

Olivaceus : pileo medio cinereo, utrinque nigro marginato, superciliis albis : subtus albus, lateribus et crisso ochraceo perfusis : rostro corneo, pedibus pallide corylinis.

Long. tota 5·7, alæ 2·7, caudæ 2·5.

Hab. Brasilia orient.

13. *BASILEUTERUS MESOLEUCUS*, sp. nov. (Pl. IX. fig. 1.)

Olivaceus : pileo cinereo, superciliis et lateribus capitis pallide rufis : subtus medialiter albus, lateribus et crisso pallide fulvis : rostro obscure corneo, pedibus pallide corylinis.

Long. tota 5·2, alæ 2·3, caudæ 2·0.

Hab. Demerara.

Obs. Proximus *B. stragulato*, sed pileo unicolore, superciliis rufis, et ventre late et clare albo, necnon alis et cauda brevioribus distinguendus.

14. *BASILEUTERUS SEMICERVINUS*. (Pl. X. fig. 1.)

Basileuterus semicervinus, Sclater, P. Z. S. 1860, pp. 84, 291 ; Cat. A. B. p. 35.

Obscure fuscus, dorso olivaceo perfuso : superciliis, corpore subtus et uropygio cum caudæ parte basali cervino-rufis : caudæ apice nigricanti-fusco : rostro nigro, pedibus pallide corylinis.

Long. tota 5·0, alæ 2·3, caudæ 1·4.

Hab. Resp. Æquator.

15. *BASILEUTERUS UROPYGIALIS*. (Pl. X. fig. 2.)

Basileuterus uropygialis, Sclater, P. Z. S. 1861, p. 128 ; Sclater & Salvin, P. Z. S. 1864, p. 347 ; Cat. A. B. p. 35.

Olivaceus : capite cinerascens, superciliis et corpore subtus dilute cervinis, ventre albescente : uropygio et caudæ dimidio basali pallide fulvis : hujus apice cinerascens-olivaceo : rostro nigro, pedibus pallide corylinis.

Long. tota 4·5, alæ 2·7, caudæ 1·8.

Hab. Isthmus Panama.

I have not included *Myiothlypis nigricristata* and *Euthlypis lacrymosa* in the present list, although I doubt whether either of these forms ought really to be separated generically from *Basileuterus*.

7. ON THE FISHES OF COCHIN, ON THE MALABAR COAST OF INDIA. BY SURGEON F. DAY, F.Z.S., F.L.S., ETC., MADRAS ARMY.

Part II. ANACANTHINI.

The ANACANTHINE fishes are by no means abundant in Cochin, either in the number of genera represented or the individuals forming the several species. As a rule they are good eating ; but their scarcity precludes their being frequently brought to the tables of Europeans. They are generally known by the designation of "*Suppatu*" (Mal.), a word meaning "a shoe."

BREGMACEROS MACCLELLANDII (Thompson).

B. vii. D. 16 + x. + 15. P. 25. V. 6. A. 22 + x. + 15.
C. 17. L. 1. 64. L. tr. 6/8.

Length of specimen $2\frac{7}{10}$ inches.

This specimen was captured in March 1861. The species appears to be rare.

PSEUDORHOMBUS RUSSELLII (Gray).

B. vii. D. 71. P. 12. V. 6. A. 59. C. 17. L. 1. 75.

Length of specimen 11 inches.

Not common; good eating.

SYNAPTURA FOLIACEA (Richardson).

B. vi. D. 62. P. 7. V. 6. A. 46. C. 15. L. 1. 75.

Length of specimens from 3 to $6\frac{5}{10}$ inches.

Not rare; good eating.

PLAGUSIA BILINEATA (Bloch).

B. vi. D. 96. V. 4. A. 73. C. 8. L. 1. 85.

Length of specimen 7 inches.

The **SILUROID** fishes are represented in several genera, whilst the individuals composing the species are most abundant. Many are exceedingly useful; but others are dangerous, and consequently offer especial reasons for examination. Being with but few exceptions scaleless, they are prohibited as articles of food to both Mahomedans and Jews, and are left to the native Christian and Pariah population, as, excepting the *Wallago* genus, none of the true scaleless Siluroids are eaten by Europeans. All of them are considered more or less indigestible, heating, and liable to give rise to irritation of the intestinal canal. There are several which might be made serviceable in the manufacture of isinglass, and the *Arius militaris* is said to have been thus employed at Tellicherry; but in Cochin, at least, none of them appear ever to have been put to such a use. "Fish-sounds" are obtained from this order of fish, as well as from some others.

The estuary species are mostly captured by a rod and line, especially in the monsoon-time; but some of the smaller ones are taken in the Chinese nets at the side of the river.

The *Siluridæ heteropterae* and *S. proteropterae*, more especially in their groups of *Silurinæ*, *Ariinæ*, and *Bagarinæ* (with the exception of the *Wallago* and, I believe, *Plotosus* genera), comprised under the Malayalam term "Coree," are exceedingly dreaded, from the injuries they inflict with their serrated pectoral spines, the wounds from which are reputed to be venomous. On being captured, both the dorsal and pectoral spines are immediately broken off; for no purchaser will handle them until this has been done.

That most dangerous inflammations are frequently occasioned from wounds caused by the pectoral spines of these fish I can confirm by personal experience, having often treated such cases in the hospitals

of Cochin, which have arisen amongst those who have incautiously handled them; but whether due to their irregular and jagged nature, or their poisonous character, has always been a disputed point.

PLOTOSUS ANGUILLARIS (Bloch).

Moorghee (Mal.).

B. xii. D. $\frac{1}{4}$ 93. P. $\frac{1}{11}$. V. $\frac{1}{13}$. A. 66. C. 13.

Length of specimens from 7 to $7\frac{6}{10}$ inches.

Not uncommon in the backwaters and estuaries; eaten by the lower classes of natives. Wounds occasioned by their pectoral spines do not appear to be dreaded in Malabar.

SACCOBRANCHUS SINGIO (Buch. Ham.).

Kahree meen (Mal.).

B. vi. D. 7. P. $\frac{1}{6}$. V. 6. A. 72. C. 15.

Length of specimens from 3 to $14\frac{5}{10}$ inches.

These fish, known as the "Bichu ka Mutchee" (Hind.) or Scorpion-fish, are greatly dreaded by the natives of Malabar. As soon as they are perceived in the nets, their pectoral spines are broken off by a blow with a stick; consequently it is difficult to procure un mutilated specimens, as the fishermen will rather cut the meshes of their nets and let them escape than endeavour to capture them.

Inhabits all sluggish pieces of water; and the young are found in all inundated paddy-fields. Eaten by the natives.

WALLAGO ATTU (Schn.).

Wahlah (Mal.).

B. xix.-xxi. D. $\frac{1}{4}$. P. $\frac{1}{13-14}$. V. 8. A. 87-90. C. 17.

Length of specimen 13 inches.

Common in the rivers: rather rich eating, salt well, and adapted for curries; but are reputed to be irritating to the intestinal canal. Captured up to $3\frac{1}{2}$ feet in length, and even occasionally larger. Very voracious; take a bait freely.

WALLAGO MALABARICI (C. & V.).

Mungee wahlah (Mal.).

B. xv. D. 4. P. $\frac{1}{13}$. V. 9. A. 68. C. 17.

Length of specimens from $5\frac{4}{10}$ to $12\frac{5}{10}$ inches.

Length of head $\frac{1}{7}$ of total, of pectoral fin $\frac{1}{9}$, of caudal $\frac{1}{9}$, of base of anal $\frac{2}{3}$. Height of head $\frac{1}{4}$, of body $\frac{1}{7}$, of dorsal fin $\frac{1}{16}$, of anal $\frac{1}{16}$ of total length. Diameter of eye $\frac{1}{5}$ of length of head, eyes $1\frac{1}{2}$ diameter apart, nearly one diameter from end of snout.

Gape of mouth very wide, being three times its antero-posterior length. Muzzle rounded in front; lower jaw the longest, curving upwards in its centre, so that when closed its upper margin is completely in advance of the upper jaw, and even ascending to a higher level. Cleft of mouth only extends half the distance to the eye, the

centre of which is situated opposite the angle. Superior maxillary barbel reaches as far as the end of the pectoral fin; that on the lower jaw is short, and only equals one-third of the length of the head.

Teeth sharp, carded, and recurved, in six or eight rows; in both intermaxillaries and lower jaw, and in two oblique spots on the vomer, separated by an interspace.

Fins. Dorsal weak, expanded in the centre, arising opposite the commencement of the ventral; pectoral reaching to just beyond the origin of the anal, its spine serrated on its inferior aspect. Anal divided from the caudal by a notch, and covered for about two-thirds of its distance from the abdomen by a fleshy sort of sheath. Caudal lobed; the superior lobe the longest.

Lateral line straight from the upper margin of operculum to centre of caudal.

Colours. Greenish along the back; white along the sides, abdomen, and chest, with a purplish tinge. The whole of the body minutely studded with fine black points: a large, round, darkish finger-mark on the shoulder, opposite the centre of the operculum.

Inhabits the same localities as the *W. attu*, and equally good for eating and salting. Said never to exceed 2 feet in length.

PSEUDEUTROPIUS SYKESII (Jerdon).

Schilbe sykesii, Jerdon, Madras Journal of Literature & Science, no. 35, 1849, p. 335.

Pseudeutropius mitchelli, Günther, Catal. v. 1864, p. 59.

B. viii.-ix. D. $\frac{1}{7}$. P. $\frac{1}{8}$. V. 6. A. 35.

Length of specimen $5\frac{5}{10}$ inches.

By no means rare in the rivers of Malabar. In two specimens the adipose fin was absent, perhaps lost by some accident; probably from some such deformed specimen Dr. Jerdon described the *Schilbe sykesii*.

MACRONES TENGARA (Buch. Ham.).

B. x. D. $\frac{1}{7}$. P. $\frac{1}{8}$. V. 6. A. 12.

Length of specimens from $6\frac{5}{10}$ to $6\frac{8}{10}$ inches.

Common; grows to a considerable size; eaten by the lower classes.

MACRONES ARMATUS, Day, sp. nov.

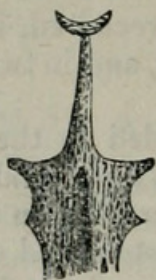
B. x. D. $\frac{1}{7}$. P. $\frac{1}{6}$. V. 6. A. 11. C. 15.

Length of specimens from $3\frac{5}{10}$ to $4\frac{3}{10}$ inches.

Length of head $\frac{1}{6}$ of the total length. Height of head $\frac{1}{11}$, of body $\frac{1}{6}$ of the total length.

