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“It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die away, if they shall entirely cease.”—

SIR WM. JONES.



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1859.

*Report of Curator, Zoological Department, for May, 1858.*

1. Dr. G. von Liebeg, having kindly permitted a native collector in the pay of the Society to accompany him, in his recent visit to the new penal settlement at Port Blair, on the eastern coast of the southern island of Great Andaman, I have now much pleasure in reporting on the specimens that were obtained by him and by Dr. Liebeg himself, under circumstances of considerable difficulty.

In the class of mammalia, there are only a human bone and some skulls of the undescribed wild Hog of the Andamans.

The bone is the left femur of probably an adolescent female. Length  $14\frac{1}{4}$  in., by  $2\frac{5}{8}$  in. in circumference at middle of trunk; the epiphyses imperfectly ankylosed. It is charred throughout; having been found among the smouldering remains of a recently fired village.

On the same occasion were found the following bones of the wild Hog. 1. Skull of an adult boar, wanting the tusks and lower jaw. 2. Lower jaw of a rather larger boar, with the series of teeth complete. 3. Skull of an adult sow, with teeth in lower jaw complete, and the upper series wanting only some of the incisors. 4, 5. Skulls of adolescent sows. 6, 7. Heads wanting lower jaw, of adult sows. 8. Lower jaw of adolescent sow. 9. That of a younger individual. All of these skulls are daubed over with regular stripes of red ochre, and had been hung up as trophies in the huts of the natives.

*SUS ANDAMANENSIS*, nobis, *n. s.* Seemingly akin to the *S. PAPUENSIS* of New Guinea, and to Mr. Hodgson's Pigmy Hog of the Nepal sâl-forest, which he terms *PORCULA SALVANIA*. The entire length of the skull of an adult male, from occiput to tip of the upper jaw, is only  $10\frac{1}{4}$  in.: breadth at zygomata  $4\frac{1}{2}$  in.: palate to tip of intermaxillaries, 6 in.: series of molars six (properly seven, the first having been displaced by the growth of the tusks, which are shewn by the shape of their sockets to have been large and abruptly curved outward and upward); longitudinal diameter of the tusk-sockets  $\frac{3}{4}$  in.: series of six grinders  $3\frac{1}{4}$  in.: from tusk-socket to tip of intermaxillaries,  $1\frac{7}{8}$  in.: breadth of occiput above, where narrowest, 1 in.; and of bony palate, 1 in. The lower jaw of a rather larger male measures  $8\frac{3}{8}$  in. to tip of incisors; and height to summit of coronoid process,  $3\frac{5}{8}$  in.: the tusks project  $1\frac{3}{4}$  in., as in the Indian boar, and are proportionately robust and keen-edged: series of six grinders  $3\frac{3}{8}$  in., thence to the tusk 1 in., and midway, a little nearer the tusk, is situate a small præmolar: the hindmost grinder is longer, in its antero-posterior diameter, than the penultimate by only one-half; and in the upper series

the hindmost is scarcely larger than the penultimate. This lower jaw is that of a fully grown boar, whose hindmost molars had long been brought into wear: in the other the hindmost molars are fully developed, but are not abraded.

Of the sow, there are three skulls of fully adults, with the hindmost molars worn; but one only has the lower jaw: in this, the upper plane of the occiput, where narrowest, is only  $\frac{1}{2}$  in.; being in the two others  $1\frac{1}{8}$  in.: the series of grinders is seven above and below; the tusks small, as in *S. INDICUS*. In other respects they resemble the boar skull, except in being smaller: length, from occiput to tip of intermaxillaries,  $9\frac{1}{2}$  in.; and greatest width, at the zygomata, 4 in.

From the size of the skull of the adult boar, it may be estimated that this animal would not exceed 15 in. in height, if indeed it is even so high at the shoulder. The skull is much less elongated anterior to the orbit than in ordinary Swine, that portion occupying somewhat less than three-fifths of the entire length. Profile a little concave anterior to the eyes, the forehead bulging into a convexity.

It is probable that the same species inhabits the Cocos islets, lying north of the Great Andaman, and also the group of the Nicobars to the south; though on the Great Coco it would appear that Hogs have only been recently introduced by the Burmans, and may therefore be of a domestic race derived from the continent. I have long had reason to suspect that the Hogs of at least the Andaman islands would prove to be of a peculiar species, and therefore called Dr. Liebeg's attention particularly to the subject. The Rev. J. Barbe describes the Nicobar Pigs as being apparently derived from the Chinese, and says nothing of their being of a diminutive size:\* moreover they appear to be domesticated; but so, I believe, are a few of the *SUS PAPUENSIS* in N. Guinea. Proceeding to the south and east, according to Dr. S. Müller, the *SUS VITTATUS* inhabits Sumátra, with Jáva and Banka; *S. VERRUCOSUS* also inhabits Jáva; *S. BARBATUS*, Borneo; *S. CELEBENSIS*, besides the Babarussa (which is also in Buru and Ternate), Celebes; *S. TIMORIENSIS*, Timor and Rotti; and *S. PAPUENSIS*, New Guinea: a goodly series of wild swine, to which we now add the *S. ANDAMANENSIS*, which needs comparison most with *S. PAPUENSIS*.

