species yet known to naturalists, and this is found in the northern rivers of Bengal and Behar. It is said to grow to seven or eight feet in length, including the tail fin, and is an ugly deformed animal, on which account, perhaps, it is seldom if ever eaten. The fish is long in proportion to its breadth, flattened before, and tapering equally all round behind. The colour above is brown, with dark cloud-like marks, on the sides white, and below diaphanous.

The head is wider than the body, flat, blunt, and covered above with bony plates, which are marked with tubercles and ridges, and end behind in three narrow processes. There are fourteen tendrils, all shorter than the head: two proceed from the corners of the upper jaw; four on each side proceed from the corner of the under jaw, and are united together at their roots by a short membrane. One on each side proceeds from the vicinity of the four, which are united, and two proceed from the chin. The mouth is below and behind the extremity of the nose, and is small. The lips are fleshy. There are no teeth. Both apertures of each nostril are in the middle, between the jaw and the eye. The eyes are small, and very high. The gill-covers move freely. Each of their membranes has about four rays, which are seen indistinctly. Under the chin, close to the lip, is a slit, which resembles somewhat a second mouth.

Between the foremost dorsal fin and the head on the back is a bony plate, having three lobes. Near this fin, on each side, are five small plates, nearly united, and disposed in a double row. The back, from the end of its foremost fin to that of the tail, has a tuberculated bony ridge. The shoulder-blades are visible, and extend in a point above the pectoral
fins; and, behind each point, are five tubercles, disposed in a row below the lateral line, which is straight and tuberculated. The vent is before the middle.

The foremost dorsal fin contains seven rays, of which the first is hard at the lower part, and indented behind, but soft and undivided at the point; the others are branched. The second fin has only one short prickle, with a short membrane behind. The pectoral fins are low, sharp above, and shorter than the head. Each has twelve rays, of which the first is a very strong prickle; indented on both edges; the others are branched. The ventral fins are still smaller, each containing seven rays. The fin behind the vent has six rays. The fin of the tail, ending in a crescent, has ten rays, of which the uppermost is in form of a whip or rod, and is longer than the whole body and head. The specific name has been derived from this singularity.

X. Genus.—Osmerus.

Fishes of the fifth order, with scales on part at least of the body; with no rays in the hinder of the two fins of the back, nor tendrils round the mouth; and with strong teeth in the jaws.

1st Species.—Osmerus? nehereus.

An Osmerus? with twelve rays in the foremost fin on the back; with fifteen in that behind the vent; and with the fin of the tail divided into three lobes.

Wana motta, Russell's Indian Fishes, Vol. II. No. 181.

This fish has a considerable affinity to the Salmo foetens of Linnaeus and Bonnaterre, (Tabl. Encyclop. page 165, Pl. LXX. fig. 285,) which is the Osmerus albidus of La Cepede, (Hist. des Poissons, Tome V. page 229;) but that animal has scales all
over the body, while the Wana motta, or Nehare, has them only on the hinder part of the lateral lines. Whether or not these scales are sufficient to induce naturalists to class this fish in the genus Osmerus, I cannot say; but the animal seems to be the link, which connects the Osmerus with the Pimelodus.

The Nehareus (Nehare) I found in the mouths of the Ganges. It grows to about a foot in length, and has a spine of uncommon flexibility and little elasticity. The fish is long in proportion to its breadth, and slightly compressed at the sides. The general colour is white, with many dots on the back.

The head is blunt and small. The mouth, from the end of the head, extends straight back, and is very large. The jaws are of nearly equal length, and do not protrude in opening. The lips have no bones. In both jaws are crowded many recurved teeth, among which some irregularly scattered are much longer than the others. Each nostril has two apertures, high on the head. The eyes are very far forward, small, circular, and flat. The gill-covers are membranous, with scarcely any bone, and leave large apertures. No rays can be distinctly traced in these membranes.

Both back and belly are transversely rounded. The lateral line extends from the eye to the end of the tail fin; and its hinder part is covered with large flexible scales, lying over each other like tiles. The other parts of the fish are covered with a naked smooth skin. The vent is behind the middle.

There are eight fins. The foremost on the back slopes backward, is far forward, and contains twelve rays, of which the two first are undivided, but soft, and have no membrane interposed, the first being very short; the others are branched. The hinder dorsal fin is minute. The pectoral fins are longer than the head, are about the middle of the side in respect to height, and are sharp above; each has twelve short rays. The
ventral fins also are long, sharpish, and near each other. Each has nine soft rays. The edge of the fin behind the vent is concave, and its rays are fifteen, of which the two first are undivided, without any membrane interposed. The lobes of the tail fin are short, and it has about eighteen rays.

XI. Genus.—Esox.

Fishes of the fifth order, with a large mouth, devoid of tendrils, but furnished with many teeth; with one back fin, supported by rays, and opposite to that behind the vent; and with the edge of the belly blunt.

Besides the circumstances mentioned above, all the species of this genus, which I have seen in India, have the head narrower than the body, and flat above. Their eyes are high, but remote from each other, and are of moderate size, and circular. Their gill-covers are rounded, smooth-edged, and consist of one plate.

1st Species.—Esox Panchax. Plate III. Fig. 69.

An Esox with the fin of the tail entire; with the jaws equal in length, and short; with six rays in the back fin; and with fourteen in that behind the vent.

The Panchax (Pangchak) is very common in the ditches and ponds of Bengal, grows to about two inches in length, and lives long after being taken out of the water. It is long in proportion to its breadth, slightly compressed on the sides, nearly straight above, and prominent, with a regular curve below. It is of a dirty-green above, and white below; and has one silver coloured spot on the crown of the head, and another before the dorsal fin. On the lower part of this fin is a black spot, and the tail fin is edged with this colour.
The head is short, blunt, somewhat flattened, and half oval, being straight above and prominent below. The hinder part is covered with scales. The mouth is rather large, and extends straight backward from the extremity of the nose. The jaws are rounded, and nearly of equal length, the lower one being dotted. There are scarcely any lips, nor, in place of the upper, are there any bones. In each jaw are crowded many teeth, rather large for the size of the animal. Each nostril has two apertures. The gill-covers are scaly, and conceal their membranes, each of which contains four rays.

The back is broad, and the belly narrow. There is no lateral line. The vent is near the middle. For the size of the fish the scales are large, adhere firmly, and are rough. They are dotted on the centre, and on the edge are marked with concentric streaks.

The fin on the back is rounded. The pectoral fins are on the middle of the side, sharpest above, and as long as the head, each having sixteen rays. The ventral fins are smaller, and each contains six rays. The fin behind the vent slopes a little backward. The tail fin is large and oval, and has sixteen rays.

2d Species.—Esox Ecrurio.

An Esox with the fin of the tail rounded; with the lower jaw three times longer than the upper; with an angular body; with thirteen rays in the dorsal fin; and with eleven in that behind the vent.

This fish, which does not exceed a foot in length, is found in the smaller rivers and ponds of the Gangetic provinces, but is not very common. It is of a slender make, and tapers to both ends, is slightly compressed at the sides, and in the middle has six longitudinal angles. It is covered with scales, but is somewhat diaphanous; and on each side has a broad longitudinal
Esox.   GANGETIC FISHES. 213

stripe, shining like silver. The snout is blackish, the eyes sil-
ver coloured.

The throat is compressed. The jaws are elongated into a
snout, or beak, longer than the rest of the head: the upper one
is plain and sharp, and is elevated in opening the mouth; the
under one is thrice as long as the under, narrow, and sharp.
The teeth in both jaws surround the aperture of the mouth, and
are rather smaller than usual in this genus. Each nostril has
only one aperture. The gill-covers conceal half of the mem-
branes, each of which has six rays.

The back is convex, and on each side is edged by a longitu-
dinal ridge. On each side, below the lateral line, is another
ridge, dividing its side into two planes. The belly is flat, and
bounded by two ridges, which unite at the fin behind the vent.
The lateral lines are straight, smooth, and high. The vent is
behind the middle. The scales are large and smooth-edged,
and fall off readily.

The fin on the back has its rays of nearly equal length, and
some of the foremost are undivided. The pectoral fins are short,
and sharp above; and each has nine rays, of which the first is
undivided. The ventral fins are very small and round: each
has six rays, of which the first is undivided. The fin behind the
vent slopes backward, and the first of its rays is a short slender
prickle. The fin of the tail contains fifteen distinct rays, besides
some compacted ones at the sides.

3d Species.—Esox cancila. Plate XXVII. Fig. 70.

An Esox with the fin of the tail rounded; with both jaws
elongated into a quadrangular beak; with no scales; and with
seventeen rays in the fin of the back, and eighteen in that be-
hind the vent.
The *Kuddera A* of Dr Russell (Indian Fishes, Vol. II. No. 176) resembles much the *Cancila*, *(Kangkila ;)* but is distinguished by having scales on the cheeks, by different numbers of rays in its fins, and by a spot on the fin of the tail.

The *Cancila* is a very common fish in the ponds and smaller rivers of the Gangetic provinces, grows to about a foot in length, and is a very well-flavoured aliment. It is of a slender form, very little compressed, and tapers to both ends. It is greenish, and dotted above, and silver coloured or diaphanous below. On each side of the tail is a silver coloured longitudinal stripe, before and below which are four irregular black spots. The eyes are yellow.

The head is somewhat quadrangular, small, and covered with very little muscle, or even skin. The mouth is very long, both jaws being elongated into a straight four-sided narrow sharpish snout, with scarcely any lips. The under one is rather longer and wider than the upper. Along the whole length of each jaw the teeth are disposed in a single row, and are sharp and unequal in size. The tongue is tied down to the jaw. Each nostril has one aperture near the eye, in a triangular cavity. The gill-covers conceal half of their membranes, each containing thirteen rays.

The lateral lines are straight and high. The vent is behind the middle.

The fin of the back has a concave edge, and slopes backward: the two first of its rays are undivided. The pectoral fins are low, small, and sharp above. Each has nine rays, of which the first is undivided. The ventral fins are very small, each having six rays, of which the first is undivided. The fin behind the vent is of the same form with that on the back, and the three first of its rays are undivided. The fin of the tail is shaped like...
a fan, and has fifteen distinct rays, besides some short compacted ones at each side.

**XII. Genus.—Mugil.**

Fishes of the fifth order, with the body covered by scales; with two fins, supported by rays, on the back; with no detached rays before the pectoral fins; and with a longitudinal ridge in the middle of the lower jaw.

All the species of Mugil which I have found in the Ganges have in common the following particulars, besides those mentioned above.

The head is small, blunt, and in part, at least, covered with scales. The bones in the upper lip are minute, or altogether wanting. The mouth is small, or at least moderate in size, and has no teeth. There is no tongue. The eyes are high, and far forward, and are of moderate size. The gill-covers are large and scaly.

The body, in proportion to its thickness, is long, and covered with scales; its lower edge is rounded. The vent is behind the middle. There are no scale-like appendants above the pectoral or ventral fins.

All the rays of the foremost fin of the back, which is quite separate from the hinder, are distinctly separated by membranes, and are all undivided prickles.

1st Species.—Mugil parsia. Plate XXII, Fig. 71.

A Mugil with nine rays in the hinder fin of the back; with three prickles and eight soft rays in that behind the vent; with the end of the tail fin crescent-shaped; with two apertures in each nostril; with the gill-covers rounded; with a sloping head; and without stripes on the sides, which are scabrous.

This fish grows sometimes to a span in length, but is seldom
above half that size. It is found in the fresh water rivers of Bengal. The length, in _proportion_ to the breadth, is less than in any of the subsequent species. It is compressed at the sides, scabrous, dotted, above greenish, and beneath silver _coloured_, without stripes of different shades.

The **head** slopes gradually in the same line with the back. The **mouth** opens directly backward. The **jaws** are very nearly equal in length, the upper one having a notch to receive the ridge on the lower. Each **nostril** has two small apertures half way between the eyes and jaws. The **eyes** are a little convex, and of moderate size, and have circular pupils. Each **gill-cover** has three plates concealing the membrane, which contains six rays.

The **back** and **belly** are nearly equally prominent, and the **tail**, both above and below, contracts suddenly at the fin behind the vent. There is, properly speaking, no **lateral line**, but some radiating lines on each scale form a kind of longitudinal streaks, that somewhat represent several lateral lines on each side. The **scales**, both on the head and body, adhere firmly, and are large, dotted, and indented on the edges.

The foremost fin of the **back** is a little behind the ventrals, and slopes very much from the first ray, the edge of each interposed membrane forming a concavity. It has four slender prickles. The hinder fin is rather behind that of the vent, and slopes much backward from the second ray, which is much longer than the first, both being undivided, while the other seven are branched. The **pectoral** fins are half way up the sides, and are sharp above, and rather shorter than the head. Each contains fourteen rays. The **ventral** fins are smaller than the pectorals, each having six rays, of which the first is undivided. The fin behind the **vent** slopes backward from the third ray, which, with the first and second, are undivided.
The fin of the tail is rather longer above than below. It contains fourteen distinct rays, besides some compacted ones on each side.

2d Species.—Mugil cascasia.

A Mugil with eight rays in the second fin of the back; with two prickles and eight soft rays in that behind the vent; with the tail fin ending in a crescent; with two apertures in each nostril; with the gill-cover rounded; with a sloping head; and without stripes on the sides, which are scabrous.

This fish I found in the northern rivers of Bengal. It is usually three or four inches long, and considered as of little value for eating. It is very nearly allied to the Parsia, but is much longer in proportion to its height, and slopes gradually toward both head and tail from the beginning of the foremost fin on the back. It is rough to the feel, green on the upper, and silver coloured on the lower parts, with a faint yellowish spot on each side at the pectoral and tail fins.

The head is oval, and slopes forward. The mouth passes directly backward. The jaws are nearly equal in length, and smooth. The upper one protrudes in opening; the under one has a notch at the extremity. The apertures of the nostrils are small. The eyes are slightly convex, and rather small. The gill-covers conceal only a part of their membranes, each of which has about three rays.

There is no proper lateral line, although a longitudinal ridge on the centre of many of the scales gives an appearance of several. The scales are circular, adhere firmly, are of moderate size, and are indented on the edge. Towards the edge they are scabrous.

The foremost fin of the back has four prickles. The first ray of the hinder fin is undivided. The ventral fins are at a dis-
tance before the vent, and each contains one prickle and five branched rays. In the fin behind the vent the first of the soft rays is undivided, but jointed.

3d Species.—*Mugil albula*?

A *Mugil* with nine rays in the hinder fin of the back; with four prickles and nine soft rays in that of the vent; with the fin of the tail ending in a crescent; with two apertures in each nostril; with the gill-covers rounded; with a sloping head; with the sides smooth, and longitudinally striped with different shades of silver.

The number of rays in the fins of this fish does not exactly coincide with that given by authors in describing the *Mugil Albula*, (Bonnaterre, *Tabl. Encyclo.* p. 180, Pl. LXXIII. Fig. 305; La Cepede, *Hist. des Poissons*, Tome V. p. 384,) and the stripes, of different shades, on the sides are abundantly evident on our fish; while it is stated, that on the *Albula* there are no stripes. The two species, however, if different, have the utmost affinity. Our fish is found in the salt water estuaries of Bengal, where it grows to a foot in length. It is very nearly allied to the *Parsia*, from the description of which it differs in only the following particulars, besides those mentioned in the specific character.

The sides are smooth, and without dots, but are longitudinally striped with different shades of silver, owing to the edges of the scales being paler than their centres.

There are scarcely any scales on the gill-covers.

On the centre of each scale is a slender line. The scales are angular, and very slightly indented on the edges.

The pectoral fins contain fifteen rays. The first ray of each ventral fin is a prickle. The first prickle in the fin behind the vent is minute.
4th Species.—*Mugil cephalus*?

A *Mugil* with the body longitudinally striped with black; with the eyes level; with no teeth in the jaws, the under of which is the shortest; and with the edges of the scales undivided.

Dr Russell describes a fish, which he calls *Bontah*, and considers as the *Mugil cephalus* of Linnaeus. It is, no doubt, very nearly allied to what I am now describing; but the edges of its scales are indented, and there is only one prickle in the fin behind its vent.

The *Cephalus*, according to La Cepede, (*Hist. des Poissons, Tome V. page 384,* and Bloch, (*Ichth. Tome XI. page 129, fig. 394,* has small teeth in both jaws; so that their fish, however similar, must differ from what I am describing. According to Bonnaterre, (*Tabl. Encyclop. p. 179, Pl. LXXIII. fig. 304,* the *Cephalus* has no teeth, and his fish may therefore be the same with that of the Ganges. None of these three writers mention whether or not the scales, in the fishes described by them, were indented on the edges. In Bloch's figure, the under jaw is represented as longest, but, in his description, the two jaws are stated to be of equal length. Considerable difficulties, therefore, still remain concerning the *Mugil cephalus*. I shall content myself with describing the fish found in the Ganges, and which the natives of Calcutta call *Sole bhanggan*, the first word being the specific, and the latter the generic term.

The *Sole* is common in the Gangetic estuaries, where the water is salt, and, near the sea, is a very rich fine-flavoured fish, from a cubit to two feet in length. It is seldom brought to table in Calcutta, because it is of a good quality only when caught near the sea, and ought to be eaten immediately after it is caught.
The fish is longer in proportion to its height than in the species already described, very slightly compressed, smooth, green above, and silver coloured below, and marked on the sides with several stripes, consisting of black dotted spots.

The head is level above. The mouth is horizontal. The jaws are flattened, and protrude when open, the upper one being undivided, and rather the shortest, while the under ends in a notch. There is a roughness on the palate and throat. The nostrils have double apertures, and are small, and placed in the middle between the eyes and jaw. The eyes are level with the head, and have circular pupils. The gill-covers are rounded behind, and conceal their membranes, the rays in which cannot be distinctly observed.

The back is convex, and slopes gradually with the head to the end of the nose. The belly is arched. The tail is suddenly contracted at the fin behind the vent, and at the hinder fin of the back. The scales are large, imbricated, smooth-edged, and easily displaced.

Both dorsal fins slope backward. The foremost, standing about the middle of the fish, has four prickles, of which the three first are strong. The hinder fin has nine rays, of which the first and second are undivided and united, the first being short; the others are branched, and the last split to the bottom. The pectoral fins are half way up the sides, are shorter than the head, and sharp above. Each has fifteen rays. The ventral fins are only a little behind the pectorals, and are shorter. Each has six rays, of which the first is undivided and short. The fin behind the vent is near that organ, slopes backward, and has twelve rays, of which the three first are undivided, and lengthen gradually from the first, which is short. The tail fin is nearly crescent-shaped, and the horns of equal
length. It contains fourteen distinct rays, beside some compacted ones at each side.

5th Species.—Mugil corsula. Plate IX. Fig. 97.

A Mugil with nine rays in the hinder fin on the back; with three prickles and nine soft rays in that behind the vent; with the tail fin ending in a crescent; with the head rising higher than the back; with the eyes protuberant; and with the sides striped with black dots.

The Corsula (Khorsula) is found in most rivers of the Gangetic provinces, and, in the southern parts of Bengal, has been introduced into some ponds. It grows to a foot in length, and swims with the nose and eyes above water, probably in search of insects. Although, no doubt, of a very different genus, it would seem to have much of the appearance and manners of the Cobitis anableps, (Bonnaterre, Tabl. Encycl. p. 148, Pl. LXI. Fig. 240.) It is very well tasted, and, by the Europeans, is much sought after for their tables.

The Corsula is very slightly compressed, scabrous; above greenish coloured, and below silvery. The fins are diaphanous.

The head rises a little from the nape to the eyes. The mouth is a little behind and under the nose, and extends straight backward. The upper jaw, which is longest, has a notch in the middle; the under is entire. The palate is smooth. Each nostril has two apertures in the middle between the eye and jaw. The eyes are very protuberant, and rather small. The longest diameter of their pupils is vertical. The gill-covers end in a point, and each contains three plates concealing the membrane, which has four rays.

The back is convex, forming a straight ridge, which slopes with a very slight declivity from the commencement of the
hinder fin to the nape. The belly is arched. There are no lateral lines. The tail slopes suddenly at the hinder back fin. The scales adhere firmly, and are large, oblong, imbricated, and very minutely indented on the edges.

The fore fin of the back is triangular, and near the middle of the fish. It contains four prickles, rather longer than the interposed membranes. The hinder fin slopes, with a curved edge, and is much larger than the first. The two first of its rays are undivided, and the first is a short prickle: the other seven are branched. The pectoral fins are almost half way up the side, shorter than the head, and sharp above; and each contains fifteen rays. The ventral fins are a little before the foremost of the back, and are shorter than the pectorals. The fin at a considerable distance behind the vent is opposite to, and of the same form with, the second on the back. The first four of its rays gradually lengthen, and the first three are prickles; the nine last are branched. The fin on the tail contains fourteen distinct rays, besides some compacted ones at each side.

XIII. Genus.—Atherina.

Fishes of the fifth order, with less than eight rays in each ventral fin, and in each membrane of the gill-covers; with the palate toothless, and the lower jaw devoid of a central ridge; with the body and tail of a long form, and somewhat diaphanous; with two fins supported by rays on the back; and with a silver-coloured stripe on each side.

1st Species.—Atherina danius.

An Atherina with about four rays in the foremost dorsal fin, and eight in the second; and with ten in that behind the vent.

The Danius (Dhani) is a minute fish, seldom exceeding an
inch in length, and is common in the Mahananda river. It has
the appearance of a Mugil, but wants the most distinguishing
character of the ridge in the lower jaw, by which that genus is
marked. It is long in proportion to its breadth, slightly com-
pressed, and diaphanous, with a dotted back. The belly is of a
silver colour.

The head is oval, of a moderate size, blunt, level above, des-
titute of scales, and dotted; and on the nape has three protu-
berances. The mouth descends backward. The jaws protrude
in opening, and have no lips. It has no teeth. The eyes are
large, and on the sides of the head. The gill-covers are naked
and shining. Their membranes contain a few rays, but so slen-
der, that I could not ascertain the number.

The back and belly are rounded transversely. The lateral line
is straight, and high on the side. The vent is near the middle.
The scales are so thin, that they are with difficulty discernible.

The rays of the fins are so slender, that I could not exactly
ascertain their number. In the fore fin of the back are about
four, in the hinder about eight, in each pectoral seven, in each
ventral six, and in the fin behind the vent about ten. The ven-
trals are half way between the pectorals and vent. The fin of
the tail ends in a crescent.

XIV. Genus.—Polynemus.

Fishes of the fifth order, with some detached bristle-like rays
before each pectoral fin; with scales on the head; and with
two distinct fins on the back.

Besides the circumstances mentioned in the generic charac-
ter, the following belong, in common, to all the fishes of this
genus that I have seen in the Ganges.

Although they are not without a resemblance to the genus
Mugil, the fishes in the genus Polynemus have a much greater
affinity to the genera *Perca, Labrus, Sparus,* &c. of Linnaeus, belonging to the fourth order, than to any included in the fifth order, which shows that this arrangement, taken from the position of the lower fins, is quite artificial.

The body in the genus *Polynemus* is long in proportion to its thickness, and is covered with scales.

The head is oval and small. The nose projects beyond the mouth, which is large, and extends directly back. There are scarcely any lips, but, in place of the upper, are two flat bones rounded behind. The teeth in both jaws are sharp, small, and crowded. Each nostril has two apertures. The eyes are covered by a thick pellucid skin or substance. The edges of the cheek-bones are indented. The gill-covers are scaly.

The rays before the pectoral fins are not jointed, in which this genus differs from the *Trigla.*

There are two distinct remote back fins. The foremost on the shoulders is supported by slender prickles, all separated by interposed membranes. The hinder fin is far back on the tail, and partly covered by scales. Each ventral fin contains one prickle and five divided rays. The fin behind the vent, and that of the tail, are scaly, and the latter is divided into two unequal lobes.

1st Species.—*Polynemus teria.*

A *Polynemus* with four detached rays before each pectoral fin, and with the fin of the tail divided into two lobes.

*Maga jellee,* Russell's Indian Fishes, Vol. II. No. 183.

At one time I thought that this fish might have been the *Trigla asiatica* of Linnaeus; but the *Polynemus asiaticus* of Bonnaterre, *(Tabl. Encycl. p. 183)* which is supposed to be the same, would appear to have only one fin on the back. For
what reason I know not, La Cepede would seem to have alto-
gether omitted this fish. 

The Teria (Teriya bhanggan) is common in the Gangetic es-
tuaries, and in the Calcutta market is often found six feet long.
I have been assured, by a credible native, that he saw one, which
was a load for six men, and which certainly, therefore, exceed-
ed in weight three hundred and twenty pounds avoirdupois. It
is considered by the natives as a wholesome diet, although sel-
dom used by Europeans.

The fish, in its form, is compressed, and tapers to both extre-
mities. It is scaly and rough. The colours are greenish above,
and silver beneath, with the lower fins yellow, and the upper
ones dotted. The eyes are silver coloured.

The head is sharp, narrow, and rough. The nose is dia-
phanous. The jaws do not protrude when open, and the un-
der one is the shortest. The bones in lieu of the upper lip
are scaly. On the palate are irregularly crowded numerous
minute teeth. The tongue is free, blunt, very short, and
smooth. On the fore part of the palate are three bones, covered
with teeth, a small three-sided one in the centre, and an ob-
long one on each side. The throat on each side has oblong
naked bones. The nostrils are in the middle, between the
eye and jaw; the foremost of their apertures is the smal-
lest. The eyes are high, and far forward. They are globular,
with the longest diameters of their pupils vertical. The gill-
covers are rounded, and smooth-edged, and each contains two
plates, of which the foremost is small. Their membranes are
half concealed, and each contains seven rays. The edges of
the outer gills are prickly, those of the inner are covered with
knobs.

The back forms an arch, and is transversely rounded. The
belly is flat. The lateral line descends from the end of the

FF
gill-covers to the middle of the tail, and then runs straight to its end. The vent is before the middle. The scales are indented on the edge, adhere firmly, and are of moderate size. The uppermost of the rays, before each pectoral fin, is as long as the fin, the others diminish gradually in length. Above each pectoral fin is a round scale-like appendant; and above each ventral fin is another appendant, tapering to a point.

The foremost fin on the back is of a triangular form, and contains eight slender prickles, of which the first is very short. The hinder fin slopes backward, with a concave edge, and contains fifteen rays, of which the first is a short prickle, adhering closely to the second, which is undivided; the others are branched, the last being very thick, and concave behind, with scales on each margin. The pectoral fins are low, nearly as long as the head, and sharp above. Each contains seventeen undivided rays, of which the two first are united. The ventral fins, although behind the pectorals, are far forward on the fish, and are small and approximated to each other. The fin behind the vent is on the middle of the tail, and slopes backward with a concave edge. It has seventeen rays, of which the first and second are short prickles, closely united to the third, which is undivided; the others are branched, the last resembling the singular structure of the last ray in the hinder back fin. The upper lobe of the tail fin is the longest. It contains fifteen distinct rays, besides some short compacted ones at each side.

2d Species.—Polynemus sele.

A Polynemus with five detached rays before each pectoral fin, and extending to the vent; with no stripes on the sides; and with the lateral lines reaching to the end of the lower lobe of the tail fin.
The number of prickles in the first fin of the back, and the singular termination of the lateral line, would have induced me to suppose, that this is the *Polynemus lineatus* of La Cepede, (*Hist. des Poissons*, Tome V. page 412,) but the want of the longitudinal stripes on the sides lead me to suspect, that it may rather be his *Polynemus Emoi*, the *P. plebeius* of Gmelin, Bonnaterre, (*Tabl. Encycl.* page 183, Pl. LXXIV. Fig. 309,) and Bloch, (*Ichth. Tome XII.* page 15, Pl. CCCC.) although the last author does not represent the singular termination of the lateral line, and reckons only ten rays in the fin behind the vent.

The *Maga booshee* of Russell (*Indian Fishes*, Vol. II. No. 184) has certainly a strong resemblance to the *Sele* of the Ganges; but it has eight prickles in the first, and fifteen rays in the second fin of the back, and two fins behind the vent.

According to Bloch, the *Polynemus plebeius* is by the English called King-Fish, a name with which I am quite unacquainted; and it is alleged to be one of the best fishes found near Tranquebar. Our *Sele* is no doubt a light nourishing food, like most of the fishes which I have called *Bola*, but it is inferior to many of them in flavour. It is common in the estuaries of the Ganges, and is often found weighing from twenty to twenty-four pounds.

The *Sele* is of a compressed long form, more prominent below than above. The colour of the back and upper fins is bluish, of the sides and belly silver. The eyes are silver coloured.

The head is rather blunt, and compressed. The jaws do not protrude in opening; the upper is the longest. In each are crowded numerous small teeth. I did not examine the palate. The nose is diaphanous. The nostrils are in the middle, between the eye and the end of the nose, are of unequal size, and have no co-
vering. The eyes are far forward, and circular. Each gill-cover is oval and sharp-pointed. Its membrane is half exposed to view, and contains five rays.

The back is nearly straight. The lateral line commences at the upper end of the gills, and runs straight to the end of the tail, where it bends downward. The vent is before the middle. The scales adhere firmly, and are flexible and indented on the edges. The longest of the rays, beneath each pectoral fin, reaches to the vent. Above each pectoral fin is a scale-like appendant, indented on the edge, and a smooth-edged one above each ventral fin.

Both the back fins are scaly. The foremost slopes backward, and has seven prickles. The hinder has fourteen rays, of which the two foremost are undivided and contiguous, and the others are branched, the last of them being split to the bottom. The pectoral fins are low, small, and sharp above; each has thirteen rays. The ends only of the ventral fins reach to the vent. The fin behind that organ slopes backward, and contains thirteen rays, of which the two first are undivided and contiguous; the others are branched, and the last of them is split to the bottom. The tail fin is long, and deeply divided into two unequal lance-shaped very sharp lobes, which have twenty distinct rays.

3d Species.—Polynemus Risua.

A Polynemus with seven detached rays below each pectoral fin, the second being the longest, and being more than twice the length of the body; with seven prickles in the foremost fin of the back, and seventeen in the hinder, with fifteen rays in the fin behind the vent; and with a green back, and silver coloured belly.
The Mango fish of the English is one of the most delicate of those found in the Ganges, and is peculiarly excellent when in spawn, which happens in the end of spring and commencement of the rainy season, at the time when the Mango fruit is most abundant, from which circumstance the name is probably derived. I have, I think, observed three species included under this name, and Dr Russell (Indian Fishes, Vol. II. No. 185) describes a fourth; but all have exactly the same qualities and manners, nor am I sure, that the slight differences in the number of rays, which I observed, may not be accidental varieties, rather marking individual than specific difference. The variety of colour, too, may not be a specific difference, but may merely be owing to the difference of season, those that I observed in spawning season having been wholly of a bright golden colour, while those seen at other seasons were green and silver.

Dr Russell, as above quoted, considered his Tupsee mutchee as the same with the Polynemus paradiseus, nor can I take upon myself to say, that this may not be the case; but, although the accounts of the Polynemus paradiseus, which I have seen, are imperfect, I can venture to assert, that it is quite different from any Mango fish that I have observed in the Ganges.

In the figure given by Bonnaterre, (Tabl. Encycl. page 183, Pl. LXXIV. Fig. 308,) the Polynemus paradiseus is represented with filaments under the pectoral fin, which do not reach to the end of the tail fin; while in all our Mango fishes, the longest of these filaments is more than double that length. The colour of the fish, described by Bonnaterre, is golden, and the detached filament next the pectoral fin is the longest. He says, that it is found in the seas of the Indies; but, by this, he probably means the West Indies, as La Cepede and Bloch say,
that the *Polynemus paradiseus* is found in the Brazils, West India Islands, and Carolina.

The number of rays in the fins given by La Cepede (*Hist. des Poissons*, Tome V. page 411) to the *Polynemus paradiseus*, differs from that found in all the Mango fishes which I have seen; and especially, he states the number of prickles in the fore fin of its back to be eight. Now, with us, these prickles are only seven in number; and the number of these prickles is both usually better defined, and less liable to variation, than the number of soft and divided rays. He describes the colour as green and silver.

In the figure of the *Polynemus paradiseus* given by Bloch, (*Ichth. Tome XII. page 20, Pl. CCCIII.*) the filaments reach scarcely to the vent; and he states, that the fish grows to a considerable size, which is never the case with any Mango fish in India. The colour, as described by this author, is green and silver.

All our Mango fishes are found throughout the year in the salt-water estuaries of the Ganges; but in spring, when they spawn, they ascend to the fresh water, never farther, however, so far as I know, than the tides reach. I have not seen any above nine inches in length, and their more common size is about half a foot.

The Mango fish, called *Risua*, (I believe from Rishi, a kind of holy person,) I found in the vicinity of Lukhipur. It is of a long compressed form, of a green colour on the back, and silver on the sides and belly, with a gloss changing from gold to purple. The fins are pale yellow, and those on the back are dotted with black.

The head is blunt, scarcely at all compressed, and covered with scales, even on the throat. The jaws protrude in opening. The upper is the longest, and has a notch at the end, while the under one is sharp-pointed. On each side of the throat are two bones covered with teeth, the upper oval, the under triangular.
The tongue is moveable, oval, smooth, and entire. The nostrils are near the eye, and their apertures are unequal. The eyes are high and far forward; they are small and circular. The gill-covers end in a point, and are flexible. They expose to view their membranes, each containing seven rays. The openings of the gills are large; and each gill has on the inner edge a double row of tubercles, of which the outer ones are almost cylindrical.

The back is arched, and transversely convex; the sides slope downward; the belly projects more than the back. The lateral line descends with an arch, and the vent is nearly in the middle. The tail is suddenly contracted at the fin behind the vent and at the hinder fin of the back. The scales are large, flexible, and indented on the edges, and adhere firmly. The foremost of the detached rays, below the pectoral fins, is about twice as long as the body; the second is a little longer, and the others shorten gradually to the seventh, which is the shortest.

The first dorsal fin slopes backward; the hinder fin is covered with scales, and its two foremost rays are undivided and approximated; the others are branched, and the last is split to the base. The pectoral fins are almost half way up the side, are longer than the head, and sharp above. Each has seventeen undivided rays, a little longer than the interposed membranes. The ventral fins are small. The fin behind the vent is in the middle between that organ and the end of the tail, and slopes backward. The three first of its rays are undivided and approximated, and the others are branched, the last being split to the base. The tail fin is large, and deeply divided into two sharp unequal lobes, with their points turned inward, and the upper one the longest. It contains seventeen distinct rays, besides some short compacted ones at each side.
4th Species.—Polynemus toposul.

A Polynemus with seven detached rays below each pectoral fin, the first being the longest, and being more than twice the length of the body; with seven prickles in the fore fin of the back, and sixteen rays in the hinder; with the same number in the fin behind the vent; and with a green back and silver belly.

This kind of Mango fish I found in one of the middle estuaries of the Ganges in the rainy season. The name Toposul, which, in the Hindustany dialect, is given to this, as well as to the other kinds, and which Dr Russell writes Tupsee, is derived from the supposed resemblance of the fish to an hermit, the long rays near the pectoral fins having some appearance of the long matted hair and beard by which hermits and other pretended saints distinguish themselves from the profane. The species which I am now describing, besides the circumstances mentioned in the specific character, differs from the Risua in the following particulars.

The sides are faintly marked with blackish longitudinal stripes; the head and the fins on the breast are stained with red. Each pectoral fin has sixteen rays. The four first rays of the fin behind the vent are undivided.

5th Species.—Polynemus aureus.

A Polynemus with seven detached rays below each pectoral fin, the longest exceeding the body by more than twice its length; with seven prickles in the fore back fin, and fifteen rays in the hinder; with fourteen rays in the fin behind the vent; and with the whole colour of a golden yellow, tinged on the upper parts with dusky.

This Mango fish I found below Calcutta in the cold season. It differs from the Polynemus Risua in colour, and in the num-
ber of rays contained in the fins, as mentioned in the specific character. In both the hinder fin of the back, and in that behind the vent, the first three rays are undivided.

**XV. Genus.---Mystus.**

Fishes of the fifth order, with more than three rays in the membrane of the gill-covers; with the edge of the belly sharp; with the fin behind the vent very long, and united with that of the tail, and with one fin on the back.

The first species described, owing to the long rays of the pectoral fins, connects this genus in some measure with the *Polynextus*. The second species is the *Notopterus* of La Cepede, the ventral fins being very small, having escaped his notice; but, as the animal is provided with these organs, it cannot be distinguished from the genus *Mystus*.

The following circumstances, besides these mentioned in the generic character, are common to the fishes of this genus which I have observed in the Ganges.

They are shaped somewhat like the head of a lance, being much flattened at the sides, and being of a long form, with a considerable depth in the middle, but tapering toward each end, although more slowly toward the tail, as the greatest height is before the middle.

The head is small, and the under jaw is the shortest. On each side of the upper lip is a considerable flat bone. There are teeth in both jaws.

The vent is before the middle. The body in all, and part of the head in some species, is scaly.

**1st Species.---Mystus ramcarati.**

A *Mystus* with the upper jaw unarmed; with the first six rays
of each pectoral fin elongated far beyond the membrane; and with ten rays in each ventral fin.

This elegant fish frequents the salt water estuaries of the Ganges, and grows to about a span in length. When living, it is everywhere of a golden colour, but soon after death this disappears. The edges of the tail fin, and of that behind the vent, are black.

The head is oval, compressed, devoid of scales, and sharp. The jaws do not protrude in opening. The bones of the upper lip are large, and indented on the edges. The teeth are minute. The nose extends a little way beyond the mouth. Each nostril has two small apertures placed close to each other, and without covering. The eyes are far forward. The edges of the cheek-bones and gill-covers are entire. The membranes of the gill-covers are short, and each contains ten rays. The gills reach almost to the end of the lower jaw.

The back slopes from the fin to the head. The ridge of the belly is toothed like a saw. The lateral line is straight. The scales are large, and entire on the edges. Before the fin of the back is a minute distinct prickle.

There are six fins. That of the back is before the middle, slopes backward, and contains fourteen rays, of which the first three are undivided, and closely connected, increasing gradually in length from the first to the third; the others are branched. The pectoral fins are situated low on the sides, and each contains twelve rays, of which the first six are undivided like bristles, and reach to the middle of the tail, while they are joined only at their roots by the membrane; the other six are very short. The ventral fins are half way between the pectorals and vent, and of a moderate size. Each has ten rays, of which the first is a prickle. The fin behind the vent is united with that
of the tail, which ends in a sharp point, so as to form only one fin, which contains about one hundred and eleven rays.

2d Species.—Mystus kapirat.

A Mystus with the upper jaw unarmed, and with two rays in the united ventral fins.

This fish is the Gymnotus kapirat of Bonnaterre, (Tabl. Encycl. p. 37, Pl. XXV. Fig. 83,) and the Notopterus kapirat of La Cepede, (Hist. des Poissons, Tome II. p. 190.) I have already mentioned the reason why I class it with the genus Mystus. I am unwilling to change the specific name adopted by two authors of reputation, although it is somewhat barbarous. Pholoe, the Bengalese name, would perhaps be more suitable.

The Pholoe is found in both ponds and rivers of fresh water in Bengal. In the former it is often a foot in length; in rivers it sometimes reaches to thrice that dimension. It contains too many bones to be considered good for eating. The colour above is green, on the sides and belly silver, with a black spot on each side, at the upper extremity of the gill-covers. The eyes are white.

The head is oval, rather narrower than the body, scaly, and rather blunt. On each side are four shining spaces devoid of scales. The first, above the eye, is large and oblong; the second, behind the angle of the mouth, is oblong, and indented on the edge; the third is above the second, and is kidney-formed; and the fourth, behind the eye, is small and semicircular. The mouth is large, and descends obliquely. The under edge of the under jaw is indented. The bones of the upper lip are quite entire. In the upper jaw are scattered some teeth; those in the under jaw are sharp, and disposed in a row. The tongue is blunt, thick, and free, with a furrow toward its point, and a margin on each edge of the root. On the tip are
some large teeth disposed in rows; towards the root some small ones are scattered. Along the middle of the palate there is a deep furrow, with a long bone on each side; and on these bones are scattered many small teeth. Each nostril has only one small tubular aperture close to the jaw. The eyes are large, circular, and on the sides of the head. The lower edge of the cheek-bone is indented. The gill-covers are scaly, and consist of one plate, rounded behind, and disclosing the membrane, which contains four slender rays that cannot be distinctly seen. The bones supporting the gills have on their inner edge a row of spines.