Eyes a little more than one-third the length of the head; nearly one diameter apart, and one from end of snout. Summit of head rugose; occipital process (see figure, p. 290) three times as long as wide, with an intermediate bone between its upper extremity and the basal bone of the dorsal fin. Fonticulus not quite extending to the

base of the occipital process. Maxillary barbels extend to the caudal; of the inferior labial barbels, the external reaches as far as the

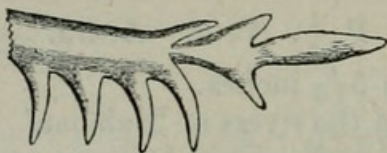


middle of the pectoral, whilst the internal are not quite so long as the head. Vomerine teeth form a crescentic band.



Dorsal spine serrated posteriorly in its upper third, but weaker and shorter than that of the pectoral, which is serrated interiorly, and as long as from the angle of the mouth to the posterior extremity of the head. Caudal very deeply forked, upper lobe the longest. Base of the adipose dorsal equals that of anal.

Wounds inflicted by its pectoral spine are much dreaded: it ends superiorly in one point directed forwards, between which and the first tooth on its inferior margin is a membranous prolongation in the form of a trefoil leaf.



Outer extremity of pectoral spine, magnified.

Not uncommon in the rivers and tanks of fresh water, and occasionally found in the backwaters. Takes a bait freely, and is eaten by the poorest of the population.

MACRONES CAVASIUS (Buch. Ham.).

B. x. D. $\frac{1}{7}$. P. $\frac{1}{7}$. V. 6. A. 11. C. 15.

Length of specimens from $3\frac{7}{10}$ to $3\frac{8}{10}$ inches.

Very common in every river, and even inundated paddy-fields; never grows to a large size; eaten as the last.

PSEUDOBAGRUS CHRYSEUS, Day, sp. nov.

B. x. D. $\frac{1}{7}$. P. $\frac{1}{6}$. V. 6. A. 27. C. 17.

Length of specimen $6\frac{2}{10}$ inches.

Length of head about $\frac{2}{9}$, of base of first dorsal $\frac{1}{13}$, of base of adipose dorsal $\frac{1}{13}$, of caudal $\frac{2}{9}$, of base of anal $\frac{2}{9}$ of total length. Height of head $\frac{1}{9}$, of body $\frac{2}{9}$, of dorsal fin $\frac{1}{6}$, of anal $\frac{1}{10}$ of total length. Diameter of eye $\frac{9}{20}$ of length of head, eyes $1\frac{1}{2}$ diameter apart, upwards of 1 diameter from end of snout.

Jaws equal in length; gape of mouth wide, its transverse width being equal to half the length of the head. Summit of head depressed; both it, the opercula, and the shoulder-bone furrowed; occipital process narrow, twice as long as wide; basal bone considerably produced to meet occipital process, and extended in front on either side of dorsal spine. A flat lance-shaped fonticulus in the central line of the head, between the orbits, pointing downwards and forwards, reaching in front nearly to intermaxillaries, and superiorly only extended to a short distance behind the orbits. Nasal cirri equal half the length of the head, superior maxillary ones slightly longer; the external of the inferior labial ones reach as far as the base of the pectoral, whilst the internal ones are one-quarter shorter.

Teeth very fine, "*en velours*" in both maxillaries and lower jaw; whilst on the vomer and palate they are considerably longer, stronger, and arranged in a crescentic band.

Fins. The first dorsal arises opposite about the middle of the pectoral; and the ventral just beyond the termination of the pectoral, whilst it just reaches as far as the commencement of anal. Adipose dorsal commences about the middle of the anal.

Dorsal spine strongly serrated; about ten teeth posteriorly in its upper two-thirds, and three serrations in the front of its summit anteriorly, whilst its extremity ends in a soft filament. The rays are longer than the spine. Pectoral situated in lower quarter of the body; its spine stronger than that of the dorsal, slightly roughened, serrated anteriorly, and strongly serrated (sixteen to eighteen teeth) posteriorly. When laid flat, this spine is protected by an overhanging bony arch, formed by the process of the shoulder-bone. Second dorsal soft and rounded. Anal rather rounded posteriorly. Caudal deeply lunated; outer rays the longest.

Lateral line passes from summit of operculum direct to the centre of caudal.

Colours. Back greenish; sides golden yellow; a large round black finger-mark situated just behind the operculum, and surrounded by a light-yellow margin. The first and adipose dorsals are yellowish, tinged with dusky. Caudal has a deep black base and a blackish margin; its ground-colour reddish orange, slightly stained with black at its extremity. Anal of a deep orange-red, slightly margined with black. Eyes orange.

Exceedingly common in the Kurriavanoor River, where they appear to prefer the deepest pools; four or five are frequently taken out at one haul of a cast-net. They are also occasionally captured during the monsoons, especially in the backwater at Kurriapudnam and the river at Cochin. Said by the fishermen to rarely exceed 16 inches in length. Esteemed for eating; but the wounds inflicted by their pectoral spines are dreaded.

ARIUS GAGORA (Buch. Ham.).

B. v. D. $\frac{1}{7}$. P. $\frac{1}{10}$. V. 6. A. 18. C. 15.

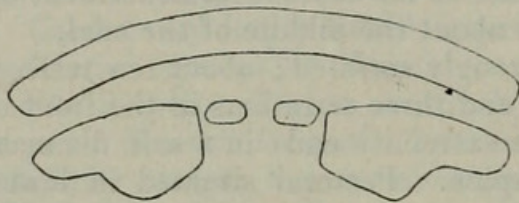
Length of specimen $7\frac{8}{10}$ inches.

Not uncommon; eaten by the lower classes.

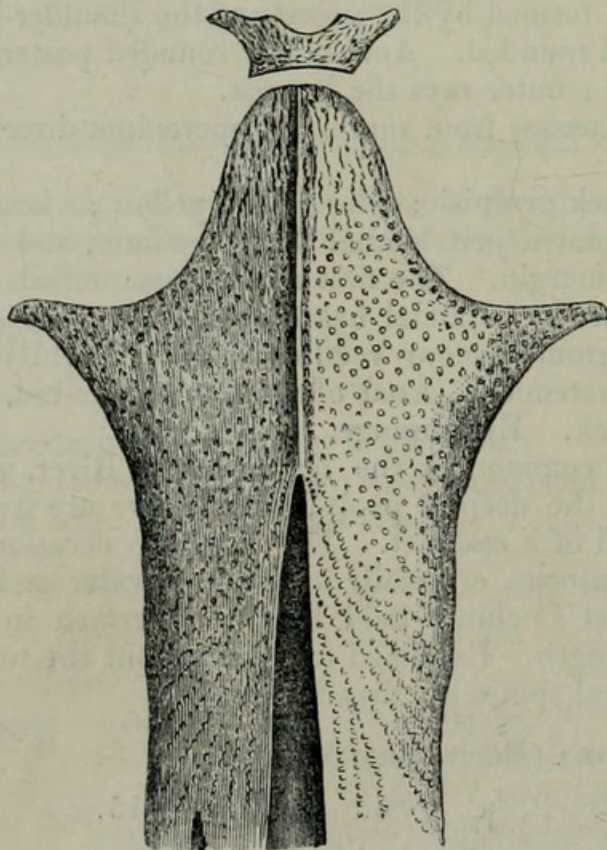
ARIUS CÆLATUS (Cuv. & Val.).B. v. D. $\frac{1}{7}$. P. $\frac{1}{9}$. V. 6. A. 19. C. 15.Length of specimen $5\frac{9}{10}$ inches.*ARIUS NETUMA* (Cuv. & Val.).B. vi. D. $\frac{1}{7}$. P. $\frac{1}{12}$. V. 6. A. 19. C. 17.

Length of specimen 12 inches.

This fish appears to me to be fairly described in Cuv. and Val., except as to its teething, which is not mentioned. Dr. Günther, in his 'Catalogue,' places the *A. netuma*, Cuv. & Val., as a synonym of the *Bagrus bilineatus*, Cuv. & Val. Snout very obtuse. Teeth villiform on intermaxillaries, and much larger than those on the vomer and palate; palatine teeth in a large patch, irregularly quadrangular, and extended externally; vomerine teeth on a small oval spot, and not at all, or very slightly, joined to those of the palate. Maxillary cirri extend to the end of operculum or base of



pectoral. Summit of head granulated. Occipital process broader than long, slightly elevated along its centre; basal bone of dorsal



spine strong and granulated. Dorsal spine very strong, granulated

in front, serrated behind for its upper half, and of equal length with the pectoral spine, which is also granulated in front, serrated for its upper third, and strongly serrated posteriorly; its length equals that of the head, as far as the posterior margin of the orbit. Soft dorsal two-thirds the height of body.

Grows to a very large size; is eaten by the natives.

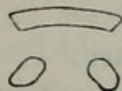
ARIUS SUBROSTRATUS (Cuv. & Val.).

B. vi. D. $\frac{1}{7}$. P. $\frac{1}{11}$. V. 6. A. 20. C. 17.

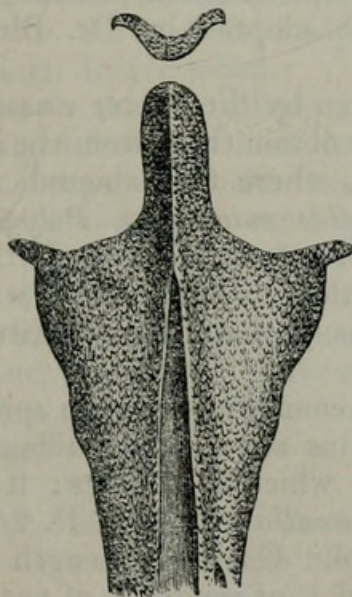
Length of specimens from 9 to $9\frac{8}{10}$ inches.

Length of head $\frac{3}{10}$ of total length. Height of body $\frac{1}{5}$, of head $\frac{1}{6}$ of total length. Diameter of eye about $\frac{1}{5}$ length of head, eyes $1\frac{1}{2}$ diameter apart, $2\frac{1}{2}$ from end of snout.

Teeth villiform on intermaxillaries, space covered more than one-fourth as wide as long; none on vomer; on palatine in two oval patches, placed wide apart, and diverging behind.



Upper surface of head granulated; occipital process longer than broad, rather keeled along its centre. Fonticulus long, narrow, and



sharp at both ends, extending from just behind the intermaxillaries to nearly as far as the base of occipital process. Operculum sulcated: shoulder-bone depressed in holes, like the marks from a thimble.

Dorsal spine ending in a soft point, strongly granulated anteriorly, serrated in its upper part, also serrated posteriorly in its upper two-thirds. Pectoral spine about equal strength with dorsal, rugose externally, serrated posteriorly.

Colours. A brilliant dark bluish silver as far as the lateral line, silvery-white below. Fins yellowish.

Common; mostly captured during the south-west monsoon; eaten by the natives.

OSTEOGENIOSUS MILITARIS (Linn.).B. v. D. $\frac{1}{7}$. P. $\frac{1}{11}$. V. 6. A. 20. C. 15.