The wild Hogs of the mainland of Asia have not yet been properly determined. They are found at all habitable elevations, and in all climates.

\* *J. A. S.* XV, 352. In Mr. H. Busch's 'Journal of a Cruise amongst the Nicobar Islands,' it is remarked that, in Teressa, "the jungle abounds with wild Pigs, which afford the islanders both sport and provisions."

Those of Siberia and Tartary (in the most extended sense of the latter appellation) are probably identical with *S. SCROPHA* of Europe; perhaps also those of Persia and Afghanistan:\* but there would seem to be more than one race in India, to judge from the skulls; and while the ordinary Indian wild Hog is also that of Ceylon, our museum contains a skull from that island which considerably resembles the skull of *S. BARBATUS*, (as figured by Dr. S. Müller); this is the *S. ZEYLONENSIS*, nobis, *J. A. S. XX*, 173. The ordinary wild Hog of India is designated *S. INDICUS* by Gray (being also *S. CRISTATUS*, Wagler); but the distinctions from *S. SCROPHA* mentioned by Dr. Gray are not very satisfactory;† and he also indicates a *S. AFFINIS* from the Nilgiris.‡ The countries eastward are likely to yield some peculiar species, even to the south of China: but the only peculiar Hog as yet properly determined from the whole mainland of Asia is Mr. Hodgson's tiny *PORCULA SALVANIA*.

Of birds, twelve species were obtained, one of which is a beautiful new *Sháma*.

*KITTACINCLA ALBIVENTRIS*, nobis, *n. s.* Differs from *K. MACROURA*, (L.) in its colouring, and in form of tail, the four middle feathers of which extend little beyond the next pair, and the medial pair but  $\frac{3}{16}$  in. (instead of commonly 2 in., as in the other). Abdominal region, vent, tibial plumes, and inside of the wing anteriorly, pure white, like the upper tail-coverts in both species; the hindmost portion of the flanks, and the lower tail-coverts, only, being deep ferruginous: four pairs of outer tail-feathers more deeply tipped with white than in *K. MACROURA*: in other respects resembling that species; being a true *Sháma*, as distinguished from a *Dhyal* (*COPSYCHUS*). Length of wing  $3\frac{1}{2}$  in., and of tail  $4\frac{1}{4}$  in. A third species of this genus, as distinguished from the nearly affined African genus *CERCOTRICHAS*, exists in the *K. LUZONIENSIS* (*Copsychus luzoniensis*, Kittlitz), of the Philippines.

The other species of birds from the Andamans are—

*HALCYON COROMANDELIANUS*, (Scopoli).

*H. SMYRNENSIS*, (L.)

*CORVUS CULMINATUS*, Sykes.

*STURNIA ERYTHROPYGIA*, nobis. The only specimen has the upper and lower tail-coverts, with the rump and tips of the tail-feathers dull white, instead of deep ferruginous; but there is a faintly perceptible shade of

\* Since writing the above, I have been assured of the existence of three most distinct species of wild Hog on the plains of Mesopotamia.

† *Vide Proc. Zool. Soc.* 1852, p. 130.

‡ *List of the Osteological specimens in the Collection of the British Museum.*

the latter, which I doubt not is fully developed in other Andaman examples. Heretofore only known from the Nicobars.

TEPHRODORNIS GRISOLA, nobis. This species we have also from Calcutta, Arakan, Pinang, and Java; so that it has probably been named by the late Professor Temminck.

GEOCICHLA INNOTATA, nobis. Discovered in the Nicobars, and subsequently obtained in Province Wellesley.

COPSYCHUS SAULARIS, (L.) Undistinguishable from Bengal specimens.

ARTAMUS LEUCORHYNCHOS, (L.) Badly so named; for the bill is of a fine blue.\*

EDOLIUS —? The Malayan species of *Bhim-ráj*, with rudimentary frontal crest.

PYCNONOTUS JOCOSUS, (L.) The Burmese and Pinang variety, with shorter and deeper-coloured crimson ear-tufts than in the Indian race.

CARPOPHAGA SYLVATICA, Tickell (*C. aenea* of India, auctorum, and of Sumatra apud Raffles). Two fine specimens, quite similar to the continental race on either side,—*i. e.* differing from the marked peculiar race of the Nicobars,—*C. INSULARIS*, nobis.†

In the class of reptiles, a species of VARANUS was procured, but circumstances did not permit of its preservation.

In that of fishes, the most remarkable is a curious new genus of the Blenny group, with broad expanded pectorals, thrown out as in the Loches of the genus HOMALOPTERA (apud Bleeker, *Balitora*, Gray, *Platy cara*, McClelland):—

ANDAMIA, nobis, *n. g.* Form elongated, with large expanded pectorals and caudal, and a long serrated anal which is also permanently expanded; the ventrals short, even with the pectorals, and consisting each of an outer simple ray and an inner divided ray, which are separated nearly to the base. Head depressed, with rather small eyes, placed vertically, and distantly apart; the mouth opening downward, and furnished with a remarkable labial apparatus: in front it is covered by a thin overflapping upper lip, which is connected laterally by a plicature with a fold or flap of membrane underneath, at a short distance from the mouth behind it: minute marginal teeth in both jaws, which are perceptible to the touch as a slight asperity. Dorsal fin extending the whole length of the back,

\* The alleged new Indian species of ARTAMUS, described by Dr. Nicholson in the *Proc. Zool. Soc.* 1851, p. 195, by the name *A. cucullatus*, seems to be no other than CAMPEPHAGA SYKESI, Strickland!