The back transversely taken is convex, and longitudinally is arched, as is the belly, the edge of which is not indented. The lateral line commences at an oblong shining space on each shoulder, and, bending suddenly down a little way from thence, runs straight along the side above its middle. The scales adhere firmly, are minute, and on the upper parts of the fish are dotted.

There are only five fins. That on the back is near the middle, is rounded, and contains nine rays; the first very short, and, together with the second, undivided; the others are branched. The pectoral fins are shorter than the head, each having twelve rays. The ventral fins are minute, situated close to the vent, and united into one, containing two undivided rays. The fin behind the vent, united with that of the tail, is covered with scales, and has about one hundred and ten forked rays, nearly of equal lengths.

3d Species.—Mystus Chitala.

A Mystus with the upper jaw unarmed, and with four rays in each ventral fin.

The Chitala (Chitol) is found in the larger fresh water
rivers of Bengal and Behar, and is usually about two feet in length, but often a half longer. The belly is uncommonly rich and well flavoured; but the back contains numerous small bones, and a strong prejudice exists against using this fish as food, owing to its being supposed to live on human carcases. In proportion to its length it is deeper than the other two species. Its colour above is green, with white transverse stripes. The sides and belly are silver, with dark dots collected into masses like clouds. There are some spots on each side of the tail.

The head, except on the nose, crown, and edges of the gill-covers, is covered with small scales. The bones of the upper lip are entire on the edges. On each jaw are crowded many teeth. Each nostril has two apertures; the foremost close to the jaw is tubular, the hinder one is small and circular. The eyes are far forward. The edges of the cheek-bones are not indented. The under plate of the gill-covers is slightly toothed. The membranes of the gill-covers are exposed to view, but are so thick that their rays cannot be distinctly numbered.

The back is slightly arched with a sudden declivity at the nape. The edge of the belly is not at all indented. The lateral line, commencing high, turns suddenly down at the shoulder, where is has a shining space devoid of scales, and then runs straight along the upper part of the side. The scales are small, and adhere firmly.

There are only five fins. That on the back is behind the middle, and has nine rays. The pectoral fins are shorter than the head, and each contains about fourteen rays. The ventral fins are minute, and slightly united round the vent, each having four rays. The fin behind the vent, united with that of the tail, contains somewhere between one hundred and twenty
and one hundred and thirty rays, but the skin is so thick that the exact number cannot be ascertained.

XVI. Genus.—Clupea.

Fishes of the fifth order, with teeth in the jaws; with an oblong scaly body, sharp-edged beneath; with one fin on the back; and with the fin behind the vent distinct from that of the tail.

The species of Clupea, which I have seen in the Ganges, besides the circumstances mentioned in the generic character, have in common the following particulars:

The body, in proportion to its depth, is longer than in the last described genus, but is almost as much compressed at the sides, and resembles the iron of a lance. The lower edge, however, from the throat to the extremity, is very sharp, and, except where there is a fin, is toothed like a saw.

The head is devoid of scales, small, and much compressed. There are scarcely any lips; but two flat bones in some measure supply the place of the upper one.

The body is covered with large smooth scales, easily removed, and above each pectoral and ventral fin is a scale-like appendant.

The pectoral fins are low on the side. The ventral fins are small, and each has seven rays. The fin behind the vent extends almost the whole length of the tail.

1st Species.—Clupea purava.

A Clupea with the hinder end of each bone of the upper lip lengthened out into a dagger-like process; with forty-six rays in the fin behind the vent; with the fin of the tail divided into two sharp lobes; and with no spots on the body.

This fish seems scarcely different from the Peddah Pooravah
Clupea. GANGETIC FISHES. 239

(Great Purava) of Dr Russell, (Indian Fishes, Vol. II. No. 190,) although he does not notice the scale-like appendants above the pectoral and ventral fins, nor the little prickle before the fin of the back. I have derived the specific name from that given by Dr Russell, although the term Purava seems to be generic, as it, no doubt, forms a part of the words Aduppa adtpuruwavai, said by La Cepede (Hist. des Poissons, Tome V. p. 459) to be given to the Clupea Malabarica. The latter fish, as described by Bloch, (Ichth. Tome XII. p. 116, Pl. CCCXXXII.) is very nearly, indeed, allied to ours, although the number of rays in the fins and the colours stated by this author differ considerably from what I observed. Bloch also says, that the fish of Tranquebar does not enter rivers, while ours is one of the most common in the estuaries of the Ganges. Our fish is also nearly allied to the Clupea setirostris of Bonnaterre, (Tabl. Encycl. p. 186, Pl. LXXVI. Fig. 316.)

The Purava grows to about a foot in length, is so full of bones as to be little valued, and, like many fishes of this genus, dies immediately after being taken out of the water. Its back is of a green colour, its sides and belly silver, with a strong gloss, varying from green to purple, and with a tinge of yellow above the lateral lines. The eyes are silver.

The head is blunt, oval, and rather narrower than the body. The mouth is large, and descends obliquely from the extremity of the head. The bones, in place of the upper lip, extend beyond the gap into a dagger-like process, and are indented on the edges. The under jaw is rather the shortest, and has two ridges on its lower side. In each jaw is a single row of small sharp straight teeth. The fore part of the palate has on each side a longitudinal bone. There is scarcely any tongue, except a ridge, to which one end of the gills is inserted. Each nostril has two oblong apertures near the eye. The eyes are high on
the head, and of moderate size, with circular pupils. The gill-covers are composed of three bony plates, with a sinuosity on the posterior edge of the largest and uppermost plate. Each exposes to view its membrane, which contains eleven rays. The bone of each gill, on its interior side, has a row of parallel slender teeth.

The back is arched, and transversely convex. The belly is more prominent. The lateral line runs straight above the middle of the side. The vent is behind the middle. The scales are orbicular. Before the back fin is a very short recurved prickle.

The fin on the back, placed between those behind and before the vent, is nearly triangular, and has thirteen rays, of which the three first are undivided and approximated; the others are branched. The pectoral fins are shorter than the head, and very sharp above. Each has thirteen rays, of which the first is undivided, and the others branched. The ventral fins are approximated, and the first ray of each is undivided. The four first rays of the fin behind the vent are undivided, and lengthen from the first to the fourth: the others are branched, and shorten towards the last. The under lobe of the tail fin is rather the longest and sharpest. In all, this fin contains eighteen distinct rays, besides compacted short ones.

2d Species.—Clupea phasa.

A Clupea with the first ray of each pectoral fin very long, and like a bristle; with both lobes of the tail fin sharp; with fourteen rays in the fin of the back; and with about seventy-eight in that behind the vent.

The name Phasa is generic; but I have appropriated it to this species, having no other to which it could be more conveniently applied. This Phasa is common in the brackish rivers of Bengal, and is a beautiful fish, about the size of a small her-
Clupea.  

GANGETIC FISHES.  

ring. The snout is diaphanous, the back is of an olive-brown colour, the sides and belly are bright silver. All the fins are diaphanous, but that of the tail has a tinge of yellow, with a black edge on the upper lobe. The eyes are silver.

The head is straight, and rather sharp-edged above, and rises upward below. The end of the nose, which is rounded, projects considerably beyond the mouth. Both jaws are indented on their edges, which are sharp; nor are there any teeth, except those formed thus in the edges of the jaws. Each nostril has one opening close to the eye. The eyes are far forward. The edges of the gill-covers wave in several sinuses. The membrane of each contains about three rays.

The back slopes gradually from the head to the fin, at which it slopes downward suddenly. The belly is prominent. The tail is long, and, toward the extremity, bends down. The lateral line is arched slightly upward.

The first ray of the dorsal fin is very short, and closely joined to the second. Each pectoral fin has thirteen rays, of which the first is more than twice the length of the others that are branched. The first ray in each ventral fin is undivided. The fin behind the vent contains from seventy-five to seventy-eight rays, either undivided, or only once forked. The fin of the tail is large, and ends in a crescent.

3d Species.—Clupea Telara. Plate II. Fig. 72.

A Clupea, with the first ray of each pectoral fin lengthened into a bristle; and with the end of the upper lobe of the tail fin blunt, as if cut across.

This fish, about the size of a small herring, is found high up in the Ganges, and in most of its larger branches and tributary streams. It is one of those which the Bengalese call Phasa; but I have adopted a name given to it in the Dinajpur district.

H h
It differs little in value or appearance from the Purava, and, therefore, I have noted only the discriminating circumstances.

The edges of the back and tail fins are black coloured. In adults, the pectoral fins are black, with a green gloss.

The ends of the bones supplying the place of the upper lip extend but a very little beyond the corner of the mouth. The membrane of each gill-cover contains thirteen rays.

The back rises more suddenly from the head to the fin than in the Purava. The vent is before the middle. The scale-like appendant above the pectoral fin is divided into two. There is no prickle before the fin on the back.

The back fin is far forward, much shorter than its height, and slopes very suddenly backward. It contains fourteen rays, of which the two first are undivided, and the first is very short; the others are branched. The pectorals are long, the first ray, which is like a bristle, reaching to the middle of the tail. The other fourteen are much shorter, the last being undivided, and the others branched. One ray on each side of each ventral fin is undivided, and the intermediate ones are branched. The fin behind the vent contains seventy-four rays, of which the three first are undivided, and lengthen from the first, which is the shortest. The others are forked, and the last, which is the shortest, is split to the root. The fin of the tail is deeply divided by an obtuse sinus. The lower lobe is the longest, and is sharp; the upper is blunt, as if its end had been cut away. The distinct rays are in all nineteen, besides some short compacted ones at each side.

XVII. Genus.—Clupanodon.

Fishes of the fifth order, with no teeth in the jaws; with an oblong scaly body, sharp-edged beneath; with one short fin on
the back; and with one fin behind the vent, distinct from that of the tail.

These fishes are distinguished from the Clupeas by no very striking circumstance, except the want of teeth, and this produces much less difference in their habits than I should have expected. Besides the circumstances mentioned in the generic character, all the species examined by me have in common the following marks:

The fish is oblong, much compressed, and shaped somewhat like the head of a lance, or sword-blade. The eyes are coloured like silver.

The head is devoid of scales, and more or less diaphanous before the eyes. The mouth is small. The jaws do not protrude in opening, and have scarcely any lips; but, in place of the upper, have two flat bones. Each nostril, when any is visible, has only one aperture. The eyes are large and high on the sides of the head. The gill-covers are rounded behind, consist of three or four shining plates, and expose their membranes, each containing five or six rays.

The edge of the belly is sharp throughout, and toothed like a saw. The vent is behind the middle.

The back fin is near the middle; that of the vent occupies a considerable proportion of the space between the vent and tail; and the number of rays in each ventral fin is either seven or eight. The tail fin has two lobes.

1st Species.—Clupanodon ilisha. Plate XIX. Fig. 73.

A Clupanodon with twenty rays in the back fin; with twenty-one in that behind the vent; and with eight in each ventral fin.

This is the Sable fish of the English in Bengal, which Dr Russell (Indian Fishes, No. 198) considered as the same with
his *Palasah*, and certainly there is the utmost affinity between the fishes: but Dr Russell states the number of rays in the fins of his fish somewhat differently from what I observed; and the scale-like appendants, which the Gangetic fish has above both pectoral and ventral fins, were observed by Dr Russell only above the former. Besides, what to many will appear of more importance, the *Palasah* would seem to be very inferior in quality, as a food, to the *Ilisha* of Bengal.

Except in wanting teeth, the *Ilisha* has the most strong resemblance to the *Shad*, (*Clupea alosa*), and there is reason to suspect that the Indian and Latin names may be radically the same. The *Ilisha* frequents the bay of Bengal and the large salt water estuaries of the Ganges, and in the rainy season ascends the larger rivers to spawn. I have seen it as high as Agra and Kanpur, but so high up it is very rare. At Patna on the Ganges, and Goyalpara on the Brahmaputra, it is pretty common, but rather poor and exhausted. About Calcutta and Dhaka it is in the utmost abundance and perfection, and is the richest and highest-flavoured fish that I know, having a taste of both the salmon and herring; but, owing to innumerable small bones, it is difficult to eat, and it is heavy of digestion. Its common size is about a foot and a half in length, but it is occasionally twice that dimension. The drawing is taken from a young fish.

The fish is above of a green *colour*, with a gloss of gold changing to purple, and below silver. In young fishes there is generally a row of four or five black spots on each shoulder; but in large individuals some of these generally, and often all of them, disappear. The fins are diaphanous; that of the tail is edged with black.

The *head* is small and oval. The *mouth* descends obliquely from the end of the nose. The *upper jaw* is rather the longest,
blunt, and terminated by a deep notch. The under one is sharp, and veiled by a projecting membrane. The bones of the upper lip extend beyond the gap, are entire on the edges, and widen towards the end, where they are rounded. The tongue is free, smooth, blunt, and protuberant at the base. The palate is smooth. The aperture of each nostril is oblong, nearer the jaw than the eye, and covered by a membranous valve. The eyes are far forward, and covered by a thick pellucid skin. The longest diameter of the pupil is vertical. The gill-covers form an arch behind, are shining, and devoid of scales; and each consists of four plates. They expose to view their membranes, each containing six rays, of which the three uppermost are flat, the middle one terminating blunt, as if cut across. The bones of the gills are covered on the inside with a row of parallel teeth.

The scales are oblong, striated, indented on the edges, and easily rubbed off; the upper ones are dotted. The back and belly are nearly equally arched. The back before the fin forms a slight ridge. There is no lateral line. Above each pectoral and ventral fin is a scale-like appendant.

The back fin commences opposite to the ventrals, and extends to the commencement of the fin behind the vent. It slopes gradually backward, is devoid of scales, and the three first of its rays are undivided, lengthening gradually from the first, which is very short; the others are branched. The pectoral fins are much shorter than the head, low down, and sharp above: each contains fifteen rays, of which one on each side is undivided, and the intermediate ones are branched. The ventral fins are very small, and stand remote both from each other, and from the vent. The first ray of each is undivided, and the others are branched. The fin behind the vent is at a little distance both from that organ and from the end of the tail, and is covered half way up with scales, forming a furrow,
in which it may be received. It slopes gradually backward, and ends in a point. The tail fin is covered at the root with scales, and deeply divided into two sharp equal lobes. It contains nineteen distinct rays, besides several short compacted ones on each side.

2d Species.—Clupanodon chacunda.

A Clupanodon with eighteen rays in the back fin, nineteen in that behind the vent; eight in each ventral fin, and five in each membrane of the gill-covers, and with the under jaw the shortest.

This fish, if it be different, has the strongest affinity to the Komal of Dr Russell, (Indian Fishes, No. 186.) That fish, however, has no spot on the shoulders, and has one ray more both in the fin of the back, and in that behind the vent.

The Chacunda is found in the Gangetic estuaries, grows from three to eight inches long, and is little valued. It is the deepest, in proportion to its length, of our Gangetic Clupanodon, and its back is more prominent than its belly. Above it is of a green colour, with a gloss of gold, and beneath silver. The fin of the back is dotted, and that of the tail is yellowish. Behind each gill-cover, on the shoulder, is one large black spot. The eyes are silver coloured.

The head is of a moderate size, and sharp. The mouth is a little behind the end of the nose, and opens horizontally. The upper jaw is the longest, and has a notch at the end, and the under has a longitudinal ridge, as in the genus Mugil. The bones of the upper lip are dilated toward the end, and entire on the edges. The nostril is round, and near the jaw. The eyes are high, large, and circular, and are covered by a thick diaphanous skin: the longest diameter of the pupil is vertical. Each gill-cover consists of four plates, and its mem-
brane contains five flat rays. The bones of the gills, on their inner edge, have parallel slender teeth.

The scales are flexible, and adhere firmly. The back slopes in both directions from the commencement of the fin, and before this member has a sharp ridge. There is scarcely any lateral line. There is a scale-like appendant above each ventral fin.

The fin of the back is like a crescent, sloping backward. The two first of its rays are short prickles close to the third, which is undivided. The others are branched. The pectoral fins are short, and sharp above; each has fifteen rays, of which one on each side is undivided, and the others branched. The ventral fins are very short; one of their rays on each side is undivided, and the others are branched. The fin behind the vent extends almost the whole length of the tail, and is like a crescent, sloping backward. The first of its rays is a short prickle, adhering to the second, which is undivided; and the others are branched. The tail fin is deeply divided into two sharp lobes, and has nineteen distinct rays, besides some short compacted ones on each side.

3d Species.—Clupanodon Manmina.

A Clupanodon with fourteen rays in the fin of the back, and twenty-four in that behind the vent; and with a black spot on each shoulder.

This fish is found in most of the fresh water branches of the Ganges, and grows to about the same length with the Chacunda; but is reckoned better for eating. Its form somewhat resembles that of a sword. Its colour is above dirty green, and below silver, with pellucid fins, and a large black spot on each shoulder.
The head is of a moderate size, oval, and sharp, and a ridge bounds its sides. The mouth, situated behind the extremity of the nose, is small and horizontal. The upper jaw has a notch at the end, and is longer than the under one, which is sharp-pointed. The bones of the upper lip are very short, and entire on the edges. The aperture of each nostril is circular, and close to the jaw. The eyes are large and high. The gill-covers are rounded behind and shining, and expose to view their membranes, each containing five rays, of which the two uppermost are flat.

The scales are small, flexible, and easily removed. The back slopes towards each end from the commencement of the fin, before which it forms a sharp ridge. The belly is arched. The lateral line runs straight above the middle of the side, and is accompanied by a stripe of silver brighter than the rest of the side.

The dorsal fin slopes backward. The first of its rays is short and undivided, and the others are branched. The pectoral fins are short and sharp above, each containing fifteen rays. The ventral fins are very small, each having eight rays, of which the extreme ones are undivided. The fin behind the vent extends the greater length of the tail, and slopes backward. The fin of the tail is divided into two unequal lobes, the inferior being longest. It has nineteen distinct rays, besides some short compacted ones on each side.

4th Species.—Clupanodon chakra.

A Clupanodon with seventeen rays in the fin of the back, and twenty-four in that behind the vent; and with a black spot on each shoulder.

This small fish, found in the upper parts of the Ganges, so nearly resembles the species last described, that I noted merely its specific characters.
5th Species.—Clupanodon cortius.

A Clupanodon with fifteen rays in the fin of the back, and twenty-four in that behind the vent; and with no spot on the shoulders.

This fish, found in the Brahmaputra near Goyalpara, resembles also the Manmina so strongly, that I considered it unnecessary to mark any thing but the specific character.

6th Species.—Clupanodon chanpole. Plate XVIII. Fig. 74.

A Clupanodon with fifteen rays on the fin of the back, and twenty-one in that behind the vent; with from three to six black spots on each shoulder; and with the ridge of the back blunt or rounded.

This fish is found in the ponds and ditches of every part of Bengal, grows to about four inches in length, and is very little valued. It is shaped like the wide head of a lance. Its colours are green above, and silver below, with from three to six black spots, extending in a line from each shoulder. The fins are pellucid, and that of the tail is dotted. The eyes are silver.

The head is oval, descending in the same gentle curve from the back fin to the nose, blunt, and moderate sized. The mouth is horizontal, opening a little below the end of the nose. The jaws are nearly equal in length, and the bones, in place of the upper lip, do not reach beyond the gap, are club-shaped, and entire on the edges. The under jaw is veiled with a projecting membrane. The tongue is sharpish, undivided, smooth, and fixed its whole length. The palate is smooth, with a convexity on each side. The aperture of the nostril is circular, and nearer the jaw than it is to the eye. The eyes are globular, with circular pupils. Each gill-cover consists of four plates, and exposes its membrane, containing six rays.

The scales are moderate in size, smooth, and adhere firmly. On each side of the nape is a naked bony plate striated on the
surface, and terminating forward in a point. The back and belly are nearly equally prominent. The tail, towards the end, is narrow, and bent down. There is no lateral line.

The back fin extends from above the ventral fins to the commencement of that behind the vent, and slopes backward with a concave edge. Its three first rays are undivided, and the first is very short; the others are branched. The pectoral fins are low, shorter than the head, and sharp above: each contains thirteen rays. The ventral fins are much smaller than the pectorals, each having eight rays, of which the first and last are undivided, and the others branched. The fin behind the vent slopes backward, and ends in a point. The two first of its rays are undivided, and the others branched. The fin of the tail is divided, beyond the middle, into two equal sharp lobes, and contains nineteen distinct rays, besides some short compacted ones at each side.

7th Species.—Clupanodon Cagiua.

A Clupanodon with fifteen rays in the back fin, and twenty-three in that behind the vent; with some black spots disposed in a row on each shoulder; and with the ridge of the back sharp.

This fish very much resembles the Chanpole, but grows to twice the size, being usually about a span in length. I found it in the rivers and ponds of Northern Behar. It is shaped like the head of a broad lance; and in colour it is above green, and below white, with an indeterminate number of black round spots in a row upon each shoulder. The eyes are silver.

The head is oval, moderate sized, and rather blunt. The mouth is horizontal. The jaws are nearly of equal length; the upper one has a notch at the end, and the under terminates in a point, and is veiled by a dotted membrane. The bones of
the upper lip widen gradually downward, and are entire on the edges. The tongue is fixed its whole length, and is smooth and sharpish. The nostrils are half way between the eye and jaw. The eyes have oval pupils, the longest diameters of which are vertical. Each gill-cover contains four plates, and its membrane contains six rays, of which the three outer are flat.

The scales are middle-sized, very thin, entire on the edges, and easily removed. There are scale-like appendants above the lower fins; but those above the pectorals are small; and those above the ventrals are minute and indistinct.

The three first rays of the back fin are undivided, and the others are branched; the first is very minute, so as to be easily overlooked. The pectoral fins are shorter than the head, low, and sharp above: each has about fourteen rays. The ventral fins are still smaller than the pectorals, and do not reach to the vent; each has eight rays. The three first rays of the fin behind the vent are undivided, and lengthen gradually from the first; the rest are branched. The fin of the tail is divided into two lobes.

8th Species.—Clupanodon Motius.

A Clupanodon with fifteen rays in the fin of the back, and forty-three in that behind the vent; and with the edge of the upper jaw quite entire.

This fish I found in the Brahmaputra river, where it grows to be about three inches in length, and is neither in a quantity nor of a quality to be valuable. It seems to have a near affinity to the Ditchelee of Dr Russell, (Indian Fishes, No. 188;) but this, having the upper jaw indented on the edge, must be rather considered as a Clupea. Besides, it has only forty rays in the fin behind the vent.

The Motius is shaped somewhat like a knife, being straighter
and blunter above, and more prominent and sharp-edged below. The general colour is silvery; but on each side is a longitudinal stripe, much brighter than the spaces above and below; and the whole is somewhat diaphanous, so that fourteen ribs on each side may be discerned through the integuments. The back and its fin, and that on the tail, are dotted. The fins are diaphanous, and that on the tail is yellow-edged, with black. The eyes are silver.

The head is half oval, being flat above, and rising with a curve beneath. It is small and dotted above, and on the crown has a longitudinal furrow, edged on each side with two ridges. The mouth is high, and descends obliquely. The jaws are scabrous, and the under one is the longest. The bones, in place of the upper lip, are as long as the jaws. The tongue is small, smooth, and detached. The nostrils, on account of the pellucidity of the head, are not to be seen. The eyes are convex, and have circular pupils. Each gill-cover consists of three flexible plates, and its membrane contains about five rays; but their number cannot be exactly ascertained.

The scales are large, very thin, and easily removed. The back is nearly straight, with a rounded edge. The belly forms an arch. The lateral line is scarcely, if at all, distinguishable.

The dorsal fin slopes backward, and its first ray is short. The pectoral fins are very small, and each contains fourteen or fifteen rays. The ventral fins are very small, and each has seven rays. The rays in the fin behind the vent are about forty-three, of which the three first are undivided, and lengthen gradually from the first, which is the shortest. The fin of the tail is divided into two lobes, of which the lower is the longest, and the distinct rays in all are eighteen, besides some short compacted ones on each side.
XVIII. Genus.—Corica.

Fishes of the fifth order, with no teeth in the jaws; with an oblong body; with the edge of the belly sharp, and toothed like a saw; with one short fin on the back; and with two behind the vent.

1st Species.—Corica soborna.

This fish is found in the Mahananda river, grows to about two inches in length, and has a very considerable resemblance to the last described species of Clupanodon: but the singular circumstance of two fins behind the vent prevents me from classing it in that genus. The native names Soborno Khorika I have adopted, the last being the generic appellation, while the specific term Soborno signifies golden, given on account of the little creature's beauty; for, in fact, its splendour is that of silver. It is shaped somewhat like a knife, being long, with the ridge of the back less prominent than that of the belly, and blunt. The greater part is diaphanous, with the bones of the skull and spine green, and the gill-covers and a longitudinal stripe on each side silver glossed with purple. The upper and lower edges, at the roots of the fins, are dotted. On the belly is an oval space, with less shining colours. The eyes are silver.

The head is oval, devoid of scales, and on the nape has a large heart-shaped protuberance, covered with dots. The mouth descends in a straight line from the extremity of the head. The jaws do not protrude in opening, are dotted, and have scarcely any lips; but, in place of an upper lip, are two oblong flat bones, which hang perpendicular. There are no teeth, nor can any nostrils be observed. The eyes are large, and on the sides of the head, and have circular pupils. The gill-covers are shining, and expose a little of their membranes, each of which contains about five very slender rays.
There are scarcely any scales, or at least they are so thin and transparent that I could not distinguish any with certainty. The ribs are discernible through the integuments. The vent is behind the middle. The lateral line runs straight along the upper part of the side.

The fin on the back is behind the middle, and contains thirteen rays. The pectoral fins are very small, each having twelve rays. The ventral fins do not reach to the vent, and each has seven rays. The first fin behind the vent has thirteen, and the second has four rays. The fin of the tail is divided into two lobes, and contains about eighteen rays.

XIX. Genus.—Cyprinodon.

Fishes of the fifth order, with an oblong, scaly, much compressed body, having both edges blunt; with one fin near the middle of the back; and with teeth in both jaws.

This genus has a very different appearance from the Esox, but a well defined characteristic difference is not easily discovered.

1st Species.—Cyprinodon cundinga.

A Cyprinodon with the last ray of the dorsal fin very long.

This fish, I believe, is the Clupea Cyprinoides of Bloch, (Ichth. Tome XII. p. 24, Pl. CCCIII.) Bonnaterre, (Tabl. Encycl. p. 187, Pl. LXXV. Fig. 314,) and La Cepede, (Hist. des Poissons, Tome V. p. 458,) although these authors, all, I suppose, copying from Broussonnet, give twenty-two rays in the membranes of the gill-covers, seventeen in the fin of the back, and twenty-five in that behind the vent.

Our fish seems undoubtedly to be the same with the Kundinga of Dr Russell, (Indian Fishes, No. 203.) I cannot include it in the genus Clupea, because the ridge of its belly is
blunt; and I do not think that a good generic character can, in almost any case, be derived from the number of rays in the membranes covering the gills, not only as in many individuals this is very difficult to ascertain, but also as it differs much in fishes evidently belonging to the same genus. I, therefore, unite this fish with the Cyprinodon of La Cepede, as it differs just as much from the subsequent Cyprini as a Clupea does from a Clupanodon.

The Cundinga is found in the salt water estuaries of the Ganges, and is a well flavoured fish, considerably larger than a herring. It is of a long form, much compressed at the sides, and is dusky green on the upper parts, and silver coloured below.

The head is oval, sharpish, of a moderate size, and devoid of scales. The mouth is high, descends obliquely in a straight line, and is large. The jaws have scarcely any lips, and the under one is considerably the longest. In place of an upper lip are two very long, blunt, flat bones, entire on the edges, descending before almost vertically, and then bending back to a horizontal position. In both jaws are crowded many minute teeth; and the same is the case on the upper surface of the tongue, which is blunt, undivided, thick, and detached below. On the fore part of the palate are three bones covered with teeth. The intermediate one, standing transversely, is oblong; the side ones, standing longitudinally, widen at one end, and narrow at the other. Each nostril has two oblong apertures, mid-way between the eyes and jaw. The eyes are very large, round, and convex, with oval pupils, the small ends pointing downward. Each gill-cover is rounded behind, and consists of three plates. It exposes one half of its membrane, containing twenty-five rays. The bones supporting the gills on their inner edges have a row of bristles.
The body is covered with large dotted scales, adhering firmly. The back is less prominent than the belly, which slopes rather suddenly at the fin behind the vent, and is blunt, and quite entire on the edge before the vent. The lateral line is above the middle, and is rather curved, with the concavity upward. The vent is behind the middle. Above each pectoral and ventral fin is a scale-like appendant.

The back fin is rather behind the middle, and slopes backward, having nineteen rays, of which the first five are undivided, and lengthen gradually from the first, which is very short: the next thirteen are branched, and the last is twice as long as any of the others, undivided, jointed, and flat, being shaped like the head of a narrow lance. The pectoral fins are low, and are shorter than the head: each contains fifteen rays, of which the first is undivided, and the others branched. The ventral fins are short, and approximated, and each contains one undivided and nine branched rays. The fin behind the vent is crescent-shaped, and contains twenty-six rays, of which the six first are undivided, and lengthen gradually from the foremost, which is very short; the others are branched, and the last split to the root. The fin of the tail is deeply divided into two sharp lobes, of which the upper is the longest. It contains nineteen distinct rays, besides some small compacted ones at each side.

N. B.—Perhaps the third species of the following genus should rather have been placed here?

XX. Genus.—Cyprinus.

Fishes of the fifth order, with one back fin, which has rays, but both this and the pectoral fins are unarmed; with no teeth in either jaw; with the edge of the visceral cavity blunt, in part at least; and with four tendrils, at the utmost, near
the mouth, but this organ is often altogether destitute of these appendages.

This very numerous class of fishes has been usually subdivided from the form of the tail fin, and from the absence or presence of fewer or more numerous tendrils; but these organs, in several species, are so minute as to render it uncertain whether some individuals of the same species have them or not; and the fin of the tail, in all the Gangetic species except one, is divided into two lobes, more or less distinct. Besides, this arrangement brings together species that have little general resemblance. I have, therefore, been under the necessity of adopting other divisions, which, indeed, bring together the species most nearly allied; but, I must confess, that some of the divisions are not distinguished by very strictly defined characters. In order to save repetitions in the specific characters, I have given each division a common name, derived generally from some native generic appellation.

Besides the circumstances mentioned in the generic character, the species of Cyprinus found in the Ganges, except in a few cases that will be specified, have in common the following marks:

The head is devoid of scales, and has shining bony gill-covers, which move freely, and leave a large opening on each side for the gills. Each nostril has two apertures separated merely by a thin membrane, which projects from the surface, and serves as a valve for one or other. In a few of the smaller species, I have not been able to trace this structure; but, in the larger species, it may be considered as existing, when the contrary is not mentioned in the description. The membrane of the gill-cover very generally contains three rays, and never more than four. The former is to be supposed as the case wherever the contrary is not mentioned.
I. Division.—Cyprinus chela.

Fishes of the Genus Cyprinus, with a sharp edge on the space between the ventral fins and the fin behind the vent.

The Cyprini of this division differ from the Clupanodons in the smaller number of rays in the membranes of the gill-covers, and in the fore part of the belly having a blunt edge; but on the whole, the Clupanodons, and these Cyprini, are but indifferently distinguished. To this division belong the Cyprinus cultratus and C. clupoides of Ichthyologists. Besides the characters belonging to the genus and division, the seven following species have in common the following marks:

The form is long, much compressed, and somewhat like the head of a lance, or blade of a knife. The eyes are silver coloured.

The head is small, and devoid of tendrils. The eyes are high and far forward. The back fin is considerably behind the middle. The ventral fins are at some distance before the vent.

1st Species.—Cyprinus cachius.

A Cyprinus of the Chela kind, with three rays in each ventral fin; with about twenty-six in that behind the vent; and with about seven in that of the back.

The Cachius (Kachhi) is a minute fish, scarcely an inch long, and is found in the Ganges, about the commencement of the Delta. It is of an oblong shape, more prominent below than above. The greater part is diaphanous, with a gloss changing from green to purple. The back and belly are dotted, the upper part of the head is green, on each side is a silver stripe, and the membrane investing the visceral cavity is of the same colour. The fins are diaphanous, that of the back being dotted.
The head is blunt, and half oval, being flat above. The mouth descends from above, and is of a moderate size. The jaws do not protrude in opening, and the under is rather the longest. The upper lip has no bones. The nostrils are half way between the eye and jaw. The eyes are large, with circular pupils. I am not certain as to the number of rays in the membranes covering the gills, but think that I can count three in each.

Over the silvery membrane investing the visceral cavity, the ribs are visible. From the commencement of the fin, the back slopes both ways very gently, and its edge is blunt. The belly is more prominent, the sides are perpendicular, and the vent is before the middle. The lateral line runs straight above the middle of the side. The scales are of moderate size, but are so transparent as to be scarcely visible.

The pectoral fins are low, and longer than the head, and each contains about eight rays. The first ray of each ventral fin is a very long bristle, and the other two are minute. The fin of the tail is divided into two lobes.

2d Species.—Cyprinus Atpar.

A Cyprinus of the Chela kind, with five rays in each ventral fin; with twenty-five in that behind the vent; and with nine in that of the back.

The Atpar I have found in the two most remote branches of the Ganges, the Brahmaputra and Yamuna, (Jumna R.) and I have also found it in ponds near the former. It grows to about three inches in length, and is nearly diaphanous, with a gloss on the sides, changing from green to purple. The head, a longitudinal stripe on each side, and the membrane lining the visceral cavity, are silver coloured; and over the latter, nine ribs on each side may be distinguished through the integuments.
The fins are yellowish, and that of the back, together with the upper ridge of the fish, are dotted.

The head is oval. The mouth is of moderate size, and descends almost perpendicularly. The jaws do not protrude in opening; and the under one is rather the longest. There are no bones in the upper lip. The nostrils are nearer the eyes than the jaw. The eyes are of moderate size, and convex, with circular pupils. The gill-covers are rounded behind, and each consists of only one plate, exposing its membrane to view.

The ridge of the back is blunt, and slopes a little both ways from the commencement of the fin. The lower edge is more prominent. The vent is nearly in the middle. The lateral line is low, and in a curve parallel to the belly. The scales are small, and adhere firmly.

The first ray of the dorsal fin is undivided, the remainder branched, and the last of them split to the root. The pectoral fins are much longer than the head, and each has eleven or twelve rays. The first ray of each ventral fin is a very long bristle, and the others are minute. The fin behind the vent occupies most of the under side of the tail; and the first three of its rays, increasing from the first, which is short, are undivided; the others are branched, the last of them being split to the root. The tail fin, with a deep sinus, is shaped like a crescent, having both horns sharp, and nearly equal in length.

3d Species.—Cyprinus Laubuca.

A Cyprinus of the Chela kind, with seven rays in each ventral fin; with twenty-four in that behind the vent; and with ten in that on the back.

The Laubuca (Layubuka) I found in the ponds of the northern parts of Bengal. It is from two to three inches long, most prominent below, and of a brownish green colour above, and sil-
ver beneath, with a gloss on the sides changing from green to purple. Above the insertion of each pectoral fin is a greenish spot, and at the end of the tail there is another. The fins are diaphanous and pale green, and, with most parts of the fish, are covered with black dots.

The head is sharpish, half oval, sloping less above than below, and rather wider than the body. The mouth is small, and descends obliquely. The jaws do not protrude in opening, and are nearly equal in length; but the under one is by a trifle the longest. They are devoid of lips, but, in place of the upper, are two minute bones entire on the edges. There is a slight roughness on each jaw, which perhaps might give the fish a place in the genus Cyprinodon. Each nostril has one aperture in the middle between the eye and jaw. The eyes are large and globular. The gill-covers consist each of three plates, end in a point, and conceal their membranes.

The back slopes gently each way from the commencement of the fin. The sides are convex. The belly forms an arch. The lateral line descends obliquely with a curve parallel to and near the belly. The scales are large, and easily removed.

The fin on the back slopes very little. Its first ray is short, and, together with the second, is undivided; the others are branched; and the last is split to the root. The pectoral fins are on the middle of the side, and are longer than the head, each having twelve rays. The ventral fins are distant from each other, and the first ray of each is undivided, and the others branched. The fin behind the vent is more distant from that organ than from the end of the tail, and its edge forms an arch. Its first ray is very short, and, together with the two following, is undivided; the others are branched. The fin of the tail is large, and divided into two lobes.
4th Species.—Cyprinus phulo.

A Cyprinus of the Chela kind, with eight rays on each ventral fin; with twenty in that behind the vent; and with nine in that of the back.

The Phulo (Phul chela) is found in the rivers and ponds of the north-eastern parts of Bengal, grows to about three inches long, and is little valued. It is more prominent on the lower edge than above, where it is green, with silver coloured sides. The fins of the tail and behind the vent are tinged with yellow.

The head is oval, and a little sharpish. The mouth is small, and opens horizontally. The jaws protrude in opening, and have no lips, but, in place of the upper, are two very minute bones. The upper jaw is rather the longest; the under one is blunt. Each nostril has only one circular opening near the eye. The eyes are circular. The gill-covers do not conceal their membranes.

The back is nearly straight, with a blunt edge. The belly is prominent and arched. On each side are two lateral lines; one high up, and straight, the other bent downward parallel to the edge of the belly. Above each pectoral and ventral fin is a scale-like appendant. The scales are minute.

The back fin slopes behind; the first of its rays is very short, and, together with the second, is undivided; the others are branched, the last being considerably longer than that next to it. The pectoral fins are low, and longer than the head, and each contains eleven rays. The ventral fins are very short. The first ray of the fin behind the vent is short, and, with the two next, is undivided, the others being branched. The fin of the tail is divided into two lobes, of which the under is the longest; and it has eighteen distinct rays, besides some short compacted ones on each side.
5th Species.—*Cyprinus gora*.

A *Cyprinus* of the *Chela* kind, with eight rays in each ventral fin; with seventeen in that behind the vent; with nine in that of the back; with the lateral line devoid of spots; and with some teeth like those of a saw on the edge of the belly.

The *Gora* (*Ghora Chela*) is one of the largest fishes in this division of the genus, and is commonly about a span in length. I found it in the Brahmaputra, near Goyalpara.

The head is bluntish, and on the upper part has scales as far as the nostrils, but is naked on the sides. It is half oval, being flat above and sloping below, and is narrower than the body. The mouth is large, and descends obliquely. The upper jaw is protruded in opening, and, in place of a lip, has two small bones entire on the edges. The under jaw has a sharp point turned upward. The nostrils are very near the eye. The gill-covers expose their membranes.

The back is straightish, and has a blunt edge. The belly is more prominent. On each side are two lateral lines, the upper straight, the under parallel to the edge of the belly, with a break in its middle. Above each pectoral and ventral fin is a scale-like appendant. The scales are small, thin, and well fixed.

The dorsal fin slopes behind; the first of its rays is short, and, with the second, is undivided; the others are branched, and the last of them split to the root. The pectoral fins are very low, and longer than the head. Each has about thirteen rays. The ventral fins are very small. The first three rays of the fin behind the vent are undivided, and closely united; and the others are branched, the last being divided to the root. The tail fin is divided into two lobes.
6th Species.—Cyprinus morar. Plate XXXI. Fig. 75.

A Cyprinus of the Chela kind, with eight rays in each ventral fin; with twelve in that behind the vent; with ten in that of the back; and with the edge of the belly smooth.