Length of specimen 8 inches.

Rare; and not observed above 8 inches in length.

BATRACHOCEPHALUS MINOR (Buch. Ham.).B. v. D. $\frac{1}{7}$. P. $\frac{1}{9}$. V. 6. A. 20. C. 17.Length of specimens from $6\frac{7}{10}$ to $6\frac{8}{10}$ inches.

By no means rare, more especially in the cold months; do not appear to grow large; are not esteemed good eating, but used as food by the lower classes.

SAURIDA TUMBIL (Bloch).*Arranna* (Mal.).B. xiii. D. 12. P. 16. V. 10. A. 10. C. 19. L. 1. 53.
L. tr. $\frac{5}{6}$.Length of specimen $7\frac{2}{10}$ inches.

Never common; but rarely absent in the cold months of the year. Eaten by the natives, but not esteemed.

In the following description of the Loaches and Carps, I have followed the arrangement adopted by Dr. Bleeker in his excellent 'Ichthyological Atlas.'

The Loaches are eaten by the poorer classes, or rather the slave castes, of Malabar, who obtain them from the inundated paddy-fields and small watercourses, where they abound, along with the *Saccobranchus singio*, *Etroplus maculatus*, *Polyacanthus cupanus*, and several species of *Puntius*, &c. Not only do they inhabit the plains, but the hills have also their varieties, one of which differs so remarkably from recorded genera that I have instituted a new one for its reception.

My specimens of the common species in spirits have unfortunately been destroyed, and skins alone are insufficient for the purpose of deciding the genus to which it belongs: it is the *Cobitis rubripinnis* (Jerdon), *Coyeewalla* (Mal.). D. $\frac{2}{6}$. A. $\frac{2}{7}$. No free spine (?) under the eye. Cirri 6. Length of head $\frac{1}{6}$, of base of dorsal $\frac{1}{3}$, of base of anal $\frac{1}{8}$, of caudal $\frac{1}{6}$, of pectoral $\frac{1}{8}$ of total length. Height of head $\frac{1}{8}$, of body $\frac{1}{6}$, of dorsal fin $\frac{1}{8}$ of total length. Diameter of eye $\frac{1}{6}$ of length of head, eyes 2 diameters from end of snout, 2 diameters apart.

Summit of head scaleless; cheeks scaled. Dorsal central, slightly in front of commencement of ventral. Anal in posterior quarter of body. Caudal entire, square.

Colours. Body olive-green, becoming of light brown on the sides, with nine brown bars descending halfway to lateral line, and a number of smaller and irregular bands beneath. A black bar at base of caudal. Dorsal with two brown bars. Caudal with four brown bands; operculum with upper margin black.

NEMACHEILUS TRIANGULARIS, Day, sp. nov.

B. iii. D. 9. P. 11. V. 9. A. 6. C. 19. Cirri 6.

Length of specimen $2\frac{1}{10}$ inches.

Length of head about $\frac{1}{5}$, of base of dorsal $\frac{1}{10}$, of base of anal $\frac{1}{21}$, of pectoral $\frac{1}{6}$, of caudal $\frac{1}{5}$ of the total length. Height of head $\frac{1}{10}$, of body $\frac{1}{4}$, of dorsal fin $\frac{1}{4}$, of anal $\frac{1}{10}$ of the total length. Diameter of eye $\frac{1}{4}$ of length of head, eyes 1 diameter apart, 2 diameters from end of snout; no suborbital spine.

Body elongated, fusiform, cylindrical in front, compressed along the sides. From snout to frontal convex, thence to caudal straight; interorbital space convex.

Lower jaw shortest; opening of mouth below, and extending as far posteriorly as half the distance to the orbit; the end of the snout fleshy and overhanging the mouth; intermaxillaries produced downwards and forming a knob, which is in advance of the lower jaw when the mouth is closed. Lips rather fleshy. Cirri four, on snout, with base not united; two on superior maxillaries, half the length of the head. Eyes not covered by any adipose membrane. Nostrils nearer to the eye than the snout; anterior tubular; posterior broad, open. Operculum rounded posteriorly.

Fins. Dorsal arises slightly in front of the origin of the ventral, and most of it is situated in the anterior half of the body. Anal is entirely in the posterior third of the body. Dorsal square; anal slightly rounded; caudal deeply lobed.

Scales very distinct over the whole body; none on the head. The lateral line passes straight from the head towards the centre of the caudal fin, but ceases abruptly opposite the termination of the anal.

Colours. Yellowish-banded, each band being edged with black; seven along the body, which pass backwards towards the lateral line, and consequently are disposed in a V shape; one band passes over the operculum, a second through the eye, and a third from the orbit to the angle of the mouth. Dorsal with three irregular rows of black spots. Pectoral, ventral, and anal unspotted, but darkest at their margins. Three oblique black bands on the caudal, which has also a black base.

I am indebted to the Rev. Henry Baker, jun., for this pretty little Loach, which he discovered on the hills at Mundikyum.

The next Loach which I have to describe I obtained at Trichoor, near Cochin, from a paddy-field, amongst some specimens of *Polyacanthus* and *Saccobranchus singio*. It is the most remarkable species I have observed, and cannot be included in any genus as at present constituted; I therefore propose to define one for its reception, premising that such should be placed immediately subsequent to Bleeker's genus *Lepidocephalichthys*, as it possesses a veiled eye, a dorsal fin with few rays placed opposite a ventral, and no swimming-bladder. One of its most appreciable features is that the innermost ray of its pectoral fin is expanded into a strong flattened spine.

Genus PLATACANTHUS.

Body elongate, moderately compressed; back low; a fleshy keel on the back, midway between the termination of the dorsal and commencement of caudal, on to which it is continued; opercular and suborbital regions scaled. Eyes veiled. Snout obtuse. Cirri eight, on snout two; on superior maxillaries four; on inferior maxillaries two. Suborbital spine free, bifurcated, close to orbit; no tubercle on end of lower jaw. Nostrils simple. Dorsal fin arises opposite ventral, in centre of the body. The internal ray of pectoral forming a large flattened spine, half the length of the soft rays. Caudal emarginate. No swimming-bladder apparent.

PLATACANTHUS AGRENSIS, Day, sp. nov.

B. iii. D. 7. P. 6—1. V. 7. A. 6. C. 16. Cirri 8.

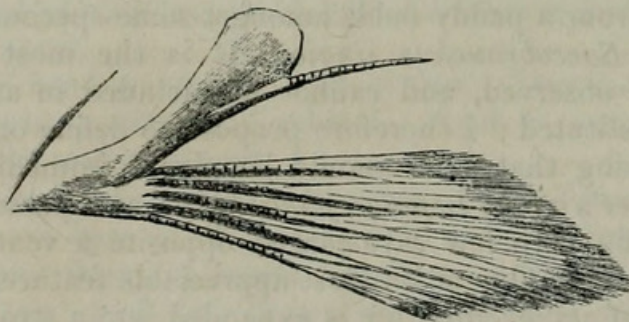
Length of specimen $3\frac{2}{10}$ inches.

Length of head $\frac{1}{11}$, of pectoral $\frac{1}{4}$, of base of dorsal $\frac{1}{16}$, of base of anal $\frac{1}{32}$, of caudal $\frac{1}{8}$ of the total length. Height of head $\frac{1}{16}$, of body $\frac{1}{8}$, of dorsal $\frac{1}{12}$, of anal $\frac{1}{12}$ of the total length. Diameter of eye $\frac{1}{3}$ of the length of the head, eyes 1 diameter from end of snout, $\frac{1}{2}$ a diameter apart. A strong bifurcated suborbital spine arises below the orbit, close to its anterior margin, and then passes backwards with a slight inward curve.

Body elongated, compressed; profile curving considerably from snout to opposite orbits, from back of head to caudal nearly straight. A raised adipose keel along the posterior sixth of the back, and extending on to the upper surface of the base of the caudal fin. Sides compressed, but with a slight bulging just before the commencement of the caudal.

Opening of the mouth below, transversely oval, and extending a very short distance posteriorly. End of snout fleshy, and overhanging the mouth. Lips thick, continuous; no enlargement of intermaxillaries, nor tubercle on lower jaw. Cirri two, fleshy on snout, their bases not united; four on superior maxillaries, and two on lower jaw; the longest cirrus reaches as far as the eye. Nostrils midway between orbit and end of snout; neither tubular. Upper margin of orbit close to profile. Eyes covered with veil. Opercles rounded posteriorly. Interorbital space smooth, scaleless.

Fins. Dorsal arises midway between snout and base of caudal. Ventral arises under the commencement of the dorsal. Pectoral



Pectoral fin, magnified.

large, the internal ray forming a broad spine, having a flattened extremity internally, and terminating externally in a soft filamentous prolongation. The flat portion of the spine, which is only about half the length of the soft rays, lies against the side when the fin is at rest. Anal situated entirely in the posterior third of the total length; its first ray undivided, its last divided to the root. Caudal slightly lobed.

Scales very distinct over the whole of the body and cheeks; none on the top of the head. Lateral line straight.

Colours. Light brown, with irregular spots and bands. Dorsal spotted with brown. Caudal with four oblique bars of dark brown, and a brown bar at its base.

The CARP order is most extensively distributed in the fresh waters around Cochin, as well as in inland situations, even to nearly the summits of the highest hills of the Western Ghauts. Some of these fish are kept in the large tanks inside the Hindu pagodas; and even on the banks of the broad Shahlacoodie river stands a Hindu temple where they are regularly fed, and have become so tame as to come when called, and even take food from human hands. In the paddy-fields the smaller species are most abundant, and afford luxurious feasts not only to the multitudes of wading-birds that frequent Malabar, but also to the lower classes of natives.

GARRA MALABARICA, Day, sp. nov.

Wuttooree (Mal.).

B. iii. D. $3/9$. P. 15. V. 10. A. $2/5$. C. 19. L. 1. 31.
L. tr. $4/3$. Cirri 2.

Length of specimen 4 inches.

Length of head $\frac{1}{6}$, of pectoral $\frac{1}{7}$, of base of dorsal $\frac{1}{8}$, of base of anal $\frac{1}{16}$ of total length. Height of head $\frac{1}{10}$, of body $\frac{1}{6}$, of dorsal $\frac{1}{7}$, of anal $\frac{1}{8}$ of the total length. Diameter of eye nearly $\frac{1}{3}$ the length of head, eyes a little above 1 diameter from end of snout, nearly 2 diameters apart.

Profile rises as far as the occiput; thence to the caudal it is nearly straight. Under surface of body equally convex with that of the upper. Sides compressed. Back rather broad and flat, and nearly as wide as the body is deep.