† The CHALCOPHAPS of the Nicobars appears to be CH. AUGUSTA of the late Prince of Canino.

becoming higher on its posterior half; its spinous and soft rays not easily distinguishable, and the second and third rays are a little elongated in the males (at least of the species described, which also has a small pal-  
mated appendage over each eye).

A. EXPANSA, nobis, *n. s.*

*D.* 36.—*V.* 26.—*P.* 14.—*C.* 11.

Colour dark plumbeous above, with slight pale mottled transverse bands on the sides: the gill-covers studded with minute dusky specks: dorsal fin dusky; the ventral surface and anal fin whitish, with a dark spot on each ray of the latter: membrane of the tail colourless, with conspicuous black rays; the caudal rays extending beyond the membrane: the tail having a rounded form, and being almost continuous below with the anal fin. In a young individual, the dorsal fin is pale, with the exception of the first two rays, which are black. In adults the pectorals and posterior half of the dorsal are marked (more or less distinctly) like the caudal, black rays on colourless membrane: ventrals pale. Length  $3\frac{5}{8}$  in.

SALARIAS OLIVACEUS, nobis, *n. s.* One of the crested species of this genus, having also a small appendage over each eye.

*D.* 12-19.—*V.* 22.—*P.* 13.—*C.* 12.

General colour dark olive-green, paler below, and also on the hinder half of the body, where inclining to dull reddish: a few obscure dark spots along the back, at base of the dorsal fin, not visible in all specimens, and some minute black specks also towards the tail. Length  $3\frac{1}{4}$  in.

PERIOPHTHALMUS FUSCATUS, nobis, *n. s.* Pectorals rather large: ventrals deeply divided: anterior dorsal moderately high, with no elongated filaments: caudal pointed, and as if obliquely truncated below.

*D.* 12-13.—*V.* 11.—*P.* 11.—*C.* 17.

Colour dusky leaden-brown above, obscurely mottled; the lower-parts pale: the two dorsal and the caudal fins speckled with black; the pectorals less distinctly so; and the ventrals and anal spotless: on the gill-covers are a few white specks; and the sides of the body are obscurely marked with numerous small black spots. Length  $3\frac{1}{4}$  in.\*

GOBIUS BREVICEPS, nobis, *n. s.* A small nude-headed Goby, with the eyes placed remarkably forward, imparting somewhat of a *feline* aspect to the visage. Fins ordinary, or presenting no peculiar character.

*D.* 6.—1-9.—*A.* 1-8.

Colour a pale red-brown, with a row of large blackish spots along the

\* We have a small PERIOPHTHALMUS from Mergui, which, in its colouring, approximates the P. ARGENTILINEATUS, C. and V., but has merely a slight infuscation of the first dorsal. *D.* 9-13.—*V.* 12. If distinct, P. SCINTILLANS, nobis.

side from pectoral to caudal, tending rarely to form a continuous band, above which the back is irregularly freckled with dusky specks of different sizes: the two dorsal and the caudal fins are also minutely speckled with dusky; the other fins and the lower-parts pale and spotless. The largest of several specimens measures  $1\frac{7}{8}$  in.

*G. CORYPHÆNULA*, Valenciennes. This curiously formed species appears to be very common both at the Andamans and Nicobars, frequenting the coral-reefs.

*APOGON QUINQUEVITTATUS*, nobis, *n. s.* About 1 in. in length, with four vertical black bands, a fifth at base of tail, and the occipital region also of this colour. Form compressed; the mouth small; scales also small, numbering about 24 to end of lateral line, which terminates at the posterior base of the second dorsal fin, and 3 rows above and 10 below the lateral line, downward from the first dorsal. Eye large, occupying two-fifths of the vertical height of the head.

D. 13—10.—A. 3-9.—P. 15 (?).—V. 5.

Pectorals reaching beyond the second lateral band; the posterior dorsal and the anal fins projecting similarly as far as the base of the tail-fin.

*MICROPHIS TENUIS*, nobis, *n. s.* A very slender *Syngnathous* fish, with 16 body and 36 caudal rings, and dorsal fin upon the first 7 caudal rings.

D. 24?—P. 16?—C. 9?

Snout half the length of the head, and scarcely more compressed than the neck; body slightly heptangular, the two dorsal angles alone strongly marked; tail quadrangular, and nearly twice as long as the head and body. Dorsal aspect unmottled brown; the other facets of the body (between the angles) marked, more or less distinctly, each with a white band, the continuity of which is broken at the rings: on the tail similar markings are but slightly indicated: no silvery appearance at the gill-covers. Described from two female specimens, the longer of which measures nearly 4 in.

Of *Mollusca*, 22 marine species were procured; but all of them are well known kinds, common in the Bay, and which need not therefore be enumerated.