The Morar (Morur) I have found in the rivers Yamuna and Tista, two large but distant branches of the Ganges. It is about a span in length, higher flavoured than any species in this division, somewhat resembling a smelt, and, by the natives, is sought after as a delicacy. Its colour is silver, with a green back, and all the fins clear, except that of the tail, which is yellowish, and stained with black.

The head is oval, and blunt. The mouth is very small, low, and horizontal. The jaws protrude in opening; and the upper is the longest, has a fleshy lip, and is undivided at the end. Each nostril has only one aperture, near the eye, which is of moderate size, and has the longest axis of the pupil in a vertical position. The membranes of the gill-covers are exposed to view.

The edge of the back is blunt. Each side has two lateral lines; the upper straight, the under parallel to the edge of the belly. Above each pectoral and ventral fin is a scale-like appendant. The scales are large, and readily separate.

The three first rays of the back fin are undivided and smooth, the first of them being minute; the others are branched, and the last split to the root. The pectoral fins are low down, and shorter than the head; each has fifteen rays. The ventral fins are small. The fin behind the vent commences near that organ, and the three first of its rays are undivided, and the others branched, the last being split to the bottom. The lobes of the tail fin are well marked, and contain about twenty distinct rays, besides some that are short and compacted.
7th Species.—Cyprinus bacaila. Plate VIII. Fig. 76.

A Cyprinus of the Chela kind, with nine rays in the ventral fins; with sixteen in that behind the vent; with nine in that of the back; and with all the fins clear as water.

The Bacaila of Hindustan Proper is one of the most generally diffused fishes in the fresh water rivers of India, as I have found it not only in all the Gangetic provinces, but in the heart of the Peninsula. It grows to about six inches in length, but is little valued, being very insipid. The colour is above dusky green, below silver. Sometimes, but not always, there is a large cloud-like spot on each shoulder; and there always are many small well-defined spots along the upper lateral lines.

The head is bluntish, narrow, and half oval, being flat above, and curved upward below. The mouth is large, and descends obliquely. The jaws protrude in opening, and have no lips; but, in place of the upper, there are two small bones about the length of the jaw. The upper jaw ends in a notch; the under, which is the longest, terminates in a turned-up point. The tongue is sharpish, entire, smooth, and tied down its whole length. The palate is smooth, and on each side is protuberant. Each nostril has only one circular aperture, very near the eye, which is globular. Each gill-cover has three plates, is rounded behind, and leaves exposed its membrane. The bones of the gills, on their inner edge, have a row of parallel bristles.

The back is nearly straight, with a rounded edge. The belly projects with a more considerable curve. Each side has two lateral lines, the upper straight, the under parallel to the edge of the belly. Above each ventral and pectoral fin is a scale-like appendant. The scales are small, thin, and adhere firmly.

The back fin slopes behind; the first of its rays is short, and, with the second, is undivided; the others are branched; and the last of them split to the bottom. The pectoral fins are very
low, and are rather longer than the head: each has twelve rays, of which the first is undivided, and the others branched. The ventral fins stand apart from each other, and are shorter than the pectorals; and both the extreme rays of each are undivided, and the intermediate ones branched. The fin behind the vent slopes backward; and the two first of its rays are undivided, and the others branched. The fin of the tail has its upper lobe the shortest, and contains nineteen distinct rays, besides some that are short and compacted.

II. Division.—Cyprinus Barilius.

Fishes of the Genus Cyprinus, with the body very long and much compressed; with the sides irregularly marked with numerous incomplete transverse bars or spots; with the back fin placed considerably behind the middle of the fish; and with one lateral line at least running parallel to the lower edge of the fish.

The fishes of this division, on account of the numerous spots or marks on their sides, have a considerable resemblance to our Trout, and, by the English in Bengal, some of them have been considered as belonging to that genus; but they have only one fin on the back. I have not been able to trace in authors any species that should be referred to this division;—all the Cyprini described as having spots being much wider in form, and having the lateral lines straight, and the back fin nearer the middle of their body.

Several species of Cyprinus included in the first division, and nearly allied to the Clupanodons, approach very near those resembling trouts, as they have a lateral line parallel to their lower edge, and their back fin far behind their middle; but the marks on the sides of the second division form a well-defined character. Besides the above circumstances, and those mentioned in the generic character, and in that of the division, I observe,
that all the species of this division in the Ganges have in common the following circumstances:

All the marks on their sides, whether bars or spots, are of a black colour. The upper parts are green; the under parts and eyes are silver.

The head is oval. The eyes are high, on the sides of the head, and have circular pupils.

Both edges of the body are blunt. The vent is behind the middle.

The dorsal fin slopes backward: its two first rays are undivided, and closely united, the first being the shortest; the others are branched, and the last divided to the root. The pectoral fins are shorter than the head, and low. The ventral fins are still smaller, and each contains nine rays, except in one species, where there are only eight. The fin behind the vent slopes backward, and its last ray is divided to the bottom. The tail fin has two lobes, except in one species, where it is like a crescent.

8th Species.—Cyprinus barila.

A Cyprinus of the Barilius kind, devoid of tendrils, with incomplete bars on each side; with eight rays in the fin of the back; and with thirteen in that behind the vent.

The Barila is common in the rivers of Northern Bengal, grows to about three inches in length, and is little valued. The form somewhat resembles the blade of a knife. Its colour has a yellow tinge on the fin of the tail, and on that behind the vent. The bars are disposed in a row on each side.

The head is sharp and small. The mouth is small, and descends obliquely in a straight line. The jaws have scarcely any lips, and protrude in opening: the upper is the longest, and is entire at the end. The nostrils are near the eyes, which are
large and flat. The membranes of the gill-covers are not concealed.

The scales are large, easily removed, and entirely conceal the shoulder-blades. The back is nearly straight, and the belly is more prominent. There are two lateral lines, the upper of which is straight.

Each pectoral fin has fourteen rays, and each ventral only eight. The first ray in the fin behind the vent is short and undivided. The under lobe of the tail fin is the longest.

9th Species.—Cyprinus chedrio.

A Cyprinus of the Barilius kind, devoid of tendrils, with incomplete bars on each side; with nine rays in the back fin; and with thirteen in that behind the vent.

The Chedrio (Chedri) is found along with the Barila, from which it only differs in the number of rays in the fin of the back. I should have considered this as a mere accidental variety, but the fishermen held them to be distinct. The first ray of the back fin is very short, and both it and the next are undivided.

10th Species.—Cyprinus barna.

A Cyprinus of the Barilius kind, devoid of tendrils, with incomplete bars on the sides; with nine rays in the back fin, and twelve in that behind the vent; and with a golden stripe along the upper lateral line.

The Barna I found in the Yamuna and Brahmaputra rivers, the extreme branches of the Ganges. It grows to about three inches in length, and is frequently observed swimming close by the shore on sloping sandy banks, on which account it is, in some places, called Bali Bhola, or the Sand Bhola. It has such a strong affinity to the two last mentioned species, that, in many
parts, it is included with them in the same generic name Bareli; and is chiefly distinguished by having smaller scales, and the golden line on each side. It has much the shape of a knife-blade. The three hinder fins are of a yellow colour, and those of the back and tail are stained with black, especially on the edge.

The head is small and sharpish. The mouth is large, and descends obliquely. The upper jaw protrudes in opening. The nostrils are in the middle between the eyes and jaw. The eyes are large. The membranes of the gill-covers are exposed to view.

The scales are of a moderate size. The back is nearly straight, and the belly is more prominent. On each side there are two lateral lines, the upper of which is straight.

Each pectoral fin has about thirteen rays. The ventral fins do not reach the vent. The first ray of the fin behind the vent is short, and closely joined to the second, which, like it, is undivided: the others are branched. The fin of the tail contains nineteen distinct rays, besides short compacted ones.

11th Species. — Cyprinus vagra.

A Cyprinus of the Barilius kind, devoid of tendrils, with incomplete bars on the sides; with nine rays in the fin of the back; and with fourteen in that behind the vent.

The Vagra I found in the Ganges about Patna, where it grows to about three inches in length. It is shaped somewhat like the blade of a knife, with transverse bars descending to the lateral line. The fin of the tail is yellow, edged with black.

The head is somewhat blunt and small, as is the mouth, which descends a very little in a straight line. The jaws are protruded in opening, and nearly equal in length, the upper being un-
divided at the end. The nostrils are in the middle between the eye and jaw. The eyes are far forward, with circular pupils. The gill-covers are rounded behind.

The scales are small. The belly is more prominent than the back. Above each pectoral and ventral fin is a large scale-like appendant.

Each pectoral fin has thirteen rays. The first three rays of the fin behind the vent are undivided. The lobes of the fin of the tail are equal, and have sixteen distinct rays, besides several short compacted ones.

12th Species.—Cyprinus bendilisis. See my Journey in Mysore, Vol. III. Pl. XXXII.

A Cyprinus of the Barilius kind, with two tendrils; with incomplete bars on the sides; with nine rays in the back fin; and with eleven in that behind the vent.

This fish I found in the rivers of Mysore, where it grows four or five inches long. It is shaped somewhat like the head of a lance; but the edge of the belly projects a little more than that of the back. The bars descend almost to the lateral line. The scales of the back toward the root are black. The fin of the tail is yellow, edged with black.

The head is sharp and small. The mouth is small, and descends obliquely. The jaws protrude in opening, the upper being the longest and widest. At each angle of the mouth is a very short tendril. Each nostril has only one aperture, near the eye, which is flat. The gill-covers are rounded behind, and each contains three plates.

The scales are large and firmly fixed. The belly slopes suddenly at the fin behind the vent. The shoulder-bones are bare, and shine bright. There are no scale-like appendants above the ventral fins.
Each pectoral fin has thirteen rays. That behind the vent commences close to this organ; the three first of its rays are undivided, and lengthen gradually from the first, which is very short; the others are branched. The under lobe of the tail fin is the longest, and it has in all nineteen distinct rays, besides some short compacted ones.

13th Species.—Cyprinus shacra.

A Cyprinus of the Barilus kind, with four tendrils; with incomplete bars on the sides; with nine rays in the fin of the back; and with ten in that behind the vent.

This fish differs very little from the last, except in having four tendrils in place of two. I found it in the river Kosi, where it grows to four or five inches in length. It is shaped like the head of a lance. Numerous transverse bars descend to the lateral lines. The fin of the tail is yellow, which, on the lower lobe, is stained with black.

The head is bluntish and small. The mouth is of moderate size, and horizontal. The jaws protrude in opening, the upper being the longest, and being undivided at the end. On each side a tendrill shorter than the head, proceeds from the middle of the upper jaw, and another from the corner of the mouth. Each nostril has only one aperture in the middle, between the eye and jaw. The eyes are far forward. The gill-covers are rounded behind.

The scales are moderate sized, and easily separated. The shoulder-blades are naked and shining. The pectoral and ventral fins have no scale-like appendants.

Each pectoral fin has thirteen rays. The two inner rays of each ventral fin are almost united. The first ray of the fin behind the vent is short, and both it and the second are undivided; the others are branched, and the last is divided to the
root. The under lobe of the tail fin is the longest, and it contains twenty distinct rays, besides some short compacted ones.

14th Species.—Cyprinus cocsa. Plate III. Fig. 77.

A Cyprinus of the Barilius kind, with four tendrils; with both incomplete bars on the sides, and a spot on the middle of each scale; with nine rays on the fin of the back; and with eleven in that behind the vent.

The Cocsa (Khoksa) is found in the northern rivers of Bengal and Behar, especially in the Mahanunda. It grows to about a span in length, and is shaped like the head of a lance, but is rather more prominent below than above. The short bars on its sides disappear in the dead fish. There is a row of small oblong spots on each side of the lateral line. The fins are yellow, but, in the dead fish, become white, which is rather uncommon, the contrary change of colour being much more usual. The lower lobe of the tail fin is stained with black.

The head is small and sharpish. The mouth is small, and descends obliquely from the extremity of the head. The jaws protrude a very little in opening, and the under one is rather the shorter, and is smooth. On each side are two tendrils much shorter than the head, one from the corner of the mouth, the other from the side of the upper jaw. There are scarcely any lips. The nostrils are near the eyes, which are of moderate size. The gill-covers are rounded behind, and edged with a pellucid membrane. Their proper membranes are exposed to view.

The scales are large, and dotted near the edge. The shoulder-blades are naked and shining. There is a small scale-like appendant above each ventral fin.

Each pectoral fin contains about thirteen rays. The ventral fins do not reach to the vent, near to which, however, the fin behind it comes. This slopes with a concave edge, and its two
first rays are undivided, the first being very short, the others are branched. The lobes of the tail fin are sharp, and contain nineteen distinct rays, besides some short compacted ones.

15th Species.—Cyprinus Chedra.

A Cyprinus of the Barilius kind, devoid of tendrils, with a spot on the bottom of each scale upon the sides; with ten rays in the back fin; and with eleven in that behind the vent.

The Chedra is found in the northern rivers of Bengal, grows to about six inches in length, and is little valued. It is deeper in the form than any other in this division. In the position of the spots it agrees with the last described species, and with that immediately following, and differs from the subsequent fishes, each spot in these being diffused over a portion of more than one scale. The dorsal and pectoral fins are dotted, the former brownish, the latter white like the ventrals. The fin behind the vent and that of the tail are reddish, the latter inclined to brown.

The head is of moderate size and blunt. On the nose are many blunt tubercles. The mouth is large and straight, and commences at the extremity of the head. The upper jaw does not protrude in opening; the under one on the outside is rough, with sharp thick-set tubercles. There are scarcely any lips. The eyes are small. The gill-covers are rounded, and do not conceal their membranes.

The scales are large, adhere firmly, and are rough on the surface with little blunt grains. The shoulder-bones are naked, large, shining, and dotted. Above each ventral fin is a scale-like appendant.

The pectoral fins are rounded at the end, and each contains about fourteen rays, of which the first is broad, but soft and undivided. The ventral fins scarcely reach to the vent. The
three first rays of the fin behind this organ are undivided, and lengthen from the first, which is short; the others are branched. The tail fin ends like a crescent, and contains about eighteen distinct rays, besides several small compacted ones.

16th Species.—Cyprinus Tila.
A Cyprinus of the Barilius kind, devoid of tendrils, with a spot on the middle of each scale upon the sides; with eight rays in the fin of the back; and with ten in that behind the vent.

The Tila is found in the northern rivers of Bengal, grows to about a span in length, and is little valued. The form is like the head of a lance.

The head is sharp and small. The outside of both jaws is rough with numerous crowded sharp tubercles. The mouth is small, and descends obliquely in a straight line. The jaws protrude in opening, and have no lips. The nostrils are near the eyes, which are of moderate size and flat, with circular pupils. Each gill-cover contains two plates, and does not conceal its membrane.

The scales are large, and adhere firmly. The shoulder-bones are naked, sharp, and edged by a membrane. Above each ventral fin is a short scale-like appendant.

Each pectoral fin has fourteen or fifteen rays. The ventral fins do not reach near the vent. The two first of the fins behind the vent are very short. The under lobe of the tail fin is the longest; and, in all, it contains eighteen distinct rays, besides short compacted ones at each side.

17th Species.—Cyprinus Bola.
A Cyprinus of the Barilius kind, devoid of tendrils, with many oblong diffuse spots, and a longitudinal golden stripe on
Cyprinus. GANGETIC FISHES. 275

Each side; with ten rays in the fin of the back; and with eleven in that behind the vent.

I found the Bola (Bhola) in the Brahmaputra. It grows to four or five inches in length, and is little valued. It is formed like the head of a lance. The golden coloured line on each side passes between the green and silver parts. The longest diameters of the spots are vertical, so that they resemble imperfect bars. The fins are yellowish.

The head is small and sharp. The mouth is very large, extending in a straight line farther back than the eyes. The jaws do not protrude in opening, and the under one is sharp-pointed and the shortest. The nostrils are very near the eyes, which are of a moderate size. The gill-covers are shining, and conceal part of their membranes.

The scales are minute. There is only one lateral line on each side.

Each pectoral fin contains about sixteen rays. The ventral fins do not reach the vent. The first ray of the fin behind the vent is short, and with the second is undivided: the others are branched. The under lobe of the tail fin is the longest, and the fin contains in all nineteen distinct rays, besides short compacted ones.

18th Species.—Cyprinus Goha.

A Cyprinus of the Barilius kind, devoid of tendrils, with many diffuse scattered spots on the sides; with ten rays in the fin of the back; and with thirteen in that behind the vent.

I have found this fish in the Kosi, Yamuna, and Son rivers, where it is called a Trout by the English. It grows to about the size of a herring, and is a fine flavoured delicate fish, somewhat resembling in taste the Smelt of Europe. In other respects it has the closest resemblance to the Bola just now de-
scribed; and I have only in addition to state, that the spots on the sides of the Goha are more numerous, more irregularly scattered, and rounder than those on the Bola.

19th Species.—Cyprinus tileo.

A Cyprinus of the Barilius kind, devoid of tendrils, with many diffuse spots in two rows above each lateral line; with nine rays in the fin of the back; and with fourteen in that behind the vent.

The Tileo (Tilei) I found in the Kosi river, where it grows to about a span in length. The form is somewhat like that of the blade of a knife, straightish on the back, prominent below, and flat on the sides. The lower fins are of a yellowish colour, those of the back and tail dotted.

The head is small and bluntish, with a notch at the end of the nose. The mouth is large, and descends obliquely. The upper jaw protrudes in opening, and is the longer and broader of the two. There are scarcely any lips. Each nostril has only one opening, near the eye. The eyes are far forward. The gill-covers are shining, and rounded behind.

The scales are of moderate size, and firmly fixed. The shoulder-blades are naked and shining. Above each ventral and pectoral fin is a scale-like appendant. On each side there is only one lateral line.

Each pectoral fin contains about fourteen rays. The two innermost rays of each ventral fin are closely united. The first ray of the fin behind the vent is very short, and is united to the second and third, which, like it, are undivided; the others are branched. The fin of the tail has in all nineteen distinct rays, besides short compacted ones.
III. Division.—Cyprinus bangana.

Fishes of the genus Cyprinus, with an elevated longitudinal ridge on the middle of the under jaw, as in the genus Mugil, to which these fishes have the utmost resemblance in every thing, except in having no more than one dorsal fin.

The native name Banggana is common to most species of the genus Mugil, and to those of this division of the genus Cyprinus, which perhaps ought to constitute a distinct genus. I have not been able to trace in authors any fish belonging to it. The six last species of this division are so nearly allied to each other, that several of them are probably merely accidental varieties, although this could not be ascertained without a more careful investigation than it was in my power to bestow. All the species of this division, that I have seen, besides the characteristic marks peculiar to the division and genus, have in common the following circumstances:

The body is long, and compressed on the sides. The colour is greenish on the back, and silver below.

The dorsal fin is nearly in the middle of the back, or only a very little behind it, and slopes backward. The last ray is divided to the root. The pectoral fins are low down. Each ventral fin has nine rays. The fin behind the vent is short, containing seven or eight rays.

To this division the 46th species might have been referred; but the ridge on the lower jaw is faintly marked, and its whole appearance is that of the fifth division.

To this division might also have been referred the 83d species; but its ridge also is indistinct, and its appearance is that of the ninth division.

20th Species.—Cyprinus pero. Plate XVII. Fig. 78.

A Cyprinus of the Bangana kind, with two tendrils; with
thirteen rays in the fin of the back; and with seven in that behind the vent.

The *Dero* (*Dhengro*) I found in the Brahmaputra river. It has the colours and form of the fishes of the seventh division, to be afterwards mentioned, but, on account of the ridge on the lower jaw, must certainly be placed here. It seldom exceeds four inches in length. The *colours* of the back and belly are irregularly indented into each other on the sides. The dorsal and caudal fins are dotted.

The *head* is oval and blunt. The nose projects a little beyond the mouth, and is fleshy, and marked with callous points. At each corner of the mouth is a minute tendril. The *mouth* is small, the upper jaw protruding in opening. The *lips* are fleshy, and smooth on the edges. The *nostrils* are in the middle, between the eyes and point of the nose. The *eyes* are high up, and small, and have circular pupils. The *gill-covers* are almost naked.

The *back* slopes gently before the fin, and is rather sharp-edged. The edge of the *belly* is rounded. The *lateral line* is below the middle, and is bent downward. The *scales* are of a moderate size, and those on the back have some dots.

The second ray of the *back* fin is longer than the first, and shorter than the third,—all the three being undivided, and devoid of joints; the others are branched. The *pectoral* fins are shorter than the head, and each contains about eighteen rays. The *ventral* fins reach to the vent, and are small. The fin behind the *vent* slopes backward, and its first ray is short, and closely united to the second, both being undivided, while the others are branched; and the last is divided to the root. The lobes of the *tail* fin are sharp and equal, and contain nineteen distinct rays, besides several short compacted ones.
21st Species.—Cyprinus Mrigala. Plate VI. Fig. 79.

A Cyprinus of the Bangana kind, with two tendrils; with sixteen rays in the fin of the back; and with eight in that behind the vent.

The Mrigala of the Sanscrit, and Mirgal of the vulgar dialects, is one of the most beautiful fishes in India, and is pretty common in the ponds and fresh water rivers of the Gangetic provinces. When taken out of the water it is tenacious of life, and grows to from one and a half to two feet in length. It is much valued by the natives, and, although inferior to the Rohita and Catla, to be afterwards described, is a well tasted fish, of easy digestion.

Its form is more prominent on the back than below. The green colour on the back changes to golden. The lower fins are tinged red, and all are dotted. The eyes are yellow.

The head is bluntish, and half oval, being flat above, and sloping upward below. The nose is fleshy, and marked by some hollow dots. On each side it has a very short tendril, scarcely reaching to the corner of the mouth. This is small, horizontal, and behind the nose. The jaws protrude in opening. The lips are quite entire on the edges, the under one being erect, and the upper one having no lateral bones. The nostrils are in the middle, between the jaw and eye. The eyes are globular, and rather small, with circular pupils. The gill-covers are rounded behind, and each consists of two plates. Their membranes are exposed to view.

The scales are dotted and of moderate size. Above each ventral fin there is a large scale-like appendant. The back forms a high arch, the most elevated part of which is at the commencement of the fin. The tail slopes rather suddenly at the fin behind the vent. The lateral line runs nearly along the middle of the side, with a very slight bend downwards.
The dorsal fin has a concave edge, forming a sharp angle at each end: the first three of its rays are undivided, and closely connected, and the first of them is very short; the other thirteen are branched. The pectoral fins are much smaller than the head, and each has seventeen rays, of which the first is undivided. The ventral fins are about as large as the pectorals, and do not reach the vent: the first ray of each is undivided, and the others branched. The fin behind the vent is near this organ, slopes much backward, and forms an acute angle at the fore end. Its two first rays are undivided, and closely conjoined; the two last are so near that they might, perhaps, be considered as one. The lobes of the tail fin are sharp, and nearly equal in length, and have convex edges: in all, the fin has nineteen distinct rays, besides several short compacted ones.

22d Species.—Cyprinus reba.

A Cyprinus of the Bangana kind, with two tendrils; with eleven rays in the fin of the back; with eight in that behind the vent; and with fleshy lips.

The Reba is pretty common in the rivers and ponds of Bengal and Behar, especially in their northern parts. It grows to about two feet in length; and, although it is in no great request, does not contain many bones, and has a good flavour. It is subject to very considerable varieties of colour. In large clean rivers, its general colour is silver; but toward the back it has some irregular longitudinal dark stripes. In ponds, again, and small rivers full of weeds, the back is green, with a gloss of gold, and the lower fins are tinged with red, which is not the case in large rivers.

The head is blunt and oval. The nose is very short, and the tendrils are near its extremity and minute. The mouth is low, extends horizontally, and is small. The jaws protrude in open-
ing; the upper is rather the longest. The lips are fleshy. The nostrils are near the middle, between the eye and jaw, and each has only one aperture, which is large and circular. The eyes are about the middle of the head, large and convex, with the longest diameter of their pupils vertical. Each gill-cover contains three plates, and is rounded behind. It exposes to view its membrane, which is thick.

The body is covered with adhesive scales, which, on the upper parts, are oblong and dotted, and on the belly small. Above each ventral fin is a scale-like appendant. The back slopes considerably from the commencement of the fin, and its edge is convex. The belly forms an arch. The lateral line runs straight along the upper part of the side.

The first ray of the dorsal fin is very short, and is closely united with the two next, which, like it, are undivided: the remaining eight are branched. The pectoral fins are shorter than the head, with each seventeen rays. The ventral fins are of about the same size with the pectorals, do not reach the vent, and do not stand near one another: the first ray of each is undivided. The anal fin is near the vent, and slopes backward: its three first rays are undivided, and closely connected, and the others are branched, the last of them being divided to the root. The tail fin ends in a crescent, and contains nineteen distinct rays, besides some short compacted ones on each side.

23d Species.—Cyprinus Elanga.

A Cyprinus of the Bangana kind, with sometimes two tendrils; with nine rays in the fin of the back, and eight in that behind the vent; and with scarcely any lips.

The Elanga is another beautiful fish pretty common in the rivers and ponds of Bengal, and in form has a considerable re-
semblance to our *Dace, (Cyprinus Leusiscus.)* On the scales of the sides, towards the back, are little dark lines and dots, forming irregular longitudinal stripes. The fins of the back and tail are blackish. The eyes are green and silver.

The *head* is bluntish, oval, and narrower than the body. In some individuals I have observed a minute *tendril* on each side of the upper jaw; in others I have not been able to trace these organs. The *mouth* descends obliquely with an arch, and is of moderate size. The *jaws* are nearly equal in length, and do not protrude in opening; the upper has a notch at the end. There are scarcely any *lips*; but, in place of the upper, are two small lateral bones. The *tongue* is blunt, smooth, and tied down. The *palate* is smooth. The *nostrils* are near the eyes, which are round and large, with small pupils, the longest diameter of which is vertical. Each *gill-cover* is rounded behind, contains three plates, and exposes to view its *membrane.*

The body is covered with large ill fixed *scales.* The edges of both *back* and *belly* are convex. The *lateral line* descends with a curve parallel to the belly, and is situated below the middle of the side.

The first ray of the *dorsal* fin is short, and closely joined to the second, which, like it, is undivided; the others are branched. The *pectoral* fins are shorter than the head, and each has sixteen rays, of which the first is undivided, and slightly indented on the edge. The *ventral* fins are still shorter, and close to one another. The first ray of each is undivided, and the others branched. The *anal* fin is near the vent, and is nearly triangular: the first of its rays is short, and closely conjointed with the two next, which, like it, are undivided; the others are branched, the last of them being divided to the root. The fin of the *tail* is divided into two lobes, and has nineteen distinct rays, besides short compacted ones.
24th Species.—Cyprinus bata.

A Cyprinus of the Bangana kind, without tendrils; with twelve rays in the fin of the back, and eight in that behind the vent; with the under lip smooth-edged and erect; with the upper lobe of the tail fin the longest; and with all the fins pale-coloured.

The Bata is another beautiful fish, found in the rivers and ponds of Bengal. Its usual size is about a foot in length, but it sometimes grows to eighteen inches. Out of water it is tenacious of life, and spawns in the commencement of the rainy season. In respect of colour the fins are much dotted, and that of the tail has an ill defined transverse bar. The eyes are silver, stained with red.

The head is oval, and narrower than the body. The jaws in opening protrude scarcely any thing; the under one is the shortest. The lips are fleshy, the upper having scarcely any lateral bones, and being smooth-edged. The nostrils are very near the eyes, which are in the middle of the head with respect to its length, are level, and of moderate size, the pupil having its longest diameter vertical. Each gill-cover has two plates, and leaves its membrane exposed.

The body is covered with large adhesive scales, striated on the centre. Above each ventral fin is a scale-like appendant. The belly is rather more prominent than the back, and the tail tapers gradually above and below. The lateral line is bent down with a curve.

The first ray of the dorsal fin is short, and closely united with the second, which, like it, is undivided; the others are branched, the last of them being divided to the root. The pectoral fins are low, and are nearly as long as the head; each has seventeen rays, of which the first is undivided. The ventral fins are smaller than the pectorals: the first and last rays of
each are undivided. The anal fin is near the vent, and slopes behind: the first of its rays is very short, and is closely joined to the two following, which, like it, are undivided; the others are branched, and the last of them is divided to the root. The tail fin contains nineteen distinct rays, besides short compacted ones.

25th Species.—Cyprinus acra.

A Cyprinus of the Bangana kind, without tendrils; with eleven rays in the fin of the back, and eight in that behind the vent; with the under lip smooth-edged, and erect; with the upper lobe of the tail fin the longest; and with the lower fins reddish.

This fish, which I found in the Sunkos river, in the northeastern part of Bengal, has the utmost resemblance to the Bata, so that I have only noted the few points in which it differs from the description above given; and, besides what is mentioned in the specific character, these are as follows: Each pectoral fin has eighteen or nineteen rays. The scales are scarcely striated on the middle, and near the edge are very smooth.

26th Species.—Cyprinus cura.

A Cyprinus of the Bangana kind, without tendrils; with twelve rays in the fin of the back, and seven in that behind the vent; with the under lip smooth-edged, and erect; and with the lobes of the tail fin equal in length.

The Cura is another fish so nearly allied to the Bata, that I have only noted the circumstances in which it differs from the account before given. It is found in the rivers of Bengal, and scarcely exceeds the finger in length. The fins are of a yellowish colour, and very little dotted. In the fin behind the vent the
two first rays only are undivided. On each gill-cover is a very narrow crescent-formed mark; indented on the edges.

27th Species.—Cyprinus Pangusia.

A Cyprinus of the Bangana kind, without tendrils; with fourteen rays in the fin of the back, and eight in that behind the vent; with the under lip reflected, and entire on the edges; and with large pores on the nose.

The Pangusia (Pangusiya) I found in the Kosi river, where it grows to about a span in length. In colour it has no appearance of longitudinal stripes, but the edges of the scales are dotted. The eyes are silver, stained with red.

The head is oval, and narrower than the body. The jaws protrude in opening. The lips are fleshy, and both are smooth on the edges. The nose is fleshy. The nostrils are very near the eye. The eyes are near the middle of the head, in respect to length are of moderate size, and the longest diameters of their pupils are vertical. The gill-covers are rounded behind, and do not conceal their membranes.

The body is covered with large scales, adhering firmly, and even on the surface. Above each ventral fin is a scale-like appendant. The tail tapers gradually. The lateral line descends with a curve along the middle of the side.

The dorsal fin is dotted: the two first of its rays are very short, and, with the two following, are undivided; the last ten are branched. The pectoral fins are shorter than the head, each having seventeen rays. The ventral fins do not reach the vent. The fin behind this organ slopes backward, and the three first of its rays are undivided, and lengthen gradually from the first; the five last are branched, and the last of them is divided to the bottom. The fin of the tail contains nineteen distinct
rays, besides compacted ones, and is divided into two lobes, of which the under one is the shortest and bluntest.

28th Species.—**Cyprinus ariza.** Buchanan’s Journey through Mysore, &c. Vol. III. p. 344, Plate XXXI.

A Cyprinus of the Bangana kind, without tendrils; with twelve rays in the fin of the back, and seven in that behind the vent; with the under lip smooth on the edges, and reflected; and without large pores on the nose.

The Ariza is found in the rivers of Bengal as well as in those of the peninsula of India, where I first saw it. There is the utmost resemblance between it and the *Pangusia* last described, and both grow to about the same size. I shall only mention the circumstances, besides those in the specific character, by which it differs from the description of the *Pangusia* before given.

The belly is more prominent than the back. In the dorsal fin three only of the rays are undivided. In each pectoral fin there are sixteen rays. In the fin behind the vent there are only two undivided rays. The lower fins are yellow, or slightly stained with red.

29th Species.—**Cyprinus boga.** Plate XXVIII. Fig. 80.

A Cyprinus of the Bangana kind, without tendrils; with twelve rays in the back fin, and eight in that behind the vent; with the under lip indented on the edge; and with large pores on the nose.

The Boga is another fish so nearly resembling the two preceding, that, besides the circumstances mentioned in the specific character, I shall mention only those by which it is chiefly distinguished. I have found it in the Brahmaputra, where it grows to about a foot in length.
The eyes are redder than in either of the two last species. Each scale along the middle is marked with a slender longitudinal ridge; but the ridges forming the proper lateral lines are much larger than those on the scales above or below. The back is more prominent than the belly. The fin of the back slopes behind with a considerable curve, and can be thrown back in a deep furrow. It contains three undivided rays, as does also the fin behind the vent. The fin of the tail is not so deeply divided as in the other two species, and ends nearly in a crescent. All the fins, except the pectorals, are more or less stained with black.

IV. Division.—Cyprinus, properly so called.

Fishes of the Cyprinus genus, without any affinity to another genus; of a large size and thick form; devoid of spots; and with the lateral lines near the middle.

The fishes of this division, although forming a natural group, have no generic appellation among the natives; and, being the best defined species, I have considered them as the prototypes of the genus, and have therefore given the division no peculiar name.

Besides the marks common to the genus, and those characteristic of the division, the only circumstance common to these fishes, that I observe, is, that they all have the fin behind the vent very short.

30th Species.—Cyprinus catla. Plate XIII. Fig. 81.

A Cyprinus proper, without tendrils; with eighteen rays in the fin of the back, and eight in that behind the vent; with the body of a dirty silver colour, having some dusky green on the back; and with the lips smooth-edged.

The Catla is a common fish in the rivers and tanks of Ben-
gal, but is seldom found farther west, and even in most parts of Behar is unknown. It grows to about three or four feet in length, and is a light wholesome fish, free of bones. The head is very fat and delicious, and the flavour of the whole is excellent, when the size is moderate, that is, when the length is from eighteen to twenty-four inches; but when large it acquires a rank taste. It is a very strong active animal, and often leaps over the seine of the fishermen, on which account, when fishing for the Catla, they usually follow the net in canoes, and make a noise by shouting and splashing with their paddles.

In form, quality, and habits, this fish has a considerable resemblance to the Carp of Europe, (Cyprinus Carpio,) but it wants the tendrils on the jaws, with which that fish is provided. The Catla is a deep full formed fish, but a good deal compressed. The fins are darkish coloured, and no part except the eyes have any tinge of red.

The head is large, oval, blunt, a little wider than the body, and smooth. The mouth is of a moderate size, and descends obliquely from the extremity of the nose. The jaws are nearly equal in length, and protrude in opening. The lips are smooth and fleshy; the upper has no bones, and the under is reflected. The palate is smooth. The tongue is blunt, undivided, fleshy, smooth, and tied down through its whole length. The nostrils are high up and very near the eye, which is convex and of a good size, and has a circular pupil. Each gill-cover is rounded behind, and edged by a broad membrane, and consists of three plates. The bones supporting the gills have on the inside a row of slender teeth.

The scales are large and entire on the edge, and each is separated into two divisions by a dotted vertical line. The back is more prominent than the belly, and arched, rising before the fin with a slope greater than that of the head. The tail slopes
rather suddenly at the fin behind the vent. The lateral line forms a curve with the concavity upward.

The dorsal fin is near the middle of the body, and slopes backward with a concave edge. The first of its rays is short, and closely joined to the second, which, like it, is undivided and smooth; the others are branched, and the last is divided to the root. The pectoral fins are much smaller than the head. The ventral fins are of about the same size with the pectorals, reach beyond the vent, and stand at a little distance from one another. The two first rays of each are undivided, the first being very short. The fin behind the vent is in the middle of the tail, and slopes much backward; the three first of its rays are undivided, and situated close to each other, and lengthen gradually from the first to the third; the others are branched, and the last of them is divided to the root. The fin of the tail is divided beyond the middle into two sharp equal lobes, and contains nineteen distinct rays, besides several short compacted ones on each side.

31st Species.—Cyprinus curchius.

A proper Cyprinus, without tendrils; with fifteen rays in the fin of the back, and seven in that behind the vent; and with very small scales.

The Curchius (Kurchi) is found in the fresh waters of Bengal, and is a beautiful fish, from one foot to a foot and a half in length; but is of little value, as it is full of bones. It is of an oblong compressed form, nearly like the head of a lance, but rather more prominent below than above. The colour is green above and silver below, with fins inclining to olive, and blackish eyes. The dorsal and anal fins are dotted with black, the dots on the latter forming a stripe along the middle of the fin.

0 0
The head is oval, and of moderate size. The nose is dotted, and projects a little beyond the mouth, which is of a moderate size. The jaws protrude in opening. The lips are fleshy, pendulous, and smooth-edged. The nostrils are high, and far back towards the eyes. The eyes are high, convex, and of moderate size, with oval pupils, their longest diameters being vertical. The gill-covers are rounded behind, and smooth-edged, and do not conceal their membranes.

Above the ventral fins there is scarcely any scale-like appendant. The lateral line commences at the upper end of the gill-cover, and is bent slightly down. The vent is behind the middle.

The dorsal fin occupies nearly the middle of the back, and slopes backward: the first of its rays is short, slender, and closely conjoined to the second, which is also undivided: the others are branched, and the last of them is divided to the root. The pectoral fins are much shorter than the head: each has eighteen rays. The ventral fins are at some distance from each other, and about as large as the pectorals; each contains nine rays. The fin behind the vent, on the middle of the tail, slopes backward: the first of its rays is short, and adheres to the second, which, like the first, is undivided: the others are branched, and the last is divided to the root. The fin of the tail is divided into two lobes, and contains nineteen distinct rays, besides some short compacted ones on each side.

32d Species.—Cyprinus cursa.

A proper Cyprinus, with two tendrils; with sixteen rays in the fin of the back, and eight in that behind the vent; and with small scales.

This, with the preceding, and two following species, on account of their small scales and size, have a considerable affinity
to the Tench of Europe, (Cyprinus tinca;) but they are inferior fishes for the table, and all of them have a prominent belly; while that of the Tench is nearly straight. The Cursa, having a tendril at each corner of the mouth, has the greatest resemblance to the Tench, but is an abundantly distinct species. The Cursa has also a considerable resemblance to the Cyprinus capoeta, (Bonnaterre, Tabl. Encycl. p. 191, Pl. C. Fig. 411;) but that fish has ten rays in each ventral fin.

The Cursa inhabits fresh water rivers and ponds in the south of Bengal, and is often found from two to three feet in length. It is full of bones, and many of the natives abstain from its use, imagining, that, if eaten in the same day with milk, it will occasion the disease called elephantiasis. It is of an oblong compressed form, and silver colour, with a dusky back. All the fins, except the pectorals, are blackish, with numerous dots.

The head is oval, blunt, and small. The tendrils are minute. The nose projects a little beyond the mouth, is fleshy, and perforated with a good many callous pores. The mouth is small and straight. The lips are fleshy and pendulous, the upper one having no bones. The nostrils are in the middle between the jaw and eye. The eyes are high, and of moderate size, with the longest diameter of the pupil vertical. Each gill-cover is rounded behind, consists of three plates, and exposes its membrane.

Above each ventral fin is a small scale-like appendant. The back slopes down to the head. The belly is arched. The lateral line is rather high, and is bent down in the middle. The vent is behind the middle.

The dorsal fin occupies the middle of the back, and slopes backward with a hollow edge: the three first of its rays are undivided, and the first is very short; the others are branched, and the last of them divided to the root. The pectoral fins are low, sharp above, and smaller than the head: each has seven-
teen rays, of which the first is undivided. The ventral fins are smaller than the pectorals, and separated from each other: each has nine rays, of which the first is undivided. The fin behind the vent is before the middle of the tail, and slopes backward, with a concave edge: the three first of its rays are undivided, and closely conjoined, the first being very short; the others are branched, and the last of them divided to the root. The fin of the tail is divided into two lobes, and contains nineteen distinct rays, besides short compacted ones at each side.

33d Species.—Cyprinus cursis.

A proper Cyprinus, with four tendrils; with sixteen rays in the fin of the back; and eight in that behind the vent; and with small scales.