Mouth below; upper jaw the longest; the two lips united, thick, and covered with mucous pores, as is also the snout. Below the under jaw is an oval disk, the transverse diameter of which is a little wider than that of the eye. One pair of fleshy cirri on superior maxilla, and which are not above two-thirds of the length of the orbit. Snout broad, depressed. Eye nearer to the posterior than it is to the anterior extremity of the head; its superior surface is on the upper profile, and it looks upwards and outwards. Inter-orbital space nearly flat from side to side. Nostrils nearer to orbit than they are to the end of the snout.

Fins. Dorsal situated rather nearer snout than it is to the base of

the caudal, and a little in advance of the ventrals; it is higher in front than behind; its base is without scales. Pectorals inserted subhorizontally. Anal short, situated entirely in posterior fourth of the body, its commencement being midway between posterior extremity of the pectoral and the termination of the lower lobe of the caudal. Ventrals short. Caudal large, emarginate, but not deeply; base scaly.

Lateral line nearly straight from upper margin of operculum to centre of caudal, and nearer the back than it is to the abdominal surface.

Colours. Back deep olive, fading to dirty white on the abdomen; a wide leaden-blue stripe runs along either side of the lateral line, becoming of a shot green along the four central rays of the caudal. Fins yellowish.

Not rare in the Kurriavanoor River.

LABEO MELANAMPYX, Day, sp. nov.

B. iii. D. 3/9. P. 16. V. 9. A. 3/6. C. 18. L. 1. 20. L. tr. 4/3. Cirri 4.

Length of specimens from 1 to $2\frac{3}{10}$ inches.

Length of head $\frac{2}{9}$, of pectoral fin $\frac{1}{6}$, of base of dorsal $\frac{2}{13}$, of base of anal $\frac{1}{11}$, of caudal $\frac{2}{5}$ of total length. Height of head $\frac{1}{6}$, of body $\frac{1}{3}$, of dorsal $\frac{1}{6}$, of anal $\frac{1}{7}$ of total length. Diameter of eye nearly $\frac{1}{3}$ the length of head, eyes upwards of 1 diameter from end of snout, $1\frac{1}{2}$ apart.

Profile rises to anterior margin of dorsal; thence to caudal it slightly descends. Abdomen flat below, and its profile not so convex as that of the back; sides compressed.

Mouth directed forwards and slightly downwards; upper jaw overhanging lower. Upper half of mouth forming a half circle; when it is wide open, the whole orifice is nearly oval. Tip of lower jaw uncovered by the lip. Lips continuous from upper to lower jaw; postlabial sulcus deep, simple; lower lip with numerous fine pores, thickened below symphysis. Præorbital bone rather triangular, base in front. Snout bulging, and continued laterally into a slight lobe; both it and præorbital covered by crenulations. Cirri four, two on snout, two on superior maxillaries, which are as long as orbit. Nostils nearer to orbit than to end of snout; anterior tubular, and separated by a membranous valve from the posterior, which is broad, oval, and patent. Some widely scattered pores exist over the whole of the upper surface of the head.

Fins. Dorsal arises midway between snout and base of caudal, and is slightly in advance of the commencement of the ventral, which last is nearly horizontal. Anal arises midway between posterior extremity of operculum and termination of the caudal, and is completely behind the whole of the dorsal. Caudal deeply lobed. Dorsal and anal fins with a row of scales at their bases. Pectoral reaches almost to the ventrals, the tip of which last nearly touches the anal.

Scales large; lateral line slightly descends. Pharyngeal teeth sharp, pointed, and slightly curved at their extremities, placed in three closely approximating rows.

Colours. Reddish brown, with four vertical black bands: one behind the eye; a second from before the base of dorsal fin, arising wide, becomes narrow close to the origin of the ventral; a third from the termination of the dorsal, crosses the lateral line, but does not reach so low down as the base of the anal; the fourth crosses the base of the caudal. Muzzle black. Fins dusky. Eyes reddish.

I am indebted to the Rev. H. Baker, jun., for several specimens of this fish, which he captured at Mundikyum.

LABEO DENISONII, Day, sp. nov.

B. iii. D. 2/8. P. 15. V. 9. A. 2/5. C. 19. L. 1. 28. L. tr. 5/3. Cirri 2.

Length of specimens from 4 to $5\frac{1}{10}$ inches.

Length of head $\frac{1}{6}$, of pectoral $\frac{1}{7}$, of base of dorsal $\frac{1}{8}$, of base of anal $\frac{1}{12}$, of caudal $\frac{1}{5}$ of total length. Height of head $\frac{1}{10}$, of body $\frac{1}{5}$, of dorsal $\frac{1}{6}$, of anal $\frac{1}{10}$ of total length. Diameter of eye about $\frac{1}{3}$ of length of head, eyes rather more than 1 diameter apart, $1\frac{1}{5}$ diameter from end of snout.

Body elongated, compressed; profile from snout to dorsal gently elevated, thence to caudal gradually sloping.

Mouth small, directed forwards and slightly downwards, the upper jaw being the longest. Lower jaw curves slightly upwards at its extremity, with a slight tubercle at the upper surface of symphysis. Tip of lower jaw uncovered by lip. Upper and lower lips continuous; edges entire, a little thickened so as to form a small lobe below symphysis of lower jaw. Sulcus simple, not very deep. Snout slightly projecting over upper jaw, with a triangular expansion on either side anteriorly; some small pores at its apex; no cirri. Præ-orbital irregularly triangular, longer than high, rounded in front. Maxillary cirri two, fleshy, one-third longer than the orbit. Nostrils nearer orbit than end of snout, the posterior closed by a membranous valve; margin of anterior slightly elevated around its edge, so as to appear semitubular.

Fins. The dorsal commences the width of two scales nearer the snout than it does to the base of the caudal; it is in advance of the ventral. Anal situated in the posterior quarter of the body, and entirely behind termination of the dorsal. Dorsal highest in front; a row of small scales at its base. Large free scale at base of ventral, which fin is rounded. Anal highest anteriorly. Caudal deeply lobed.

Scales large. Lateral line slightly curved at first, then passing direct to centre of caudal. Air-bladder contracted, dividing one-third from the remainder. Pharyngeal teeth sharp, pointed, slightly curved towards their extremity, situated in three closely approximating rows.

Colours. Silvery, with a line of black running from snout through lower part of eye to centre of base of caudal fin; above that a wide line of bright scarlet, extending the same distance. Back glossy metallic blue, and the abdomen silvery white. Caudal with an oblique black band crossing the posterior third of each lobe. Other fins colourless.

I received several specimens of this species from the Rev. H. Baker, jun., who discovered it at Mundikyum. I have named it after H. E. Sir W. Denison, K.C.B., the Governor of Madras.

ROHITA DUSSUMIERI (Cuv. & Val.).

Toolee (Mal.).

B. iii. D. $\frac{3}{12}$. P. 17. V. 9. A. $\frac{3}{5}$. C. 19. L. 1. 35. L. tr. $\frac{9}{7}$.

Length of specimen $8\frac{4}{10}$ inches.

Common in the Kurriavanoor River. They take surprising leaps when attempts are made to capture them with nets, sometimes springing completely over the heads of the boatmen, who are standing up at the time. Immediately on being captured, their necks are broken with a stick.

Fair eating; much esteemed by the natives.

CYCLOCHEILICHTHYS PINNAURATUS, Day, sp. nov.

B. iii. D. $\frac{3}{8}$. P. 17. V. 9. A. $\frac{2}{6}$. C. 21. L. 1. 29. L. tr. $\frac{6}{5}$. Cirri 4.

Length of specimen $3\frac{4}{10}$ inches.

Length of head above $\frac{1}{4}$ of total; of base of dorsal $\frac{1}{8}$, of base of anal $\frac{1}{11}$, of caudal $\frac{1}{4}$ of total length. Height of body $\frac{1}{3}$, of head $\frac{1}{8}$ of total length. Diameter of eye $\frac{1}{4}$ of length of head, eyes 1 diameter from end of snout, upwards of 1 diameter apart.

Profile rises considerably to commencement of dorsal, thence sinks more gradually to the caudal. Abdomen not so convex as back. Body strongly compressed.

Eyes situated in anterior half of the head; their upper surface does not reach the profile. Mouth directed forwards; lower jaw covered by the upper when the two are closed. Nostrils situated nearer to eye than to end of snout; posterior patent, divided by a membranous flap from the anterior, which is slightly tubular. Præ-orbital triangular; apex directed forwards and inwards. Two cirri on snout, two-thirds the length of the maxillary pair, which are nearly as long as the orbit.

Dorsal nearly triangular, with a row of scales at its base; it commences midway between snout and base of caudal, and is slightly in advance of ventrals. Anal, which has also a row of scales at its base, is situated in the posterior fourth of the body. Dorsal spine finely serrated posteriorly for its upper three-fourths. Inferior margin of anal concave. Caudal deeply lobed. Pectoral just reaches ventral. Ventral does not extend quite to anal.

Scales with eight or ten lines arising from their anterior margin and rather diverging posteriorly. Lateral line in a single distinct tube, extending along half the exposed posterior extremity of each scale; it first descends slightly for six scales; opposite the centre of operculum it passes direct to the caudal.

Colours. Silvery, with a large diffused black spot on lateral line, extending from the twenty-fourth to the twenty-eighth scale. A

red spot on operculum. Dorsal and pectoral tinged with red, and minutely spotted with black, as is also the base of each scale and the various pieces of the operculum. External half of ventral bright orange-scarlet; anal tinged with red; both minutely dotted with black. Caudal stained with black.

Captured in Cochin, in a small pond.

PUNTIUS CHRYSOPOMA (Cuv. & Val.).

Munduttee (Mal.).

B. iii. D. $4/8$. P. 15. V. 9. A. $3/5$. C. 19. L. 1. 28.
L. tr. $6/4$. Cirri 4.

Length of specimens from 4 to $7\frac{1}{2}$ inches.

Very common in rivers; grows to upwards of 2 feet in length; is good eating.

PUNTIUS HAMILTONII (Jerdon).

Oolee perlee (Mal.).

B. iii. D. $3/8$. P. 17. V. 9. A. $2/5$. C. 19. L. 1. 24. L.
tr. $5/3$. Cirri 2.

Length of specimens from $3\frac{2}{10}$ to $4\frac{1}{10}$ inches.

Dorsal fins commence exactly over the ventrals; spine smooth. It is very similar to the next; but the scales in this species are not in parallel rows. Opposite the fifth scale of the lateral line a fresh row commences. Height of body half its length, without the caudal fin, which is deeply lobed.

General colour of the back green; abdomen silvery, and a slight golden tinge on upper part of operculum; a dark diffused spot on the lateral line from twenty-first to twenty-third scale. Dorsal slightly stained with dark at its summit. Pectoral, ventral, and anal yellowish. Caudal dirty white.

When young, the summit of the head is golden green, and a yellow streak runs from opposite the centre of the eye to the centre of the tail. When about 2 inches long, the black spot at the side of the tail begins to show itself, whilst the dorsal becomes of a brownish red, and by degrees the golden streak on the side disappears.