Among the *Crustacea* are five specimens of a magnificent land-Crab, which sufficiently agrees with the description of *CARDISOMA CARNIFEX*, (Herbst.), by Milne Edwards; but which are nevertheless probably distinct and new, as no land-Crabs approaching them in size seem to be known on the peninsula of India. There are two marked varieties (one of them probably the result of former mutilation of a claw), each attaining to above 3 in. across the carapace. In one of these varieties the claws of the male are excessively unequal, and the huge nippers of the great

claw (which in three specimens sent is on the dexter side) are armed at the middle (typically) each with an enormous tooth. In the other variety the claws are unequal in the male (the left being rather the larger in the specimen sent), and quite equal in the female,—in both sexes much exceeding in size the small claw of the male of the other variety. There is also a marked difference in the colouring of the claws; those of the second variety being weaker in hue,—whence not improbably the whole difference may depend on the latter having cast and renewed the organ. In *GELASIMUS* and other Crabs with very unequal claws, the big one is as often on the right side as on the left. From the size and seeming abundance of this fine land-Crab, it is probably much eaten by the Andamaners.

A fresh-water species sent is the female of a new genus akin to *VARUNA*, remarkable for the small size and nearly round form of the last articulation to the tail, which is placed within a notch of the penultimate articulation, that accordingly half surrounds it, and is the largest of the series.

Other species of Crabs sent are a new *ZOZYMUS* (since received also from Ceylon), *ERIPHIA TUBERCULATA*, nobis, *n. s.* (common on the Burmese coasts), *TRAPEZA FERRUGINEA* (? Latr.), *PILUMNUS VESPERTILIO*, *GRAPSUS STRIGOSUS*, *GR. MESSOR*, *SESARMA TETRAGONA*, *CÆNOBITA RUGOSA*, C. —, a *PAGURUS*, and *GONODACTYLUS CHIRAGRA* of the *SQUILLA* group.

A species of Scorpion and *SCOLOPENDRA MORSITANS* are also sent; and of *Radiata* a species of *COMATULA*, two of *OPHIOCOMA*, one of *ECHINUS*, a *HOLOTHURIA*, and a *SIRINX* (?). Several interesting forms likewise of *Annelides*.

2. E. F. Kelaart, Esq., M. D., Trincomali. To this gentleman we are indebted for a very interesting series of marine Crabs, amounting to 15 species, with specimens of *OPHIOCOMA*, *OPHIURA*, *URASTER*, *ASTERINA*, &c. Also a *FILARIA* from the ovaries of the Pearl Oyster.

3. I have next to announce the presentation of a large collection of stuffed specimens, from his highness the Máharája of Burdwan. This collection contains numerous duplicates, and some very acceptable specimens—especially one or more undescribed species of mammalia, so far as I have been able to discover.

Of *Quadrumana*, adult male and female of the Mandrill (*PAPIO MAIMON*), and a young male of the Drill (*P. LEUCOPHÆUS*),—well set up: a Monkey, also, which I take to be the *INUUS ASSAMENSIS* (v. *pelops*); and other species with which we have long been well supplied. Two kinds of Lemur are sent; one the *L. ALBIFRONS*, Geoffroy; and the other is probably—

*L. FLAVIVENTER*, Lesson (*Rev. Zool. &c.*, 1851, p. 24). In this case, however, the remarkable colouring of the face is unnoticed by its describer. The face and between the eyes are black; but the broad bilobate band above the eyes of *L. NIGRIFRONS*, is in the present species grizzled with fulvous-white, vaguely divided by blackish along the middle, and the latter continued as a more distinct black line from the vertex to the occiput; the periphery also of the greyish frontal band is dusky-black. Fur more dense and frizzled than in *L. NIGRIFRONS*, especially upon the head: of a nearly uniform dull grizzled fulvous-brown on the upper-parts, limbs, and tail; palest on the limbs, but darker towards the anterior hands, and the digits light fulvescent: below dull fulvescent-white, purer white on the chin and throat, and passing to deeper fulvous towards the tail, and likewise on the fore-limbs towards the palms; some pale colour also on the cheeks, and the fur upon the ears; and the moustachial bristles black. Size rather exceeding that of *L. NIGRIFRONS* and *L. ALBIFRONS*.\*

A species of *PARADOXURUS* would seem to be *P. LANIGER*, Hodgson; but with the woolly fur much shorter (as produced in confinement), only  $\frac{1}{2}$  in. long upon the body, and *Lemurine* or Bat-like in character, close and frizzled: but the relative proportions of the tail and body do not agree, this having the tail about equalling in length the head and body; whereas in *P. LANIGER* it is described to be "barely more than a third of the entire dimensions." The prevailing colour of the fur is a maronne-brown, grizzled with hoary tips; darker on the head, occiput, cheeks, and ears; and a narrow median white line along the nose: paws also darker, especially those of the hind-feet, and the terminal third or more of the tail: lower-parts whitish, passing up the sides of the neck so as almost to form a collar: the whiskers long and black: ears naked within, and nearly so for the terminal half externally: no dark lines along the back; but a vague appearance of a broadish fulvous streak along the middle of the back. Length about 32 in., of which the tail is half (or very nearly so): head 4 in.; and hind-feet from heel,  $2\frac{3}{4}$  in.