The Cursis (Kursi) I found in the river Kosi of Northern Behar. Except in the few circumstances mentioned below, and in the specific character, it agrees entirely with the description of the Cursa; and I have some doubt of the species being actually different.

The colour is silver, with black dots disposed on the back in ill defined longitudinal stripes. On the sides are scattered many red atoms. The lips are toothletted or fringed; the under one is double.

34th Species.—Cyprinus gonius. Plate IV. Fig. 82.

A proper Cyprinus, with four tendrils; with fifteen rays in the fin of the back, and seven in that behind the vent; with large pores on the nose; with fringed lips; with longitudinal lines of black dots on the sides; and with moderate sized scales.

The Gonius (Goni) is a strong fish, very tenacious of life, but little valued for food. It grows to a foot and a half in length, and is found in the fresh water rivers and ponds of Bengal.
The form is like the head of a lance, compressed at the sides, and rather more prominent on the back than below. Above it is of a dark green colour with a gloss of silver; below the colour is entirely silver, and on the sides are several longitudinal lines composed of black dots. The fins are darkish, and all of them dotted with black. The eyes are silver with a tinge of green.

The head is oval, small, and blunt. The nose projects a little beyond the mouth, and is marked by some large hollow dots. The mouth is small. The jaws protrude in opening. The lips are fleshy, pendulous, and indented, or fringed, on the edges: the upper one has no bones. The tendrils, which are very short, proceed from the corners of the lips. The nostrils are nearly in the middle between the eyes and jaw. The eyes are high, of moderate size, and have the longest diameter of their pupils vertical. The gill-covers are rounded behind, and edged with a broad membrane: they do not conceal their proper membranes, the rays in which are flat.

The scales are roughish, and of a moderate size. Above each ventral fin is a scale-like appendant covered with small scales. The lateral lines are ill defined, and descend with a curve along the middle of the sides. The vent is behind the middle. The dorsal fin occupies the middle of the fish, and slopes backward with a concave edge, ending very sharp behind. The two first of its rays are undivided and conjoined, the first being a half shorter than the second, which is smooth; the others are branched. The pectoral fins are low, much smaller than the head, and sharp above: and each contains about seventeen rays. The ventral fins are large, but do not reach to the vent: and each has nine rays. The fin behind the vent is before the middle of the tail, and slopes backward. The two first of its rays are strong smooth undivided bones, closely joined to each other, the second being twice as long as the first; the others are branch-
ed, and the last of them is divided to the root. The tail fin is slightly divided into two lobes, or rather ends almost in a crescent.


A proper Cyprinus, with two tendrils; with eleven rays in the fin of the back, and eight in that behind the vent; with moderate sized scales; with callous tubercles on the head; and with the third ray of the dorsal fin smooth behind.

This and the following species have a very great resemblance to the Cyprinus cirrhosus of Bloch, (Ichth. Tome XII. p. 43, Pl. CCCCXI. ;) but the callosities of the head are neither mentioned in Bloch's description, nor represented in his figure.

The Curmuca is found in the fresh water rivers of the south of India, and sometimes reaches three feet in length. It is of an oblong compressed form, shaped like the head of a lance, and is of a dusky green above and of a silver colour below.

The head is small and oval. Near the upper jaw are scattered many small callous projecting tubercles. The tendrils are minute, one at each corner of the mouth, which is small, and a little below the extremity of the nose, and extends straight backwards. The jaws protrude much in opening; the under one is the shortest. The lips are smooth-edged, and the under one is erect, while the upper has a small bone on each side. There is scarcely any tongue. Across the middle of the palate is suspended a membranous veil. The nostrils are near the eyes, which are high, of a good size, flat, and round, with circular pupils. The gill-covers are rounded behind, and each contains three bony plates, which do not conceal their membranes.

The body is covered with moderate sized scales, which ad-
here firmly. Above each ventral fin is a scale-like **appendant.** The **lateral line** descends a little at the shoulder, and then runs straight along the middle of the side. The **tail** slopes gradually. The **vent** is behind the middle.

The **dorsal fin** is nearly in the middle, and slopes much backward. The three first of its rays are smooth, closely conjoined, and undivided; and the first is very short: the others are branched, and the last of them divided to the root. The **pectoral fins** are much smaller than the head, and sharp above; and each contains sixteen rays, of which the first is undivided. The **ventral fins** are larger than the pectorals, extend beyond the vent, and are at some distance from one another; and each contains nine rays, of which the first is undivided. The fin behind the vent is on the middle of the tail, and is rather rounded. The first of its rays is very short, and closely united with the two next, which, like it, are undivided; the others are branched, and the last of them is divided to the root. The **tail fin** consists of two sharp lobes, of which the upper is rather the longest and sharpest: both contain eighteen distinct rays, besides some short compacted ones.

36th Species.—**Cyprinus chagunio.**

A proper **Cyprinus,** with four tendrils; with twelve rays in the fin of the back, and eight in that behind the vent; with callous tubercles on the head; with large scales; and with the third ray of the dorsal fin indented behind.

The **Chagunio (Chaguni)** I have found in the Yamuna, and in the northern rivers of Behar and Bengal. It grows to about a foot and a half in length, and is considered good eating. It is rather deep in form, and its back is more prominent than the belly. The **colour** is green above, and below silver; and the
scales towards the back, being dotted at the base, give an appearance of longitudinal stripes.

The head is narrower than the body, and small. The tubercles are round, and scattered over the fore part of the head. The tendrils are minute, two proceeding from the sides of the upper jaw, and two from the corners of the mouth. The mouth is low and small, and extends straight backward. The jaws protrude in opening; the upper is the longest. The lips are fleshy, and smooth-edged. The tongue is smooth, sharp, thick, and tied down throughout its whole length. From the middle of the palate is suspended a loose membrane. The nostrils are near the eyes, which are high, flat, large, and round, with circular pupils. The gill-covers are rounded behind, and do not conceal their membranes, the bones in which are flat.

The back slopes gradually in each direction from the beginning of the fin, and its edge forms a sharp ridge. The belly is almost straight. The tail tapers gradually. The lateral line descends a little, and is rather below the middle of the side. The vent is behind the middle. The body is covered with large smooth-edged scales, adhering firmly. Above each ventral fin is a scale-like appendant.

The dorsal fin occupies the middle of the back, and slopes behind. The three first of its rays are strong undivided bones, the teeth in the last of them being long and reflected; the other nine rays are branched, and the last of them is divided to the root. The pectoral fins are low, much shorter than the head, and sharp above. Each contains seventeen rays, of which the first is undivided. The ventral fins are at some distance from each other, and are about as large as the pectorals, each having ten rays, of which the first is very small, and the second undivided. The fin behind the vent occupies the
middle of the tail, and slopes backward: the three first of its rays are closely united and undivided; and the others are branched, the last of them being divided to the root. The fin of the tail is divided into two equal lobes, and contains nineteen distinct rays, besides several short compacted ones.

37th Species.—Cyprinus calbasu. Plate II. Fig. 83.
A proper Cyprinus, with four tendrils; with sixteen rays in the fin of the back, and eight in that behind the vent; with the nose smooth, and projecting considerably beyond the mouth; and with lips indented on the edge.

The Calbasu (Kalbosu) is very common in the rivers and ponds of Bengal, and is also found in the western provinces. It has a strong affinity to the Barbell (Cyprinus barbus) of England, but is deeper in the form. It is often found a foot and a half in length, and sometimes twice that size, and is a well tasted light food, but contains many small bones. It is of an oblong compressed form, more protuberant above than below, and, in general, is of a dark olive colour, with a silvery gloss, inclining to yellow, on the belly, while the scales are covered with numerous black dots. In some places, as at Mungger, where the water is clear, on a rocky or pure sandy bottom, many of the scales on the sides assume a ferruginous colour, and the fish is then considered as of a distinct species, and called Kundhna; but I have no doubt that this difference of colour is a mere accidental circumstance. The eyes are orange-coloured.

The head is blunt, small, and devoid of tubercles or large pores. The tendrils are short, thick, and incurved, the two longest proceeding from the end of the nose, and the two shorter from the middle of the upper jaw. The nose projects considerably beyond the mouth, and is covered with minute
dots. The mouth descends obliquely, and is small. The jaws do not protrude in opening. The lips are fleshy, pendulous, and indented on the edges, the upper one having very minute, or rather no bones. The nostrils are far back, and each has only one aperture, covered by a membranous valve. The eyes are high, and rather small, with circular pupils. The gill-covers are rounded behind, smooth on the edge, contain each three plates, and conceal in part their membranes.

The ridge of the back forms an arch, rising before more suddenly than the head, and terminating near the end of the tail. The fore part of the arch is blunt, the hinder part has a sharp edge. The belly is nearly straight, but the tail contracts suddenly at the fin behind the vent. The lateral line descends with a slight curve from the shoulder along the middle of the side. The vent is behind the middle. The body is covered with large, dotted, and firmly-fixed scales, without any scale-like appendants above the ventral fins.

The dorsal fin occupies the middle of the back, and slopes only a little behind. The first of its rays is a half shorter than the second, to which it closely adheres, and, like it, is undivided: the others are branched. The pectoral fins are low, shorter than the head, and sharp above, and each contains eighteen rays. The ventral fins are near each other, and are about as large as the pectorals: each has nine rays, of which the two first are undivided. The fin behind the vent occupies the middle of the tail, and slopes much backward; the two first of its rays resemble those in the dorsal fin; the others are branched. The fin of the tail is divided into two bluntish lobes, of which the upper is rather the longest. In both are nineteen distinct rays, besides some short compacted ones.
38th Species.—Cyprinus Nancar.

A proper Cyprinus, with four minute tendrils; with twenty rays in the dorsal fin, and eight in that behind the vent; with the edges of the lips smooth; with no tubercles nor large pores on the nose; and with large equal scales on the sides.

The Nancar has a considerable affinity to the Cyprinus gibellio of Bloch, (Ichth. Tome I. p. 61, Pl. XII.) which, however, wants the tendrils. I found it in the small rivers of the Gorakhpur district, such as the Gunggi. It does not attain a greater weight than three pounds, and is of a deep compressed form, above of a dark green colour, with a golden gloss, and below white. The fins are dark coloured, and the eyes reddish.

The head is small, blunt, and oval. The tendrils proceed from the corners of the mouth. The nose projects a little beyond the mouth, and is fleshy and bluntish. The mouth is low, extends straight back, and is small. The jaws protrude in opening, and are nearly equal in length; within the upper one a pendulous membrane is suspended. The lips are fleshy, and the under one is erect. The eyes are high, circular, and of moderate size. Each gill-cover consists of one bony plate, rounded behind, and does not conceal its membrane.

The ridge of the back, towards the fin, is sharp-edged. The belly forms an arch. The lateral line descends with a curve. The vent is behind the middle of the body. The scales are large, adhere firmly, and are minutely dotted. Above each ventral fin there is a very short scale-like appendant.

The dorsal fin is behind the middle. The first of its rays is very short, and, with the second and third, is undivided: the others are branched, and the last of them divided to the root. The pectoral fins are smaller than the head, and low, and each contains about eighteen rays. The ventral fins do not reach the vent, and each has nine rays. The three first rays of the fin be-
hind the vent are closely united, and undivided. The tail fin consists of two sharp lobes, and contains about twenty distinct rays, besides some short compacted ones.

39th Species.—Cyprinus Nandina. Plate VIII. Fig. 84.

A proper Cyprinus, with four tendrils; with twenty-six rays in the fin of the back, and eight in that behind the vent; with the lips fringed, and the nose smooth; and with large scales.

The Nandina (Nandin) I found in the Mahananda river, and in the large adjacent marshes or lakes which surround the ruins of ancient Gaur. In the Gorakhpur district I found a fish of the same name, which differed in no respect from the description given below, except that it had only twenty-three rays in the dorsal fin; and I doubt much if this variation can be considered sufficient to constitute a distinct species. The Nandina, of all the fishes that I have seen in India, has the greatest affinity, in external appearance, to the Carp (Cyprinus carpio) of Europe; but many of its qualities are very different. Of all Bloch's fishes, the Cyprinus fimbriatus (Ichth. Tome XII. Pl. CCCXIX.) has the greatest resemblance to the Nandina: but its sides are spotted with red, and, according to La Cepede, (Hist. des Poissons, Tome V. p. 502,) it has no tendrils; and it has tubercles on the nose, and only eighteen rays in the dorsal fin.

The Nandina often grows to two, or even three feet in length, and is a well-tasted fish. Its form is deep and thick; but still it is compressed. It is of a dark green colour above, with a coppery gloss, and white below, with dark fins and red eyes.

The head is small, blunt, and half oval, being rather flat above. From each corner of the mouth there are two minute tendrils. The nose is blunt and fleshy, without tubercles, or remarkable pores. The mouth, which is low and small, opens straight back. The jaws protrude in opening, and each has
within a transverse membrane, fixed by one edge. The lips are fleshy, and edged with many short sharp slender tendrils: the under one is reflected. The nostrils are nearly in the middle, between the eyes and nose.

Although both form arches, the back is rather more prominent than the belly: towards the fin the former has a sharp edge. The lateral line descends with a curve from the shoulder. The vent is behind the middle. The scales are large, and marked with dots and concentric circles. Above each ventral fin is a scale-like appendant.

The dorsal fin is rather behind the middle, and contains twenty-six rays, or, in one variety, only twenty-three. The first three rays are closely conjoined, and undivided, the first being very short: the others are branched; and the last divided to the root. The pectoral fins are much smaller than the head, low placed, and sharp above, each containing sixteen rays. The ventral fins are about as large as the pectorals, and do not reach the vent: each has nine rays. The fin behind the vent slopes much backward, and the three first of its rays are undivided, and closely united, the first being very short; the others are branched, and the last divided to the root. The fin of the tail is deeply divided into two sharp lobes, and in all contains twenty-three rays.

40th Species.—Cyprinus rohita. Plate XXXVI. Fig. 85. A proper Cyprinus, with two tendrils; with fifteen rays in the back fin, and seven in that behind the vent; with large scales; with the nose smooth and devoid of remarkable pores; with the lips indented on the edges; and with the under one reflected.

The Rohita, in its form, has a considerable resemblance to the Cyprinus nasus, (La Cepede, Hist. des Poissons, Tome V. p. 585;) but, in its size and qualities, has a stronger resem-
blance to the Carp, (*Cyprinus carpio,*), which, however, it appears to me to excel; and it is not only a fish of easy digestion, and well flavoured, but the belly is uncommonly rich and delicious. It abounds in the fresh water rivers of the Gangetic provinces, and also in those of Ava, and, in the ponds of the former, is propagated with considerable care, being considered as the most valuable fish; although I think, that what is found in the smaller and more rapid rivers is by far the best for eating. Its beauty, both in form and colour, equals its value for the table; and of all fresh water fishes, so far as I have seen, it is, perhaps, the most excellent. It frequently grows to three feet in length, and is of a long but full made form, rather more prominent above than below. The tail contracts suddenly at the fin behind the vent. The back is of a green colour, and the belly silver; but on the sides the middle of the scales is golden. The eyes and all the fins, except the dorsal, are reddish.

The head is blunt, smooth, and half oval, sloping much below and little above. It is small, but rather wider than the body. The nose is fleshy and blunt, is devoid of tubercles or remarkable pores, and projects some way beyond the mouth, which is small, and extends straight backward. At each of its corners is a minute tendril. The jaws protrude in opening, the upper being the longest, and having a membrane stretched across its inside. The lips are fleshy, and indented on the edges with short thick processes. The tongue is tied down throughout its whole length. The nostrils are nearer the eyes than the nose. The eyes are high, and of a good size, and have circular pupils. Each gill-cover consists of three plates, is rounded behind, and does not conceal its membrane, which is thick, with flat rays. The bones supporting the rays are unarmed, and their inside forms a ridge.

The back forms a regular arch to near the end of the tail.
The belly is almost straight. The lateral line descends, with a slight curve, from the shoulder. The vent is behind the middle. The scales are large, and dotted round the edges. Above each ventral fin is an appendant, consisting of two scale-like plates.

The dorsal fin occupies the middle of the back, and slopes behind. The first of its rays is very short, and is closely conjoined with the two next, which, like it, are undivided: the others are branched, and the last is divided to the root. The pectoral fins are low, much shorter than the head, and sharp above: each has eighteen rays, of which the first is undivided. The ventral fins are about as long as the pectorals, are placed at some distance from each other, and each has ten rays, of which the first is very short, and closely united to the second, which is undivided. The anal fin is in the middle of the tail, and slopes much behind: the first of its rays is short, and closely united to the second, which is undivided, the others are branched, and the last is divided to the root. The fin of the tail is divided into two lobes, nearly equal, and bluntish, and has nineteen distinct rays, besides short compacted ones.

41st Species.—Cyprinus putitora.

A proper Cyprinus, with four tendrils; with eleven rays in the fin of the back, of which two are undivided; with seven rays in the fin behind the vent; with very large scales; with a smooth nose; with smooth-edged lips; and with pale fins.

This and the two following species have, in many points, a strong resemblance, being very large fishes, affording an excellent wholesome nourishment, free from bones, although not quite so delicate as the Rohita. They are all also strong, well-formed, handsome fishes, peculiarly distinguished by the enormous size of their scales, which, in large individuals, almost equals the hand, insomuch, that cards for gaming are some-
times made of them at Dakha. Mahasaula and Tora, variously altered or corrupted, or with various additions, may be considered as generic appellations among the natives for these fishes, all of which frequent large rivers.

The Puditora is found in the eastern parts of Bengal, and sometimes grows to nine feet in length. It is of an oblong compressed form, with, however, a great width; and above is of a dusky colour with a gloss of steel, while the edges of the scales change from gold to silver. The lower parts resemble entirely the latter. The fins are without spots, and the hinder ones are tinged with yellow. The eyes are like silver.

The head is blunt, oval, small, and smooth, with a very minute tendril at each corner of the mouth, and another from each side of the upper jaw. The mouth is small, and opens horizontally. The jaws protrude in opening, and the upper is the longest. The lips are fleshy, and the under one is reflected. The nostrils are in the middle between the eyes and nose. The eyes are far forward, and small, with circular pupils. The gill-covers have little or no flesh, and do not conceal their membranes.

The back from the fin to the head slopes and forms a sharp ridge. The tail is suddenly narrowed at the fin behind the vent, which is behind the middle. The lateral line is scarcely distinguishable. The scales end with a wide notch. Above each ventral fin is a scale-like appendant.

The dorsal fin occupies nearly the middle of the back, and slopes behind: the first of its rays is very short, and the second very strong and undivided; the others are branched, and the last of them divided to the root. The pectoral fins are low, shorter than the head, and sharp above; each contains fifteen rays. The ventral fins do not reach the vent; each contains nine rays. The fin behind the vent is rounded, and may be al-
most entirely withdrawn into a scaly furrow. The first of its rays is very short, and closely united to the second, which is undivided; the others are branched, and the last of them divided to the root. The fin of the tail is divided into two lobes, of which the under is the sharpest. Both contain nineteen distinct rays, besides short compacted ones.

In one specimen I found only two tendrils, with ten rays in the dorsal fin, and eight in that behind the vent; but, as it differed in no other particulars, and was considered by the fishermen as of the same species, I suppose that these circumstances were owing to accident.

42d Species.—Cyprinus Tor.

A proper Cyprinus, with eleven rays in the fin of the back, (of which three are undivided,) and eight in that behind the vent; with very large scales; with a smooth nose, and smooth-edged lips; and with reddish fins on the belly.

This fish I found in the Mahananda river, where it grows to three or four feet in length. It is of a long compressed form, but considerable width, rather more prominent below than above. Above its colour shines with gold and green, below like silver. The fins have no spots, but the dorsal one is dotted. The eyes are silver-coloured, with some dots above.

The head is sharpish, half oval, (being flattish above,) and smooth, with a protuberance between the nostrils, arising from a process of the upper jaw, which passes backward under the skin. There is a minute tendril at each corner of the mouth, and two at the extremity of the nose. The mouth is low, and extends straight backward. The jaws protrude in opening. The lips are fleshy, and the lower terminates in a narrow reflected point. The nostrils are near the eyes. The eyes are high, of moderate size, and have circular pupils. The gill-covers
are not bordered behind by a membrane, but expose their proper membranes to view.

The back slopes from the fin to the head, and has a blunt or convex edge. The vent is behind the middle. The lateral lines bend down from the shoulder. The scales adhere firmly, and are dotted at the edges. Above each ventral fin is a scale-like appendant.

The dorsal fin occupies the middle of the back: the three first of its rays are very strong, undivided, and closely united, the first being very short, and the third the longest; the others are branched, and the last is divided to the root. The pectoral fins are shorter than the head, and sharp above: each has eighteen rays, of which the first is undivided. The ventral fins do not extend to the vent, and each has nine rays. The anal fin is near the vent: the three first of its rays are undivided, and gradually lengthen from the first, which is very short; the other five are branched, and divided to the root. The tail fin is divided into two lobes, and has nineteen distinct rays, besides short compacted ones.

43d Species.—Cyprinus mosal.

A proper Cyprinus, with four tendrils; with thirteen rays (of which the four first are undivided) in the fin of the back, and eight in that behind the vent; with very large scales; with a smooth nose, and smooth-edged lips; and with pale fins.

The Mosal I found in the river Kosi, where it grows to four or five feet long. It is of a long, compressed, but thick form, more prominent on the back than on the belly, its colours shining above with green and gold, and below with silver. The fins have no spots, and a slight orange tinge. The eyes are silver, dotted above.

The head is sharp, oval, and narrower than the body, and
smooth, with a small tubercle between the nostrils, as in the last species, but less strongly marked. There is a minute tendril from each corner of the mouth, and two from the middle of the nose. The mouth is low, and extends straight back. The jaws protrude in opening, the under one being shortest. Both the lips are fleshy and rounded, nor is the under one reflected. The nostrils are near the eyes. The eyes are high, and of moderate size. The gill-covers are not margined behind with a membrane, but expose to view their proper membranes.

The back slopes from the fin forward, and there forms a sharpish ridge. The vent is behind the middle. The lateral line bends down from the shoulder. The scales adhere firmly, and are rounded, those of the lateral line terminating in a small notch. Above each ventral fin is a scale-like appendant.

The dorsal fin occupies the middle of the back; the three first of its rays are small, and the fourth is a very large undivided bone; the others are branched, and the last of them divided to the root. The pectoral fins are low, shorter than the head, and sharp above, each having about seventeen rays. The ventral fins do not extend to the vent, and each has nine rays. The anal fin is near the vent; the three first of its rays are undivided, the second being longer than the first, and shorter than the third; the others are branched, and the last divided to the root. The tail fin is divided into two lobes, and has nineteen distinct rays, besides short compacted ones.

44th Species.—Cyprinus sarana.

A proper Cyprinus, with four tendrils; with ten rays in the fin of the back, the longest of the rays being indented behind; with eight rays in the fin behind the vent; with large scales;
with the jaws nearly equal; with the under lip erect, and smooth-edged; and with pale fins.

I have little or no doubt that this is the same with the Kunamoo of Dr Russell, (Indian Fishes, No. 24,) although he mentions two small bony rays before the largest one, while I have noticed only one; and, although he reckons nine rays in the anal fin, while I reckon eight, he considering as two distinct rays what I call one divided to the root.

The Sarana would also appear to have a considerable affinity with the Cyprinus chalybeus of Walbaum, (see his edition of Artedi, Vol. II. page 24,) which I suppose is the same with the Cyprinus bulatmai of La Cepede, (Hist. des Poissons, Tome V. page 490,) and is a fish of the Caspian Sea, which may readily, however, be distinguished from our Indian kind by the great comparative length of the upper jaw, and by the redness of the anal fin.

The Sarana sometimes grows to the length of two feet, and is pretty common in the ponds and rivers of India. It is a beautiful fish, but not much valued for eating. The natives of Bengal class it with the following division, calling it Sarana pungti, and, in shape and proportion of scales, it has no doubt a considerable resemblance; but then it exceeds the fishes of that division vastly in size, and wants those bright well defined marks of colour by which the others are distinguished. It is of an oblong, but rather deep form, compressed, but rather thick make, and rather more protuberant on the back than below. The colour is green and silver, the middle of the scales being green, and the edges silver; but towards the back the green greatly prevails, while the scales there are dotted on the middle; and towards the belly the silver is entirely predominant. The head has a purple gloss. The fins are without spots. The eyes are silver-coloured.
The head is blunt, oval, small, and smooth. From each angle of the mouth are two minute tendrils. The mouth extends from the extremity of the nose, descending a little backward, and is small. The jaws protrude in opening, the upper one being rather the longest. The upper lip has a small bone at each side. The palate has several longitudinal wrinkles, peculiar, so far as I know, to this species. The nostrils are nearer the eyes than the jaw. The eyes are of a good size, and have circular pupils. Each gill-cover consists of three plates, rounded behind, and conceals in part its membrane.

The back slopes, with a slight convexity, from the commencement of the fin to the end of the nose, and the ridge there is rather sharp. The hinder part slopes with a slight concavity. The belly forms an arch, which slopes suddenly at the fin behind the vent. The lateral line bends, with a slight curvature, from the shoulder. Each scale has several fine lines, radiating as it were from the centre.

The dorsal fin occupies nearly the middle of the back, and slopes behind: the first of its rays is a thick, short, smooth bone, closely joined to the second, which is a long strong bone, indented along the hinder edge; the others are branched, and the two last are near each other, so that the fin might be said to have only nine rays, with the last divided to the root. The pectoral fins are very little shorter than the head, and each has sixteen rays, of which the first is undivided. The ventral fins are as large as the pectorals; each has nine rays, of which the first is undivided. The anal fin occupies the middle of the tail, and slopes backward: the three first of its rays are undivided, and closely united, the second being longer than the first and shorter than third; the others are branched, the last being divided to the root. The fin of the tail is divided into two bluntr-
ish lobes, and contains nineteen distinct rays, besides some short compacted ones.

V. Division.—Puntius.

Fishes of the genus Cyprinus, without any resemblance to other genera, of a small size, and marked by a few large deep coloured spots.

The fishes of this division among the natives of Bengal have the generic name of Pungti, and are very common throughout the Gangetic provinces. They rarely reach four inches in length, and, although all eaten, are considered as of little value. Like those of the last division, they all have oblong bodies, with a moderate depth; and, although all compressed, are of a good width and strong form. The head is oval and smooth. The tendrils, when any exist, are much shorter than the head. The jaws protrude in opening. The lateral line runs either on or above the middle of the side. The dorsal fin is near the middle of the fish, the anal is very short, and that of the tail consists of two lobes.

45th Species.—Cyprinus Sophore. Plate XIX. Fig. 86.

An opaque Cyprinus of the Puntius kind, with a diffuse golden spot on the gill-covers; with a black spot at the end of the tail, and another at the root of the dorsal fin; and with the second ray of that fin smooth behind.

The Sophore, of the Sangskrit language, is a beautiful little fish, very common in ponds. It is rather deep in proportion to its length, and a little more prominent above than below. Its colour above is greenish, with a gloss of silver, and below entirely of the latter colour. Besides the five spots mentioned in the specific character, it has little else remarkable in its colours. The fins have more or less of a yellow tinge, sometimes below,
inclining to red. The eyes are stained with red, and of a silver colour.

The head is narrower than the body, and small. There are four tendrils, so very minute, as often to be scarcely perceptible. The mouth is small, and descends obliquely from the extremity of the nose. The upper jaw is rather the longest. The lips are small, nor has the upper any lateral bones. The tongue is sharp, moveable, and smooth, as is the palate. The nostrils are near the eyes, which are high, and rather large. The gill-covers are rounded, and expose their membranes.

The back slopes up to the commencement of the fin with an arch, and is rounded on the edge; behind the commencement of the fin it slopes down with a slight curve. The belly forms a pretty regular curve from the mouth to the end of the anal fin. The scales are large, angular behind, dotted near the edge, and marked with lines diverging like the rays of a star.

The dorsal fin slopes behind, and contains ten rays, of which the two first are closely united and undivided, the second being twice as long as the first; the others are branched, and the last divided to the bottom. The pectoral fins are low, sharp above, and nearly equal in length to the head, each containing fourteen rays, of which the first is undivided, and the others bifid. The ventral fins are smaller than the pectorals, and near each other, each having nine rays, of which the first is undivided, and the others branched. The edge of the anal fin is slightly arched: it contains seven rays, of which the two first are undivided and united, the second being much the longest; the others are branched, and the last divided to the root. The lobes of the tail fin are bluntish: it has nineteen distinct rays, besides some close compacted short ones.
46th Species.—*Cyprinus Chola*.

An opaque *Cyprinus* of the *Puntius* kind, with a diffuse spot of a golden colour on the gill-covers; with one small black spot near the end of the tail; and with the second ray of the dorsal fin smooth behind.

The *Chola* I found in the north-eastern parts of Bengal, where it is found in ponds and other stagnant waters. It is rather deeper in form than the *Sophore*, and rather more prominent above than below. The colour above is green, with a gloss of silver, below entirely silver. The most remarkable spots are mentioned in the specific character, but the dorsal fin is variegated with dots collected in the form of various spots. The fins are olive, except the ventrals, which are tinged with orange. The eyes are silvery.

The head is small, and narrower than the body. At each corner of the mouth is a *tendril*. The mouth is small, and descends obliquely. The under jaw is the shorter, and along its middle has a slight ridge, on which account, perhaps, the fish should have been placed in the third division, to the fishes in which, however, it has little resemblance. The lips are rather fleshy. The gill-covers are rounded behind, and edged with a broad membrane.

Both back and belly form arches. The *lateral line* is bent with a slight curve from the shoulder. The *scales* are large; those on the back are dotted towards the root. There are no scale-like *appendants* above either the ventral or pectoral fins.

The *dorsal* fin slopes backward, and has ten rays, of which the two first are undivided, and very thick, the first being very short: the others are branched. The *pectoral* fins are low, and shorter than the head, and contain about thirteen rays. The *ventral* fins are as long as the pectorals, and each has nine rays, of which the first and last are undivided. The fin behind the
vent has seven rays, of which the first is short and closely joined to the second, which is undivided; the others are branched, and the last of them divided to the root. The fin of the tail contains nineteen distinct rays, besides those which are short and compacted.

47th Species.—Cyprinus terio.

An opaque Cyprinus of the Puntius kind, with a diffuse golden spot on each gill-cover, and a black one on each side of the tail near its middle; and with three undivided and smooth rays in the dorsal fin.

I have found the Terio (Teri pungti) in the north-east of Bengal. Its form is less deep than that of the two preceding species, but its back also is more prominent than its belly. The colour is silver, with the fore part of the scales on the back greenish. In old individuals the spots on the tail become surrounded with a faint ring. The dorsal fin is yellowish, and has many small spots composed of dark dots. The eyes are silver, stained above with black.

The head is of moderate size, and devoid of tendrils. The mouth descends obliquely from the extremity of the nose. The jaws have scarcely any lips. The eyes are high and large.

From the fin the back slopes forward with a curve, and its edge is convex. The lateral line descends straight from the shoulder. The vent is behind the middle. The scales are large.

The dorsal fin has eleven rays, of which the three first are undivided, and closely united, the second being longer than the first, and shorter than the third; the others are branched. The pectoral fins are sharp above, low, and shorter than the head, each containing about thirteen rays. Each of the ventral fins has nine rays. The fin behind the vent has eight rays, of
which the three first are undivided, and closely united, the second being longer than the first, and shorter than the third; the others are branched, and the last of them divided to the root. The fin of the tail has nineteen distinct rays, besides short compacted ones.

48th Species.—Cyprinus Ticto. Plate VIII. Fig. 87.

An opaque Cyprinus of the Puntius kind, with one black spot on the lateral line above each pectoral fin, and another near the end of the tail; and with the back fin spotted, and its second ray indented behind.

The Ticto (Tikto sophore) resembles strongly in form the Sophore, but wants the golden mark on the gill-covers, and seldom is found above two inches long. I found it in the south-east parts of Bengal. The colour above is green, with a gloss of silver, and the latter colour occupies entirely the belly. The fins are pale-green, and, in old individuals, the dorsal, anal, and ventral fins are slightly stained with red; the dorsal is marked with two rows of dark spots. The eyes are silver, with a faint yellow mark before and behind. The spots on the sides are large, well defined, and deep black.

The head is blunt, short, rather narrower than the body, and devoid of tendrils. The mouth is small, and rather low, and descends obliquely. The jaws are almost devoid of lips, and the under is rather the shorter. There is scarcely any tongue. The palate is smooth. The nostrils are in the middle between the eyes and jaw. The eyes are high up, convex, and large. The gill-covers are rounded behind, each consisting of two plates, and concealing half of its membrane.

The back, from the commencement of the fin to the end of the nose, forms a slight arch, with a rounded edge: from the commencement of the fin to the end of the tail is a concavity.
The **throat** has rather a sharp edge; the **belly** below is blunt, and is not so prominent as the back, although it forms a regular arch. The **lateral line** is scarcely distinguishable. The **scales** are large, and marked with lines diverging from a centre; those of the upper parts are dotted towards the roots.

The **dorsal fin** commences at the middle of the fish, slopes backward, and contains ten rays, of which the first is short, undivided, and closely joined to the second, also undivided, but indented behind; the others are branched. The **pectoral fins** are shorter than the head, low, and sharp above, each having twelve rays. The **ventral fins** are still smaller than the pectorals, are placed close to each other, and have each nine rays, of which the first and two last are undivided. The fin behind the vent occupies the middle of the tail, slopes backward, and has seven rays, of which the two first are closely united and undivided, the first being a half shorter than the second, and the others are branched. The **tail fin** has twenty distinct rays, besides short compacted ones.

**49th Species. — Cyprinus titius.**

An opaque **Cyprinus** of the **Puntius** kind, with two black spots on each side, near the lateral line; with no spots on the dorsal fin; and with the second of its rays smooth behind.

The **Titius** (*Tit pungti*) I found in ponds near Calcutta, and, by the natives, it was considered as the same fish with the **Ticto**, called also *Tit pungti*; but, although both kinds have the utmost resemblance, the marks mentioned in the specific character will serve abundantly to distinguish them as species. From the great resemblance, however, I did not think it necessary to take a drawing or particular description of the Calcutta kind.

In the north-east parts of Bengal I saw another fish called
by the same names, and procured a drawing, now in possession of the Bengal Government. It differed in a few particulars from the Ticto, but, the drawings being sufficient to point out the differences, I took no notes, and, therefore, until I recover the drawings, I cannot give this fish a specific character, although I call it Tictis.

50th Species.—Cyprinus Joalius.

An opaque Cyprinus of the Puntius kind, with one black crescent-shaped spot on each side of the tail near the end; with the second ray of the dorsal fin smooth; and with the edge of the under lip indented.

I have found the Joalius (Jaoyali) in the ponds and ditches of the north-east parts of Bengal. It grows about three inches in length, and is of a brownish-green colour above, and silver below. The back fin is dotted. The eyes are golden.

The head is large, but not thicker than the body, and very blunt, and the crown slopes downwards towards the nose. Above each corner of the mouth are two tendrils. The mouth is low, and extends right backward. The lips are fleshy. The nostrils are very high. The eyes are a little lower, and of a moderate size. There is a vertical dotted line on each gill-cover, and this does not conceal its membrane.

The edge of the back before the fin forms a sharp ridge; that of the belly is rounded. The lateral line descends from the shoulder, with a slight curve. The vent is behind the middle. The scales are dotted, and of a moderate size.

The dorsal fin slopes toward the tail, and contains twelve rays, of which the first is short, and closely united to the second, which, like it, is undivided; the others are branched. The pectoral fins are shorter than the head, low, and sharp above. The ventral fins are still smaller than the pectorals,
scarcely reach to the vent, and each has nine rays. The fin behind the vent slopes toward the tail, and has eight rays, of which three are undivided, and closely conjoined, the second being longer than the first, and shorter than the third: the others are branched.

51st Species.—Cyprinus pausio.

An opaque Cyprinus of the Puntius kind, with one black spot near the end of the tail on each side, and with the second ray of the dorsal fin, and the edge of the under lip, smooth.

The Pausio (Paungsi) I found in the river Kosi; and it has such a strong resemblance to the Joalius, that I noted down only the differences, which, besides those mentioned in the specific character, are as follows:

The head is narrower. The dorsal fin has thirteen rays, of which the last is divided to the root. The fin behind the vent has seven rays, the four last being branched, and the last divided to the root.

52d Species.—Cyprinus conchonius.

An opaque Cyprinus of the Puntius kind, with one black spot near the middle of the tail, and with no spots on the dorsal fin, the second ray of which is indented behind.

I found the Conchonius (Kongchon punghi) in the ponds of the north-east of Bengal, and in the rivers Kosi and Ami, which are far to the west. It probably, therefore, is found in all the northern borders of the Gangetic provinces.

This is deeper in the form than either the Terio or Ticto, to both of which it has a strong affinity. In Bengal it has clear coloured fins, without spots or dots, and is greenish above, and silver coloured below; but the specimens which I saw in Behar had blackish fins; and those which I observed farther west, in
the Ami, a stagnant river full of weeds, had the belly stained black, while the fins of the back and tail were yellow, with blackish ends; yet I am persuaded that the fishes which I observed in the three provinces belonged to the same species.

It has no tendrils. On each gill-cover is a bent line of dots.

The dorsal fin contains ten rays, of which the first is short and slender, and closely united to the second, which is strong, undivided, and indented behind; the others are branched. The pectoral fins are much smaller than the head, and each contains about ten rays. Each ventral fin contains nine rays, of which the first and last are undivided. The fin behind the vent has eight rays, of which the three first are undivided, and closely united, the second being longer than the first, and shorter than the third: the others are branched. The fin of the tail contains nineteen distinct rays, besides short compacted ones.

53d Species.—Cyprinus puntio.

An almost opaque Cyprinus of the Puntius kind, with a black ring round the end of the tail, and a black spot at the roots of the dorsal and anal fins.

This fish I found in the ponds and ditches of the southern parts of Bengal, where it is called Pungti; and it was brought to me as the young of the 30th species, or Catla; but although it resembles the Catla in form, and although several young fishes differ very much in colour from the adults, yet the differences in the number of rays, which support the fins of the two animals, renders it highly improbable that they should belong to the same species.

The form of the Puntio is very similar to that of the Catla. The back and tail are of a greenish-brown colour, almost diaphanous. The abdomen and gill-covers are silvery white. On each side is a diffuse stripe of greenish gold colour. The
pectoral, ventral, and tail fins, are glassy; the dorsal and anal are deep yellow. The eyes are silver.

The lateral line is indistinct. The scales are large.

The dorsal fin has nine rays, of which the first is undivided. Each pectoral fin has twelve rays, each ventral eight, and the anal six. The lobes of the tail fin are equal and sharp.

54th Species.—Cyprinus phutunio.

A somewhat diaphanous Cyprinus of the Puntius kind, with five black spots on each side; and with the second ray of the back fin indented behind.

The Phutunio (Phutuni pungthi) I found in the ponds of the north-east of Bengal. It strongly resembles the next described species, the Gelius, so that I have not taken a very particular description.

The Phutunio is deep in the make, and except the gill-covers and membrane covering the viscera, which are silver coloured, the whole animal is slightly diaphanous. On each side are two long black spots placed with their longest axis vertical; and, besides these, there are three other spots, which appear as if deeply seated, and as if they were seen through the skin. The fin of the back is spotted, and the ventrals are red.

There are no tendrils. The mouth is very small.

The back, from the fin to the head, slopes more rapidly than any other of the Puntius kind. The lateral lines are very faint. The scales are large.

The dorsal fin contains ten rays, of which the second is undivided and indented behind. Each pectoral fin seems to have only nine rays, but of this number I am not certain. Each ventral fin has only eight rays. That behind the vent has seven.
55th Species.—Cyprinus Gelius.

A yellowish diaphanous Cyprinus of the Puntius kind, with the gill-covers, the membrane covering the viscera, and a longitudinal stripe along the spine, all of a silver colour; with several large spots on each side; and with the second ray of the back fin indented behind.