In the monsoon-time a beautiful rosy streak extends from the eye to the centre of the caudal, and the back is more of an olive-green, and the fins redder.

Very common in the rivers and paddy-fields; but is more frequently found in tanks than some of the other species.

PUNTIUS PARRAH, Day.

? *Puntius amphibius* (Jerdon). Not Cuv. & Val.

Parrah perlee (Mal.).

B. iii. D. $3/8$. P. 15. V. 8. A. $2/5$. C. 19. L. 1. 25.
L. tr. $5/4$. Cirri 2.

Length of specimens from $2\frac{8}{10}$ to 5 inches.

Length of head $\frac{1}{5}$, of base of dorsal $\frac{1}{6}$, of base of anal $\frac{1}{12}$, of pec-

toral $\frac{1}{7}$, of caudal $\frac{1}{5}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of dorsal $\frac{1}{6}$, of anal $\frac{1}{7}$ of the total length. Diameter of eye nearly $\frac{1}{3}$ of the length of the head, eyes nearly $1\frac{1}{4}$ diameter apart, 1 diameter from end of snout.

Profile curved gradually to dorsal, descends along its base, and thence straight to the caudal.

Cirri, one pair at the superior maxillæ, which are two-thirds of the length of the orbit. Nostrils nearer to the orbit than to end of snout; posterior patent, divided from anterior, which is slightly tubular, by a membranous valve.

Fins. Dorsal commences midway between snout and base of caudal, situated just over the ventral. Spine strong, smooth, and with a soft point; last two rays elongated. Anal arises behind the posterior margin of dorsal, at equal distance between the orbit and the end of the caudal. Upper surface of dorsal concave; under surface of anal the same. Caudal deeply lobed. Pectoral does not quite reach the ventral, nor the ventral the anal.

Scales. Rows above the lateral line regular, parallel, unbroken.

Colours. Upper surface of back dark silvery green, divided from a silvery abdomen by a dark bluish line. Cheeks golden red. Pectoral, ventral, and anal tinged with yellow. Dorsal and caudal dusky. A diffused black spot on the lateral line extending from twentieth to twenty-second scale. Eyes golden.

Very common in the rivers, and also in the inundated paddy-fields.

PUNTIUS PUNCTATUS, Day, sp. nov.

Putter perlee (Mal.).

B. iii. D. $3/8$. P. 15. V. 8. A. $2/5$. C. 18. L. 1. 27. L. tr. $6/4$. No cirri.

Length of specimens from $2\frac{5}{10}$ to $3\frac{4}{10}$ inches.

Third dorsal spine strongly serrated posteriorly.

Length of head $\frac{1}{6}$, of pectoral $\frac{1}{6}$, of base of dorsal $\frac{1}{7}$, of base of anal $\frac{1}{10}$, of caudal $\frac{1}{6}$ of total length. Height of head $\frac{1}{6}$, of body $\frac{1}{3}$, of dorsal $\frac{1}{5}$ of total length. Eye large, close to profile, nearly $\frac{1}{2}$ the length of head, $\frac{1}{3}$ of a diameter from end of snout, eyes nearly 1 diameter apart.

Lateral line first curves gently downwards, and from opposite base of ventral passes direct to centre of caudal.

Colours. Olive-green above, gradually fading into silvery on the abdomen. A black diffused spot on the twentieth and twenty-first scales of the lateral line. The anterior half of the fourth scale from the operculum, of the row next below the lateral line, deep black, and also a portion of the scale above and beneath it. Fins yellowish. Dorsal and anal tipped with orange. Dorsal spotted with black, in two longitudinal rows, with a third in the front part between the other two. The dark markings are much more visible in the months when the freshes are coming down.

Common; eaten by the natives.

PUNTIVUS VITTATUS, Day, sp. nov.

B. iii. D. 2/8. P. 12. V. 9. A. 2/5. C. 20. L. 1. 22.
L. tr. 4/3. No cirri.

Length of specimen $1\frac{6}{10}$ inch. Dorsal spine entire.

Length of head $\frac{2}{9}$, of pectoral $\frac{1}{6}$, of base of dorsal $\frac{1}{5}$, of base of anal $\frac{1}{11}$, of caudal $\frac{2}{7}$ of total length. Height of head $\frac{1}{4}$, of body $\frac{1}{3}$ of total length. Diameter of eye nearly $\frac{1}{2}$ the length of head, eyes $\frac{2}{3}$ of a diameter from end of snout, 2 diameters apart.

Rarely grows above $1\frac{1}{2}$ inch in length, and is the most common species in the paddy-fields. When about $\frac{8}{10}$ ths of an inch long, a vertical black stripe begins to show itself in the posterior third of the dorsal fin, the tip of which also becomes edged with black; and there is some irregular orange coloration about the fin. A black spot shows itself at the base of the caudal and anal fins; and in young specimens the line of demarcation between the green of the back and the silvery abdomen is very apparent, and seems as if a white line ran from the eye to the centre of the caudal. In adult specimens there are four black spots, one just before the dorsal, one under its posterior margin, one at the base of the caudal, and one at the base of the anal. The dorsal has one black streak down it, and a black tip, with orange markings. Upper surface of body dusky green. Abdomen silvery. Cheeks sometimes golden.

Is eaten by the slave castes.

PUNTIVUS FILAMENTOSUS (Cuv. & Val.).

Curroah (Mal.).

B. iii. D. 3/8. P. 17. V. 9. A. 2/5. C. 16. L. 1. 21.
L. tr. 5/4. No cirri.

Length of specimens from $3\frac{5}{10}$ to $6\frac{4}{10}$ inches.

The young have no filaments to the dorsal rays; in the adult they are present on all.

Common in some tanks, especially the fort-ditch in Cochin. Is considered good eating.

RASBORA ANJANA? (Buch. Ham.).

? *Leuciscus malabaricus* (Jerdon).

Kokanutchee (Mal.).

B. iii. D. 2/7. P. 15. V. 9. A. 3/5. C. 19. L. 1. 34.
L. tr. 5/3.

Length of specimens from $3\frac{1}{10}$ to $3\frac{2}{10}$ inches.

Length of head $\frac{1}{5}$, of base of dorsal $\frac{1}{3}$, of base of anal $\frac{1}{6}$, of caudal $\frac{1}{6}$ of the total length. Height of head $\frac{1}{8}$, of body $\frac{1}{5}$, of dorsal $\frac{1}{6}$ of the total length. Diameter of eye above $\frac{1}{3}$ of length of head, eyes 1 diameter from end of snout, upwards of 1 diameter apart.

Profile rises gradually to a little before the first dorsal, then still more gently slopes to the root of caudal. Abdominal surface about equally convex with that of back. Sides compressed; head still more so.

Mouth oblique, directed slightly upwards, with a short protuberance at the apex of the lower maxilla, which is received into a corresponding fissure in the intermaxillaries. Snout appears rather elevated. Præorbital irregularly quadrangular.

Dorsal fin high and square, arises the breadth of two scales nearer to the snout than it does to the root of the caudal; it is opposite the ventral. Caudal deeply forked. Anal square, arising midway between the base of the pectoral and the lower extremity of the caudal. Base of fins destitute of scales.

Lateral line commences opposite the upper margin of the operculum, and curves downwards until it reaches the fifth scale; thence it follows the curve of the abdomen to the lower half of the caudal.

Colours. Back greenish; a narrow yellow streak extends from the eye to about the centre of the caudal fin; below it is a broad leaden line. The whole of the fish has a purplish reflexion. Fins reddish orange; caudal slightly tipped with black.

Very common in the rivers, small streams, and tanks; takes a fly or bait readily.

The next fish, of which I have six specimens, differs from any of the genera of *Barbini* described by Bleeker. It evidently belongs to his subfamily *Catlae*, and is allied to a certain extent to his *Rasborichthys*; but there are well-marked differences which warrant the formation of a new genus for its reception. Dr. Jerdon has described two other species of this genus under the term *Rhodeus*, because their lateral line suddenly ceases; but the *Rhodeus*, according to Bleeker, belongs to the true *Leuciscini*, its scales are large, it has only two series of pharyngeal teeth, the apex of the præorbital is directed upwards, and the posterior half of the dorsal is opposite an elongated anal.

Genus BRACHYGRAMMA, Day.

Body subelongate; sides compressed. Snout broad, depressed; præorbital bone triangular, apex directed downwards. No cirri. Eyes not covered by any adipose membrane. Opening of mouth of moderate size, oblique. Superior symphysis emarginate; inferior hooked above. Scales small, deciduous. Lateral line curved downwards, ceasing abruptly opposite the ventral fin. Base of dorsal scaleless; it arises behind the commencement of the ventrals, but does not extend as far as opposite commencement of anal. Anal few-rayed; no scales at its base. Caudal deeply lobed. Pharyngeal teeth large, oval, with their free surface concave or spoon-shaped, 1, 2, 3/3, 2, 1.

BRACHYGRAMMA JERDONII, Day, sp. nov.

Wumboo (Mal.).

B. iii. D. 2/7. P. 15. V. 9. A. 3/5. C. 19. L. 1. 63.
L. tr. 10/6.

Length of specimens from $2\frac{9}{10}$ to $3\frac{8}{10}$ inches.

Length of head $\frac{1}{5}$, of pectoral $\frac{1}{7}$, of base of dorsal $\frac{1}{10}$, of base of anal $\frac{1}{10}$, of caudal $\frac{1}{5}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of dorsal $\frac{1}{7}$, of anal $\frac{1}{9}$ of the total length. Diameter of eye nearly $\frac{1}{5}$ of the length of the head, eyes a little above $\frac{1}{2}$ a diameter from the end of snout, $1\frac{1}{4}$ diameter apart; its under surface is as close to lower profile as its upper surface is to the margin of the head.

Profile rises gradually from snout to posterior extremity of the head; thence there is a gradual decline to the caudal. Abdominal surface rather more curved than the dorsal. Sides compressed. Head compressed from side to side. Snout broad, depressed.

Mouth of moderate size, oblique. Lower jaw the longest, with a hook at its extremity, which is received into a corresponding emargination in the intermaxillaries. When the mouth is closed, the upper surface of the lower lip forms a portion of the superior profile of the head. Lips thin, covering both jaws. Præorbital triangular; apex below. Nostrils close to the anterior superior angle of the orbit; the posterior broad and patent, divided by a valve from the anterior, the margins of which are raised. Operculum nearly triangular, smooth. Intermaxillaries slightly protrusible, elevated into a point behind, expanded in front, and in central line emarginate to receive the hook of lower jaw.

Fins. Dorsal arises rather nearer the caudal than it does to the snout, is slightly behind the commencement of the ventral, but does not extend so far backwards as to above the anal. Anal situated in posterior third of the body, arises at an equal distance between orbit and end of inferior lobe of caudal. Dorsal and anal square. Caudal deeply lobed.