Here may likewise be noticed—

*P. LEUCOTIS*, nobis (Horsfield's Catalogue). Length about 3 ft., of

\* We have now the following species of this genus:

1. *L. MACACO*, L.: the Ruffed Lemur.
2. *L. CATTALIA*, L. The Ring-tailed Lemur.
3. *L. NIGER*, L. The Black Lemur.
4. *L. ALBIFRONS*, Geoffroy. The White-fronted Lemur.
5. *L. NIGRIFRONS*, Geoffroy. The Black-fronted Lemur, with skeleton.
6. *L. FLAVIVENTER* (?), Lesson. The Grey-fronted Lemur.

which the tail is half. Fur dense and woolly at base, but with long straight hairs intermixed: the prevailing colour pale dull yellowish or fulvous-brown, with three blackish dorsal streaks; below paler, more or less albescent: a white streak on the nose to between the eyes; and the ears black at base, with the terminal half flesh-coloured and scantily furnished with white hairs: crown more or less dusky, grizzled with whitish; and the paws and terminal half (or nearly so) of the tail blackish. Whiskers long and black. Inhabits the Burmese countries (Arakan, Tenasserim, &c.); and is said to be found likewise in Sylhet.

*P. RUBIDUS*, nobis, *n. s.* A large species, of a prevailing deep maronne colour, with black paws and terminal third of tail; the nape also blackish: no dorsal stripes or spots: a whitish band across forehead, extending broadly in front of the ears; and a duller white streak upon the nose, passing to pale ruddy on the forehead: ears black externally: whiskers conspicuously white: lower parts paler; but the fore-part and sides of the neck blackish, with a pale lateral streak continued downward from the white in front of the ears. Fur rather coarse, obscurely grizzled, with dusky-grey woolly pile at base. Entire length about 44 in., of which the tail is 18 in.: hind-foot from heel  $3\frac{1}{2}$  in. A broad pure white tail-tip in the specimen, which was purchased already stuffed; the individual having its nape much abraded from being tied up when alive. *Hab.* — ?\*

Among the mammalia sent by the Máharája of Burdwán, are a stuffed Tiger, 8 Leopards, and 9 Bears, an albino Jackal,† 2 Ratels, *ARCTONYX COLLARIS*, numerous *TRAGULI* (or ‘Mouse Deer’), with various others unnecessary to particularise, and 5 species of Kangaroo, three of which are new to our museum, *viz.* *HETEROPUS PENICILLATUS*, *BETTONGIA PENI-*

\* Of this genus we have now 8 species, counting *MUSANGA* and *typus* as one, and excluding the *DERBIANUS* as not properly appertaining to it.

1. *P. RUBIDUS*, nobis, *ut supra.* *Hab.* — ?
2. *P. GRAYII*, Bennett: *P. nipalensis*, Hodgson. *Hab.* Himaláya, and mountains of Arakan. One specimen from the latter locality has the entire tail fulvous-white.
3. *P. LANIGER* (?), Hodgson, *ut supra.* *Hab.* Himalaya?
4. *P. LEUCOMYSTAX*, Gray: *Amblyodon auratus*, Jourdain. *Hab.* Malayan peninsula, &c.
5. *P. ZEYLONICUS*, (Schreber). *Hab.* Ceylon.
6. *P. LEUCOTIS*, nobis, *ut supra.* *Hab.* Burmese countries.
7. *P. TRIVIRGATUS*, Reinwardt. *HAB.* Malayan peninsula, &c.
8. *P. MUSANGA*, (Marsden): *P. typus*, F. Cuv. *Hab.* India, Burma, and Malay countries.

† We have specimens of the Jackal in the museum,—pure white, coal-black, and bright rufous.

CILLATA, and a large species of LAGORCHESTES, which cannot be identified with any one of the four described by Mr. Waterhouse.

L. GYMNOTIS, nobis, *n. s.* Most nearly akin to L. CONSPICILLATUS, Gould; but much larger, a stuffed female measuring about  $2\frac{1}{2}$  ft. from nose to base of tail, and the tail 16 in.: the skin may be distended; but the following admeasurements can be better depended on: ears externally  $1\frac{3}{4}$  in. (more when fresh); palm to tip of middle claw  $1\frac{7}{8}$  in., the claw  $\frac{1}{2}$  in.; tarse to tip of longest claw  $5\frac{3}{4}$  in., the claw 1 in.; from muzzle to base of ear  $4\frac{1}{2}$  in. Muzzle as in L. CONSPICILLATUS: ears naked within. Prevailing hue rufous-brown, grizzled with dull white; each hair white towards the end, with a black tip: limbs more rufescent: under-parts dull rufescent-white throughout: from the mouth proceeds a dark chocolate-brown line or ill-defined band, contrasting with the white of the throat; and a similar vague band passes from the nostril to the eye, which latter is surrounded with dark hairs: chin also dark: the hairs of the tail are excessively abraded in the specimen, save chiefly a median line underneath; and they seem naturally to be very short, and scanty above and laterally: there is an exceedingly slight indication upon the haunches of the pale band of L. CONSPICILLATUS. *Hab.* — ?\*

Of the specimens of TRAGULUS (or 'Mouse Deer') under examination, four (if not five) species are distinguishable,—in addition to the MEMINNA INDICA.