The Gelius (Geli pungti) I found in the ponds and ditches of the north-east parts of Bengal, where it grows to about two inches in length. It is deep in the make, and protuberant on the back. On the sides are scattered several large spots. The back fin is yellowish, with a black spot at its root, as has also each ventral; the anal is spotted at the lower part.

The head is of a moderate size, and without tendrils. The mouth descends obliquely from the extremity of the head, and is small. There are no lips. The eyes are large and high.

The back slopes from the fin with a rounded edge. The lateral line runs straight above the middle of the side. The scales are large and dotted.

The back fin has ten rays, of which the first is short and closely united to the second, which, like it, is undivided; the others are branched. The pectoral fins are low, shorter than the head, and sharp above, with rays so slender that I cannot ascertain their number. Each ventral fin has nine rays: the anal has eight, of which the three first are undivided and closely united, the second being longer than the first, and shorter than the third; the others are branched.

56th Species.—Cyprinus Canius.

A reddish diaphanous Cyprinus of the Puntius kind, with the gill-covers, and the membranes covering the viscera and spine, like silver; with several large black spots on each side; and with the second ray of the back fin indented behind.
This is a beautiful fish, about an inch and a half in length, which I have found in the ponds and ditches of the north-east parts of Bengal. It is of rather a deep form, and more protuberant above than below.

The head is rather large, oval, and without tendrils. The mouth descends obliquely from the extremity of the head, and is small. There are no lips. The eyes are large and high.

The slope of the back, from the fin to the head, is rounded on the edge. The lateral line is straight. The scales, in proportion, are very large.

The back fin slopes behind, and contains ten rays, of which the first is short, and closely united to the second, which is simple; the others are branched. The pectoral fins are low, and shorter than the head, each having about eight rays. Each of the ventral fins has nine rays; and the anal, which slopes behind, has seven, of which the first two are undivided and closely united, the first being short: the others are branched.

VI. Division.—Cyprinus dangila.

Fishes of the genus Cyprinus, without any resemblance to other genera, of a small size, and marked with longitudinal lines, without remarkable spots.

Several species of this division, especially such as have the strongest resemblance to the Minnow, (Cyprinus phoxinus,) are, by the Bengalese, called Dhani, or some variation of that name, with different additions; and it is on this account that the name Danio has been adopted. In an economical view, the fishes of this division are of still less value than the preceding, as they are equally insipid and smaller; nor does their number anywhere compensate for these defects.

57th Species.—Cyprinus dangila.

A Cyprinus of the Danio kind, with blue stripes on the sides,
uniting together into a net-work; with the body much compressed; and with four tendrils, of which two are rather longer than the head.

I found the **Dangila** among the rocks and stones which compose the bottom of several clear mountain streams, south from Mungger. It is a beautiful fish, about the length of the finger, very much compressed, and of a long form, more prominent below than above. The back is of an olive colour, and the belly silver, having on each side several blue lines, that form a beautiful net-work. Behind the gill-cover, and above each pectoral fin, is a large blue spot. The fin behind the vent is edged with green, and has two or three stripes of the same colour. The eyes are silver, with some green on their upper sides.

The **head** is half oval and small. Two of the tendrils, proceeding from before the nostrils, are a little shorter than the head; and the two from the corners of the mouth are a little longer. The **mouth** descends obliquely, and is of moderate size. The **jaws** do not protrude in opening, and the under one is the longest. The **eyes** are on the sides of the head, and of moderate size, with the longest axis of their pupil vertical. The **gill-covers** are dotted.

The **back**, from the head to the commencement of the fin, scarcely rises. The **belly** is prominent. The **lateral line** is bent down parallel to the belly. The **vent** is behind the middle. The **scales** are rather large in proportion. Above each ventral fin is a scale-like appendant.

The **dorsal fin**, placed far back, and ending sharp behind, has thirteen rays, of which the two first are closely united and undivided, and the others are branched, the last being divided to the root. The **pectoral fins** are low, sharp above, and nearly of the same length with the head, and each contains about twelve rays. The **ventral fins** are smaller than the pectoral, do not extend to the vent, and each has only seven rays, of which the
last is divided to the root. The fin behind the vent has seventeen rays, of which the three first are undivided, the second being longer than the first, and shorter than the third. The tail fin ends in a small sinus, and contains twenty distinct rays, besides four short compacted ones on each side, in all twenty-eight.

58th Species.—Cyprinus rerio.

A Cyprinus of the Danio kind, with several blue and silver stripes on each side; with the body much compressed, and with four tendrils, of which two are a little longer than the head.

This beautiful fish I found in the Kosi river, where it grows to about two inches in length. The form is oblong, projecting more below than above. The colour above inclines to olive, and below to silver, with several longitudinal blue and silver stripes alternating on each side. The fin behind the vent is barred, and that of the tail striped with blue. The eyes are silver.

The head is small and half oval. The mouth descends obliquely backward, and is of moderate size. The jaws protrude in opening, the under one being rather the longest. The two tendrils before the nostrils are very short; the two from the corners of the mouth are a little longer than the head. The eyes, placed on the sides of the head, are of moderate size, with circular pupils. The gill-covers do not conceal their membranes.

The back, from the fin to the head, is straight, and the breast convex. The lateral line is scarcely observable. The scales are of moderate size. The vent is rather behind the middle. There are no scale-like appendants above the lower fins.

The fin of the back is behind the middle, and is rounded. It
has eight rays, of which the first is undivided. The *pectoral* fins are low, and sharp above: each contains about nine rays; but they are indistinctly visible. The *ventral* fins are small, each containing only seven rays. In the fin behind the *vent* there are sixteen. The *tail* fin ends in a crescent, or sinus; but its rays, on account of their slenderness, and the brightness of the colours, cannot be counted.

59th Species.—*Cyprinus chapalio*.

A *Cyprinus* of the *Danio* kind, with three blue stripes on each side, with the body slightly compressed, and with two tendrils shorter than the head.

The *Chapalio* is a very beautiful fish, little longer than the *Rerio*, to which it has a strong resemblance. It is found in the ponds of Bengal. The *form*, like that of the *Minnow*, (*Cyprinus phoxinus*), is oblong, very slightly compressed. The blue *coloured* stripes on the sides are separated by intermediate ones of gold or silver. The back is dusky, the belly white. There are five blue stripes on the fin of the tail, and three on that behind the vent.

The *head* is small, and blunt. The *tendrils*, which proceed from the corners of the mouth, are slender, and shorter than the head. The *mouth* descends obliquely backward. The under *jaw* is rather the longest. The *gill-covers* end in a point.

The *back* forms a slight arch. The *belly* projects considerably. The *lateral line* is straight, high up on the side, and smooth. The *vent* is near the middle. The *scales* are large, and adhere firmly.

The *back* fin is behind the middle, its edge is arched, and it contains nine rays, of which the first is short and undivided, and the others branched. The *pectoral* fins are low, shorter than the head, and sharp above; each has twelve rays. The
ventral fins are near each other, and very small, each having seven rays. The anal fin is near the vent, and nearly of equal width throughout, and has thirteen rays, of which the two first are undivided, and the others branched. The fin of the tail has a slight notch in the middle, and contains eighteen distinct rays, besides some short compacted ones at each side.

60th Species.—Cyprinus danrica. Plate XVI. Fig. 88.

A Cyprinus of the Danio kind, with one dark dotted stripe below the lateral line; with the form slightly compressed; with four tendrils, of which two are very long; and with the first ray of each ventral fin lengthened into a bristle.

The Danrica is found in the ponds and ditches of Bengal, and strongly resembles the Minnow (Cyprinus phoxinus) in size and appearance. The form is oblong, very slightly compressed. The colour above is green, and dotted, below silver. There is only one longitudinal stripe on each side. The lower fins are yellowish. The eyes are silver, dotted with black.

The head is flat above, narrower than the body, and short. From each angle of the mouth are two slender tendrils, of which the upper is minute, and the under extends to the ventral fins. The mouth commences high, descends much backward, and is small. The jaws have scarcely any lips, and protrude much in opening. The nostrils are near the eyes, and circular. The eyes are high up, and far forward, and are small. The gill-covers are rounded, and half conceal their membranes.

The back is convex on the edge, and rises little towards the fin. The belly is rather sharp-edged. The lateral line is straight, higher than the middle, and in a golden stripe. The vent is behind the middle. The scales are large in proportion, and easily removed.
The back fin is far behind the middle, and rounded. It contains eight rays, of which the first is short, and, together with the second, is undivided, while the others are branched. The pectoral fins are as long as the head, low, and sharp above; each contains thirteen rays, of which the first is undivided, and the others branched. The ventral fins are near each other, and as long as the pectorals; each has eight rays, of which the first is by much the longest and undivided, ending in a bristly point, projecting beyond the membrane; the last also is undivided, and the intermediate ones branched. The anal fin is near the vent, and triangular, and has eight rays, of which the first is short, and, with the second, is undivided, the others being branched. The fin of the tail is large, is divided into two equal lobes, and contains nineteen distinct rays, besides short compacted ones on each side.

61st Species.—Cyprinus Jogia.

A Cyprinus of the Danio kind, with one dark dotted stripe below the lateral line; with the form much compressed; with four tendrils, of which two are very long; and with the first ray of each ventral fin no longer than the membrane.

The Jogia (Jongja) I found in the Kosi along with the Rerio, to which it has a considerable resemblance, and by the fishermen is considered as belonging to the same genus: but, on the whole, its affinity with the Danrica is stronger; and, besides the circumstances mentioned in the specific character, it differs from the description of the Danrica in only the following particulars:

The eyes are entirely silver-coloured. The belly is more arched. The pectoral fins are longer than the head, and each contains about ten rays. The rays in each ventral and in the anal fin are seven in number.
62d Species.—Cyprinus sutiha.

A Cyprinus of the Danio kind, with one silver stripe along the lateral line; with the form much compressed; with four tendrils, of which two are very long; and with the first ray of each pectoral and ventral fin produced in a slender point beyond the membrane.

The Sutiha is found in the ponds of the Gorakhpur district, and has the utmost affinity to the two last described species, from which, however, it may at once be distinguished by wanting the dotted stripe on its sides. Besides this and the circumstances mentioned in the specific character, it differs from the Jogia in the following particulars:

The lower part of the body is diaphanous, with a silver membrane lining the visceral cavity. The under fins are pellucid.

63d Species.—Cyprinus daniconius. Plate XV. Fig. 89.

A Cyprinus of the Danio kind, with one dark dotted stripe below the lateral line; with the form slightly compressed; with no tendrils; with nine rays in the back fin, and seven in that behind the vent; and with the lateral line straight.

The Daniconius (Danikoni) is pretty common in the rivers of Southern Bengal. It is a beautiful fish, three or four inches long, and in colour has a strong resemblance to the three last described. The form is long, and tapers equally to both ends. On each side are two adjacent longitudinal stripes, the upper gold colour, the other dark from numerous dots; but in many individuals these are not so numerous as in the specimen from which the drawing was taken. The fins are yellowish without marks.

The head is oval, blunt, and of moderate size. The mouth is small, and descends a very little backward. The jaws have no lips, and protrude in opening, the under one being rather the
longest, and ending in a sharpish point, while the upper ends in a notch. The eyes are high, convex, and rather large, with circular pupils. The gill-covers are rounded, and consist of two bony plates, which do not entirely conceal the membranes.

The back, from the fin to the nose, forms a regular slight curve. The lateral line is straight and above the middle. The vent is behind the middle. The scales adhere slightly, are large, and are dotted and marked with lines diverging from the centre.

The fin of the back is rather behind the middle, slopes backward, and contains nine rays, of which the first is short, and with the second is undivided, the others being branched. The pectoral fins are low, shorter than the head, and sharp above, each having thirteen rays. The ventral fins are small, and each has nine rays, of which the first is undivided. The anal fin is under the middle of the tail, slopes backward, and contains seven rays, of which the first is short, and, like the second, is undivided, the remainder being branched, and the last divided to the root. The fin of the tail is divided into two equal lobes, and contains nineteen distinct rays, besides several short compacted ones.

64th Species.—Cyprinus Anjana.

A Cyprinus of the Danio kind, with two dotted longitudinal stripes on each side; with the form somewhat compressed; with no tendrils; and with nine rays in the dorsal fin, and seven in the anal.

The Anjana (Angjana) I found in the ponds of the Puraniya district. It is a small fish, very like the Daniconius, and is of an oblong form, and thick make. The colour of the upper parts is green, and of the lower silver. The upper dotted stripe runs straight along the middle of the side, and is edged
above with gold: the under is parallel to the belly, and is interrupted. The fins are yellow, with dark dots. The eyes are silver

The **head** is narrower and more compressed than the body, and it is flat above, and blunt. The mouth is of a moderate size, and descends backward. The **jaws** are flattened, without lips, and protrude in opening, the under one being rather the longest, and ending in a sharp point, while the upper one ends in a notch. The **eyes** are high, and of moderate size, and have circular pupils. The **gill-covers** are somewhat angular, and expose part of their **membranes**.

The edge of the **back** is rounded, and slopes suddenly at the nape. The **lateral line** is low, and runs parallel to the **belly**. The **vent** is behind the middle. The **scales** are large, adhere but slightly, and are both dotted and marked with diverging lines. Above each ventral fin is a scale-like **appendant**.

The **dorsal fin**, situated behind the middle, has nine rays, of which the first is short, and, with the second, is undivided, the others being branched, and the last divided to the root. The **pectoral fins** are shorter than the head, and each has about thirteen rays. The **ventral fins** are small, and each has nine rays. The **anal fin** slopes backward, and has seven rays like those of the dorsal. The **tail fin** is divided into two lobes, and contains about nineteen distinct rays, besides some short compacted ones.

---

65th Species.—**Cyprinus rasbora.** Plate II. **Fig 90.**

A *Cyprinus* of the *Danio* kind, with one slightly dotted longitudinal stripe on each side; without tendrils; with the form slightly compressed; with nine rays in the **fin** of the **back**, and eight in that behind the **vent**; and with the **lateral line** bent parallel to the **belly**.
The *Rasbora* is found in the ponds of Bengal, and has a very strong resemblance to the *Daniconius*, but is rather larger. The form resembles that of the head of a lance, but is only slightly compressed. The colours above are green, with many small dots, and below silver. On each side are two longitudinal faint contiguous stripes, the upper golden, the under dotted with black. The fin of the tail is yellow, with the hinder edge stained black.

The head is oval, sharpish, and of moderate size. The mouth is small, and descends a very little backward. The jaws protrude in opening; the under is rather the longest, and ends in a sharp point; the upper ends in a notch. The eyes are high, rather large, and convex, and have circular pupils. Each gill-cover has three plates, and is rounded and dotted.

The back before the fin forms a curve that slopes rather suddenly at the nape. The lateral line is low. The vent is behind the middle. The tail contracts suddenly at the fin behind the vent. The scales are large, adhere slightly, and are dotted and marked with lines diverging from a centre.

The dorsal fin is near the middle, slopes backward, and has nine rays, of which the first is short, and, like the second, is undivided, the others being branched, and the last divided to the root. The pectoral fins are low, shorter than the head, and sharp above: each has thirteen rays. The ventral fins are small, and close together, each having nine rays, of which the first and last are undivided. The anal fin, placed near the vent, slopes with a concave edge, and contains eight rays, of which the three first are undivided, the second being longer than the first, and shorter than the third: the others are branched; and the last is divided to the root. The fin of the tail consists of two lobes, of which the under one is the longest; and both contain nineteen distinct rays, besides several short compacted ones.
66th Species.—Cyprinus Angra.

A Cyprinus of the Danio kind, with the sides stained yellow, and marked with one broad longitudinal dark dotted stripe; with two minute tendrils; and with the form compressed.

The Angra is found in the Brahmaputra river, and is about a span in length. Although, from its colours, it belongs to a different division, it has, in every other respect, the utmost resemblance to the Morala, which will be next described; and, indeed, differs from the description of that only in the few particulars mentioned in the specific character, and in the following circumstances:

The eyes are red. The minute first ray of the dorsal fin is wanting. All the fins are dotted with black.

VII. Division.—Morulius.

Fishes of the Cyprinus genus, with no resemblance to other genera, of a small size, and with the colours of the belly and back indented into each other.

All the fishes of this division have the strongest affinity to each other, yet, among the natives, their names are quite distinct. I have formed the name of the division from one of those given to the most common species. The 20th species, or Dero, differs in nothing from this division, except in having the ridge on the under jaw like a Mugil.

67th Species.—Cyprinus Morala. Plate XVIII. Fig. 91.

A Cyprinus of the Morulius kind, with four tendrils; with thirteen rays in the fin of the back; and with eight in that of the vent.

The Morala I have found in the fresh waters of Bengal, where it reaches to the size of a small herring. The form is long and compressed. The upper parts are of a brownish-green colour, with many dark dots, the under are silver. The fins
are of the same colour with the adjacent parts. The eyes are silver.

The head is small, long-oval, and dotted on the nose. The tendrils are minute. The mouth is under the nose, and small, and opens directly backward. The jaws protrude in opening, and are covered by pendulous lips, of which the under one is indented on the edge. The nostrils are close to the eyes, which are high, flat, and of moderate size, with the longest axis of the pupil vertical. The gill-covers do not conceal their membranes.

The lateral line runs straight along the middle of the side. The vent is behind the middle. Before the fin the back slopes straight down to the nose. The scales are large, adhere firmly, and are surrounded by a margin. Above each ventral fin is a scale-like appendant.

The dorsal fin is before the middle, and its edge forms a concave curve. It contains thirteen rays, of which the second is longer than the first, and shorter than the third, all the three being undivided, but the third has joints: the others are branched, and the last is divided to the root. The pectoral fins are shorter than the head, each containing about sixteen rays. The ventral fins reach, with their ends, to the vent, and each has nine rays. The edge of the anal fin is concave, and it contains eight rays like those of the back. The fin of the tail consists of two lobes, of which the upper is the longest and sharpest; and it contains nineteen distinct rays, besides several short compacted ones.

68th Species.—Cyprinus pausius.

A Cyprinus of the Morulius kind, with four tendrils; with fourteen rays in the fin of the back; and with seven in that of the vent.
The Pausto (Paungsi) I found in the Kosi river. It is a smaller fish than the Morala, and its colours fainter; but, in other respects, except the number of rays in the back and anal fins, it scarcely differs from that fish.

69th Species.—Cyprinus Musiha.
A Cyprinus of the Morulius kind, without tendrils; with thirteen rays in the fin of the back, and eight in that behind the vent; and with the body compressed.

The Musiha I found in the Ganges at Patna. It differs from the description of the Morala in nothing but the want of tendrils, and those of the Morala are so minute, that I have some doubts of their being a sufficient mark of distinction.

VIII. Division.—Cabdio.
Fishes of the genus Cyprinus, having no resemblance to other genera, and of a small size; without spots, stripes, or other remarkable distinction of colour; and with a form very considerably compressed.

The small fishes composing this division are of little importance either from number or quality; nor have the natives any generic appellation common to the greater part. I have adopted one of the many names (Kavdi) given to the most common species. None of them, that I have seen, have tendrils.

70th Species.—Cyprinus Jaya.
A Cyprinus of the Cabdio kind, with eight rays in the dorsal fin, about thirteen in each pectoral, eight in each ventral, and nine in that behind the vent; and with two lateral lines on each side.

The Jaya is found in the rivers of Northern Behar, and grows to about two inches in length. The form is long and compres-
The colour is silver, with a greenish back, and no spots either on the body or fins. The eyes are silver.

The head is oval, small, and blunt. The nose is fleshy, and projects a little beyond the mouth, which is small and arched. The jaws have scarcely any lips, and protrude in opening, the upper being the longest, and entire at the end. The nostrils are near the eyes, and each has only one aperture. The eyes are high, near the middle of the head, and of moderate size. The gill-covers are rounded.

The back has a convex edge, with a pale line before the fin. The shoulder-bones are covered with scales. The upper lateral line is straight, the under parallel to the belly. The vent is behind the middle. The scales adhere slightly, and are small. There are no scale-like appendants above the lower fins.

The dorsal fin is behind the middle: the first and second of its rays are undivided; the first being short: the others are branched, and the last divided to the root. The pectoral fins are low, sharp above, and smaller than the head. The ventral fins do not extend to the vent, and their rays are undivided. The anal fin slopes backward: the first and second of its rays are short, and the last is divided to the root. The tail fin is divided into two lobes, of which the upper is the bluntest. It contains seventeen distinct rays, besides several short compacted ones.

71st Species.—Cyprinus Mola. Plate XXXVIII. Fig. 92.

A Cyprinus of the Cabdio kind, with nine rays in the dorsal fin, seven in that behind the vent, fifteen in each pectoral, and nine in each ventral; and with two lateral lines on each side.

This is the most common and most generally diffused species of this division with which I am acquainted, and is found
in both ponds and fresh water rivers in every part of the Gangetic provinces. It grows to three or four inches in length.

The form resembles the head of a lance, and is much compressed. The colours above are green, and below silvery, but the body is somewhat diaphanous, so that membranes like silver, which line the visceral cavity and spine, are visible. The eyes are like silver.

The head is blunt, oval, and of moderate size. The mouth terminates the head, descends obliquely backward, and is of moderate size. The jaws have no lips, and scarcely protrude in opening; the upper is rather the shortest, ends in a notch, and has a membranous veil projecting from its inner side; the under one is rather sharp. The tongue is sharpish and smooth, as is the palate. Each nostril has only one aperture, and is situated in the middle between the eye and nose. The eyes are on the middle of the cheeks, and are of moderate size and globular. The gill-covers consist of three bones, of which the uppermost is by much the largest, is rounded behind, and marked by a bent line of dots. The membrane of each is exposed to view. The bones supporting the gills on their inside have a row of tubercles.

The back is arched with a gentle curve, having before a declivity greater than that of the head: its edge is convex. The tail slopes suddenly at the anal fin. The upper lateral line runs straight above the middle of the side; the under runs downward, terminating above the ventral fins. The vent is behind the middle. The scales adhere loosely, and are small.

The dorsal fin is nearly in the middle of the fish, and slopes backward: the first of its rays is short, and closely united to the second, both being undivided; the others are branched, and the last is divided to the root. The pectoral fins
are very low, shorter than the head, and sharp above. The ventral fins are shorter than the pectorals; the first and last rays of each are undivided, and the intermediate ones branched. The anal fin slopes backward, and its rays are like those on the back. The tail fin consists of two lobes, the under one being rather the longest, and contains nineteen distinct rays, besides several short compacted ones.

72d Species.—Cyprinus hoalius.

A Cyprinus of the Cabdio kind, with nine rays in the dorsal fin, ten in the anal, and nine in each ventral; with one lateral line on each side; and with the belly silver-coloured.

The Hoalius (Hayali) is found in the Atreyi, and other rivers in the northern parts of Bengal, and grows to about six inches in length. It has some affinity to the Leusiscus or Dace, and Dobula, but is smaller. The description I took was very imperfect.

The form is much compressed, straightish above, and prominent below. The colours are above green, and below silver.

The head is small. The jaws are equal in length.

The lateral line is bent parallel to the edge of the belly.

The fin of the tail is divided into two lobes.

73d Species.—Cyprinus borelio.

A Cyprinus of the Cabdio kind, with nine rays in the dorsal, eleven in the anal fin, and eight in each ventral; with two lateral lines on each side; and with the belly yellow.

In the Gangetic provinces the Borelio (Boreli) is a pretty common fish, and grows to about four inches in length.

The form is long and compressed. The colour above is sil-
ver, with a tinge of green, and below a deep yellow, extending to the lower fins. The eyes are silver.

The head is small. The nose projects a little beyond the mouth, which is very small, and extends directly backward. The upper lip is fleshy. The jaws protrude in opening, the upper being the longest, and having a notch in the middle. Each nostril has only one aperture, situated near the eye. The eyes are far forward on the head, and of moderate size.

The edge of the back is convex. The shoulder-bones are shining, and devoid of scales. The upper lateral line is straight; the under parallel to the belly. The vent is behind the middle. The scales adhere slightly, and are of moderate size. There are no scale-like appendants above the lower fins.

The dorsal fin is behind the middle, and slopes backward: the first of its rays is short, and united to the second, which is undivided; the others are branched, and the last of them is divided to the root. The pectoral fins are low, and sharp above; each has about thirteen rays. The ventral fins are small, and do not reach to the vent; the first and last ray of each is undivided. The anal fin slopes behind, and its rays are like those on the back. The tail fin is divided into two lobes, and contains eighteen distinct rays, besides short compacted ones.

74th Species.—Cyprinus solio.

A Cyprinus of the Cabdio kind, with nine rays in the dorsal fin, eleven in the anal, and eight in each ventral; with two lateral lines on each side; and with the belly like silver.

The Solio (Soli) is found in the Kosi river, and differs from the Borelio only in the colour of the belly, which in no part inclines to yellow, and in having scale-like appendants above both pectoral and ventral fins. It is rather of a smaller size.
75th Species.—Cyprinus cosuatis.

A Cyprinus of the Cabdio kind, with ten rays in the dorsal and seven in the anal fin; with one lateral line on each side; and with an opaque body.

I found the Cosuatis (Koswati) in the Kosi river. It has a great resemblance to the Terio, (47th species,) but wants the fine spots by which that fish is distinguished. The form is deep, compressed, more prominent on the back than below. The colour is silver, with a greenish back, and the scales on that part are dotted towards the root. The ventral fins are red, all the others are yellowish, and those of the back and behind the vent are stained with black. The eyes are silver, stained above with black.

The head is oval, and of a moderate size. The mouth opens at the extremity of the head. The jaws protrude much in opening, and have no lips: the under one is by a little the shorter. The eyes are high and large. The gill-covers are generally dotted.

Before the fin the back slopes downward in a curve, and has a rounded edge. The lateral line is straight, and descends along the side from the shoulder. The vent is behind the middle. The scales are large, and there are no scale-like appendants above the lower fins.

The dorsal fin is somewhat rounded: the first of its rays is short, and, with the second, which is smooth, is undivided; the others are branched. The pectoral fins are low, much shorter than the head, and sharp above. The ventral fins are small: each has nine rays. The rays of the anal fin are like those of the back. The fin of the tail is divided into two lobes.

76th Species.—Cyprinus guganio.

A Cyprinus of the Cabdio kind, with ten rays in the dorsal,
and seven in the anal fin; with scarcely any lateral line, and with a diaphanous body.

The Guganio (Gugani) is probably found in most of the rivers and ponds of the Gagetic provinces, as I have seen it in both the Brahmaputra and Yamuna, the extreme rivers of that territory. It scarcely exceeds an inch and a half in length, and has a considerable affinity to the Mola, (Species 71.) The form is compressed, deep, and more prominent below than above. It is diaphanous, so that eleven ribs on each side may be seen through the scales. The back is dotted: the head, eyes, the membrane lining the visceral cavity, and the spine, are coloured like silver. The fins are diaphanous, the fore part of the dorsal being dotted.

The head is oval, small, blunt, and dotted. The mouth is small. The jaws protrude in opening; the upper is the longest. The nostrils cannot be clearly distinguished. The eyes are far forward on the sides of the head, and large. The membrane of each gill-cover contains four rays.

Before the fin the back slopes downward. The scales are large in proportion, and adhere firmly. The lateral line, if any exists, is very faint. The vent is behind the middle.

The dorsal fin is near the middle: the first of its rays is short, the second strong, undivided, and indented behind: the others are branched. Each of the pectoral fins has about twelve rays; but the lower ones are so slender as to be scarcely visible. Each of the ventral fins has nine rays, of which the first and last are undivided. The first ray of the anal fin is short, and the last divided to the root. The tail fin is divided into two lobes.

77th Species.—Cyprinus cotio. Plate XXXIX. Fig. 93.

A Cyprinus of the Cabdio kind, with ten rays in the dorsal fin, thirty-six in the anal, and twelve in each ventral.
The *Cotio (Koti)* in the ponds and ditches of Bengal is a pretty common fish, grows to about four inches in length, and is full of bones.

The form is deep, very much compressed, and somewhat like a trapezium. The colour is above green, and below white with a silver gloss, and somewhat diaphanous. At the commencement of the dorsal fin is a small black spot, and under the fore part of the lateral line there is a row of five or six others, around which is a bluish shining depression. The eyes are silver, stained above with dark green.

The head is oval, blunt, and of moderate size: above it is covered by a naked bone, on which is a depression in form of a parallelogram. The mouth terminates the nose, descends obliquely, and is small. The jaws are nearly equal, have no lips, and protrude in opening. The nostrils are near the eyes, which are large, and high up, with circular pupils. The membranes of the gill-covers are half exposed. The bones supporting the gills have on the inside a row of tubercles.

Before the fin the back forms a sharp ridge, and slopes more than the head. The lateral line runs straight above the middle of the side. The vent is before the middle. The scales adhere slightly, are small, and on the back are dotted.

The dorsal fin is near the middle, and slopes backward: the first of its rays is short; the second, like the first, is undivided, and is indented behind; and the others are branched, the last being divided to the root. The pectoral fins are low, nearly as long as the head, and sharp above; each contains sixteen rays, of which the first is undivided. The ventral fins are small, and the first ray of each is very short, and adheres to the second, which is undivided. The anal fin occupies almost the whole length of the tail, and slopes backward: the three first of its rays are undivided, the second being longer than the first, and shorter
Cyprinus. 

GANGETIC FISHES. 341

than the third; the others are branched, and the last is divided to the root. The tail fin is divided into two sharp lobes, and contains nineteen distinct rays, besides several compacted ones.

78th Species.—Cyprinus devario. Plate VI. Fig. 94.

A Cyprinus of the Cabdio kind, with eighteen rays in the fin of the back, and an equal number in that behind the vent.

The Devario (Debari) is also a pretty common fish in the rivers and ponds of Bengal: in the former it is sometimes a span in length; but in the latter, where it is most common, it seldom reaches half that size. It is a very beautiful animal, of a green colour above, with generally many large irregular golden spots, and a golden gloss: below it is like silver; and on each side of the tail, extending to the end of the fin, is a bluish stripe, changing in certain lights to green. The fins are yellow; the eyes are white, with a golden ring round the pupil. The form is much compressed, and deep, with the belly prominent.

The head is oval and blunt, and descends with less slope than that of the back. The mouth is at the extremity of the head, descends obliquely, and is large. The jaws have no lips, protrude in opening, and are nearly equal in length: in the under is a slight roughness, which may perhaps be considered as teeth; but it is scarcely distinguishable, except to the touch. The tongue is sharpish, tied down, and smooth. The palate is smooth, with a projection on each side. Each nostril, in the middle, between the point of the nose and eye, has only one aperture. The eyes are rather large, high, and globular. The gill-covers are rounded, and expose part of their membranes. The bones supporting the gills are smooth on the inside.

The back has a convex ridge, and forms a regular curve from the nape to the end of the tail. The ridge below also is convex,
and the curve very prominent before the vent, which is behind the middle. On each side there is one lateral line parallel to the belly. The scales are large and dotted, adhere firmly, and are marked with concentric lines.

The dorsal fin is nearly in the middle, and slopes very little: the first two of its rays are undivided, and the first of them is very short: the others are branched. The pectoral fins are low, nearly as long as the head, and sharp above: each has ten rays. The ventral fins are small: each contains eight rays. The anal fin occupies the middle of the tail, and slopes a little backward: its rays are like those on the back. The tail fin is divided into two lobes, and contains nineteen distinct rays, besides several short compacted ones.

79th Species.—Cyprinus Dancena.

A Cyprinus of the Cabdio kind, with six rays in the dorsal, and twenty in the anal fin.

The Dancena (Dhankena) is a fish about an inch and a half long, which I found in the estuary below Calcutta, near which city both it and the third species (Cyprinus Laubuca) are called by the same name, having a strong resemblance. The form is very much compressed, with the back rising gently to the commencement of the fin, and the lower edge very prominent. The colours are green above, and silver below.

The head is half oval, flat above, broader than the body, and small. The mouth is small, and descends backward obliquely. The upper jaw is the longest. The lips are fleshy. The eyes are high, and far forward.

The lateral line runs straight above the middle of the side. The vent is near the middle. The scales are large in proportion, but so thin, as scarcely to be visible without a glass, except on the belly.
The dorsal fin is far back. The pectoral fins are of moderate size, are placed high on the side, and are sharp above: each has ten rays. The ventral fins are small, each having six rays. The tail fin is rounded, and has sixteen rays.

IX. Division.—Cyprinus Garra.

Fishes of the Cyprinus kind, of a small size, with no affinity to another genus; without remarkable spots or stripes; and with a long form, very little, if at all, compressed.

The little fishes of this division live among stones in rapid mountain streams, or in rivers with pure sandy bottoms, and, like many of the Loaches, (Cobitis,) usually lie close to the bottom, so that several of them are by the natives called Balitora, or sand-diggers; and the name Garra, given to one species, and applied by me to the whole, seems to be derived from this circumstance. The fishes of this division have a considerable resemblance to the Cyprinus aphya.

80th Species.—Cyprinus Lamta.

A Cyprinus of the Garra kind, with four tendrils; with the pectoral fins sharp in the middle; with ten rays in the dorsal, and seven in the anal fin; and with the lateral line above the middle.

The Lamta I have found in rivulets, with rocky bottoms, in the province of Behar, and in the Rapti river of the Gorakhpur district. It grows to about three inches in length, and out of water retains life for a considerable time. The colours are green above, and silver below, with a faint spot on each side toward the end of the tail. The eyes are like silver.

The head is oval, blunt, and of moderate size. The tendrils are very minute. The nose projects a little beyond the mouth, which is small. The jaws protrude in opening. Below the un-
der one is a circular space, callous in the middle. The eyes are small and high. The membranes of the gill-covers are exposed to view.

The ridge of the back is convex. The lateral line runs straight, near the middle of the side, but rises a little at the shoulder. The scales are large in proportion, and adhere firmly.

The dorsal fin is before the middle; the first of its rays is short, and, with the second, is undivided; the others are branched. The pectoral fins are nearly as long as the head; each contains thirteen rays. Each ventral fin has nine rays. The rays of the anal fin are like those on the back. The tail fin ends in a crescent, and contains nineteen distinct rays, besides short compacted ones.

81st Species.—Cyprinus sada.

A Cyprinus of the Garra kind, with four tendrils; with the pectoral fins sharp above; with ten rays in the dorsal, and seven in the anal fin; and with the lateral line above the middle of the side.

This little fish I found in the Brahmaputra river, during the spawning season, on which account, perhaps, its belly appeared more prominent than usual. The colours are green above, and silver below, and this colour extends to the eyes.

The head is half oval, being flattened above, blunt, and of moderate size. The nose projects a little beyond the mouth, which is small. The jaws protrude in opening. The tendrils are shorter than the head. The nostrils are in the middle between the eyes and nose. The membranes of the gill-covers are exposed to view.

The back is nearly straight, with a convex edge. The late-
ral lines are straight. The vent is behind the middle. The scales are of moderate size.

The back fin is before the middle; the two first of its rays are undivided, and not indented; the others are branched. The pectoral fins are much smaller than the head, and low. Each ventral fin has nine rays. The three first rays of the anal fin are undivided and united together, the second being longer than the first, and shorter than the third; the others are branched. The tail fin is divided into two lobes.

82d Species.—Cyprinus Latius.

A Cyprinus of the Garra kind, with two tendrils; and with eleven rays in the dorsal, and seven in the anal fin.

This small fish, which is tenacious of life out of water, I found in the Tista river. The colour above is greenish, with many dots, below silver. The lower fins are stained yellow. The eyes are like the body in colour, with a narrow golden circle round the pupil.

The head is oval, bluntish, and short, as are the tendrils proceeding from the sides of the nose, which projects beyond the mouth. This is small, and opens transversely. The jaws do not protrude in opening, and are covered with fleshy lips, of which the upper is bent inward, and indented on the edge. The nostrils are in the middle, between the eyes and end of the nose. The eyes are high and large, and have oval pupils, with the longer axis vertical. The gill-covers are dotted, and conceal half their membranes.

The back slopes a little before the fin, and has a convex ridge. The lateral line runs straight along the middle of the side. The vent is behind the middle. The scales are large. Above each ventral fin is a scale-like appendant.

The dorsal fin is near the middle; the three first of its rays
are undivided, and smooth-edged, the second being longer than the first, and shorter than the third; the others are branched. The pectoral fins are shorter than the head, and low; each has about thirteen rays. Each ventral fin has nine rays. The anal fin, occupying the middle of the tail, slopes backward: the first of its rays is short, and closely united with the second, which, like it, is undivided; the others are branched. The tail fin is divided into two lobes, of which the upper is the longest; it contains twenty distinct rays, besides several compacted ones.

83d Species.—Cyprinus gohama.
A Cyprinus of the Garra kind? with two tendrils; and with eleven rays in the dorsal, and eight in the anal fin.
This little fish I have found both in the Kosi and Ganges. It differs very little from the Latius, but it dies very soon out of water, and its form is somewhat deeper and more protuberant on the back. The lower fins are pellucid like glass. The pupils are circular. The lateral line descends from the shoulder to the tail. Before the seven rays of the anal fin is an eighth minute one. The under jaw along its middle has a slight ridge, on which account it might, perhaps, be placed in the third division. In other respects it agrees entirely with the account given of the Latius.

84th Species.—Cyprinus mosario.
A Cyprinus of the Garra kind, without tendrils; with the pectoral fins sharp above; and with the sides free from cloud-like spots.
This is another small fish, differing very little from the Latius, and found in the Rapti river of the Gorakhpur dis-
85th Species.—Cyprinus sucatio.

A Cyprinus of the Garra kind, without tendrils; with the pectoral fins rounded; with the sides clouded with dots; and with nine rays in the dorsal, and seven in the anal fin.

This fish, both in form and colour, has a strong resemblance to many of the genus Cobitis, but wants tendrils. It is found in the rivers of Northern Bengal, and grows to about three inches long. The back is rather protuberant. Above the colour is greenish, with scattered dots; on the sides these are collected into clouds, and below the body is whitish and diaphanous. The fins of the back, breast, and tail, are dotted. The eyes are brown, with a narrow golden circle round the pupil.

The head is blunt, short, depressed, dotted, and as thick as the body. The nose extends beyond the mouth, which is small and transverse. The jaws protrude in opening, and have fleshy lips. The eyes are far back on the sides of the head, and are globular. The apertures of the gills are much smaller than usual in this genus. I cannot observe any rays in the membranes of the gill-covers.

The back is more prominent than the belly, and has a convex ridge. The belly is flat. The tail ends almost in a point. The lateral line runs straight below the middle of the side. The vent is nearly in the middle. The scales are large, adhere firmly, and are marked with lines diverging from the centre.

The dorsal fin is before the middle, slopes backward, and contains nine rays, of which the first is short, and, like the second, is undivided; the others are branched, and the last is divided to the root. The pectoral fins are near each other, and
rounded; each contains thirteen rays. The ventral fins are as large as the pectorals, and are rounded; each contains nine rays, of which the first adheres to the second, and, like it, is undivided, as are also the third and ninth. The anal fin is nearer the end of the tail than the vent, and has seven rays like those on the back. The tail fin ends in a crescent, and has about sixteen distinct rays, besides small compacted ones.

86th Species.— _Cyprinus balitora._

A _Cyprinus_ of the Garra kind, without tendrils; with the pectoral fins rounded; with a row of cloud-like spots on each side, and a third along the back; and with ten rays in the dorsal, and seven in the anal fin.

The _Balitora_ I have found in the rivers towards the north-east of Bengal, where it grows to about two inches in length. The form tapers to both ends. The whole is diaphanous except the eyes, the gill-covers, the membrane lining the visceral cavity, and the spine, which are coloured like silver. The spots on the body consist of numerous black dots. The fins of the back and tail are spotted.

The head is blunt, short, depressed, dotted, and of moderate thickness. The nose projects beyond the mouth, which is small and transverse, and has fleshy lips. The eyes are far back on the sides of the head, and are small and globular. The membrane of each gill-cover, so far as I can perceive, has only two rays.