Scales on chest very small as far as ventral fins. Lateral line formed of long single tubes, only extending along fifteen scales, and curved downwards.

Pharyngeal teeth short, wide, transversely oval; extremities concave both from side to side and from before backwards, in fact resembling the concave surface of a spoon, 3, 2, 1 / 1, 2, 3.

Colours. Greenish above, silvery below. A bright greenish-yellow line separates the green of the back from the silvery sides and abdomen. Summit of head bright green. Inside of mouth and lips closely spotted with black. Fins colourless. Eyes white.

Is not uncommon in rivers and ponds. I have named the species after Dr. Jerdon, who appears to be the first who discovered the genus in India.

BARILIUS BAKERI, Day, sp. nov.

B. iii. D. $3/10$. P. 15. V. 10. A. $\frac{3}{14}$. C. 17. L. l. 38. L. tr. $9/2$.

Length of specimens from $4\frac{6}{10}$ to $5\frac{1}{10}$ inches.

Length of head $\frac{1}{4}$, of base of dorsal $\frac{1}{7}$, of base of anal $\frac{1}{6}$, of pectoral $\frac{1}{6}$, of caudal $\frac{2}{9}$ of the total length. Height of head $\frac{1}{7}$, of body $\frac{2}{7}$, of dorsal $\frac{1}{6}$, of anal $\frac{1}{7}$ of total length. Diameter of eye about $\frac{1}{4}$ of

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the length of the head, eyes $1\frac{1}{4}$ diameter apart, 1 diameter from end of snout.

Profile more convex on ventral than on dorsal aspect.

Gape of mouth large, triangular, directed forwards, compressed from side to side. Lower jaw slightly the longest, terminating in a knob, which is received into the apex of a triangle formed by the meeting of the intermaxillaries. Lips not fleshy; jaws entirely covered; some pores along the margin of the lower lip, on the snout, and on the anterior margin of the præorbital. Sulcus single, not deep. Snout rather enlarged at extremity, and divided by a small fissure from the margin of the præorbital bone, which last is pentagonal, with the inferior border the longest. Nostrils rather closer to orbit than to end of snout, divided from one another by a membranous valve; posterior broad, open; anterior with raised margins. Upper surface of head rather convex from side to side.

Fins. Dorsal commences nearly midway between snout and base of caudal, and opposite the middle of the ventrals; it extends backwards as far as opposite to the fourth ray of the anal. Caudal deeply forked, lower lobe the longest. Anterior margins of dorsal and anal the highest; the former with a slightly convex, the latter with a concave margin. Base of dorsal scaleless, of anal scaled; two long free scales at base of ventral; some scales at base of caudal.

Scales large; lateral line descending nearly to the abdomen.

Pharyngeal teeth in three rows, curved, slightly hooked at their extremities and pointed, arranged in the following order:—5, 4, 2/2, 4, 5.

Colours. Back bluish grey, fading to whitish along the sides. Abdomen silvery. Some bright blue spots along the sides. Dorsal, anal, and pectoral fins margined with white; their bases dark grey. Caudal grey in the centre, whitish externally.

I have named this fish after the Rev. H. Baker, jun., who obtained several specimens of it from Mundikyum.

The next fish is a *Perilampus* (McClelland); but Bleeker's description of the genus does not coincide with this one at least of the species in South India. He observes, "scales large," whereas they are mostly of middle size or small; he also places the genus amongst the *Acheilognathini*, a group which he has given as having pharyngeal teeth in one row; but the species of which I have brought some specimens from Cochin have them in three series.

PERILAMPUS AUROLINEATUS, Day, sp. nov.

B. iii. D. 2/12. P. 14. V. 7. A. 3/15. C. 19. L. 1. 34–40. L. tr. 7/2.

Length of specimens from $2\frac{7}{10}$ to $2\frac{8}{10}$ inches.

Length of head nearly $\frac{1}{5}$, of pectoral $\frac{1}{6}$, of base of dorsal $\frac{1}{6}$, of base of anal $\frac{1}{5}$, of caudal $\frac{1}{5}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{3}$, of dorsal $\frac{1}{7}$, of anal $\frac{1}{7}$ of total length. Diameter of eye $\frac{1}{3}$ of length of head, eyes $\frac{3}{4}$ of a diameter from end of snout, 1 diameter apart.

Profile slightly raised to base of dorsal, and thence gently sinks to the caudal; inferior surface of body much more convex than that of the back. The upper margin of lower jaw when closed is flush with the upper surface of the head.

Mouth oblique. Lower jaw the longest; extremity covered with a knob, which is received into an emarginate space formed by the intermaxillaries. Lips thin, covering the jaws. Præorbital small, irregularly quadrilateral; the lower extremity the smallest, forming a sort of apex. Upper margin of orbit close to profile. Upper surface of head nearly flat. Opercula smooth.

Fins. Dorsal arises rather nearer to snout than it does to the posterior extremity of the caudal, but is entirely situated in the posterior half of the body (excluding the caudal fin). Anal arises opposite the dorsal. Caudal lobed. Pectorals just reach the ventrals. Ventrals do not extend to the anal. Anterior extremity of dorsal and anal the highest. Margin of dorsal convex, of anal slightly concave.

Scales with well-marked lines radiating from their posterior margin: their rows run obliquely towards the back. Lateral line strongly concave, and situated in lower fifth of the body.

Pharyngeal teeth curved, pointed; the external row being much the largest—5, 4, 1/1, 4, 5.

Colours. Four yellow horizontal lines passing from the head to the tail, the highest and lowest of which are much less brilliant than the others. Between these lines, colour bright blue. Lower part of abdomen silvery. A bright blue spot on the operculum. Fins finely dotted with black. A dark line runs along the centre of the caudal.

Common in rivers, and also found in stagnant tanks. Is eaten by the natives.

PANCHAX LINEATUM (Cuv. & Val.).

B. v. D. 8. P. 15. V. 6. A. 17. C. 19. L. l. 34. L. tr. 9.

Length of specimens from $2\frac{1}{10}$ to $3\frac{2}{10}$ inches.

The length of the ventral and caudal fins vary very much in different seasons of the year.

It is exceedingly common in all rivers, tanks, paddy-fields, and even in pieces of water within the influence of the tides. It is eaten by the natives.

The EELS are amongst the most difficult of fish to obtain at Cochin, in consequence of the dread in which the natives hold them. Unfortunately the Sea-snakes abound along the Malabar coast; and snake-like fishes are therefore held in awe. Even if captured, neither Mahomedans nor Jews will touch them; whilst there seems to be some antipathy against their use amongst the servants of Europeans, so that they rarely appear at the table. The bite of the *Muraenesox telabon* (Cuv.) and also of several other species of Eels is severe, and dangerous wounds are frequently caused by them.

MURÆNA MACULATA (Buch. Ham.).

B. xi. D. 256. A. 221. C. 12.

Length of specimens from $10\frac{1}{10}$ to 18 inches.

Common in fresh water ; excellent eating.

MURÆNESOX TELABON (Cuvier).

B. xv. D. 250–265. P. 17. A. 135–146. C. 11.

Length of specimens from 21 to 27 inches.

Common. Its bite is very severe. Is good eating.

SYMBRANCHUS BENGALIENSIS (McClelland).Length of specimen $25\frac{1}{10}$ inches.

Captured in the fort-ditch, Cochin.

PISOODONOPHIS BORO (Kp.).

B. xxix. D. 345. P. 12. A. 250.

Length of specimen $11\frac{1}{2}$ inches.

Common.

LEPTOCEPHALUS MALABARICUS, Day, sp. nov.Length of specimen $3\frac{5}{10}$ inches. Number of neural spines about 212.

Length of head $\frac{1}{14}$ of total length. Height of head $\frac{1}{35}$, of body $\frac{1}{12}$, of dorsal fin nearly $\frac{1}{35}$, of anal nearly $\frac{1}{35}$ of the total length. Diameter of eye $\frac{1}{5}$ of the length of head, eyes 1 diameter from end of snout.

Profile from snout nearly straight to the upper margin of the back, then slightly raised. Body very compressed.

Mouth-cleft beyond the posterior margin of the orbit. Snout produced, overlapping lower lip. Eyes central.

Whether due to accident or natural causes, a circular hole, exceeding the diameter of the eye, exists at the posterior extremity of the anterior two-fifths of the body, midway below vertebral column and ventral surface ; also a notch near the caudal, at its under surface.

Dorsal fin commences a short distance behind the head, and is continuous with the caudal and anal. Anal occupies the posterior half of the body. Caudal very short.

Colours. Body whitish. Eye golden ; lower surface orange. One line of yellow, spotted with green, proceeds backwards from the eye ; a second from the mouth ; this last also traverses the lower lip.

This little fish was brought alive, and remained about two hours swimming about in a globe of water. The aperture referred to and the notch were very distinct whilst it was alive.

In describing the succeeding genera, I shall follow M. Valenciennes's arrangement in the 'Histoire Naturelle des Poissons,' because Bleeker's excellent 'Atlas Ichthyologique' has not extended so far.

Natives esteem the *Hemiramphus* genus when fresh ; and even the

Europeans consider their roes, when curried, a great delicacy. But the "*Cuttay charlay*" (Mal.), *Spratella fimbriata*, C. & V., is the fish most generally approved of by the natives, whether fresh or salt. In fact, the Christian population appear to consider no curry fit to eat unless it contains fish. The *Dussumieria acuta*, C. & V., and *Engraulis brownii*, Gm., are both relished by Europeans, the latter being known as "Whitebait;" whilst the "*Charlay*" (Mal.), *Sardinella neohowii*, C. & V., or Sardine, is exceedingly valuable on account of the fish-oil which is prepared from it, and extensively exported from Malabar to Europe.

BELONE CANCILA (Buch. Ham.).

Coahlan (Mal.).

B. x. D. 16. P. 11. V. 6. A. 16. C. 15.

Length of specimen $8\frac{1}{10}$ inches.

Found in the Kurriavanoor River, and said to be very destructive to small fish; it does not appear to grow to a large size.

BELONE CAUDIMACULATA (C. & V.).

Coplah (Mal.).

B. x. D. 14. P. 11. V. 6. A. 17. C. 15.

Length of specimen $12\frac{2}{10}$ inches.

Is captured only in the sea, and at the mouth of the river within the influence of the tides. Considered good eating by the natives; but not much esteemed by Europeans, owing to its large number of bones.

BELONE ANNULATA (C. & V.).

B. xiii. D. 22. P. 12. V. 6. A. 23. C. 15.

Length of specimen $19\frac{4}{10}$ inches.

Inhabits the same places, and held in the same esteem, as *B. caudimaculata*, C. & V.

HEMIRAMPHUS REYNALDI (C. & V.).

Morrul (Mal.).

B. xii. D. 16. P. 12. V. 6. A. 15. C. 15. L. l. 58. L. tr. 8.

Length of specimen $7\frac{6}{10}$ inches.