1. TRAGULUS KANCHIL, (Raffles); of which *Moschus fulviventis*, Gray, is a common variety. This is by far the most abundant species, and its range of distribution extends northward into the Tenasserim provinces. Fourteen specimens are before me, besides an albino. It is constantly dis-

\* The Society's museum now contains the following species of MACROPODIDÆ.

1. MACRUPUS GIGANTEUS, (Zimmerman). Young male, and skeleton of the same; with skull of an older individual.

2. LAGORCHESTES GYMNOTIS, nobis, *ut supra*.

3. HALMATURUS RUFICOLLIS, (Desmarest). Adult male and female, skeleton of latter, and skull of a younger specimen.

4. H. BENNETTII, Waterhouse. Adult male and female, with skeletons, and skull of a younger individual.

5. H. UALABATUS, (Lesson and Garnot). Stuffed male, and skull.

6. H. DERBIANUS, Gray. Stuffed male and female.

7. H. BILLARDIERI, (Desmarest). Skeleton, with skin of head and neck.

8. HETEROPUS PENICILLATUS, (Gray), *ut supra*. Stuffed female.

9. BETTONGIA PENICILLATA, Gray, *ut supra*. Male.

10. B. CUNICULUS, Ogilby. Skull only.

tinguished from all the rest by the median dark line between the fore-legs : neck rufous, with a median dark nape-band strongly defined. A rufous hue commonly pervades the entire lower-parts, with the exception of the white on either side of the pectoral line ; and this white with its medial dark streak extends more or less backward, in proportion as another white streak is continued forward on each side of the belly from behind.

2. TR. PELANDOC (?); *Moschus pelandoc* (?), Ham. Smith: *Tr. affinis* (?), Gray. This species accords better than any other with Buffon's figure of *le Chevrotain de Java*. It is smaller than the Kanchil, with a conspicuously shorter head and larger eye : also smaller accessory or succentorial hoofs. The head and neck are very differently coloured ; and the hue of the body is more uniformly rufous and much less nigrescent than in the Kanchil, each hair, however, being black-tipped. Head of adult male from base of ear to muzzle  $3\frac{1}{2}$  in. ; from eye to muzzle  $1\frac{3}{4}$  in. : the corresponding dimensions in an adult male Kanchil being  $3\frac{7}{8}$  in. and  $2\frac{1}{8}$  in. : from hock to point of succentorial hoof  $3\frac{3}{8}$  in. in the present species,  $3\frac{5}{8}$  in. in the Kanchil. Head rufous, with a strongly marked dark patch on centre of forehead, contrasting much with the broad rufous superciliary mark ; but the black of the forehead faintly continued as a nape-streak, whereas in the Kanchil the contrast of the same colours is transferred to the nape. In our present species, the throat is white, continued into three stripes down the front of the neck, which alike terminate in a pale fulvescent cross-band : the rest of the under-parts white, with merely a fulvous tinge on centre of belly : back and sides of the neck, with the two dark bands in front which alternate with the three white ones, of a peculiar *and similar* grizzled colouring, contrasting much with the rufous of the body ; the former being constantly rufous, and the latter more or less nigrescent, in the Kanchil : tail bright rufous above, white below and at the tip : limbs also bright rufous. Tusk protruding about  $\frac{9}{16}$  in. in the specimen described.

3. TR. JAVANICUS, (Pallas). An adult male and female which I refer to this species, as described by Dr. J. E. Gray in the *Proc. Zool. Soc.* for 1836, p. 64, are remarkable (more especially the female) for the blackish hue of the whole neck, and of the two dark streaks alternating with the three white ones in front of it. General colour rufous, the black tips to the hairs shewing much ; the breast, and towards the hind-legs, white, separated by fulvous which occupies the medial region of the belly, extending quite across it. From hock to point of succentorial hoof 4 in.

4. TR. JAVANICUS, var. STANLEYANUS ; *Moschus Stanleyanus*, Gray, *P. Z. S.* 1836, p. 65. I take this to be merely a variety of the last, having

the neck, and the marks in front of it, bright chesnut-rufous. The general colouring also is less nigrescent; and one female has a strongly defined dark line from eye to nose, and another along middle of nose, separated by a contrasting pale space. A male and two females are before me.

5. TR. FUSCATUS, nobis, n. s.: *Meminna malaccensis* (?), Gray, *Brit. Mus. Catal.* Larger than TR. JAVANICUS; an adult female measuring, from hock to point of succentorial hoof,  $4\frac{1}{2}$  in. General hue whitish, with prevailing dusky tips to the fur: beneath wholly white: neck of the same hue as the body, but with a dark nape-streak commencing from the forehead, and the usual white markings in front, alternating with the two dark ones, which are broad and nigrescent. Perhaps a third variety of the JAVANICUS; but, if so, a very distinct one. *Hab.* — ?