The ridge of the back is convex. The belly is flat. The tail is wedge-shaped. The lateral lines are straight. The vent is before the middle. The scales adhere firmly, and, for the size of the fish, are large; but are so diaphanous as to be scarcely distinguishable.

The dorsal fin is on the middle of the back, and slopes be-
hind; the first of its rays is short, and, like the second, undivided; the others are branched, and the last divided to the root. Each pectoral fin has about twelve rays. The ventral fins, placed near the vent, have each nine rays. The anal fin is remote from the vent, and its rays are like those on the back. The tail fin is divided into two lobes, which contain about eighteen distinct rays, besides short compacted ones.

XXI. Genus.—Cobitis.

Fishes of the fifth order, with one dorsal fin, which is supported by rays, and which, with the pectoral fins, is unarmed; without teeth in the jaws; and with six or eight tendrils round the mouth.

All the fishes of this genus, that I know in India, are small; nor are any of them found in such a quantity as to render them of the least importance in an economical view. Those with cloud-like marks on their sides have the strongest resemblance to the Loach (Cobitis barbatula) both in appearance and habits, which need not, therefore, be described, as being perfectly known to naturalists. Those which are striped are more beautiful fishes, resembling the appearance of the others but slightly, and differing a good deal in habits, especially in swimming higher, and in not remaining so stationary on the bottom. In many species, beneath each eye, are one or two strong prickles, capable of being reflected into a slit behind. These, no doubt, serve as weapons of defence.

Besides the above mentioned circumstances, all the species of Cobitis, that I have described, have the following in common:

The form is long in proportion to the width. The head is small, and destitute of scales. The tendrils are shorter than the head, but thick, and sharp-pointed. The nose projects be-
yond the mouth, which is small, and has fleshy lips. The eyes are small, and high on the sides of the head. The gill-covers are flexible, and the apertures are small, or at least of moderate dimensions. There are not above three rays in each membrane of the gill-covers; and in several species there are either none, or, on account of their slenderness, they are indistinctly visible. The vent is behind the middle. There are seven distinct fins, those on the back and behind the vent being short.

1st Species.—**Cobitis botia.**

A *Cobitis* with a prickle under each eye; with six tendrils; with cloud-like marks on the sides; and with fourteen rays in the dorsal, and eight in each ventral fin.

The *Botia* is found in the rivers of the north-eastern parts of Bengal, and is nearly of the same size and qualities for eating as the *Loach.*

The form is compressed, and wedge-shaped. The body is slippery and covered with scales. On each side is a longitudinal silver coloured stripe, above which is olive green, clouded with spots of a deeper shade. Below the line is somewhat diaphanous. The head is reddish, with yellowish gill-covers. The fins are reddish and spotted.

The head is blunt. The prickle below each eye is strong and undivided. Four of the tendrils proceed from the upper lip, and two from the corners of the mouth. The gill-covers are smooth, and expose part of their membranes, each of which has about three rays; but they are not to be seen distinctly.

The scales are small. There is no lateral line.

The dorsal fin is near the middle: the three first of its rays are undivided, the second being longer than the first, and shorter than the third; the others are divided twice into two. The pectoral fins end in a point, and each has about thirteen
rays. In the anal fin are eight rays, of which the first is short, and united to the second, both being undivided; the others are branched. The tail fin is large, fan-shaped, and rounded behind, and contains fifteen distinct rays, besides some shorter.

2d Species.—Cobitis Gongota.

A Cobitis with two prickles beneath each eye; with six tendrils; with cloud-like marks on the sides; and with eleven rays in the dorsal, and six in each ventral fin.

This fish grows to six inches in length, and is found in the rivers of Northern Bengal towards the mountains. The form is slightly compressed. The colour is white on the sides, above clouded with dotted spots, and below silvery. The dorsal and tail fins are transversely striped. The pectoral fins are whitish.

The head is half oval, sloping below, and narrower than the body. The prickles beneath the eyes are short, strong, and united by a membrane. The tendrils are at equal distances from each other; four proceed from the upper lip, and two from the corners of the mouth, which is circular. The jaws protrude much in opening. The under lip is reflected at a sharp angle. The nostrils are small, and in the middle between the nose and eyes, which are far back and near each other, and have the longest axis of the pupil vertical. The membranes of the gill-covers are devoid of visible rays.

The lateral line runs straight above the middle. The scales are small, angular, and adhere firmly. Above each ventral fin is a scale-like appendant.

The dorsal fin is far back: the first of its rays is minute, and the second short, and both, together with the third, are undivided; the others are branched, and the last of them divided to the root. The pectoral fins are rounded, and each has ten rays. The ventral fins are smaller than the pectorals. The anal fin,
in the middle between the vent and end of the tail, has eight rays like those of the back. The tail fin is rounded, and has seventeen rays.

3d Species.—Cobitis cucura.

A Cobitis with prickles below the eyes; with six tendrils; with cloud-like marks on the body; and with nine rays in the dorsal, and six in each ventral fin.

I found this fish in the river Kosi, where it seldom reaches three inches in length. The form is compressed. The sides are of a white colour, below is somewhat diaphanous, above is dotted. The back and sides are clouded with five irregular transverse dark bars, alternating with an equal number of large irregular dark spots.

The head is narrower than the body, and blunt. Beneath each eye are two short prickles. The under jaw is narrow. The nostrils are in the middle, between the nose and eyes, which are near each other, and have the longest axis of their pupils vertical. The gill-covers are dotted, and expose to view their membranes, in which no rays are discernible.

The lateral line runs straight above the middle of the side. The whole skin is devoid of distinguishable scales, nor above the ventral fin is there any appendant.

The dorsal fin is behind the middle: the two first of its rays are short and undivided, and the others are branched. The pectoral fins are much smaller than the head, and are low down: each contains about nine rays. The interior rays of each ventral fin are longer than the exterior, which I do not recollect having seen in any other fish. There are seven rays in the anal fin, and fifteen in that of the tail, which is rounded.
4th Species.—Cobitis Guntea.

A Cobitis with prickles under the eyes; with six tendrils; with cloud-like spots on the sides; and with eight rays in the dorsal, and seven in each ventral fin.

The Guntea (Guntea) is found in the ponds and fresh rivers of Bengal, and grows to three or four inches in length. The form is compressed, and wedge-shaped. The skin is slimy. The body above is olive coloured, with a coppery stripe along each side, and below this is somewhat diaphanous. The gill-covers are greenish. The sides are clouded with dark colour-ed dots, collected into clusters, of which, on the middle of each side, there is a row more remarkable than the others. Above the end of each lateral line is a black spot. The rays of the back and tail fins are spotted with olive and white; those of the other fins with black and brazen.

The head is oblong, compressed, and blunt. Beneath each eye is a strong sharp prickle, divided at the end into two. Two tendrils proceed from the upper lip, and four from the angles of the mouth. The upper jaw is the longest. The eyes can be turned down so as to see the bottom. The gill-covers are rounded behind, and dotted; each of their membranes seems to contain three rays, but I cannot be certain of their number.

The back and belly are straight, and blunt-edged. There are no lateral lines. The body is covered with minute scales.

The first and second rays of the dorsal fin are undivided and closely united; the others are divided into two, the last of them to the root. Each of the pectoral fins contains eight rays. The anal fin contains seven rays like those of the back. The caudal fin ends in a straight line, and has seventeen rays.
5th Species.—**Cozitis pario.** Plate XXIX. Fig. 95.

A *Cozitis* with prickles under the eyes; with six tendrils; and with transverse bars on the sides.

The *Dario* (*Dari*) is found in the northern rivers of Bengal, and grows to two or three inches in length. The *form* is more prominent above than below, and compressed. The *colours* are disposed in transverse bands, slanting obliquely backward along the sides, and alternately yellow and covered with black dots. All the fins are free from marks, except that of the tail, which is yellow, with transverse black imperfect bands. The eyes are yellow, dotted with black.

The *head* is half oval, sloping above, and no wider than the body. Under each eye are two short strong *prickles*, joined by a membrane. Two of the *tendrils* hang from the corners of the mouth, and four from the end of the nose. The *mouth* is circular, with *jaws*, which protrude in opening. The *nostrils* are in the middle, between the eyes and nose, and each has two small apertures. The *eyes* are far back, and flat. The *gill-covers* are incapable of much motion; nor can I distinguish any rays in their *membranes*, which are thick.

The *back* is arched. The *lateral lines* run straight along the middle of the sides. The body is devoid of *scales*.

The *dorsal* fin is near the middle of the back, and has eleven rays, all nearly of the same length. The *pectoral* fins are low, much smaller than the head, and sharp above: each contains thirteen rays. The *ventral* fins are nearly as large as the pectorals, and near each other; and each has eight rays. The *anal* fin under the middle of the tail has seven rays, the first of which is short, and the others of nearly equal lengths. The *tail* fin is divided into two sharp lobes, and has eighteen distinct rays, besides some short compacted ones.
6th Species.—Cobitis pangia.

A Cobitis with prickles under the eyes; with eight tendrils; and without spots on the body.

The Pangia (Pangya) is found in the north-eastern parts of Bengal, grows to three or four inches in length, and is not eaten by the natives. The form is nearly of equal height throughout, and compressed. The fish is slippery, devoid of scales, and of a reddish colour, with dark dots, and its muscles are visible through the skin.

The head is oval, sloping at the nose, and narrow. The prickle below each eye is two-forked. Two tendrils proceed from the end of the nose, two from the corners of the mouth, and four from under the chin. The nostrils are in the middle between the nose and eyes, and are tubular. The eyes are minute. The membranes of the gill-covers contain no rays.

The lateral lines run straight above the middle of the sides. The back is straight.

The number of rays in the fins, owing to their slenderness, and to the thickness of the connecting membranes, cannot be exactly ascertained. The dorsal fin is behind the middle of the back, is rounded, and contains about seven rays. The pectoral fins are smaller than the head, and rounded; each contains about ten rays. The ventral fins are near each other, but do not extend to the vent; each has six rays. The anal fin is rounded, and has about seven rays. The caudal fin is small and rounded, and has about eighteen rays.

7th Species.—Cobitis geto. Plate XI. Fig. 96.

A Cobitis with prickles below the eyes; with eight tendrils; and with the body transversely barred.

The Geto is found in ponds in the north-eastern parts of Bengal. The form is compressed, and more prominent above
than below. The whole is devoid of scales, and of a yellow colour, with transverse black bars running obliquely backward on the sides. One of the bars passes through the eye, which is black, with a gold-coloured ring round the pupil. The fins are yellow, with two black spots on that of the tail.

The head is half oval, sloping downward above, sharp, and not wider than the body. The prickle below each eye is divided to the root into two. Two tendrils proceed from the corners of the mouth, four from the end of the nose, and two from under the chin. The mouth is circular, with jaws that protrude in opening, the under one ending in a hard point. Each nostril has two apertures. Each membrane of the gill-covers has three rays.

The back is arched and round-edged. There is no lateral line.

The fin of the back, which is near its middle, and slopes behind, has twelve rays. The pectoral fins are much smaller than the head, and rounded: each contains thirteen rays. The ventral fins are rather larger, and each has nine rays. The anal fin has seven. The fin of the tail is divided into two sharp lobes.

8th Species.—Cositis balgara.

A Cositis with prickles below the eyes; with eight tendrils; and with the body spotted.

The Balgara is found in the Kosi river, and grows to about two inches in length. The form is a little compressed, and sharp before; and the tail is like a wedge. The whole is devoid of scales, and above is of a pale olive colour, with many darker dotted spots, and below is silvery. The spots on the back are oblong, and transverse; on the sides they are irregular. The fins of the back and tail are variegated.

The head is half oval, sloping above, and narrower than the
body. The prickles below each eye are divided to the root. Two tendrils proceed from the corners of the mouth, four from the nose, and two from the chin. The mouth is small, and the jaws protrude much in opening. The nostrils are in the middle between the nose and eyes, and are either tubular, or have two apertures, separated by a projecting membrane; but are so small, that I am not certain which is their structure. The eyes are near each other, and have circular pupils. I cannot distinguish the number of rays in the membranes of the gill-covers.

The dorsal and anal fins, as well as both pectoral and ventrals, have each seven rays. The fin of the tail has seventeen, and ends in a crescent.

9th Species.—**Cobitis savona.**

A Cobitis with the head unarmed; with six tendrils; and with half bars on the sides.

The Savona (Savon khorka) is found in the Kosi river, where it grows to about two inches long.

The form before is sharp, behind only compressed. The whole is devoid of scales. Above the colour is dusky, with narrow yellowish bars; below it is white. The fin of the tail is dotted. The eyes are golden.

The head is half oval, sloping above. Four tendrils proceed from the upper jaw, and two from the corners of the mouth. The nose projects beyond the mouth. The gill-covers are shining.

The back rises to the fin with a sharp edge. The lateral line is straight and smooth.

The back fin has ten rays, of which the two first and the last are undivided. The pectoral fins are low, and smaller than the head: each contains about ten rays. Each ventral fin has about
six rays, which is the number in the fin behind the vent, where the two first are undivided. The tail fin ends in a crescent.

10th Species.—*Cobitis turio*.

A *Cobitis* with the head unarmed; with six tendrils; with the sides clouded; and with eight rays in the dorsal fin, and also in each ventral.

The *Turio* (*Turi*) 1 found in the Brahmaputra river, where it grows two or three inches long.

The form is compressed, with a prominent back. The whole is devoid of scales, above silver coloured, clouded with dotted irregular spots, and below somewhat diaphanous. The eyes are blackish, with a golden ring round the pupil. The dorsal fin is yellow and spotted; the anal has no spots; the caudal is yellow, with transverse bars, and a black spot above near the root.

The head is half oval, sloping above, not wider than the body, and of a moderate size. Two tendrils proceed from the corners of the mouth, and four from the upper jaw. The jaws protrude a little in opening. The eyes are far back. The gill-covers have little motion. The rays of their membranes are to be seen very indistinctly.

The back is arched. The lateral line runs straight along the middle of the side.

The dorsal fin is before the middle of the back: the three first of its rays are closely united, the first being very short. The pectoral fins are sharpish in the middle; each has about twelve rays. The ventral fins are smaller, and the anal has seven rays. The tail fin ends in a notch, and has nineteen rays.

11th Species.—*Cobitis bilturio*.

A *Cobitis* with the head unarmed; with six tendrils; with clouded sides; and with fourteen rays in the dorsal, and eight in each of the ventral fins.
Cobitis.

The Bilturio (Bil turi) I found along with the tenth species, from which it differs scarcely in any thing but in the number of rays which support the fins. Each pectoral fin has fourteen rays; that behind the vent has seven.

12th Species.—Cobitis corica.

A Cobitis with the head unarmed; with six tendrils; with the body spotted; and with nine rays in the dorsal fin.

The Corica (Khorika) is found in the river Kosi, where it grows to about two inches in length.

The body is not compressed, but is sharp before, and has a wedge-like tail. The whole is devoid of scales. The upper parts are of a bluish colour, and somewhat diaphanous, with many large spots, composed of black dots. The lower parts are silvery, as are the eyes.

The head slopes above, and is half oval. Four tendrils proceed from the upper jaw, of which the two in the centre are very minute: the other two proceed from the corners of the mouth. The nostrils are near the eyes, which are far back. The gill-covers are shining and dotted. Their membranes are half exposed to view; but their rays, on account of their slenderness, cannot be exactly numbered.

On the back is a longitudinal furrow. The lateral line forms a ridge on the middle of the side.

The dorsal fin is on the middle of the back: the first of its rays is undivided, and the last divided to the root. The pectoral fins are longer than the head, and sharp above: each has eleven rays, of which the two first are short, and the third very long and undivided. The ventral fins are smaller, and each has seven rays; in the anal there are six. The caudal fin is divided into two blunt lobes, and has nineteen distinct rays, besides short compacted ones.
INDEX METHODICUS.

In hoc indice L. B. notandum est, quod in radios pinnarum enumera-
do notam post aliquem numerum interrogationis (?) significare numerum vel ob cutis crassitudinem, vel ob radiorum tenuitatem esse incertum; nota-
am autem (—) significare me hujus pinnae radios non percensisse; no-
tam denique (+) significare radios præter annotatos esse nonnullos ita arc-
te compactos ut eorum numerus incertus restat.

ORDO I.—PISCES CARTILAGINEI.

Pisces spina dorsali cartilaginea.

Genus I. RAIA. Spiracula subtus corpus utrinque 5 s. 7, operculis et membranis branchiostegis nudata; os infra rostrum; corpus depressissimum, pinnis pectoralis abdominibusque marginatum.

Species 1. Raia Lymna? cauda elongata, spina caudali serrata.
2. Raia Sancur dentibus obtusis, corpore caudaque pinnata in-
ermibus, dorso apertario, capite circinnato.

Genus II. SQUALUS. Spiracula in colli latera utrinque 5 seu 7, opercu-
ulis et membranis branchiostegis nudata.

Species 1. Squalus Carcharias? pinna analis solitaria; apertura auricu-
leri nulla; dentibus triangularibus, utrinque serratis; pinna
caudae caudae versus finem subitus deficiente.
2. Squalus pectinatus rostro elongato, ancipite, spinis angustio-
ribus utrinque circiter 34 armato.

Genus III. TETRODON maxillis porrectis, osseis, bifidis; corpore ad
piscis arbitrium inflato, alepidoto.
Species 1. *Tetrodon fluviatilis* corpore vix compressiusculo, supra fuscoviridi, lineis flavescentibus decussantibus in pulvinulos quasi diviso; maxilla superiore sublongiore.
B 1? D 16, P 17, A 14, C 8.

2. *Tetrodon Patoca* corpore vix compressiusculo, spinulis simplicibus hispido, supra nigricante maculis flavis vario; maxilla superiore longiore.

3. *Tetrodon Cutcutia* corpore vix compressiusculo, inermi, supra viridi plagis irregularibus fuscis, infra albido; macula magna nigra utrinque ad caudæ partem anteriorem; maxilla inferiore longiore.
B 0, D 12, P 21? A 11, C 8.

4. *Tetrodon Caria* corpore vix compressiusculo, inermi, supra plagis irregularibus fuscis viridi, infra nigro; maxillis subæqualibus.

5. *Tetrodon Gularis* corpore vix compressiusculo, inermi, supra plagis irregularibus fuscis viridi, infra nigro; macula utrinque nigra ad caudæ partem anteriorem; plaga gulari rubra; maxillis subæqualibus.


Genus IV. *Syngnathus* oris rictu ad apicem rostri longissimi subcilindrici minuto, edentulo; branchiarum apertura in nucha, per membranam adnatam sæpius obturata.

Species 1. *Syngnathus Cuncalus* pinnis dorsi pectoraliibus et caudæ radiatis; corpore septemangulari; cingulis abdominalibus 16, caudalibus 25.

2. *Syngnathus Carce* pinnis dorsi pectoraliibus et caudæ radiatis; corpore septemangulari; cingulis abdominalibus 32, analibus 18.
B—, D 25, P 10, C 10.
Species 8. *Syngnathus Deocata* pinnis dorsi pectoralibus et caudæ radiatis; corpore sexangulare.
   B—, D 30? P 15? C 7?

**ORDO II.—PISCES APODES.**

Pisces spina dorsali ossea absque pinnis ventralibus.

Genus I. *Unibranchiapertura* pinnis pectoralibus nullis; corpore tereti serpentiformi; apertura branchiarum unica, gulari.

Species 1. *Unibranchiapertura Cuchia* pinnis nullis; corporis maculis atris.

Genus II. *Murænophis* corpore serpentiformi, alepidoto; pinnis pectoralibus nullis, dorsi caudæ anique unitis.

Species 1. *Murænophis Sathe* pinna dorsi e nucha incipiente; denticibus in utraque maxilla acutis, remotis; maxillis subæqualibus; corpore emaculato.

2. *Murænophis Tile* pinna dorsi e nucha incipiente; denticibus in utraque maxilla acutis, remotis; dente in palato unico, magno; corpore lineolis depressis tessulato, et lituris flavis et punctis nigris variegato.

Genus III. *Ophisurus* pinnis pectoralibus dorsi et ani radiatis, duabus posterioribus longitudinalibus, linearibus; cauda nuda; corpore serpentiformi; apertura branchiostega in utroque latere.

Species 1. *Ophisurus Hijala* maxilla superiori longiore; ordine macularum pallidarum prope lineæ lateralis partem anteriorem.
   B 0, D 230-240, P 8, A 170?

2. *Ophisurus Boro* maxilla superiore longiore; corpore absque linea laterali, immaculato; radiis dorsalibus 330 circiter.
   B 0, D 330? P 11? A 270?

3. *Ophisurus Harancha* maxilla superiore longiore; corpore immaculato; linea laterali recta; radiis dorsalibus 345 circiter.
   B 0, D 345? P 12? A 240?
Genus IV. *Muraena* corpore serpentiformi, alepidoto, lubrico, pinnis pectoralibus ani caudae dorsique instructo; dorso caudaque inermibus.

Species 1. *Muraena Anguilla* maxilla inferiore longiore; radiis analibus 100 circiter; pinnis ani caudae dorsique unitis; corpore immaculato.

2. *Muraena maculata*? maxilla inferiore longiore; corpore viridi, nebulis nigris variegato; pinnis ani caudae dorsique unitis.

P 24.

3. *Muraena Vamos* maxilla superiore multo longiore; corpore immaculato; linea laterali nulla; pinnis ani caudae dorsique unitis.

4. *Muraena Bagio* maxilla superiore multo longiore; corpore supra bruneo, immaculato; linea laterali evidente; pinnis ani caudae dorsique unitis.


5. *Muraena Raitaborua* maxilla superiore longiore; corpore supra purpureo, punctis nigris asperso; pinnis ani caudae dorsique distinctis.

B—, D 32, P 8, A 50, C 60.

Genus V. *Macrognathus* corpore squamoso, subserpentiformi, ante pinnas dorsi et ani aculeato; cauda pinnata.

Species 1. *Macrognathus armatus* pinnis dorsi caudae anique unitis.

B—, D 83—85, P 21, A 88—90, C 17.


B 4, D 40? P 12, A 25? C—.

Genus VI. *Trichiurus* corpore compressissimo; cauda subulata, pinnis nudata.

Species 1. *Trichiurus Lepturus* maxilla inferiore longiore.

B—, D 114, P 11.
Genus VII. *Cynoglossus* oculis ad unum latus positis, corpore compressimo in latus oculis oppositum incumbente.

Species 1. *Cynoglossus* *Lingua* oculis sinistris; pinnis dorsi caudae anique unitis, pectoralibus nullis.

B—, D 140? A 111, C 8.

**ORDO III.—PISCES JUGULARES.**

Pisces spina dorsali ossea, pinnis ventralibus ante pectorales positis.

Genus I. *Batrachoides* capite magno depresso; oris rictu maximo; cirrhis circa maxillis nonnullis.

Species 1. *Batrachoides* *Gangene* corpore alepidoto, filamentis asperso; aculeis dorsalibus 3 recumbentibus, in operculo branchiarii 4.

B 4, D $\frac{5}{2}$ et 19, P 22, V $\frac{1}{6}$, A 16, C 14?

**ORDO IV.—PISCES THORACICI.**

Pisces spina dorsali ossea, pinnis ventralibus sub pectorales positis.

Genus I. *Gobioides* pinnis ventralibus unitis; cauda pinnata; dorso monopterigio.

Species 1. *Gobioides* *rubicundus* pinna caudae cum dorsali analique unita; radiis dorsalibus 46, analibus 40.

B 5, D 46, P—, V 12, A 40, C—.

2. *Gobioides ruber* pinna caudae discreta; radiis dorsalibus 55, analibus 52.

B—, D 55, P 20, V 10, A 52, C 16.

Genus II. *Gobius* pinnis ventralibus unitis, dorsalibus duabus.

Species 1. *Gobius* *Bato* corpore anguilliformi; radiis dorsalibus 5 et 21, analibus 22.

B 3, D 5 et 21, P 21, V 12, A 22, C 22?

2. *Gobius* *Changua* corpore anguilliformi; radiis dorsalibus 5 et 31, analibus 29.

B 4, D 5 et 31, P 18, V 12, A 29, C 18.

B 3, D 5 et 26, P 19, V 12, A 26, C 16.


B 3, D 5 et 26, P 17, V 12, A 26, C 17.

5. *Gobius septemradiatus* pinnis pectoralibus flabello insidentibus; radiis pinnae dorsalis anterioris 7 abreviatis, posterioris 13, analis 14.

B 2, D 7 et 13, P 13, V 12, A 14, C 17.


B 0, D 9 et 14, P 13, V 12, A 15, C 13.

7. *Gobius tredecemradiatus* pinnis pectoralibus flabello insidentibus; radiis pinnae dorsalis anterioris 13, posterioris 14, analis 12.

B 3, D 13 et 14, P 12, V 12, A 12, C 14+.

8. *Gobius Gutum* corpore cuneato; radiis pinnae dorsalis posterioris 11, prioris radios longitudine equantibus; radiis pectoralibus 13; corpore diaphano, punctis nigris, nebuloso.

B 3, D 6 et 11, P 13, V 10, A 11, C 17.


B 5, D 6 et 10, P 22, V 12, A 9, C 14+.

10. *Gobius Sadanundio* corpore cuneato; radiis pinnae dorsalis posterioris 8.

B —, D 6 et 8, P 18, V 9, A 9, C 23.


B —, D 5 et 7, P 10, V 5, A 10, C 18?

12. *Gobius Nunus* corpore cuneato; radiis pinnae dorsalis posterioris 5.

B —, D 6 et 5, P 10, V 10, A 7, C 13?
Genus III. Cheilodipterus pinnis ventralibus distinctis, dorsalibus duabus; operculis branchiostegis integerrimis, inermibus; apertura branchiarum utrinque ampla.

Species 1. Cheilodipterus Culius pinna caudali rotundata; radiis pinnae dorsalis anterioris 6 inermibus.
   B 4, D 6 et 10, P 17, V 6, A 11, C 27.
2. Cheilodipterus Butis pinna caudali rotundata; aculeis pinnae dorsalis anterioris 6.
   B 7, D 8 et 9, P 18, V 5, A 9, C 15?
3. Cheilodipterus Panijus pinna caudali subtruncata; aculeis pinnae dorsalis anterioris 9, quorum secundus longissimus.
   B 5, D 9 et 28, P 20, V 6, A 12, C 19+.

Genus IV. Ophiocephalus pinnis inermibus, dorsalibus unico, ventralibus geminis; capite operculis branchiostegis integerrimis, inermibus, et squamosis; corpore elongato, parum compresso.

Species 1. Ophiocephalus Wrahl radiis pinnae dorsalis 43-46; fasciis pluribus nigris latera variegantibus; pinnae dorsi et ani pone nigro maculatis.
2. Ophiocephalus Chena radiis pinnae dorsalis 43-46; dorsis pinnae que dorsi et ani immaculatis.
3. Ophiocephalus Lata radiis pinnae dorsalis 30 circiter; dorso fasciis atris pluribus ad vittam longitudinalarem atram descendedentibus variegato.
   B 5, D 30, P 16, V 6, A 20, C 12+.
4. Ophiocephalus Marulius radiis pinnae dorsalis 52-54, ventralium senis; macula pinnae caudalis ocellata.
   B 4, D 52-54, P 19, V 6, A 31-35, C 15.
5. Ophiocephalus Barca radiis pinnae dorsalis 52 circiter, ventralium quinis.
   B 4, D 52, P 16, V 5, A 32, C 19.
6. Ophiocephalus Gachua radiis pinnae dorsalis 36 circiter, ventralium quinis; fasciis dorsi nigris plurimis.
   B 5, D 36, P 15, V 5, A 22, C 12?
Species 7. *Ophiocephalus aurantiacus* radiis pinnae dorsalis 34 circiter; colore ubique aurantiaco.

Genus V. *Labrus* maxillis mobilibus; operculis branchiotegis inermibus, integerrimis; pinnarum nonnullis aculeatis, dorsali unico; corporre compresso.

Species 1. *Labrus Badis* radiis simplicibus recurvis 17, et compositis 8 in pinna dorsali; aculeis 3, et radiis compositis 7 in pinna anali.

B 5, D 25, P 12, V 6, A $^9_7$, C 16.

2. *Labrus Dario* aculeis pinnae dorsalis 14, radiis compositis 8; aculeis analibus 3, radiis compositis 7.

B—, D 14, P 9, V 6, A $^3_1$, C—.

Genus VI. *Bola* dentibus conicis acutis, vel in ordines plures conflertis; ossium capitis nonnullis serratis; pinnarum nonnullis aculeatis; corporre opaco; lateribus declivibus.

Species 1. *Bola Coitor* aculeis pinnae dorsalis anterioris 10; aculeo 1 radiisque mollibus 26 vel 27 in pinnarum dorsalium posteriore; aculeis 2 et radiis mollibus 6 seu 7 in pinna anali; ramo primario radii pinnarum ventralium secundarii setaceo-producto; rostro a maxillas elongato.

B 7, D $^{10}_{10}$ et $^1_{37-29}$, P 17, V $^3_6$, A $^{12-9}_9$, C 17 +.

2. *Bola Chapitis* aculeis pinnae dorsalis anterioris 10; aculeo 1 radiisque mollibus 25 in pinnarum dorsalium posteriori; aculeis 2 et radiis mollibus 7 in pinna anali; ramo primario radii ventralium secundarii setaceo-producto; maxillis terminalibus.

B 7, D $^{10}_{10}$ et $^1_{37-29}$, P 19, V $^3_6$, A $^3_9$, C 17 +.

*Varietas Nuria* dicta in pinna dorsali posteriori radios molles 24 habet, caeteroquin non diversa.

3. *Bola Coibor* aculeis pinnae dorsalis anterioris 9; aculeo 1 radiisque mollibus 24 in pinnarum dorsalium posteriori; aculeis 3 radiisque mollibus 7 in pinna anali; pinnis ventralibus imberbibus; ventre lateribusque flavis.

4. *Bola Pama* aculeis pinnae dorsalis anterioris 9; aculeo 1


Species 5. *Bola Cuja* aculeis pinnae dorsalis anterioris 10; aculeo 1 radiisque mollibus 23 in pinnarum dorsalis posteriori; aculeis 2 radiisque mollibus 7 in pinna anali; ramo primario radii pinnarum ventralium secundarii setaceo producto; maxillis terminalibus, inferiore longiore; vittis laterum nigris, interruptis.

B 7, D $\frac{13}{10}$ et $\frac{1}{2}$, P 17, V $\frac{1}{2}$, A $\frac{5}{9}$, C 17 +.


B 7, D $\frac{11}{9}$ et $\frac{1}{10}$, P 18, V $\frac{1}{9}$, A $\frac{5}{11}$, C 16 +.

Genus VII. *Corus* dentibus in utraque maxilla vallidis acutis, vel in ordiniibus pluribus congestis; ossium capitis nonnullis margine denticulatis; pinnarum nonnullis aculeatis; corpore opaco; lateribus subverticalibus.

Species 1. *Corus Vacti* pinna caudali flabelliformi; pinnarum dorsali subdistinctarum aculeis in priore 7, in posteriore aculeo 1 radiisque mollibus 11; aculeis in pinna anali 3, radiis mollibus 8.

B 7, D $\frac{13}{10}$ et $\frac{1}{9}$, P 17, V $\frac{1}{8}$, A $\frac{5}{11}$, C 18 ?

2. *Corus Datnia* pinna caudali bifida; pinnarum dorsali unitarum aculeis 12, et radiis mollibus 10; pinnae analis aculeis 3, et radiis mollibus 8; ramo radii in pinnis ventralibus secundarii primario in setam producto.

B 6, D $\frac{10}{9}$ et 10, P 15, V $\frac{1}{7}$, A $\frac{5}{11}$, C 17 +.

3. *Corus Catus* pinna caudali sublunata; pinnarum dorsali unitarum aculeis 10, radiis mollibus 14; pinnae analis aculeis 3 radiis mollibus 8; pinnarum ventralium radii secundarii ramo primario in setam producto; macula diffusa nigra in latere utroque.

B 7, D $\frac{10}{10}$ et 14, P 17, V $\frac{1}{6}$, A $\frac{5}{11}$, C 17 +.
Species 4. *Coitus trivittatus* pinna caudali bifurca; pinnarum dorsalium unitarum aculeis 11, radiis mollibus 10; pinnae analis aculeis 3, radiis mollibus 8; vittis in utroque latere 3 nigris.

B 6, D \(\frac{10}{10}\) et \(\frac{1}{1}\), P 13, V \(\frac{1}{6}\), A \(\frac{5}{11}\), C 18 +.

5. *Coitus Gudgutia* pinna caudali truncata; pinnarum dorsalium unitarum aculeis 12, radiis mollibus 14; pinnae analis aculeis 3, radiis mollibus 7; pinnarum ventralium radii secundarii ramo primo in setam producto.

B 7, D \(\frac{11}{11}\) et \(\frac{1}{1}\), P 17, V \(\frac{1}{6}\), A \(\frac{3}{16}\), C 17 +.

6. *Coitus Polota* pinna caudali flabelliformi; pinnarum dorsalium unitarum aculeis 12, et radiis mollibus totidem; pinnae analis aculeis 3, radiis mollibus 9; pinnarum ventralium radii secundaria in setas duas producto.

B 6, D \(\frac{17}{19}\), P 19, V \(\frac{1}{6}\), A \(\frac{5}{17}\), C 17 +.

7. *Coitus Nandus* pinna caudae flabelliformi; pinnarum dorsalium unitarum aculeis 13, radiis mollibus 12; pinnae analis aculeis 3, radiisque mollibus 8; maculis corporis nebulosis.

B 7, D \(\frac{13}{15}\), P 15, V \(\frac{1}{6}\), A \(\frac{5}{17}\), C 16.

8. *Coitus Cobojius* pinna caudali subrotundata; pinnarum dorsalium unitarum aculeis 17, et radiis mollibus 8; pinnae analis aculeis 10, radiisque mollibus totidem; fasciis laterum nigrantibus obsoletis.

B 0?, D \(\frac{17}{20}\), P 16, V \(\frac{1}{1}\), A \(\frac{10}{20}\), C 14 ?

9. *Coitus Chatareus* pinna caudali retusa; pinnae dorsalis solitariae aculeis 5, radiis mollibus 12; pinnae analis aculeis 3, radiis mollibus 16; corpore argenteo; maculis dorsi nigris.

B 7, D \(\frac{5}{17}\), P 12, V \(\frac{1}{6}\), A \(\frac{5}{19}\), C 17 +.

Genus VIII. Chanda dentibus in utraque maxilla acutis, sparsis, vel obsoletis; margine ossium in capite nonnullorum inciso; pinnarum non-nullis aculeatis; corpore plus minus diaphano, compresso; lateribus sub-verticalibus.

Species 1. Chanda? setifer pinnae dorsalis solitariae aculeis 10, radiis-
Species 2. *Chanda Ruconius* pinnae dorsalis solitariae aculeis 8, radiisque mollibus 16; pinnae analis aculeis 3, radiisque mollibus 16; corpore squamoso, subopaco.

B 6, D $\frac{10}{16}$, P 16, V $\frac{1}{6}$, A $\frac{3}{17}$, C 17+.

3. *Chanda Nalua* pinnis dorsalibus 2 unitis, posterioris radiis mollibus 11; pinnae analis radiis mollibus 10; capite alepidoto, corpore squamoso.

B 6, D $\frac{7}{17}$ et $\frac{3}{17}$, P 13, V $\frac{1}{6}$, A $\frac{3}{17}$, C 15+.

4. *Chanda Nama* pinnis dorsalibus unitis, posterioris radiis mollibus 16; pinnae analis radiis mollibus 15; corpore elongato, alepidoto.

B 6, D $\frac{7}{17}$ et $\frac{1}{17}$, P 11, V $\frac{1}{6}$, A $\frac{3}{17}$, C 17+.

5. *Chanda Phula* pinnis dorsalibus unitis, posterioris radiis mollibus 14; pinnae analis radiis mollibus 13; corpore elongato, alepidoto.

B 6, D $\frac{7}{17}$ et $\frac{1}{17}$, P 10 vel 11, V $\frac{1}{6}$, A $\frac{3}{17}$, C 17+.

6. *Chanda Bogoda* pinnis dorsalibus unitis, posterioris radiis mollibus 16; pinnae analis radiis mollibus 17; corpore elongato, alepidoto.

B 6, D $\frac{7}{17}$ et $\frac{1}{17}$, P 12, V $\frac{1}{6}$, A $\frac{3}{17}$, C 16+.

7. *Chanda Baculis* pinnis dorsalibus unitis, posterioris radiis mollibus 14; pinnae analis radiis mollibus 13; corpore brevi, alepidoto; macula nuchae flava.

B 6, D $\frac{7}{17}$ et $\frac{1}{17}$, P 10, V $\frac{1}{6}$, A $\frac{3}{17}$, C 17+.

8. *Chanda Ranga* pinnis dorsalibus unitis, priore incisa, posterioris radiis mollibus 12; pinnae analis radiis mollibus 15; corpore brevi, squamoso.

B 6, D $\frac{7}{17}$ et $\frac{1}{17}$, P 11, V $\frac{1}{6}$, A $\frac{3}{17}$, C 18+.

9. *Chanda Lala* pinnis dorsalibus unitis, priore integerrima,
posterioris radiis mollibus 12-14; pinnae analis radiis mollibus 15; corpore brevi, squamoso.

B 6, D $\frac{7}{9}$ et $\frac{1}{13}$-$\frac{1}{15}$, P 11, V $\frac{1}{6}$, A $\frac{3}{10}$, C 18+.

Genus IX. *Trichopodus* pinnis ventralibus setaceis, uniradiatis.

Species 1. *Trichopodus Colisa* pinna caudali flabelliformi, integra; lateribus viride æreque fasciatis; pinna dorsi pone rotundata.

B—, D $\frac{16}{27}$, P 10, V 1, A $\frac{17}{33}$, C 18.

2. *Trichopodus Beseus* pinna caudali emarginata; lateribus viridi cupreoque fasciatis; pinna dorsi pone acuta.

B 3? D $\frac{17}{28}$, P 9, V 1, A $\frac{16}{33}$, C 18.

3. *Trichopodus Cotra* pinna caudali flabelliformi, integra; lateribus viridi ceruleoque fasciatis.

B 4? D $\frac{17}{28}$, P 9, V 1, A $\frac{17}{33}$, C 17.

4. *Trichopodus Lalius* pinna caudali flabelliformi, integra; fasciis laterum rubris.

B 4? D $\frac{16}{27}$, P 9, V 1, A $\frac{18}{33}$, C 16+.

5. *Trichopodus Sota* pinna caudali retusa; coloribus corporis oblique demidiatis, supra et poræ rufescente, infra et ante sub-argentoe.

B 4? D $\frac{17}{28}$, P 9, V 1, A $\frac{19}{33}$, C 16?

6. *Trichopodus Chuna* pinna caudali retusa; vitta aurea nigro punctata in latere utroque.

B—, D $\frac{17}{28}$, P 9, V 1, A $\frac{19}{33}$, C 15+.

Genus X. *Chatoodon* ossibus capitis integerrimis; corpore compressissimo, brevi, squamoso; dentibus in utraque maxilla simplice serie positis, acerosis, approximatis, parallelis.

Species 1. *Chatoodon Pairatalis* pinna caudali flabelliformi, integra; aculeis in pinnis dorsalis subunitis 11, radiis mollibus 16; corpore maculato; ramo primario radii in pinnis ventralibus secundarii producto, subulato.

B 4, D $\frac{10}{19}$ et $\frac{1}{17}$, P 18, V $\frac{1}{6}$, A $\frac{5}{7}$ et $\frac{1}{15}$, C 14+.

2. *Chatoodon Caris* pinna caudali retusa; aculeis dorsi 18, radiis mollibus 14; lateribus supra viridibus, subtus albidis; fasciis 5 latis, flavis.