Exceedingly common after the commencement of the south-west monsoon, and through the cold weather. Very much esteemed by the natives, and its roe highly prized by Europeans for curries.

HEMIRAMPHUS XANTHOPTERUS (C. & V.).

Coollah (Mal.).

B. xii. D. 15. P. 13. V. 6. A. 16. C. 15. L. l. 56. L. tr. 9.

Length of specimen $7\frac{8}{10}$ inches.

The length of the head, from the termination of the intermaxillaries, is $\frac{1}{6}$ of the total to the end of the lower lobe of caudal fin, of beak

from opening $\frac{1}{6}$, of pectoral $\frac{1}{11}$, of caudal $\frac{2}{13}$, of base of dorsal $\frac{1}{9}$, of base of anal $\frac{1}{10}$ of total length. The height of head $\frac{1}{3}$, of body $\frac{1}{9}$ of the total length. Diameter of eye $\frac{1}{3}$ of the length of the head, eyes not quite 1 transverse diameter apart, upwards of 1 diameter from end of intermaxillaries.

Intermaxillaries forming a very pointed angle at their junction. Teeth in wide bands in both jaws, the innermost being the largest, in the lower maxillary at the central line only touching at their base. Interorbital space nearly flat.

Dorsal fin commences a little behind posterior third of body. Anal arises opposite dorsal, and their shape is the same, highest in front. Caudal not deeply cleft; lower lobe the longest.

This *Hemiramphus*, with its scarlet-tipped beak, is occasionally seen in vast numbers at the mouth of the river, and is also frequently captured in fresh water.

CHIROCENTRUS DORAB (Forsk.).

B. viii. D. 16. P. 14. V. 6. A. 33. C. 19.

Length of specimen $16\frac{5}{10}$ inches.

Not uncommon at Cochin; but much more abundant at Telli-cherry, and where there are rocks. Is highly esteemed by the natives, and extensively salted.

CHANOS PALA (Cuv.).

B. iv. D. 14. P. 17. V. 11. A. 9. C. 19.

Length of specimen 7 inches.

Usually captured in the backwater, during the monsoon; is good eating.

ELOPS SAURUS (Linn.).

B. l. xxxi., r. xxix. D. 23. P. 17. V. 15. A. 17. C. 31.
L. l. 109. L. tr. $\frac{12}{12}$.

Length of specimen $22\frac{5}{10}$ inches.

MEGALOPS CUNDINGA (Buch. Ham.).

Cunnay (Mal.).

B. xxiii. D. 20. P. 15. V. 11. A. 24. C. 19. L. l. 39.
L. tr. $\frac{6}{6}$.

Length of specimens from $9\frac{5}{10}$ to $15\frac{1}{10}$ inches.

It is sometimes captured at the mouth of the river; but is most commonly found in tanks, especially in the fort-ditch. Amongst the Cochin specimens there is not any difference in the number of scales in the adult and the young, as observed by Cantor in the Straits settlements. Likewise the filament from the last dorsal ray is as long in adults as in the younger specimens; but the comparative size of the eye is larger in the older ones. Considered good eating, but bony.

SARDINELLA NEOHOWII (C. & V.).*Charlay* (Mal.).

B. v. D. 17. P. 17. V. 9. A. 16. C. 17. L. l. 45. L. tr. 13.

Length of specimen $6\frac{5}{10}$ inches.

Comes to Cochin in some years in enormous numbers; and from it fish-oil is prepared. When Dussumier was in Malabar, about 1827, he observed that those not consumed as food were used for manuring the cocoa-nut trees and the rice-fields.

It is very good eating, but too fat to salt well.

SPRATELLA FIMBRIATA (C. & V.).*Cuttay charlay* (Mal.).

B. v. D. 19. P. 17. V. 8. A. 20. C. 19. L. l. 46. L. tr. 11.

Length of specimens from $5\frac{6}{10}$ to $5\frac{9}{10}$ inches.

Very much esteemed by the natives, and extensively salted. Owing to its not containing much oil, it is not a good species for those manufacturers; but that very reason favours its being cured. It is very abundant.

PRISTIGASTER TARTOOR (C. & V.).B. vi. D. 13. P. 13. A. $\frac{1}{60}$. C. 21. L. l. 50.Length of specimen $4\frac{1}{2}$ inches.

Twenty-eight spines before commencement of anal.

Rare in Cochin.

ALAUSA MELANURA (C. & V.).

B. vi. D. 16. P. 14. V. 8. A. 17. C. 21. L. l. 38. L. tr. 9.

Length of specimen $3\frac{6}{10}$ inches.*ENGRAULIS MALABARICUS* (C. & V.).*Monangoo* (Mal.).

B. xii. D. 13. P. 14. V. 7. A. 40. C. 19. L. l. 42. L. tr. 11.

Length of specimen 8 inches.

Very common, eaten by natives; but is very bony, and not esteemed by Europeans.

ENGRAULIS BROWNII (Gmelin).

B. xi. D. 15. P. 15. V. 7. A. 21. C. 19. L. l. 36. L. tr. 7.

Length of specimen $5\frac{2}{10}$ inches.

This species is exceedingly numerous in some seasons, and is one of those commonly known as *Whitebait* by the Europeans, by whom it is much esteemed.

ENGRAULIS DUSSUMIERI (C. & V.).B. x. D. $1\frac{1}{12}$. P. 13. V. 6. A. 34. C. 19. L. l. 35. L. tr. 9.

Length of specimens from $4\frac{4}{10}$ to $4\frac{5}{10}$ inches.
Not uncommon in the cold season.

ENGRAULIS AURATUS, Day, sp. nov.

B. x. D. $\frac{1}{14}$. P. 12. V. 7. A. 34. C. 19. L. l. 40. L. tr. 9.

Length of specimen $4\frac{6}{10}$ inches.

Length of head nearly $\frac{1}{7}$, of pectoral $\frac{1}{7}$, of base of dorsal $\frac{1}{9}$, of base of anal $\frac{1}{4}$, of caudal $\frac{1}{7}$ of the total length. Height of head $\frac{1}{6}$, of body $\frac{1}{4}$, of dorsal fin $\frac{1}{7}$, of anal $\frac{1}{9}$ of the total length. Diameter of eye, longest transverse, $\frac{1}{3}$ of the length of head, eyes $\frac{1}{2}$ a diameter from end of snout, 1 diameter apart. Its anterior and posterior third covered by an adipose lid.

Profile scarcely ascends from snout to dorsal fin, or descends much thence to the caudal, the abdominal surface being very much more convex; sides flat.

Head. Snout short; gape of mouth extending to below the posterior margin of the orbit; superior maxillaries very elongated, reaching as far as last quarter of pectoral, and equal to nearly one-third of the total length of the fish. A raised crest exists from snout along the whole central line of the head. Operculum narrow, octagonal; posterior margin having its central two-fifths straight, directed a little obliquely backwards, and forming an obtuse angle at its upper and lower fifths; superior and inferior margin straight, but very short. Præoperculum, posterior margin nearly vertical. Branchiostegous opening very wide, extending almost to the lower margin of the symphysis.

Teeth. A series of fine villiform teeth in the lower jaw, also along the whole extent of the elongated superior maxilla; only a few in the external half of each intermaxillary. A few in the vomer. A long double line of fine teeth in the palatine bones, with a large oval toothed space posteriorly.

Fins. Dorsal commences midway between snout and base of caudal fin; anal midway between anterior surface of chest and commencement of caudal. Pectoral arises below the posterior margin of operculum, and reaches to the ventral. Dorsal triangular, with a small spine a short distance before its first ray. Pectoral falciform. Anal, anterior portion highest. Caudal lobed, lobes of equal length. About thirteen sharp compressed scales on the keel of the lower margin of the body, anterior to the commencement of the ventral fins, and seven between their termination and the origin of the anal.

Colours. The upper surface of the back closely dotted with black, and of a brilliant shining coppery tinge, passing downwards and becoming pure white on the sides. A large black spot on the shoulder. Dorsal with minute black dots, more especially at its upper margin; otherwise colourless, as are also the pectoral, ventral, and anal fins. Caudal light straw-coloured, with a darkish tip. Eyes tinged with brown superiorly, below yellowish.

Common, and considered good eating; arrives during the southwest monsoon.

DUSSUMIERIA ACUTA (C. & V.).

B. xv. D. 21. P. 14. V. 9. A. 14. C. 21.

Length of specimens from $4\frac{1}{10}$ to $6\frac{3}{10}$ inches.

Very common, and excellent eating.

COILIA REYNALDI (C. & V.).B. x. D. $1\frac{1}{14}$. P. 15. V. 15. A. 104. C. 15.Length of specimens from $3\frac{7}{10}$ to $3\frac{8}{10}$ inches.

Not rare.

CHATOESSUS ALTUS (Gray).*Noonah* (Mal.).B. vi. D. 18-19. P. 15. V. 9. A. 23-25. C. 19. L. l. 48.
L. tr. 18.Length of specimens from $5\frac{8}{10}$ to $6\frac{1}{10}$ inches.

Common and good eating.

CHATOESSUS CHACUNDA (Buch. Ham.).

B. vi. D. 20. P. 17. V. 8. A. 20. C. 19. L. l. 45. L. tr. 11.

Length of specimens from 3 to 6 inches.

Eaten by the natives, by whom it is esteemed.

The *Plectognathi* are not approved of as food, but are eaten by the poorer classes.

ALUTARIUS LÆVIS (Bloch).*Mullah purroah* (Mal.).B. vi. D. $2\frac{1}{46}$. P. 15. A. 49. C. 12.Length of specimen $5\frac{8}{10}$ inches.

Rare.

TRIACANTHUS BIACULEATUS (Bloch).*Mootarree* (Mal.).

B. vi. D. 5-24. P. 14. V. 1. A. 19. C. 14.

Length of specimens from 3 to $7\frac{2}{10}$ inches.

Very common; does not grow to a large size.

The *Ostracioides* are comparatively rare, only two species having been observed at Cochin, and of these only three specimens.

OSTRACIUM TESSERULA (Cantor).B. vi. D. 9. P. 13. A. 9. C. $8\frac{1}{1}$. Plates 12×5 .Length of specimen $\frac{8}{10}$ ths of an inch.*OSTRACIUM NASUS* (Bloch).B. vi. D. 9. P. 11. A. 9. C. $8\frac{1}{1}$.Length of specimen $5\frac{1}{10}$ inches.

Amongst the *Gymnodontidæ* the most common are the Tetrodons or Sea-Porcupines, as known to Europeans, or "*Kuddul mahcut-chee*" (Mal.), Sea Frogs, as they are termed by the natives on account of the noise they make when captured. They are taken in the Chinese nets on the river's bank; they are thrown up by the sea on the shore, and also captured in brackish and saltwater marshes. The natives occasionally eat them; but as they frequently cause indigestion—some allege, symptoms of poisoning—they are generally avoided. The native doctors prescribe them in cases of phthisis, having a belief in their curative powers for diseases of the lungs.