The second species, however, which I have doubtfully assigned to TR. PELANDOC, is most assuredly no variety of the Kanchil; and I do not in the least hesitate to regard it as a well characterized species.

The birds comprise numerous Lories, Cockatoos, and other Parrots; of which the following are new to the Society's museum. EOLOPHUS PHILIPPINARAM, (Gm.), LORIUS CYANAUCHEN, Muller,\* and CHALCOP-SITTA NOVÆ GUINÆÆ: also 2 Emeus, 3 Swans, 3 *Sárás* Cranes, a couple of white Crows, a white (or rather *lutino*) 'Hurrial' or fruit-Pigeon (OSMOTRERON BICINCTA), sundry *Gallinaceæ*, and others which need not be particularized: the only novelty being two specimens (old and young, in very bad condition,) of the PHAPS HISTRIONICA, (Gould). The following Australian species are, however, worthy of notice, as having evi-

\* SYN. *L. superbus*, Fraser; but the *L. LORY*, (*L.*, v. *tricolor*, Stephens,) is subject to so much variation, that I have great doubt if the present bird is more than an occasional variety of it. The principal difference is, that this is blue under the wing (brighter than in *L. DOMICELLUS*), whereas *L. LORY* is usually red under the wing: there is also an unusual amount of red up the back, and the blue of the hind-part of the neck is particularly brilliant; but the latter varies much in brightness in different specimens of *L. LORY*, as do also the relative proportions of the blue and red both above and below,—some having nearly the whole under-parts blackish-blue, passing to vivid prussian-blue posteriorly, and others being crimson as far back as the thighs, with various intermediate phases. This particular specimen of CYANAUCHEN has lost many of its upper nape-feathers, so that it cannot be ascertained whether the usual red occipital band had been present; but I observe that some of the black feathers of the hindmost part of the cap are partly red at base. I repeat my doubt that it is more than an occasional variety of *L. LORY*.

dently been set up from cage specimens brought alive to this country—*PTILINORHYNCHUS COOKII* and *ENTOMYZA CYANOTIS*.\*

The reptiles are *CROCODILUS PALUSTRIS* and *GAVIALIS GANGETICUS*.

While describing new or little known birds, I may here bring to notice a Pheasant, of remarkable beauty, four living specimens of which (all males) have recently been obtained by Babu Rajendra Mállika for his

\* The following, if not the *EOS RICINIATA* or *E. SEMILARVATA*, Bonap., descriptions of which I have not seen, would appear to be a new species of Lory.

*EOS FUSCATA*, nobis, *n. s.* (?) Structure typical. Length of closed wing 6 in. Prevalent colour brown-black, the rump-feathers marginal with dull-white, those of the nape with ruddy-brown, and of the breast with bluish-grey: a dull orange band across the crown, from eye to eye, perhaps typically crimson, a crimson band crossing the upper and another crossing the lower part of the breast; the abdominal and tibial feathers also crimson, and the flanks and lower tail-coverts dull purple-black: tertiaries ruddy-brown, perhaps brighter in fine specimens: a large ruddy-yellow spot on the inner web of each primary, as seen from above in the spread wing; and the unspread tail dull ruddy-brown above, with a shade of blue at tip, all but its middle feathers having the inner web crimson to near the tip: under surface of the wings chiefly yellowish-red. HAB. — ?

*TRICHOGLOSSUS OCHREOCEPHALUS*, nobis, *n. s.* Size and structure of *TR. CHLOROLEPIDOTUS*, (Kuhl). Upper-parts uniformly vivid green; the lower yellowish, passing on the belly and flanks to pure yellow with green tips: crown, ear-coverts, and cheeks, ochreous-yellow, streaked: a broad pure yellow band on the under-surface of the wing, on the inner webs of the primaries and secondaries. Length of closed wing 5 in. HAB. — ?

The following is perhaps but a cage variety of *TR. HÆMATODUS*, (L.); unless that the tail is more developed, attaining to 5 in. and upwards. The red of the breast and beneath the wing in *HÆMATODUS* is replaced by glowing yellow, faintly tinged with red towards the centres of most of the feathers: a slight admixture of red also on the axillaries and on the under-surface of the wing: pectoral feathers without dark margins, or with obscure traces of green terminal edges, chiefly towards the flanks: abdominal patch green, with very slight admixture of blue: the blue of the forehead and cheeks dull and little extended; and the occiput green, above the greenish-yellow nape-band: no yellow at base of inter-scapularies, abruptly defined, as red in *HÆMATODUS*. Perhaps a distinct species,—the *TR. FORSTENI*, Bonap.? The next is certainly distinct.

*TR. IMMARGINATUS*, nobis, *n. s.* Smaller than *HÆMATODUS*, the feet conspicuously so. Length of wing 5 in., and of tail 4 in. Crimson of the breast and beneath the wing much brighter than in *TR. HÆMATODUS*, and little or no trace of dark terminal margins: nape-feathers with fuscous tips, below which a few feathers are red at base, but shewing less than in *HÆMATODUS*; great abdominal

aviaries. *Habitat* unknown.\* It appears to constitute a second species of the genus *DIARDIGALLUS* of the late Prince of Canino; but still is closely akin to *GALLOPHASIS*, Hodgson, and *NYCTHEMERUS*, Swainson.