B 5, D $\frac{10}{27}$, P 17, V $\frac{1}{6}$, A $\frac{3}{1}$, C 16+. 
Genus XI. *Pleuronectes* oculis utrisque in laterum altero dispositis; pectore utrinque pinnato.

Species 1. *Pleuronectes Nauphala* oculis sinistris; pinna caudali acuta; radiis dorsalisibus 73, analibus 55; corpore elongato, tuberculis destituto.

   B 7, D 73, P dext. 11, sinist. 12, V 6, A 55, C 17.

2. *Pleuronectes Arsius* oculis sinistris; pinna caudali integra; radiis dorsalisibus 81, analibus 55; corpore elongato; linea laterali supra ocellis duobus signata.

   B 3 s. 4, D 81, P 10, V 6, A 55, C 16.

3. *Pleuronectes Pan* oculis dextris; pinnis dorsi caudae anique unitis; corpore brevi; radiis in pinna pectorali utraque 5 setaceis.

   B 4, D C et A 115, supra 64 infra 51, P 5, V 4.

Genus XII. *Achirus* oculis in alterum laterum positis, pinnis pectoralibus nullis.

Species 1. *Achirus Cynoglossus* oculis sinistris; pinnarum dorsi caudae anique unitarum radiis 102, 12, et 78; latere sinistro fusco punctato.

   B 0, V 4, D C et A 102 et 12 et 78.

Genus XIII. *Calliomorus* capite armato, ossibus integerrimis; corpore depresso, squamoso; pinnis dorsalisibus duabus.

Species 1. *Calliomorus Chaka* spina ante oculum utrumque; lamina operculorum branchiostegorum posteriore inermi.

   B 7, D 8 et 13, P 18, V 6, A 13, C 18?

**ORDO V.—PISCES ABDOMINALES.**

*Pisces* spina dorsi ossea; pinnis ventralibus pone pectorales insidentibus.

Genus I. *Platystacus* cuti glutinosi, verrucosa, alepidota; ore cirrhis cincto; pinna dorsali unica, anica, brevi; cauda quam trunco et capite unitis breviore, subulata; pinnis dorsi pectorisque armatis.
Species 1. *Platystacus Chaca* pinna caudali supra ante analem, infra prope eandem extensa.

B 0, D $\frac{1}{2}$, P $\frac{1}{5}$, V 8, A 8, C 38?

Genus II. *Plotosus* cute glutinosa, laevi, alepidota; ore cirrhis cincto; pinna dorsali postica cum caudali et anali in unem coalita; cauda quam capite truncoque unitis longiore.

Species 1. *Plotosus Canius* dorso unicolor; aculeo pinnae dorsalis integerrimo.

Genus III. *Macropteronotus* cute laevi, glutinosa, alepidota; ore cirrhoso; pinna dorsali unica, elongata; cauda cuneata; pinnis pectoralibus armatis.

Species 1. *Macropteronotus Jagur* pinnis dorsi caudaeque unitis.

B 2 ? D 53, P $\frac{1}{3}$, V 6, A 50, C 14?

2. *Macropteronotus Magur* pinnis dorsi caudaeque distinctis, prioris radiis 60; radiis analibus 44; aculeis pectoralibus integerrimis.

B 9 ? D 60, P $\frac{1}{10}$, V 6, A 44, C 15.

Genus IV. *Silurus* cute laevi, glutinosa, alepidota; ore cirrhoso; pinna dorsali unica, brevissima, scapulari, radiata; cauda longa, compressa; pinnis dorsalibus vel pectoralibus armatis, vel radiis branchiostegis plusquam tribus.

Species 1. *Silurus Singio* pinna caudali rotundata; cirrhis 8; aculeis pectoralibus utrinque retrorsum serratis.

B 0 ? D 7, P $\frac{1}{3}$, V 6, A 61 ? C 12+.

2. *Silurus Pabda* pinna caudali bifida, obtusa; cirrhis 4, quorum duo superiores pinnis pectoralibus longiores; radiis pinnae analis 54; aculeis pinnarum pectoralium integerrimis; lateribus nigro nebulosis.

B 9, D 4, P $\frac{1}{10}$, V 8, A 54, C 17.

3. *Silurus Canio* pinna caudali bifida, acuta; cirrhis 4, quorum duo superiores ad piscis medium pertingunt; radiis pinnae analis 69; aculeis pinnarum pectoralium integerrimis; lateribus immaculatis.

B 12 ? D 4, P $\frac{1}{12}$, V 8, A 69, C 18.
Species 4. *Silurus Duda* pinna caudali bifida, acuta; cirrhis 4, quorum 2 superiores ad piscis medium pertingunt; radiis pinnae analis 73; aculeis pinnarum pectoralium integerrimis; lateribus immaculatis.

B 12? D 4, P $\frac{1}{13}$, V 8, A 73, C 18.

5. *Silurus Chechra* pinna caudali bifida, obtusa; cirrhis 4, quorum duo superiores ad pinnae dorsalis apicem pertingunt; radiis pinnae analis 67; aculeis pinnarum pectoralium pone denticulatis; lateribus nigro nebulosis.

B 13? D 4, P $\frac{1}{16}$, V 8, A 67, C 17.

6. *Silurus Pabo* pinna caudali biloba; cirrhis 4 capite brevioribus; radiis pinnae analis 73.

B 13? D 5, P $\frac{1}{15}$, V 10, A 73? C 19.

7. *Silurus Boalis* pinna caudali biloba; cirrhis 4, quorum 2 superiores ad piscis medium pertingunt; pinnis pectoralibus inermibus; radio pinnae dorsalis primario integerrimo.


8. *Silurus Garua* pinna caudali bifida; cirrhis 8; radiis pinnae dorsalis 8, analis 29.

B 8, D $\frac{1}{16}$, P $\frac{1}{15}$, V 6, A 29, C 17+.

Genus V. *Malapterurus* cute laevi, glutinosa, alepidota; ore cirrhoso; pinna dorsi unica, postica, brevi, adiposa.


B—, D 0, P 16, V 7, A 71, C 16+.

Genus VI. *Ageneiosus* cute laevi, glutinosa, alepidota; ore imberbi; pinnis dorsi duabus, posteriore adiposa.

Species 1. *Ageneiosus Mino* radiis pinnae dorsalis 8, analis 21.

B 5, D $\frac{2}{8}$ et 0, P $\frac{1}{10}$, V 6, A 21, C 19+.

Genus VII. *Pimelodus* cute glutinosa, alepidota; ore cirrhoso; pinnis dorsi duabus, posteriore adiposa.

Species 1. *Pimelodus Silondia* cirrhis duobus; corpore opaco.

B 10, D $\frac{1}{6}$ et 0, P $\frac{1}{14}$, V 6, A 41, C 17+.

2. *Pimelodus Chandramara* cirrhis 2; corpore diaphano.

B—, D $\frac{1}{8}$ et 0, P $\frac{1}{14}$, V 6, A 17, C —.
Species 3. *Pimelodus Pangasius* pinna caudali bifida; cirrhis 4; aculeis dorsi pectorisque curtis.
   B 10, D $\frac{5}{6}$ et 0, P $\frac{3}{10}$, V 6, A 31, C 17+.

4. *Pimelodus Rita* pinna caudali biloba; cirrhis 6 capite brevioribus; radiis dorsi 8, ani 12; aculeo dorsi integerrimo; corpore opaco, emaculato.
   B—, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 8, A 12, C 15+.

5. *Pimelodus Gagora* pinna caudae bifida; cirrhis 6 capite brevioribus; radiis dorsi 9, ani 18; aculeo dorsi curto, utrinque serrato; lateribus opacis, emaculatis.
   B 4, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 6, A 18, C 18+.

6. *Pimelodus Sagor* pinna caudae bifida; cirrhis 6, piscis demidio brevioribus; radiis dorsi 9, ani 18; aculeo dorsi utrinque serrato, curto; lateribus opacis, supra lineas laterales solitarias fasciatis.
   B 4, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 6, A 18, C 16+.

7. *Pimelodus Arius* pinna caudae bifida; cirrhis 6 capite non longioribus; radiis dorsi 8, ani 22; aculeo dorsi longius ultra pinnae membranam producto, utrinque serrato; palato dentato; lateribus emaculatis, opacis.
   B 5, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 6, A 22, C 15+.

8. *Pimelodus Jatius* pinna caudae bifida; cirrhis 6 capite non longioribus; radiis dorsi 8, ani 21; aculeo dorsi longius ultra pinnae membranam producto, utrinque serrato; palato edentulo; lateribus opacis.
   B 5, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 6, A 21, C 15+.

9. *Pimelodus Nenga* pinna caudae bifida; cirrhis 6 capite longioribus; radiis dorsi 9, ani 20; aculeo dorsi longius ultra pinnae membranam producto, utrinque serrato; palato dentato; corpore opaco, lineis brevibus fasciato.
   B 4, D $\frac{5}{6}$ et 0, P $\frac{1}{15}$, V 6, A 20, C 18+.

10. *Pimelodus Sona* pinna caudae bifida; cirrhis 6 capite longioribus; radiis dorsi 9, ani 18; aculeo dorsi longius ultra
ABDOMINALES.

pinnae membranam producto, utrinque serrato; corpore opaco, emaculato.

B 4, D 8/9 et 0, P 1/12, V 6, A 18, C 18+.

Species 11. *Pimelodus viridescens* pinna caudae bifida; cirrhis 6; radiis dorsi 7, ani 13; aculeo dorsi integerrimo; dorsi rubicundi fasciis 5 viridescentibus; lateribus opacis, emaculatis.

B 6, D 2/7 et 0, P 7/9 ? V 6, A 13, C 20+.

12. *Pimelodus Rana* pinna caudae bifida; cirrhis 6 capite brevioribus; corpore diaphano.

B—, D 6 et 0, P 1/2, V 6, A 15, C—.

13. *Pimelodus Tengana* pinna caudae bifida; cirrhis 8 capite brevioribus; corpore diaphano, supra punctato; radiis dorsi 8, ani 14.

B 6, D 8/9 et 0, P 1, V 6, A 14, C—.

14. *Pimelodus Urna* pinna caudae bifida; cirrhis 8 capite longioribus; corpore diaphano, supra punctato; radiis dorsi 5, ani 43.

B 9 ? D 5 et 0, P 1/2, V 7 ? A 43 ? C 24 ?

15. *Pimelodus Batasio* pinna caudae bifida; cirrhis 8 capite brevioribus; corpore diaphano, vittis utrinque 2 nigro punctatis; radiis dorsi 9, ani 16.

B 6 ? D 8/9 et 0, P 1/2, V 6, A 16, C 20 ?

16. *Pimelodus Angius* pinna caudae bifida; cirrhis 8 capite longioribus; corpore subdiaphano, vittis punctatis utrinque 8; radiis dorsi 7, ani 42.

B—, D 1/2 et 0, P 1/3, V 6, A 42 ? C—.

17. *Pimelodus Carcio* pinna caudae bifida; cirrhis 8, duobus tantum capite longioribus; corpore subopaco, vittis punctatis utrinque tribus; radiis dorsi 8, ani 14.

B 6 ? D 8/9 et 0, P 1/2 ? V 6, A 14, C—.

18. *Pimelodus Tengara* pinna caudae bifida; cirrhis 8, quorum 4 capite longiores; corpore opaco, laevi, vittis punctatis utrinque 4; radiis dorsi 8, ani 10.

B 6 ? D 8/9 et 0, P 1/3, V 6, A 10, C—.

3 b
Species 19. *Pimelodus Telchita* pinna caudæ bifida; cirrhis 8 capite brevioribus; corpore opaco, aspero, rubicundo, vitta utrinque obsoleta; radiis dorsi 8, ani 13.

B 4 seu 5, D $\frac{2}{6}$ et 0, P $\frac{1}{16}$, V 6, A 13, C 19+.

20. *Pimelodus Bagarius* pinna caudæ biloba; cirrhis 8 capite non longioribus; corpore opaco, scabro, maculis nigris nebuloso; radiis dorsi 8, ani 13.

B 11, D $\frac{5}{6}$ et 0, P $\frac{1}{13}$, V 6, A 13, C 17+.

21. *Pimelodus Cavia* pinna caudæ biloba, lobo inferiore longiore; cirrhis 8 capite non longioribus; corpore opaco, scabro, nebuloso; radiis dorsi 5, ani 9.

B 6? D $\frac{1}{5}$ et 0, P $\frac{1}{7}$? V 6, A 9, C 13?

22. *Pimelodus Harra* pinna caudæ lunata; cirrhis 8, quorum 2 capite paulo longiores; corpore opaco, scabro, fusco, nebuloso; maculis pinnarum pellucidis; radiis dorsi 7, ani 10.

B—, D $\frac{1}{7}$ et 0, P $\frac{1}{6}$, V 6, A 10, C—.

23. *Pimelodus Conta* pinna caudæ biloba, lobo superiore subulato; cirrhis 8 capite brevioribus; corpore opaco, scabro, fusco; maculis pinnarum pellucidis; radiis dorsi 5, ani 10.

B—, D $\frac{5}{6}$ et 0, P $\frac{1}{6}$, V 6, A 10, C 16?

24. *Pimelodus Botius* pinna caudæ bifida; cirrhis 8 capite brevioribus; corpore opaco, fuscescente, scabro; radiis dorsi 6, ani 11.

B—, D $\frac{1}{6}$ et 0, P $\frac{1}{9}$? V 5, A 11, C 18+.

25. *Pimelodus Nangra* pinna caudæ bifida; cirrhis 8, quorum 2 ad anum pertingunt; corpore subopaco, lävi, emaculato, evittato; radiis dorsi 8, ani 9.

B 6? D $\frac{5}{6}$ et 0, P $\frac{1}{6}$? V 6, A 9, C 16+.

26. *Pimelodus Murius* pinna caudæ bifida; cirrhis 8, capite non longioribus; corpore opaco, lävi, supra viridi; radiis dorsi 8, ani 42.

B 5? D $\frac{1}{6}$ et 0, P $\frac{1}{15}$, V 6, A 42, C—.

27. *Pimelodus Vacha* pinna caudæ bifida; cirrhis 8 caput lon-
gitudine aequantibus; corpore subopaco, laevi, supra viridi; radiis dorsi 7, ani 50.

B 10, D ½ et 0, P ½, V 6, A 50, C 17+.

Species 28. Pimelodus Gagata pinna caudae bifida; cirrhis 8, quorum 2 capite paulo longiores; corpore opaco, laevi, flavescente; radiis dorsi 8, ani 17.

B 5, D ¾ et 0, P ½, V 6, A 17, C 18+.

29. Pimelodus Mangois pinna caudae biloba; cirrhis 8 capite paulo longioribus; corpore opaco, laevi, subolivaceo; radiis dorsi 7, ani 8.

B 8? D ½ et 0, P ⅔, V 6, A 8, C 26.

30. Pimelodus Gulio pinna caudae subbifida; cirrhis 8, quorum 2 ad finem pinnae dorsalis anterioris, 4 ultra caput pertingunt; corpore opaco, laevi, supra fuscescente; radiis dorsi 8, ani 15.

B—, D ¾ et 0, P ⅔, V 6, A 15, C 18+.

31. Pimelodus Menoda pinna caudae subbifida; cirrhis 8, quorum 2 ad finem pinnae dorsalis anterioris, 4 ultra caput pertingunt; corpore opaco, laevi, supra fuscescente; radiis dorsi 9, ani 13.

B—, D ¾ et 0, P ⅔, V 6, A 13, C 18+.

32. Pimelodus Cavasius pinna caudae biloba, acuta; cirrhis 8, quorum 2 cauda longiores; corpore subopaco, laevi, supra fuscescente; radiis dorsi 8, ani 13.

B 7? D ½ et 0, P ⅔? V 6, A 13, C—.

33. Pimelodus Aor pinna caudae biloba, supra falcata; cirrhis 8, quorum 2 pinnae caudae, 2 nucham pertingunt; corpore subopaco, laevi, supra fuscescente; radiis dorsi 9, ani 12.

B 14, D ¾ et 0, P ⅔, V 6, A 12, C 17+.

Genus IX. Sisor corpore glutinoso alepidoto; cauda nuda; ore cirrho-so; pinnis dorsi 2, utraque radiata.

Species 1. Sisor Rabdophorus.

B 4? D ½ et ½, P ⅔, V 7, A 6, C 10.

Genus X. Osmerus corpore squamoso; pinnis dorsi geminis, posteriore adiposa; ore imberbi; dentibus maxillarum vallidis.
Species 1. *Osmerus? Neherius* radiis dorsi 12, ani 15; pinna caudae trifida.

Genus XI. *Esox* ore magno imberbi; pinna dorsi unica, lumbari, radiata; dentibus maxillarum validis; ventre obtuso.

Species 1. *Esox Panchax* pinna caudae integra; maxillis equalibus, rotundatis; radiis dorsi 6, ani 14.

2. *Esox Ectuntio* pinna caudae integra; maxillis in rostrum elongatis, subaequalibus; corpore capiteque alepidotis; radiis dorsi 13, ani 11.

3. *Esox Cancila* pinna caudae integra; maxillis in rostrum elongatis, subaequalibus; corpore capiteque alepidotis, radiis dorsi 17, ani 18.

Genus XII. *Mugil* corpore squamoso; pinnis dorsalibus radiatis duabus; digitis ante pinnas pectorales liberis nullis; maxilla inferiore carinata.

Species 1. *Mugil Parsia* radiis pinnae dorsalis posterioris 9; aculeis 3, radiisque mollibus 8 in pinna anali; caudae pinna lunata; naribus geminis; operculis branchiostegis arcuatis; capite decline; lateribus glabris, non vittatis.

2. *Mugil Cascasia* radiis pinnae dorsalis posterioris 8; aculeis 2, radiisque mollibus 8 in pinna anali; pinna caudae lunata; naribus geminis; operculis branchiostegis arcuatis; capite decline; lateribus scabris non vittatis.

3. *Mugil Albula?* radiis pinnae dorsalis posterioris 9; aculeis 4, radiisque mollibus 9 in pinna anali; pinna caudae lunata; naribus geminis; operculis branchiostegis arcuatis; capite decline; lateribus glabris, argenteo versicolore vittatis.
Species 4. *Mugil Cephalus* ? lateribus nigro vittatis; oculis planis; maxillis edentulis, inferiore breviore; squamis integerrimis.

B—, D 9, P 15, V 6, A 12, C 14+.

5. *Mugil Corsula* radiis pinnae dorsalis posterioris 9; aculeis 3, radiisque mollibus 9 in pinna anali; pinna caudae lunata; capite adscendente; oculis protuberantibus; laterum vittis e punctis nigris conflatis.

B 4, D 4, P 15, V 6, A 10, C 14+.

Genus XIII. *Atherina* pinnis dorsalis duabus radiatis; digitis ante pinnae pectorales liberis nullis; radiis in pinnae ventralibus et in membranis branchiostegis singulis minus 8; palato edentulo; corpore elongato, subdiaphano, vitta utrinque argentea.

Species 1. *Atherina Danius* radiis pinnae dorsalis anterioris circiter 4, posterioris 8, analibus 10.

B—, D 4, P 7, V 6, A 12, C 14+.

Genus XIV. *Polynemus* pinnis dorsalis radiatis duabus; digitis ante pinnae pectorales nonnullis liberis.

Species 1. *Polynemus Teria* digitis 4; pinna caudali biloba.

B 7, D 4, P 17, V 10, A 11, C 15+.

2. *Polynemus Sele* digitis 5 ad anum pertingebantibus; lateribus non vittatis; linea laterali per lorum pinnae caudalis inferiis deflexa.

B 5, D 4, P 13, V 6, A 13, C 20+.

3. *Polynemus Risua* digitis 7, secundo longissimo, corporis longitudinem duplo superante; aculeis dorsalis 7; radiis in pinna dorsi posteriore 17, in pinna ani 15; dorso viridi; ventre argenteo.

B 7, D 4, P 17, V 10, A 15, C 17+.

4. *Polynemus Toposui* digitis 7, priore longissimo, corporis longitudinem duplo superante; aculeis dorsalis 7; radiis in pinna dorsi posteriore 16, in pinna ani 16; dorso viridi, ventre argentae.

B 7, D 4, P 16, V 10, A 16, C—.

5. *Polynemus aureus* digitis 7, longissimo corporis longitudinem
ABDOMINALES.

duplo superante; aculeis dorsalibus 7; radiis in pinna dorsi posteriori 15, in pinna ani 14; colore aureo, supra fusescente.

B 7, D \frac{7}{2} et 15, P 17, V \frac{1}{6}, A 14, C 17+.

Genus XV. Mystus radiis branchiostegis utrinque plus tribus; ventre carinato; pinna ani longa cum caudali unita; dorso monopterygio.

Species 1. Mystus Ramcarate maxilla superiore inermi; radiis pinnarum pectoralium senis primariis setaceis, membrana multoties longioribus; radiis pinnarum ventralium denis.

B 10, D 14, P 12, V 16, A et C 111?

2. Mystus Kapirat maxilla superiore inermi; radiis pinnarum ventralium unitarum geminis.

B 4? D 9, P 12, V 1, A et C 110?


B—, D 9, P 14? V 4, A et C 120–130.

Genus XVI. Clupea maxillis dentatis; pinna dorsali radiata, unica; corpore oblongo, squamoso; ventre carinato; pinnis ani caudaeque distinctis.

Species 1. Clupea Purava mystacibus elongatis, ensiformibus; radiis analibus 46; pinna caudali bifida; corpore immaculato.

B 11, D 13, P 13, V 7, A 46, C 18+.

2. Clupea Phasa radio pinnarum pectoralium primario longissimo setaceo; lobis pinne caudalis utrisque acutis; radiis dorsalis 14, analibus 78 circiter.

B 3? D 14, P 13, V 7, A 75–78, C—.

3. Clupea Telara radio pinnarum pectoralium primario longissimo setaceo; lobo pinne caudalis superiore truncato.

B 13, D 14, P 15, V 7, A 74, C 19+.

Genus XVII. Clupanodon maxillis edentulis; corpore oblongo, squamoso, supra obtuso, subtus carinato; pinna dorsi unica brevi; pinna ani ab caudali distincta.

Species 1. Clupanodon Ilisha radiis dorsalibus 20, analibus 21, ventralibus 8.

B 6, D 20, P 15, V 8, A 21, C 19+. 
Species 2. *Clupanodon Chacunda* radiis dorsalibus 18, analibus 19, ventralibus 8, branchiostegis 5; maxilla inferiore breviore.
   B 5, D 18, P 15, V 8, A 19, C 19+.

3. *Clupanodon Manmina* radiis dorsalibus 14, analibus 24; macula in humero utroque nigra.
   B 5, D 14, P 15, V 8, A 24, C 19+.

4. *Clupanodon Chapra* radiis dorsalibus 17, analibus 24; macula in humero utroque nigra.

5. *Clupanodon Cortius* radiis dorsalibus 15, analibus 24; humeris immaculatis.

   B 6, D 15, P 13, V 8, A 21, C 19+.

7. *Clupanodon Cagius* radiis dorsalibus 15, analibus 23; serie macularum nigrarum in humero utroque; dorso carinato.
   B 6, D 15, P 14? V 8, A 23, C—.

8. *Clupanodon Motius* radiis dorsalibus 15, analibus 43; maxilla superiore integerrima.

Genus XVIII. *Corica* dentibus nullis; corpore oblongo, subtus carinato, serrato; pinna dorsali solitaria, brevi; pinnis analibus duabus.

Species 1. *Corica soborna*.
   B 5? D 13, P 12, V 7, A 13 et 4, C 18?

Genus XIX. *Cyprinodon* corpore oblongo, squamoso, compressissimo; ventre obtuso; pinna dorsali solitaria, submedia; dentibus in maxilla utroque.

Species 1. *Cyprinodon Cundinga* radio pinnae dorsalis postremo longissimo.
   B 25, D 19, P 15, V 10, A 26, C 19+.

Genus XX. *Cyprinus* pinna dorsali solitaria, radiata; radiis dorsalibus pectoralisque muticis; maxillis edentulis; radiis branchiostegis ternis; cirrhis vel nullis vel duobus, vel quatuor.

N. B. In unica specie radios branchiostegos 4, in altera duos notavi.

Subgenus I. *Chela* Cyprini Clupanodontibus affines ventre inter pinnas ventrales et analem carinato.
Species 1. *Cyprinus Cachius*, Chela radiis pinnarum ventralium ternis, analis 26 circiter, dorsalis 7 circiter.
   B 3? D 7, P 8, V 3, A 26, C—.

   B 3, D 9, P 11 vel 12, V 5, A 25, C—.

   B 3, D 10, P 12, V 7, A 24, C—.

   B 3, D 9, P 11, V 8, A 20, C 18+.

5. *Cyprinus Gora*, Chela radiis pinnarum ventralium octonis, analis 17, dorsalis 9; linea laterali immaculata.
   B 3, D 9, P 13? V 8, A 17, C—.

   B 3, D 10, P 15, V 8, A 12, C 20+.

   B 3, D 9, B 12, V 9, A 16, C 19+.

Subgenus II. *Barilius*, Cyprini Truttis affines corpore compressissimo, fasciis demidiatis, vel maculis pluribus vagis vario; pinna dorsali lumbar; linea laterali decurva, ventri parallela.

   B 3, D 8, P 14, V 8, A 13, C—.

   B 3, D 9, P 14, V 8, A 13, C—.

10. *Cyprinus Barna*, Barilius imberbis lateribus semifasciatis; radiis in pinna dorsi 9, in anali 12; linea laterali superiore auro vittata.
    B 3, D 9, P 13? V 9, A 12, C 19+. 

B—, D 9, P 13, V 9, A 14, C 16+.

*Cyprinus Bendilisis*, Barilius cirrhis 2; lateribus semifasciatis; radiis in pinna dorsali 9, in anali 11.

B—, D 9, P 13, V 9, A 11, C 19+.


B—, D 9, P 13, V 9, A 10, C 20+.


B 3, D 9, P 13?, V 9, A 11, C 19.


B 3, D 8, P 14 seu 15, V 9, A 10, C 18+.


B 3, D 10, P—, V 9, A 13, C—.

Subgenus III. *Bangana* Cyprini Mugilibus affines maxilla inferiore intus carinata.


B 3, D 13, P 18? V 9, A 7, C 19+.

\[ B \, 3, \, D \, 16, \, P \, 17, \, V \, 9, \, A \, 8, \, C \, 19+. \]

20. *Cyprinus Reba*, Bangana cirrhis 2; radiis in pinna dorsali 11, in anali 8; labiis carnosis.

\[ B \, 3, \, D \, 11, \, P \, 17, \, V \, 9, \, A \, 8, \, C \, 19+. \]

21. *Cyprinus Elanga*, Bangana cirrhis vix ullis; radiis in pinna dorsali 9, in anali 8; labiis obseletis.

\[ B \, 3, \, D \, 9, \, P \, 16, \, V \, 9, \, A \, 8, \, C \, 19+. \]

22. *Cyprinus Bata*, Bangana imberbis radiis in pinna dorsali 12, in anali 8; labio inferiore integerrimo, erecto; lobo pinnae caudalis superiore longiore; pinnis omnibus pallidis.

\[ B \, 3, \, D \, 12, \, P \, 17, \, V \, 9, \, A \, 8, \, C \, 19+. \]

23. *Cyprinus Acra*, Bangana imberbis radiis in pinna dorsali 11, in anali 8; labio inferiore integerrimo, erecto; lobo pinnae caudalis superiore longiore; pinnis inferioribus rubicundis.

\[ B \, 3, \, D \, 11, \, P \, 18 \text{ vel } 19, \, V \, 9, \, A \, 8, \, C \, 19+. \]

24. *Cyprinus Cura*, Bangana imberbis radiis in pinna dorsali 12, in anali 7; labio inferiore integerrimo, erecto; lobis pinnae caudalis equalibus.

\[ B \, 3, \, D \, 12, \, P \,-, \, V \, 9, \, A \, 7, \, C\,-. \]

25. *Cyprinus Pangusia*, Bangana imberbis radiis in pinna dorsali 14, in anali 8; labio inferiore reflexo, integerrimo; rostro poris punctato.

\[ B \, 3, \, D \, 14, \, P \, 17, \, V \, 9, \, A \, 8, \, C \, 19+. \]

26. *Cyprinus Ariza*, Bangana imberbis radiis in pinna dorsali 12, in anali 7; labio inferiore reflexo, integerrimo; rostro lati.

\[ B \, 3, \, D \, 12, \, P \, 16, \, V \, 9, \, A \, 7, \, C\,-. \]

27. *Cyprinus Boga*, Bangana imberbis radiis in pinna dorsali 12, in anali 8; labio inferiore crenato; rostro poris punctato.

\[ B \, 3, \, D \, 12, \, P \,-, \, V \, 9, \, A \, 8, \, C\,-. \]
Subgenus IV. Cyprini veri absque ulla ad alium genus affinitate; corpore magno, crasso, macularum insignium experte; linea laterali submedia.

Species 28. Cyprinus Catla, Cyprinus verus imberbis radiis in pinna dorsali 18, in anali 8; colore subargenteo, dorso fusco-virescente; labiis integerrimis.
   B 3; D 18, P—, V 9, A 8, C 19+.

29. Cyprinus Curchius, Cyprinus verus imberbis radiis in pinna dorsali 15, in anali 7; squamis minutis.
   B 3, D 15, P 18, V 9, A 7, C 19+.

30. Cyprinus Cursa, Cyprinus verus cirrhis 2; radiis in pinna dorsali 16, in anali 8; squamis parvis; rostro poris callosis punctato.
   B 3, D 16, P 17, V 9, A 8, C 91+.

31. Cyprinus Cursis, Cyprinus verus cirrhis 4; radiis in pinna dorsali 16, in anali 8; squamis parvis; rostro poris callosis punctato; labiis fimbriatis.
   B 3, D 16, P 17, V 9, A 8, C 19+.

32. Cyprinus Gonius, Cyprinus verus cirrhis 4; radiis in pinna dorsali 15, in anali 7; squamis mediocribus; rostro poris callosis punctato; labiis fimbriatis; lateribus subvittatis.
   B 3, D 15, P 17, V 9, A 7, C—.

— Cyprinus Curmuca, Cyprinus verus cirrhis 2; radiis in pinna dorsali 11, in anali 8; squamis mediocribus; capite anterius tuberculato; radio dorsali tertio integerrimo.
   B 3, D 11, P 16, V 9, A 8, C 18+.

33. Cyprinus Chagunio, Cyprinus verus cirrhis 4; radiis in pinna dorsali 12, in anali 8; squamis magnis; capite anterius tuberculato; radio dorsali tertio pone serrato.
   B 3, D 12, P 17, V 10, A 8, C 19+.

34. Cyprinus Calbasu, Cyprinus verus cirrhis 4; radiis in pinna dorsali 16, in anali 8; squamis magnis; rostro lavi, imperforato; labiis serratis.
   B 3, D 16, P 18, V 9, A 8, C 19+.

35. Cyprinus Nancar, Cyprinus verus cirrhis 4; radiis in pin-
388 ABDOMINALES.

na dorsali 20, in anali 8; squamis magnis equalibus; rostro lævi, imperforato; labiis integerrimis.
   B 3, D 20, P 18? V 9, A 8, C 20+.

Species 36. *Cyprinus Nandina*, Cyprinus verus cirrhis 4; radiis in pinna dorsali 26, in anali 8; squamis magnis; rostro lævi; labiis fimbriatis.
   B 3, D 26 vel in aliis 23, P 16, V 9, A 8, C 23.

37. *Cyprinus Rohita*, Cyprinus verus cirrhis 4; radiis in pinna dorsali 15, in anali 7; squamis magnis; rostro lævi imperforato; labiis serratis, inferiore reflexo.
   B 3, D 15, P 18, V 10, A 7, C 19+.

38. *Cyprinus Putitora*, Cyprinus verus cirrhis 4; radiis in pinna dorsali 11, duobus prioribus simplicibus, in pinna anali 7; squamis maximis; rostro lævi imperforato; labiis integerrimis; pinnis pallidis.
   B 3, D 11, P 15, V 9, A 7, C 19+.

*Varietas* cirrhis 2; radiis in pinna dorsali 10, in anali 8.

39. *Cyprinus Tor*, Cyprinus verus cirrhis 4; radiis in pinna dorsi 11, quorum 3 priores simplices, in anali 8; squamis maximis; rostro lævi imperforato; labiis integerrimis; pinnis inferioribus rubicundis.
   B 3, D 11, P 18, V 9, A 8, C 19+.

40. *Cyprinus Mosal*, Cyprinus verus cirrhis 4; radiis in pinna dorsali 13, quorum 4 priores simplices, in anali 8; squamis maximis; rostro lævi imperforato; labiis integerrimis; pinnis pallidis.
   B 3, D 13, P 17? V 9, A 8, C 19+.

41. *Cyprinus Sarana*, Cyprinus verus cirrhis 4; radiis in pinna dorsali 10, longiore simplicium pone serrato, in anali 8; squamis magnis; maxillis subæqualibus; labio inferiore erecto, integerrimo; pinnis pallidis.
   B 3, D 10, P 16, V 9, A 8, C 19+.

Subgenus V. *Punctius* Cyprini absque ulla ad aliud genus affinitate; corpore parvo, maculis paucis magnis saturatis insigni.
Species 42. *Cyprinus Sophore*, Puntius corpore opaco; macula diffusa aurea in operculis utrinque, nigra in caudae extremitate utrinque, et ad pinnae dorsalis insertionem; radio pinnae dorsalis secundo pone integerrimo.

B 3, D 10, P 14, V 9, A 7, C 19+.

43. *Cyprinus Chola*, Puntius corpore opaco; macula aurea diffusa in operculis utrinque, nigra prope caudae finem; radio pinnae dorsalis secundo pone integerrimo.

B 3, D 10, P 13? V 9, A 7, C 19+.

44. *Cyprinus Terio*, Puntius corpore opaco; macula aurea diffusa in operculis utrinque, nigra in medio caudae; radiis pinnae dorsalis 3 primaris individuis integerrimisque.

B 3, D 11, P 13? V 9, A 8, C 19+.

45. *Cyprinus Ticto*, Puntius corpore opaco; maculis utrinque nigris duabus, una supra pinnam pectoralem, altera caudae versus finem; pinnae dorsalis maculatae radio secundo pone serrato.

B 3, D 10, P 12, V 9, A 7, C 20+.

46. *Cyprinus Titius*, Puntius corpore opaco; maculis nigris utrinque 2 prope lineam lateralem; pinnae dorsalis immaculatae radii secundo pone integerrimo.

47. *Cyprinus Joalius*, Puntius corpore opaco; macula nigra lunata versus finem caudae utrinque; radio pinnae dorsalis secundo pone integerrimo; labio inferiore serrato.

B 3, D 12, P—, V 9, A 8, C—.


B 3, D 13, P—, V 9, A 7, C—.

49. *Cyprinus Conchonius*, Puntius corpore opaco; macula utrinque nigra in caudae medio; pinnae dorsalis immaculatae radio secundo pone serrato.

B—, D 10, P 10? V 9, A 8, C 19+.

50. *Cyprinus Puntio*, Puntius corpore subopaco; annulo circa
finem caudæ nigro; macula nigra ad insertiones pinnarum dorsi anique.

B—, D 9, P 12, V 8, A 6, C—.

Species 51. *Cyprinus Phutunio*, Puntius corpore subdiaphano; maculis in utroque latere quinque nigris; radio pinnæ dorsalis secundo pone serrato.

B—, D 10, P 9? V 8, A 7, C—.

52. *Cyprinus Gélius*, Puntius corpore diaphano flavescente; operculis peritona spinaque dorsali argenteis; maculis utrinque magnis nonnullis; radio pinnæ dorsalis 2do pone serrato.

B 3, D 10, P—, V 9, A 8, C—.

53. *Cyprinus Canius*, Puntius corpore diaphano rubescente; operculis peritona spinaque dorsali argenteis; maculis utrinque magnis nigris nonnullis; radio pinnæ dorsalis secundo pone serrato.

B 3, D 10, P 8? V 9, A 7, C—.

Subgenus VI. *Danio* Cyprini absque ulla ad aliud genus affinitate; corpore parvo, vittato, immaculato.

54. *Cyprinus Dangila*, Danio vittis cæruleis anastomozantibus; corpore compresse; cirrhis 4, quorum 2 capite longiores.

B 3, D 13, P 12? V 7, A 17, C 28.

55. *Cyprinus Rerio*, Danio vittis utrinque cæruleis argenteisque nonnullis; corpore compressissimo; cirrhis 4, quorum 2 capite paulo longiores.

B 3, D 8, P 9? V 7, A 16, C—?

56. *Cyprinus Chapalio*, Danio vittis cæruleis utrinque 8; corpore compressiusculo; cirrhis 2 capite brevioribus.

B 3, D 9, P 12, V 7, A 13, C 18+.

57. *Cyprinus Danrica*, Danio vitta infra lineam lateralem utrinque punctata, nigrescente; corpore compressiusculo; cirrhis 4, quorum duo longissimi; radiis pinnarum ventralium primarìis setaceo elongatis.

B 8, D 8, P 13, V 8, A 8, C 19+. 
Species 58. *Cyprinus Jogia*, Danio vitta infra lineam lateralem utrinque punctata, nigrescente; corpore compressissimo; cirrhis 4, quorum 2 longissimi; radiis pinnarum ventralium primariis curtiis.

B 3, D 8, P 10? V 7, A 7, C 19+.

59. *Cyprinus Sutliha*, Danio vitta per lineam lateralem utrinque argentea; corpore compresso; cirrhis 4, quorum duo longissimi; radiis pinnarum pectoralium ventraliumque primariis setaceo productis.

B 3, D 3, P 10, V 7, A 7, C 19+.

60. *Cyprinus Daniconius*, Danio vitta infra lineam lateralem utrinque punctis nigrescente; corpore compressiusculo; capite imberbi; radiis pinnarum pectoralium ventraliumque primariis setaceo productis.

B 3, D 9, P 13, V 9, A 7, C 19+.

61. *Cyprinus Anjana*, Danio vittis nigro punctatis utrinque duabus; corpore compressiusculo; capite imberbi; radiis in pinnae dorsalis 9, analis 7.

B 3, D 9, P 13? V 9, A 7, C 19+?

62. *Cyprinus Rasbora*, Danio vitta punctata utrinque unica; capite imberbi; corpore compressiusculo; radiis pinnae dorsalis 9, analis 7; linea laterali ventri parallela.

B—, D 9, P 13, V 9, A 8, C 19+.

63. *Cyprinus Angra*, Danio lateribus flavescentibus; vitta unica utrinque nigro punctato; cirrhis minutis duobus; corpore compresso.

B 3, D 12, P 16? V 9, A 8, C 19+.

Subgenus VII. *Marutius Cyprini* absque ulla ad aliud genus affinitate; corpore parvo; dorsi ventrisque colorum commissura invicem serrata.

64. *Cyprinus Morala*, Morulius cirrhis 4; radiis in pinnae dorsali 13, in analis 8.

B 3, D 13, P 16? V 9, A 8, C 19+.
   B 3, D 14, P 16? V 9, A 7, C 19+.

66. *Cyprinus Musiha*, Morulius imberbis; radiis in pinna dorsali 13, in anali 8; corpore compresso.
   B 3, D 13, P 16? V 9, A 8, C 19+.

Subgenus VIII. *Cabdio* Cyprini absque ulla ad aliud genus affinitate; corpore parvo, compresso; absque maculis, vittis, vel alia colorum nota insigni.

67. *Cyprinus Jaya*, Cabdio radiis in pinna dorsali 8, in anali 9, in pectoralibus 18 circiter, in ventralibus 8; lineis utrinque lateralis 2.
   B 3, D 8, P 13? V 8, A 9, C 17+.

68. *Cyprinus Mola*, Cabdio radiis in pinna dorsali 9, in anali 7, in pectoralibus 15, in ventralibus 9; lineis lateralis 2 utrinque.
   B 3, D 9, P 15, V 9, A 7, C 19+.