TETRODON LUNARIS (Cuvier).

B. v. D. 14. P. 18. A. 12. C. $10\frac{2}{2}$. Sides spineless.

Length of specimen $3\frac{3}{10}$ inches.

Rare.

CRAYRACION TESTUDINEUS (Linn.).

Paattha (Mal.).

B. v. D. 10. P. 17. A. 10. C. 10.

Length of specimens from $1\frac{9}{10}$ to $7\frac{5}{10}$ inches.

In the small specimen the spines exist all over the body, as in the older one; but the horizontal lines along the abdomen are absent, the back and sides alone showing the coloration of the more mature one.

CRAYRACION FLUVIATILIS (Ham. Buch.).

B. v. D. 14. P. 21. A. 12. C. 12.

Length of specimens from 3 to $4\frac{8}{10}$ inches.

The commonest species; abundant all through the year.

CRAYRACION COCHINENSIS, Day, sp. nov.

B. v. D. 9. P. 18. A. 10. C. 11. Spined to front of anal fin.

Length of specimen $5\frac{5}{10}$ inches.

Length of head nearly $\frac{1}{4}$, of pectoral $\frac{1}{11}$, of base of dorsal $\frac{1}{8}$, of base of anal $\frac{1}{9}$, of caudal $\frac{1}{5}$ of total length. Diameter of eye $\frac{1}{5}$ of length of head, eyes $2\frac{1}{3}$ diameters apart posteriorly, $1\frac{3}{4}$ anteriorly, 2 from end of snout.

Spines single, sharp, closely set, commencing from interorbital space, and behind upper and lower jaws, and continued on the back as far as the anus. Anteriorly from the interorbital space they are continued in rather a fine band, surrounding the nostrils, posteriorly in a crescentic form; there are none on the space around the pectoral fin anteriorly. Nostrils tubular, placed above and slightly behind the anterior margin of the orbit.

Fins. Dorsal arises at the commencement of the posterior third of the back, and at a distance equal to its base in front of the anterior

margin of the anal. All the fins are rounded. The first ray of anal and three first of dorsal undivided.

Colours. Olive-green on the back, becoming lighter on the sides and dirty white on the abdomen. A large pure-white spot, longer than the diameter of the eye, over each orbit. Dorsal, caudal, and anal fins of a yellowish green, stained with a darker shade at their extremities. Pectoral brownish olive.

Rare. A single specimen captured in June 1863.

LEIODON VIRIDIPUNCTATUS, Day, sp. nov.

B. v. D. 12. P. 18. A. 11. C. $10\frac{2}{2}$. Sides spineless.

Length of specimen 6 inches.

Length of head $\frac{1}{4}$, of pectoral $\frac{1}{8}$, of base of dorsal $\frac{1}{12}$, of base of anal $\frac{1}{20}$, of caudal $\frac{1}{5}$ of the total length. Diameter of eye $\frac{1}{5}$ of the length of the head, eyes 2 diameters apart anteriorly, but further posteriorly, rather nearer to gill-opening than to end of snout.

Spines short, some distance asunder, commence from occiput, and pass along the back two-thirds of the way to the commencement of the dorsal fin. Inferiorly they begin below the orbit, surround the lower and posterior margin of the pectoral fin, and are continued backwards as far as the anus. Those most in front are directed backwards; but from the posterior margin of the pectoral they are turned downwards. Nostrils broad, open, placed above and slightly behind the anterior margin of the orbit.

Fins. Dorsal arises at commencement of posterior quarter of the body, and its posterior margin is above the first ray of the anal. All the fins are rounded. First three dorsal and two anal rays are undivided.

Lateral line curves upwards from above the pectoral fin, and is continued to centre of the caudal. It is very indistinct.

Colours. Back light green. Abdomen silvery white. Back and sides covered with emerald-green spots; a bar of the same colour passes across the vertex, from one eye to the other, and also goes backwards in the median line, towards a second irregular band of the same colour, which passes across the back further posteriorly. Eye brown, with a golden rim surrounding the iris. Caudal and anal tipped with black. Dorsal yellowish. Four black spots under the throat.

The LOPHOBRANCHIATE fishes are not numerous at Cochin—but are more common a little to the south, commencing at Quilon. They are neither eaten nor made use of by the natives, except for the purpose of drying and selling as curiosities to the European sailors and others.

HIPPOCAMPUS COMES (Cantor).

Coodra meen (Mal.).

D. 16. P. 17. A. 4. Rings of body 11, of tail 33.

Length of specimens from $8\frac{4}{10}$ to $9\frac{2}{10}$ inches.

SYNGNATHUS SCHLEGELI (Kaup).

D. 35. C. 9.

Length of specimens from 5 to $7\frac{2}{10}$ inches.

Eighteen rings before the dorsal fin (which stands on 9), and 14 rings posterior to it.

SYNGNATHUS ARGYROSTICTUS (Kuhl & V. Hass.).

D. 27. P. 16. A. 2. C. 10.

Length of specimen $5\frac{2}{10}$ inches.

By no means rare, and ascends the rivers far above the influence of the tides, one specimen having been captured at Alwaye, some miles beyond that portion of the river where the salt water ceases.

The great order of SELACHIA is abundantly represented, in the Sharks (*Shraawoo*, Mal.) and Rays which abound in the seas and backwaters surrounding Cochin. It is not a little remarkable that very few accidents occur from Sharks carrying off human beings; in fact, during five years' residence there was only one such instance came to my knowledge. The Hammer-headed species is the one most feared; but the Saw-fish is much more dreaded than any of the Shark tribe, accidents from its wounds being by no means infrequent.

Shark-liver oil is employed as a good substitute for the true cod-liver oil, and, could its odour be mitigated without deleteriously affecting its medicinal properties, it would be exceedingly valuable. Sharks' fins are dried and exported to places whence they are said to find their way to China. Shark's flesh is considered so nourishing that it is rather extensively salted; and owing to its properties it has received the name of "*pāl soora*" (Mal.), or milk-producer, and is given to women shortly after their confinements. Sharks' skins are employed for sword-belts, and in various useful trades.

The Rays, of course, are not eaten by Mahomedans or Jews, and appear not to be held in much esteem, except for salting or oil; they are mostly captured in the backwater during the south-west monsoon and the succeeding cold months. They grow to an enormous size, more especially the *Trygon uarnak*. The spines on the tails of these fish are much dreaded, as they often inflict most dangerous wounds with them; they are at once broken off on their being captured. But, feared alive, these tails are believed to possess some secret but powerful agency when dead, which protects the fortunate possessor, so long as he wears one about his person, not only against the power of spells, but also enables him to face the "evil eye" with impunity.

CHILOSCYLLIUM PLAGIOSUM (Müll. & Henle).

Ettee (Mal.).Length of specimens from $4\frac{5}{10}$ to 21 inches.

The young, as pointed out by Cantor, are always barred; the mature has neither bars, streaks, nor spots. It is dull ashy grey above, and dirty white or reddish white beneath.

Common; flesh esteemed very nourishing.

SQUALUS ACUTUS (Rüpp.).

Length of specimen $16\frac{2}{10}$ inches.

Common.

SQUALUS MELANOPTERUS (Quoy & Gaim.).

Length of specimen $10\frac{2}{10}$ inches.

Common; grows to a very large size.

SPHYRNA ZYGÆNA (Linn.).

The Hammer-headed Shark is much dreaded, and grows to a large size. Its flesh is considered very wholesome. Oil extracted from its liver is the favourite native remedy for night blindness.

PRISTIS ANTIQUORUM (Linn.).

Length of specimen 12 inches.

Much feared, as it inflicts most dangerous wounds. Flesh esteemed.

RHYNCHOBATUS DJEDDENSIS (Forsk.).

Length of specimen $17\frac{2}{10}$ inches.

ASTRAPE DIPTERYGIA (Bl., Schn.).

Length of specimen $6\frac{8}{10}$ inches.

TRYGON UARNAK (Müll. & Henle).

Length of specimen 12 inches.

Very common. Large specimens, spotted like a Cheetah, are as common as the smaller and immature light brown ones. They grow to a very large size, and wounds from their spines are considered very dangerous. Good eating.

DASYATIS MICRURA (Bl., Schn.).

Length of specimen 9 inches.

Not common.

HYPLOPHUS SEPHEN (Forsk.).

Length of specimen $21\frac{3}{10}$ inches.

The skin of this species forms some of the true shagreen of commerce. Its tail-spine is considered dangerous. Grows to a large size, is fair eating. Is most common during south-west monsoon and succeeding cold months.

ÆTOBATIS NARINARI (Bl., Schn.).

Therrundee (Mal.).

Length of specimen 15 inches.

Out of 211 species of fish which I have brought in safety to this country from Cochin, nearly one in eight appear to have been hitherto undescribed. As zealous Dutch and French travellers have more efficiently collected ichthyological specimens in Malabar than elsewhere on the shores of India, it shows the vast field still left to be explored. The freshwater fishes of the inland hills appear almost unknown; for out of eight species kindly furnished me by the Rev. H. Baker, jun., five were entirely new.

The difficulty in India of obtaining fresh specimens, of preserving them when obtained, the damage they receive on being conveyed from place to place, and the almost impossibility of procuring at out-stations good ichthyological works of reference make the study of the finny tribes more difficult, perhaps, than that of any other branch of zoology. At the same time these very difficulties render it more productive than most others in new forms and hitherto unknown species.

March 28th, 1865.

John Gould, Esq., F.R.S., in the Chair.

The Secretary called the attention of the Meeting to the valuable addition recently made to the Society's collection in the shape of a pair of the rare Fruit-Pigeon of the Seychelles Islands, *Erythrænas pulcherrima* (Scop.), remarkable for the curious naked wattles at the base of the bill, and for other peculiarities. This pair of birds, believed to be the only individuals of the species ever received alive in this country, had been presented to the Society by Lady Barkly, the wife of H. E. Sir Henry Barkly, K.G., Governor of Mauritius.

The Secretary also announced the arrival on the preceding day of a fine specimen of the King Penguin (*Apterodytes pennanti*) of the Falkland Islands. This bird, which was believed to be the only Penguin ever brought alive to Europe, had been obtained at the Falklands, and skilfully conveyed to this country by Commander Fenwick, of H.M.S. 'Harrier,' by whom it had been liberally presented to the Society.

The following papers were read :—

1. NOTICE OF A NEW SPECIES OF PORPOISE (*PHOCÆNA TUBERCULIFERA*) INHABITING THE MOUTH OF THE THAMES. BY DR. JOHN EDWARD GRAY, F.R.S., F.L.S., ETC.

The fact of a new species of Porpoise being found on our own shores, at the mouth of the Thames, must be considered as a proof of how little we at present know of the species of Cetacea.



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