69. *Cyprinus Hoalius*, Cabdio radiis in pinna dorsali 9, in anali 10, in ventralibus 9; linea laterali solitaria; ventre argenteo.
   B—, D 9, P—, V 9, A 10, C—.

70. *Cyprinus Borelio*, Cabdio radiis in pinna dorsali 9, in anali 11, in ventralibus 8; linea laterali gemina; ventre flavo.
   B 3, D 9, P 13? V 8, A 11, C 18+.

71. *Cyprinus Solio*, Cabdio radiis in pinna dorsali 9, in anali 11, in ventralibus 8; linea laterali gemina; ventre argenteeo.
   B 3, D 9, P 13, V 8, A 11, C 18+.

72. *Cyprinus Cosuatis*, Cabdio radiis in pinna dorsali 10, in anali 7; linea laterali solitaria; corpore opaco.
   B 3, D 10, P—, V 9, A 7, C—.

73. *Cyprinus Guganio*, Cabdio radiis in pinna dorsali 10, in anali 7; linea laterali obsolete; corpore diaphano.
   B 4, D 10, P 12? V 9, A 7, C—.
   
   \[ B \ 3, \ D \ 10, \ P \ 16, \ V \ 12, \ A \ 36, \ C \ 19+. \]

75. *Cyprinus Devario*, Cabdio radiis in pinna dorsali 18, in anali totidem.
   
   \[ B \ 3, \ D \ 18, \ P \ 10, \ V \ 8, \ A \ 18, \ C \ 19+. \]

   
   \[ B\ —, \ D \ 6, \ P \ 10, \ V \ 6; \ A \ 20; \ C \ 16. \]

Subgenus IX. *Garra* Cyprini absque ulla ad aliud genus affinitate; corpore parvo, vix compressiusculo; absque maculis, vittis, notave colorum alia insigni.

77. *Cyprinus Lamta*, Garra cirrhis 4; pinnis pectoralibus medio acuminatis; radiis pinnæ dorsalis 10, analis 7; linea laterali supera.
   
   \[ B \ 3, \ D \ 10, \ P \ 13, \ V \ 9, \ A \ 7, \ C \ 19+. \]

78. *Cyprinus Sada*, Garra cirrhis 4; pinnis pectoralibus supra acuminatis; radiis pinnæ dorsalis 10, analis 7; linea laterali supera.
   
   \[ B \ 3, \ D \ 10, \ P\ —, \ V \ 9, \ A \ 7, \ C\ —. \]

   
   \[ B \ 3, \ D \ 11, \ P \ 13, \ V \ 9, \ A \ 7, \ C \ 20+. \]

   
   \[ B \ 3, \ D \ 11, \ P \ 13, \ V \ 9, \ A \ 8, \ C \ 20+. \]

   
   \[ B \ 3, \ D \ 10, \ P \ 13, \ V \ 9, \ A \ 7, \ C \ 20. \]

82. *Cyprinus Sucatio*, Garra imberbis pinnis pectoralibus rotundatis; lateribus nebulosis, radiis in pinna dorsali 9, in anali 7.
   
   \[ B \ 0, \ D \ 9, \ P \ 13, \ V \ 9, \ A \ 7, \ C \ 16+. \]
Species 83. *Cyprinus Balitora*, Garra imberbis pinnis pectoralis rotundatis; maculis nebulosis triplae serie dispositis, una in dorso, altera in latere utroque; radiis pinnae dorsalis 10, analis 7.


Genus XXI. *Cobitis* pinna dorsali unica radiata; radiis dorsalis et pectoralis muticis; maxillis edentulis; cirrhis vel 6 vel 8.

Species 1. *Cobitis Botta*, oculis subtus armatis; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 14, in ventralibus 8.


2. *Cobitis Gongota*, oculis subtus armatis; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 11, in ventralibus 6.

B 0, D 11, P 10, V 6, A 8, C 17.

3. *Cobitis Cucura*, oculis subtus armatis; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 9, in ventralibus 6.

B 0, D 9, P 9? V 6, A 7, C 15.

4. *Cobitis Guntea*, oculis subtus armatis; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 8, in ventralibus 7.

B 8? D 8, P 8, V 7, A 7, C 17.

5. *Cobitis Dario*, oculis subtus armatis; cirrhis 6; corpore fasciato.

B 0, D 11, P 13, V 8, A 7, C 18.

6. *Cobitis Pangia*, oculis subtus armatis; cirrhis 8; corpore immaculato.

B 0, D 7? P 10? V 6, A 7? C 18?

7. *Cobitis Geto*, oculis subtus armatis; cirrhis 8; corpore fasciato.

B 3, D 12, P 13, V 9, A 7, C—.

8. *Cobitis Balgara*, oculis subtus armatis; cirrhis 8; corpore maculato.

B 0? D 7, P 7, V 7, A 7, C 17.

9. *Cobitis Savona*, oculis inermibus; cirrhis 6; corpore semifasciato.

B—, D 10, P 10? V 6? A 6, C—.
Species 10. *Cobitis Turio*, oculis inermibus; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 8, in ventrali totidem.


11. *Cobitis Bilturio*, oculis inermibus; cirrhis 6; corpore nebuloso; radiis in pinna dorsali 14, in ventralibus 8.

B 0? D 14, P 14, V 8, A 7, C—.


B—? D 9, P 11, V 7, A 6, C 19+. 
<table>
<thead>
<tr>
<th>Acchirus, 131, 373</th>
<th>Barbel, 297</th>
</tr>
</thead>
<tbody>
<tr>
<td>bilineatus, 32, 132</td>
<td>Barbus, 167</td>
</tr>
<tr>
<td>Cynoglossus, 32, 132</td>
<td>Barca, 67, 367</td>
</tr>
<tr>
<td>Acra, 284, 386</td>
<td>Barila, 267, 384</td>
</tr>
<tr>
<td>Ageneiosus, 159, 375</td>
<td>Barilius, 266, 384</td>
</tr>
<tr>
<td>Mino, 159, 375</td>
<td>Barna, 265, 384</td>
</tr>
<tr>
<td>Albula, 218</td>
<td>Bata, 283, 386</td>
</tr>
<tr>
<td>Anableps, 221</td>
<td>Batasio, 179, 377</td>
</tr>
<tr>
<td>Angiana, 328</td>
<td>Batis, 2</td>
</tr>
<tr>
<td>Angra, 381, 391</td>
<td>Bato, 40, 365</td>
</tr>
<tr>
<td>Anguilla, 17, 22, 364</td>
<td>Batrachoïdes, 34, 365</td>
</tr>
<tr>
<td>Anjana, 328, 391</td>
<td>Gangene, 34, 365</td>
</tr>
<tr>
<td>Anjius, 180, 377</td>
<td>Tau, 34</td>
</tr>
<tr>
<td>Anthias Johnii, 91</td>
<td>Bejeius, 118, 372</td>
</tr>
<tr>
<td>Aor, 205</td>
<td>Bele, 55</td>
</tr>
<tr>
<td>Aquila, 2</td>
<td>Bendelisis, 270, 385</td>
</tr>
<tr>
<td>Argus, 122</td>
<td>Bhanggan, 219</td>
</tr>
<tr>
<td>Ari Gagora, 170</td>
<td>Bholta, 268, 275</td>
</tr>
<tr>
<td>Arius, 170, 376</td>
<td>Bilturio or Bilurioso, 358, 395</td>
</tr>
<tr>
<td>Ariza, 286, 386</td>
<td>Boalis, 154, 375</td>
</tr>
<tr>
<td>Arsi, 129</td>
<td>Bodianus Stellifer, 77</td>
</tr>
<tr>
<td>Arsii, 188, 373</td>
<td>Boga, 236, 386</td>
</tr>
<tr>
<td>Atbula, 238, 380</td>
<td>Bogada, 111, 371</td>
</tr>
<tr>
<td>Atherina, 136, 222, 381</td>
<td>Bola, 73, 274, 368, 385</td>
</tr>
<tr>
<td>Danius, 222, 381</td>
<td>—— Chaptis, 77, 368</td>
</tr>
<tr>
<td>Atherinoïdes, 177</td>
<td>—— Coibor, 78, 368</td>
</tr>
<tr>
<td>Atpar, 259, 384</td>
<td>—— Coioides, 82, 369</td>
</tr>
<tr>
<td>Auppa Adtpuruwai, 239</td>
<td>—— Coitor, 75, 368</td>
</tr>
<tr>
<td></td>
<td>—— Cuja, 81, 369</td>
</tr>
<tr>
<td></td>
<td>—— Pama, 79, 368</td>
</tr>
<tr>
<td>Bacaila, 265, 384</td>
<td>Bombelo, 31</td>
</tr>
<tr>
<td>Baculis, 112, 371</td>
<td>Bontah, 219</td>
</tr>
<tr>
<td>Badis, 70, 368</td>
<td>Boreli or Borelio, 336, 392</td>
</tr>
<tr>
<td>Bagarius, 186, 378</td>
<td>Boro, 20, 363</td>
</tr>
<tr>
<td>Bagio, 24, 364</td>
<td>Botia, 320, 394</td>
</tr>
<tr>
<td>Balgara, 356, 394</td>
<td>Botius, 192, 378</td>
</tr>
<tr>
<td>Bali Bhola, 268</td>
<td>Butis, 57, 367</td>
</tr>
<tr>
<td>Balitora, 343, 348, 394</td>
<td>Cabdio, 333, 392</td>
</tr>
<tr>
<td>Balinya, 55</td>
<td>Cachius, 258, 384</td>
</tr>
<tr>
<td>Bangana, 277, 385</td>
<td></td>
</tr>
<tr>
<td>Banggana, 277</td>
<td></td>
</tr>
<tr>
<td>Index Page</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Cagius, 250, 383</td>
<td></td>
</tr>
<tr>
<td>Calamaria, 99</td>
<td></td>
</tr>
<tr>
<td>Calamalia Paum, 18</td>
<td></td>
</tr>
<tr>
<td>Calbasu, 297, 387</td>
<td></td>
</tr>
<tr>
<td>Calliomorus, 133, 373</td>
<td></td>
</tr>
<tr>
<td>Calchirus, 183, 373</td>
<td></td>
</tr>
<tr>
<td>Calchus Indicus, 133</td>
<td></td>
</tr>
<tr>
<td>Callionymus Indicus, 134</td>
<td></td>
</tr>
<tr>
<td>Callichrous, 149</td>
<td></td>
</tr>
<tr>
<td>Cancila, 213, 380</td>
<td></td>
</tr>
<tr>
<td>Canio, 151, 374</td>
<td></td>
</tr>
<tr>
<td>Canius, 142, 320, 374, 390</td>
<td></td>
</tr>
<tr>
<td>Carce, 13, 362</td>
<td></td>
</tr>
<tr>
<td>Carcharias, 4, 361</td>
<td></td>
</tr>
<tr>
<td>Carpio, 399, 387</td>
<td></td>
</tr>
<tr>
<td>Caris, 125, 372</td>
<td></td>
</tr>
<tr>
<td>Carp, 288, 300, 302</td>
<td></td>
</tr>
<tr>
<td>Cascaia, 217, 380</td>
<td></td>
</tr>
<tr>
<td>Cataphractus, 207</td>
<td></td>
</tr>
<tr>
<td>Catla, 287, 318, 387</td>
<td></td>
</tr>
<tr>
<td>Catus, 90, 369</td>
<td></td>
</tr>
<tr>
<td>Cavia, 188, 378</td>
<td></td>
</tr>
<tr>
<td>Cenia, 174, 376</td>
<td></td>
</tr>
<tr>
<td>Centropomus Ambasius, 108</td>
<td></td>
</tr>
<tr>
<td>Cephalus, 219</td>
<td></td>
</tr>
<tr>
<td>Chaca, 133, 140, 373, 374</td>
<td></td>
</tr>
<tr>
<td>Chacunda, 246, 383</td>
<td></td>
</tr>
<tr>
<td>Chæthodon, 122, 372</td>
<td></td>
</tr>
<tr>
<td>--- Argus, 122</td>
<td></td>
</tr>
<tr>
<td>--- Caris, 125, 372</td>
<td></td>
</tr>
<tr>
<td>--- Fairtéalís, 122, 372</td>
<td></td>
</tr>
<tr>
<td>--- Surattensis, 125</td>
<td></td>
</tr>
<tr>
<td>Chaguni or Chagunio, 295, 387</td>
<td></td>
</tr>
<tr>
<td>Chanda, 103, 370</td>
<td></td>
</tr>
<tr>
<td>--- Baculis, 112, 371</td>
<td></td>
</tr>
<tr>
<td>--- Bogoda, 111, 371</td>
<td></td>
</tr>
<tr>
<td>--- Laia, 114, 371</td>
<td></td>
</tr>
<tr>
<td>--- Nalua, 107, 371</td>
<td></td>
</tr>
<tr>
<td>--- Nama, 109, 371</td>
<td></td>
</tr>
<tr>
<td>--- Phula, 111, 371</td>
<td></td>
</tr>
<tr>
<td>--- Ranga, 113, 371</td>
<td></td>
</tr>
<tr>
<td>--- Ruconius, 106, 371</td>
<td></td>
</tr>
<tr>
<td>--- setifer, 105, 370</td>
<td></td>
</tr>
<tr>
<td>Chandramara, 162, 375</td>
<td></td>
</tr>
<tr>
<td>Changua, 39, 41, 365</td>
<td></td>
</tr>
<tr>
<td>Chaprile, 349, 383</td>
<td></td>
</tr>
<tr>
<td>Chapil, 324, 390</td>
<td></td>
</tr>
<tr>
<td>Chaps, 348, 383</td>
<td></td>
</tr>
<tr>
<td>Chaptis, 77, 368</td>
<td></td>
</tr>
<tr>
<td>Chatareus, 101, 370</td>
<td></td>
</tr>
<tr>
<td>Chena, 60, 367</td>
<td></td>
</tr>
<tr>
<td>Chithala, 236, 382</td>
<td></td>
</tr>
<tr>
<td>Chitool, 236</td>
<td></td>
</tr>
<tr>
<td>Chola, 312, 389</td>
<td></td>
</tr>
<tr>
<td>Chowloo Pamoo, 22</td>
<td></td>
</tr>
<tr>
<td>Chuna, 191, 372</td>
<td></td>
</tr>
<tr>
<td>Chunio, 53, 366</td>
<td></td>
</tr>
<tr>
<td>Clupanodon, 242, 258, 382</td>
<td></td>
</tr>
<tr>
<td>--- Cagius, 250, 383</td>
<td></td>
</tr>
<tr>
<td>--- Chacunda, 246, 383</td>
<td></td>
</tr>
<tr>
<td>--- Chappole, 249, 383</td>
<td></td>
</tr>
<tr>
<td>--- Chapra, 248, 383</td>
<td></td>
</tr>
<tr>
<td>--- Cortius, 249, 383</td>
<td></td>
</tr>
<tr>
<td>--- Dilia, 249, 382</td>
<td></td>
</tr>
<tr>
<td>--- Mannius, 247, 383</td>
<td></td>
</tr>
<tr>
<td>--- Motius, 251, 383</td>
<td></td>
</tr>
<tr>
<td>Clupea, 236, 383</td>
<td></td>
</tr>
<tr>
<td>--- Aloa, 244</td>
<td></td>
</tr>
<tr>
<td>--- Cyprinoides, 254</td>
<td></td>
</tr>
<tr>
<td>--- Malabarica, 239</td>
<td></td>
</tr>
<tr>
<td>--- Phasa, 240, 382</td>
<td></td>
</tr>
<tr>
<td>--- Purava, 238, 382</td>
<td></td>
</tr>
<tr>
<td>--- setirostris, 239</td>
<td></td>
</tr>
<tr>
<td>--- Telara, 241, 382</td>
<td></td>
</tr>
<tr>
<td>Clupeoides, 258</td>
<td></td>
</tr>
<tr>
<td>--- Anableps, 221</td>
<td></td>
</tr>
<tr>
<td>--- Balgara, 356, 394</td>
<td></td>
</tr>
<tr>
<td>--- Barbatula, 349</td>
<td></td>
</tr>
<tr>
<td>--- Bilturio, 358, 394</td>
<td></td>
</tr>
<tr>
<td>--- Bota, 350, 394</td>
<td></td>
</tr>
<tr>
<td>--- Corica, 359, 395</td>
<td></td>
</tr>
<tr>
<td>--- Cucrua, 352, 394</td>
<td></td>
</tr>
<tr>
<td>--- Dario, 354, 394</td>
<td></td>
</tr>
<tr>
<td>--- Goto, 355, 394</td>
<td></td>
</tr>
<tr>
<td>--- Gongota, 351, 394</td>
<td></td>
</tr>
<tr>
<td>--- Guntea, 353, 394</td>
<td></td>
</tr>
<tr>
<td>--- Pangia, 355, 394</td>
<td></td>
</tr>
<tr>
<td>--- Savona, 357, 394</td>
<td></td>
</tr>
<tr>
<td>--- Turio, 358, 395</td>
<td></td>
</tr>
<tr>
<td>Cobojuus, 98, 370</td>
<td></td>
</tr>
<tr>
<td>Cockup, 86</td>
<td></td>
</tr>
<tr>
<td>Coesa, 372, 385</td>
<td></td>
</tr>
<tr>
<td>Ciobula, 83</td>
<td></td>
</tr>
<tr>
<td>Colbor, 78, 85, 363</td>
<td></td>
</tr>
</tbody>
</table>
INDEX.

Coila, 158, 375
Coioides, 82, 369
Coitor, 75, 368
Coius, 85, 369
—— Catus, 90, 369
—— Chatareus, 101, 370
—— Cobojius, 98, 370
—— Datnia, 88, 369
—— Gudgutia, 94, 370
—— Nandus, 96, 370
—— Polota, 95, 370
—— trivittatus, 92, 370
—— Vacti, 86, 369
Colisa, 116, 117, 372
Conchonius, 317, 389
Conta, 191, 378
Corica, 253, 359, 383, 395
—— Soborna, 253, 383
Corsula, 221, 381
Cortius, 249, 383
Cosuatis, 338, 392
Cotio, 339, 393
Cotra, 118, 372
Cottus, 134
—— Grumiens, 34
—— Uranoscopus, 140
Cous, 188, 378
Cuchia, 16, 363
Cucura, 354, 394
Cuja, 81, 369
Culius, 25, 367
Cuncalus, 12, 362
Cundinga, 254, 383
Cura, 284, 386
Curchius, 289, 387
Curmuca, 294, 387
Cursa, 250, 387
Cursis, 292, 387
Cynoglossus, 132
—— Lingua, 32, 365
Cyprinodonton, 254, 261, 383
—— Cundinga, 254, 383
Cyprinoides, 254
Cyprinus, 136, 256, 287, 388, 387
—— Acra, 384, 386
—— Angra, 321, 391
—— Anjana, 328, 391
—— Apyn, 343
—— Atpar, 259, 384
—— Bacalla, 265, 384
—— Balitora, 348, 348, 394
Cyprinus Barbus, 297
—— Barilia, 267, 384
—— Barna, 268, 394
—— Bata, 383, 386
—— Bendelisis, 270, 385
—— Boga, 286, 386
—— Bola, 274, 385
—— Borelio, 336, 392
—— Bulatma, 308
—— Cabdio, 333, 392
—— Cachi, 258, 384
—— Calbasu, 297, 387
—— Canius, 320, 390
—— Capata, 291
—— Carplo, 258, 300, 302
—— Catla, 297, 318, 387
—— Chagunio, 295, 387
—— chalybeus, 308
—— Chapalio, 324, 390
—— Chedra, 273, 385
—— Chedrio, 268, 394
—— Chola, 312, 389
—— cirrhosus, 294
—— Clupeoides, 258
—— Cossa, 272, 385
—— Conchonius, 317, 389
—— Cosuatis, 338, 392
—— Cotio, 339, 393
—— cultratus, 258
—— Cura, 384, 386
—— Curchiu, 289, 387
—— Curnuca, 294, 387
—— Cursa, 290, 387
—— Cursis, 292, 387
—— Dancena, 342, 393
—— Dangila, 321, 390
—— Danicomenius, 327, 391
—— Danio, 321, 390
—— Danrica, 325, 390
—— Dero, 277, 331, 385
—— Devario, 341, 393
—— Dobula, 336
—— Elanga, 281, 386
—— fimbriatus, 300, 388
—— Garra, 343, 395
—— Gelius, 320, 390
—— Gibelio, 299
—— Goha, 275, 385
—— Gohama, 346, 393
—— Gondius, 292, 387
—— Gora, 263, 394
—— Guganio, 338, 339, 392
Cyprinus Hoalius, 336, 392
Jaya, 333, 392
Jealius, 316, 389
Jogia, 326, 391
Lamta, 343, 393
Latius, 345, 393
Laubucca, 260, 384
Leusiscus, 282, 336
Mola, 334, 392
Moralia, 331, 391
Morar, 264, 384
Morulius, 331, 391
Mosal, 306, 388
Mosario, 345, 393
Mrigala, 279, 386
Musiva, 333, 392
Nancar, 299, 387
Nandina, 300, 388
Nasus, 301
Pangusia, 385, 386
Pausio, 317, 389
Pausius, 332, 389
Phacra, 271, 385
Phoxinus, 321, 324, 325
Phulo, 262, 384
Phutunio, 319, 390
Punto, 318, 389
Putitora, 303, 388
Rasbora, 329, 391
Reba, 380, 386
Rerio, 322, 390
Rohita, 301, 388
Sada, 344, 393
Sarana, 307, 388
Shagga, 271
Sulio, 337, 392
Sophure, 310, 389
Sucatio, 347, 393
Sutha, 327, 391
Tenca, 291
Terio, 313, 389
Tictis, 316, 389
Ticto, 314, 389
Tilca, 274, 385
Tileco, 276, 385
Titius, 315, 389
Tor, 305, 388
Vagra, 269, 385

Dace, 282, 336
Dancena, 342, 393
Dangila, 321, 390
<table>
<thead>
<tr>
<th>Index Item</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gobius Anguillaris, 36</td>
<td>Bato, 40, 365</td>
</tr>
<tr>
<td>—— Changua, 41, 365</td>
<td></td>
</tr>
<tr>
<td>—— Chun, 53, 366</td>
<td></td>
</tr>
<tr>
<td>—— Eleotris, 50, 51</td>
<td></td>
</tr>
<tr>
<td>—— Giuris, 51, 366</td>
<td></td>
</tr>
<tr>
<td>—— Gutum, 50, 366</td>
<td></td>
</tr>
<tr>
<td>—— lanceolatus, 40</td>
<td></td>
</tr>
<tr>
<td>—— niger, 49</td>
<td></td>
</tr>
<tr>
<td>—— novemradiatus, 47, 366</td>
<td></td>
</tr>
<tr>
<td>—— Nunus, 54, 366</td>
<td></td>
</tr>
<tr>
<td>—— pectenirostris, 42</td>
<td></td>
</tr>
<tr>
<td>—— planianus, 45, 366</td>
<td></td>
</tr>
<tr>
<td>—— Sadanundio, 52, 366</td>
<td></td>
</tr>
<tr>
<td>—— schlosser, 43, 47</td>
<td></td>
</tr>
<tr>
<td>—— septemradiatus, 46, 366</td>
<td></td>
</tr>
<tr>
<td>—— tredecemradiatus, 48, 366</td>
<td></td>
</tr>
<tr>
<td>—— viridis, 42, 45, 366</td>
<td></td>
</tr>
<tr>
<td>Goba, 275, 385</td>
<td></td>
</tr>
<tr>
<td>Gohama, 346, 393</td>
<td></td>
</tr>
<tr>
<td>Gongota, 351, 394</td>
<td></td>
</tr>
<tr>
<td>Goni or Gonius, 292, 387</td>
<td></td>
</tr>
<tr>
<td>Gorayi, 63</td>
<td></td>
</tr>
<tr>
<td>Gora, 263, 384</td>
<td></td>
</tr>
<tr>
<td>Ground-Shark, 4</td>
<td></td>
</tr>
<tr>
<td>Gudgutia, 94, 370</td>
<td></td>
</tr>
<tr>
<td>Gugani or Guganio, 339, 392</td>
<td></td>
</tr>
<tr>
<td>Gul, 201</td>
<td></td>
</tr>
<tr>
<td>Gulio, 201, 379</td>
<td></td>
</tr>
<tr>
<td>Gunte or Guntea, 353, 394</td>
<td></td>
</tr>
<tr>
<td>Gutum, 50, 366</td>
<td></td>
</tr>
<tr>
<td>Gymnotorax, 17</td>
<td></td>
</tr>
<tr>
<td>—— reticulatus, 18</td>
<td></td>
</tr>
<tr>
<td>Gymnotus Kapirat, 235</td>
<td></td>
</tr>
<tr>
<td>Hara, 190, 378</td>
<td></td>
</tr>
<tr>
<td>Harancha, 21, 363</td>
<td></td>
</tr>
<tr>
<td>Hayali, 336</td>
<td></td>
</tr>
<tr>
<td>Hijala, 20, 336</td>
<td></td>
</tr>
<tr>
<td>Hoalius, 336, 392</td>
<td></td>
</tr>
<tr>
<td>Holybut, 127</td>
<td></td>
</tr>
<tr>
<td>Hypoglossus, 127</td>
<td></td>
</tr>
<tr>
<td>Jagur, 145, 374</td>
<td></td>
</tr>
<tr>
<td>Jat Gagora, 171</td>
<td></td>
</tr>
<tr>
<td>Jatius, 171, 376</td>
<td></td>
</tr>
<tr>
<td>Jaoyali, 316</td>
<td></td>
</tr>
<tr>
<td>Jaya, 333, 392</td>
<td></td>
</tr>
<tr>
<td>Jerce Poloo, 32</td>
<td></td>
</tr>
<tr>
<td>Jerce Potoo, 132</td>
<td></td>
</tr>
<tr>
<td>Ilisha, 244, 249, 382</td>
<td></td>
</tr>
<tr>
<td>Jealius, 316, 389</td>
<td></td>
</tr>
<tr>
<td>Jogia, 326, 391</td>
<td></td>
</tr>
<tr>
<td>Jongia, 326</td>
<td></td>
</tr>
<tr>
<td>Kachchi, 258</td>
<td></td>
</tr>
<tr>
<td>Kadi Changua, 39</td>
<td></td>
</tr>
<tr>
<td>Kalbsoo, 297</td>
<td></td>
</tr>
<tr>
<td>Kani Magur, 143</td>
<td></td>
</tr>
<tr>
<td>—— Pabla, 151</td>
<td></td>
</tr>
<tr>
<td>Kanthawaleh Phoksha, 10</td>
<td></td>
</tr>
<tr>
<td>Kapirat, 235</td>
<td></td>
</tr>
<tr>
<td>Kappa, 8</td>
<td></td>
</tr>
<tr>
<td>Karrowey, 65</td>
<td></td>
</tr>
<tr>
<td>Kauya Tengara, 189</td>
<td></td>
</tr>
<tr>
<td>Kavasi Tenggara, 204</td>
<td></td>
</tr>
<tr>
<td>Khoksa, 272</td>
<td></td>
</tr>
<tr>
<td>Kholisha, 116</td>
<td></td>
</tr>
<tr>
<td>Khongta, 191</td>
<td></td>
</tr>
<tr>
<td>Khorka, 357</td>
<td></td>
</tr>
<tr>
<td>Klorika, 253, 357, 359</td>
<td></td>
</tr>
<tr>
<td>Khorsula, 221</td>
<td></td>
</tr>
<tr>
<td>King-fish, 227</td>
<td></td>
</tr>
<tr>
<td>Koker, 51</td>
<td></td>
</tr>
<tr>
<td>Kongchon Pungti, 317</td>
<td></td>
</tr>
<tr>
<td>Koonamoo, 308</td>
<td></td>
</tr>
<tr>
<td>Koswati, 338</td>
<td></td>
</tr>
<tr>
<td>Koti, 340</td>
<td></td>
</tr>
<tr>
<td>Kowal, 246</td>
<td></td>
</tr>
<tr>
<td>Kuddera, 214</td>
<td></td>
</tr>
<tr>
<td>Kundhna, 297</td>
<td></td>
</tr>
<tr>
<td>Kundinga, 254</td>
<td></td>
</tr>
<tr>
<td>Kurchi, 289</td>
<td></td>
</tr>
<tr>
<td>Kursi, 292</td>
<td></td>
</tr>
<tr>
<td>Labrus, 70, 368</td>
<td></td>
</tr>
<tr>
<td>—— Badis, 70, 368</td>
<td></td>
</tr>
<tr>
<td>—— Dario, 72, 368</td>
<td></td>
</tr>
<tr>
<td>—— Malapterus, 70</td>
<td></td>
</tr>
<tr>
<td>Lala, 114, 371</td>
<td></td>
</tr>
<tr>
<td>Lalius, 120, 372</td>
<td></td>
</tr>
<tr>
<td>Lantia, 343, 393</td>
<td></td>
</tr>
<tr>
<td>Lata, 63, 367</td>
<td></td>
</tr>
<tr>
<td>Latius, 345, 393</td>
<td></td>
</tr>
<tr>
<td>Laubuca, 200, 384</td>
<td></td>
</tr>
<tr>
<td>Layubuka, 260</td>
<td></td>
</tr>
<tr>
<td>Lepturus, 31, 364</td>
<td></td>
</tr>
<tr>
<td>Leusiscus, 282, 386</td>
<td></td>
</tr>
<tr>
<td>Lingua, 32, 365</td>
<td></td>
</tr>
<tr>
<td>Loach, 349, 350</td>
<td></td>
</tr>
<tr>
<td>Lutianus chinensis, 79</td>
<td></td>
</tr>
<tr>
<td>—— Johnii, 91</td>
<td></td>
</tr>
<tr>
<td>—— scandens, 98</td>
<td></td>
</tr>
</tbody>
</table>
INDEX.

Lymma, 2, 361
Macrognathus, 26, 364
——— aculeatus, 29, 364
——— armatus, 28, 364
——— Pancalus, 30, 364
Macropteronotus, 144, 374
——— Batrachus, 146
——— Jagur, 145, 374
——— Magur, 146, 374
Maga Booshee, 227
——— Jellee, 224
Magur, 146, 374
Mahasaula, 30
Malapterurus, 157, 375
——— Coila, 158, 375
Malgumaroo, 22
Manggoi, 200
Mango Fish, 229, 232
Mangois, 199, 379
Manmina, 247, 383
Maruliis, 65, 367
Medinawa Bontoo, 82
Menoda, 203, 379
Minnov, 321, 324, 325
Mino, 159, 375
Mirlgal, 279
Mola, 334, 392
Morala, 331, 391
Morar or Morur, 264, 384
Morulius, 331, 391
Mosal, 306, 388
Mosario, 347, 393
Mota, 63
Motius, 251, 383
Mirgal, 279
Mula, 246, 380
——— Albula, 218, 380
——— Cascasia, 217, 380
——— Cephalus, 219, 381
——— Corsula, 221, 381
——— Parsia, 215, 380
Mungi Mapudee, 91
Muraena, 17, 20, 364
——— Anguilla, 22, 364
——— Bagio, 24, 364
——— guttata, 23, 364
——— maculata, 23, 364
——— Raitaborua, 25, 364
——— Vamos, 24, 364
Mur€ænophis, 17, 363
Mur€ænophis grisea, 18
——— reticularis, 18
——— Sathe, 17, 363
——— Tile, 18, 363
Murius, 195, 378
Muri Vacha, 195
Musila, 333, 392
Muttah, 62, 63
Mystus, 233, 382
——— Chitala, 236, 382
——— Kapirat, 235, 382
——— Ramcarati, 233, 382
Nalua, 107, 371
Nama, 109, 371
Nancar, 299, 387
Nand or Nandina, 900, 388
Nandus, 96, 370
Nangra, 193, 378
Nasus, 301
Nauphal, 126, 373
Nehare, 210
Nehereus, 209, 379
Nenga, 171, 376
——— Gagora, 172
Nettee Kunla Motah, 45
Noree Nalaka, 128
Notopterus, 233
——— Kapirat, 235
Nunus, 54, 366
Nuria, 78, 368
Oligopodus, 115
Ophidium, 26
——— aculeatum, 29
——— Simack, 28
Ophiocephalus, 55, 59, 367
——— aurantiacus, 69, 368
——— Barca, 67, 367
——— Chena, 62, 367
——— Gachua, 68, 367
——— Karrowey, 63
——— Lata, 63, 367
——— Marulius, 63, 367
——— punctatus, 63, 367
—— striatus, 60, 62, 63
—— Wrahl, 60, 367
Ophisurus, 20, 363
——— Boro, 20, 363
——— Harancha, 21, 363
——— Hijala, 20, 363
INDEX.

Osmerus, 209, 379
— albidus, 209
— Nehereus, 209, 379

Pabda, 150, 152, 374
Pabo, 153, 375
Pairatalis, 122, 372
Palasah, 244
Pala Sorra, 4
Pama, 80, 368
Pan, 150, 373
Pancalus, 30, 364
Panchax, 211, 380
Pandoo Menoo, 87
Pangasius, 163, 376
Pangchak, 211
Pangia, 355, 394
Pangusia or Pangysiya, 285, 386
Pangor, 355
Panijus, 57, 367
Parsia, 215, 380
Patoca, 7, 362
Paungsi, 317, 333
Pausio, 317, 389
Pausius, 332, 392
Peare, 127
Peddah Poorawah, 238
Perca, 55
— Asper, 58
— Scandens, 98
— Zingel, 58
Phacra, 271, 385
Phasa, 240, 241
Phoksha, 10
Phole, 235
Phula, 111, 371
Phul Chela, 262
Phulo, 262
Phutunio, 319, 390
Phutuni Pungti, 319
Pimelodus, 160, 375
— Angius, 180, 377
— Aor, 205
— Arios, 170, 376
— Atherinoides, 177
— Bagarius, 186, 378
— Barbus, 167
— Batasi, 179, 377
— Botius, 192, 378
— Carpio, 181, 377
— Cavusius, 203, 379
— Cavia, 108, 378
Pimelodus Cenia, 174, 376
— Chandramara, 162, 375
— Conta, 191, 378
— Cous, 188, 378
— Gagata, 197, 379
— Gagora, 167, 376
— Giulio, 201, 379
— guttatus, 162, 375
— Hara, 190, 378
— Jatius, 171, 376
— Mangois, 199, 379
— Menoda, 203, 379
— Murius, 195, 378
— Nangra, 193, 378
— Nenga, 171, 376
— Pangasius, 163, 376
— Rama, 176, 377
— Rita, 165, 376
— Sagor, 169, 376
— Siondria, 160, 375
— Sona, 172, 376
— Telchita, 185, 378
— Tengana, 176, 377
— Tengara, 183, 377
— Urua, 177, 377
— Vacha, 196, 378
— viridescentis, 173, 377
Plagiopus, 130, 373
Platycephalus Spathula, 134
Platyctis, 140, 373
— Anguiliaris, 142
— Chaca, 140, 374
— verrucosus, 140
Pleuronectes, 126, 373
— Arsius, 128, 373
— dentatus, 127
— Hypoglossus, 127
— Nauphala, 126, 373
— Pan, 130, 373
— Plagiopus, 130, 373
— rhombeus, 127
— trichodactylus, 130, 373
Plotosus, 140, 142, 374
— Anguiliaris, 142
— Canius, 142, 374
Polota, 95, 370
Polyneus, 223, 233, 381
— asiaticus, 224
— aureus, 232, 381
— Emoi, 227
— lineatus, 227
— paradiseus, 229
INDEX.

Polynemus, plebeius, 227
Polynemus, plebeius, 227
------ Risa, 228, 381
------ Sele, 226, 381
------ Teria, 224, 381
------ Topiswi, 232, 381
Pungti, 308, 310, 318, 320
Puntio, 318, 389
Puntius, 310, 388, 390
Purava, 238, 239
Putitora, 303, 388

Rabdophorus, 208, 379
Raia, 1, 361
------ Aquila, 2
------ Batis, 2
------ fluviatilis, 1
------ Lymma, 2, 361
------ Sancur, 2, 361
Raitaborua, 25, 365
Rama, 176, 377
Ramcarat, 233, 382
Ranga, 113, 371
Rasbora, 329, 391
Reba, 280, 386
Rerie, 323, 390
Risa, 228, 381
Rita, 165, 376
Rohita, 302, 388
Rucon Chanda, 106
Ruconius, 106, 371

Sable-fish, 243
Sada, 344, 393
Sadansadio, 52, 366
Sagor, 169, 376
Salmo, 136
------ foetens, 209
Sancur, 2, 361
Sarana, 307, 388
Sathete, 17, 363
Savona, 357, 394
Savon Khorka, 357
Saw-fish, 5
Sele, 226, 381
Shacra, 271
Shad, 244
Shark, 4
Silondia, 160, 375
Silurus, 156, 137, 147, 149, 374
------ Batrachus, 146
------ bimaculatus, 151
------ Boalis, 154, 375

Silurus, Canio, 151, 374
------ Checchia, 152, 375
------ Duda, 152, 379
------ fossils, 147
------ Garus, 156, 375
------ Herbergi, 169
------ Padba, 150, 374
------ Pabo, 153, 375
------ Single, 147, 374
------ verrucosus, 140
------ viitalthus, 183

Simack, 28
Singgi, 148
Singio, 147, 374
Sisor, 207, 379
------ Rabdophorus, 208, 379
Smelt, 275
Soborna, 258
Sol, 61
Sole, 9, 132
Sole Bhanggan, 219
Soli or Solio, 337, 392
Sona, 172, 376
Sophore, 316, 389
Sota, 120, 372
Sowarah, 63
Squalus, 4, 361
------ Carcharias, 4, 361
------ pectinatus, 5, 361
Sucatio, 347, 393
Sutha, 327, 391
Synbranchus, 15
Syngnathus, 12, 362
------ barbarus, 14
------ Carce, 13, 362
------ Cunialus, 12, 362
------ Deocata, 14, 363
------ pelagicus, 12

Taleo Paum, 24
Telara, 241
Telchita, 185, 378
Tench, 291
Tengana, 176, 377
Tengara, 183, 203, 377
Tengpa, 10
Tepa, 10, 362
Teria, 224, 381
Terio, 313, 389
Teri Pungti, 313
Teriya Bhanggan, 225
Tetrodon, 6, 361
INDEX.

Tetrodon Caria, 9, 362
—— Cutcutia, 8, 362
—— fluviatilis, 6, 362
—— gularis, 9, 362
—— Kappa, 8
—— Patoca, 7, 362
—— sceleratus, 10
—— Sprengleri, 8
—— Tepa, 10, 362
—— testudineus, 8
Tictis, 316, 389
Ticto, 314, 389
—— Sophore, 314
Tila, 274, 385
Tile, 18, 363
Tilei, 276
Tileo, 276, 385
Tic Pungti, 315
Titius, 315, 389
Toposui or Toposwi, 232, 381
Tor or Tora, 305, 388
Trachinus, 134
Trichurus lepturus, 31, 364
Trichopodus, 115, 372
—— Bejeius, 118, 372
—— Chuna, 121, 372
—— Colisa, 117, 372
—— Cotra, 119, 372
—— Lalius, 120, 372

Trichopodus Sota, 120, 372
—— trichopterus, 115
Trigla Asiatica, 224
Trout, 266, 275
Tupsee Mutchee, 229, 232
Turio, 358, 395

Unibranchapertura, 16, 363
——— Cuchia, 16, 363
——— laxis, 16, 363
Uranoscoius, 134
Urua, 177, 377

Vacha, 195, 196, 378
Vacti, 86, 369
Vaghari, 186
Vagra, 269, 385
Vamos, 24, 364

Wallagog, 154
Wana Motta, 209
Whiting, 74, 79
Wahl, 61, 367

Zeus ciliaris, 104
—— faber, 104
—— insidiator, 104, 106
—— Kleinii, 106

FINIS.