*D. FASCIOLATUS*, nobis, *n. s.* Size of a Jungle-fowl; and the tail well arched, as in typical *GALLUS*: papillose crimson skin of the cheeks greatly developed, as in the common Silver Pheasant (*GALLOPHASIS NYCTHEMERUS*), rising on either side into a distinct lappet over the forehead, but not uniting medially to form a comb; also continued downward into well marked incipient wattles, and backward into a peak above the ears. From the crown of the head a most elegant Peafowl-like crest, composed of feathers 3 in. long, the slender black stems of which are quite bare for 2 in., and then each divides and subdivides in a remarkable manner, together forming an acute triangular barbed tip, truncate at the extremity, and of a steel-blue colour. Crown black, passing downward into minutely vermiculated feathers on the neck, fore-part of the back, and breast; the vermiculation less distinct upon the last, which appears of a somewhat dark blended ash-colour: belly, flanks, and tibial plumes, black, the feathers of the flanks tipped with steel-blue: scapularies and wings like the back, but more coarsely vermiculated, each feather terminating in a transverse black band, with narrow whitish margin above, broadest on the scapularies: the great alars, tertiaries, and largest range of wing-coverts, are not thus tipped, but are vermiculated like the inter-scapularies: across the back, above the rump, a shining coppery-golden band; and the rump and upper tail-coverts black, tipped with shining steel-blue, and finally with very rich shining maroon-red: legs bright vermillion, the shank well spurred; and the bill dull waxy-greenish. Irides reddish-hazel. Length of tarse  $3\frac{1}{4}$  in.; of bill to gape  $1\frac{1}{4}$  in., and anterior to nostril  $\frac{3}{4}$  in.: closed wing 9 in., or somewhat less. Female unknown. The figure of the living bird is particularly gracile and *game*-looking; and the bright carmine legs are a conspicuous feature, also the handsome crest, and great development of the papillose naked skin of the cheeks, continued downward into wattles, which are more distinct than in the *NYCTHEMERUS*.

patch dusky-purple: blue of the forehead and cheeks less developed than in the other.

These various Lorikeets are not uncommonly brought alive to Calcutta; but much less numerously than *TR. ORNATUS*, the range of which extends eastward to Celebes,—certainly, however, not to Sumatra, as stated by Raffles.

\* Since writing the above, I have seen another in the possession of a gentleman, who has reason to believe that it is from Borneo.—All are now dead.

4. A small collection from Major Berdmore, sent by him from the Sitang valley, Pegu. It consists chiefly of species previously forwarded by that officer; though several of them are still highly acceptable. Of mammalia, RHINOLOPHUS AFFINIS, Horsfield,—SOREX FULIGINOSUS, nobis (*J. A. S.* XXIV, 362), and SCIUROPTERA SAGITTA *apud nos* (*J. A. S.* XXIII, 731). Of birds, a fine pair of BUCEROS CAVATUS. Of reptiles and fishes, a few known species, including a small MASTACEMBALUS 4 in. in length, which seems to be M. UNICOLOR, K. and V. H., but with 37 dorsal spines (instead of 34), and a row of black spots along the soft dorsal and more obscurely along the anal.\* Also a few crustacea and some good insects.†

We have another MASTACEMBALUS from Maulmein, which seems to be undescribed, and may therefore be designated—

M. ZEBRINUS, nobis. Tail detached from the dorsal and anal fins, as in the common M. PANCALUS of Bengal. Series of 28 or 29 dorsal spines. Colour pale brown, deeper along the back; and marked throughout (more distinctly in the young) with dusky transverse stripes, alternating with fainter stripes more or less regular, which latter are often double or more or less divided, and are set off by the narrow pale interspaces,—much as in the ‘Dauw’ or *original Zebra* (EQUUS BURCHELLII). In the larger specimens the stripes are more or less obsolete, except towards the tail. Dorsal and caudal fins minutely striated; the anal with broad stripes, as on the sides. Our largest specimen, apparently full grown from its bulk, is  $8\frac{1}{2}$  in. in length.

We have also a small *Siluroid* fish from the same locality, which appears to be new both as regards genus and species.

AMBLYCEPS, nobis, *n. g.* Affined to OLYRA,‡ McClelland, but the head much broader and flatter, with minute eyes, placed near the hind aperture of the nostrils: two pairs of cirri above and below, the inner above situate between the fore and hind apertures of the nostrils: pectoral and dorsal spines short and concealed, but comparatively robust: the second or adipose dorsal short and low; and the ventrals and anal also short: tail large and moderately furcate: a band of card-like teeth above and

\* The EMYS formerly sent by Major Berdmore, and referred to E. OCELLATA, Dumeril and Bibron (*J. A. S.* XXII, 645), proves to be totally distinct from the latter, of which I have lately obtained two living specimens in the Calcutta bazar. The Burmese Terrapin may therefore now bear the name E. BERDMOREI, nobis.

† Another,  $9\frac{1}{2}$  in. long, since received, has 36 dorsal spines, including the comparatively large one immediately anterior to the soft-rayed dorsal.

‡ This name is pre-occupied in Botany.

below, but no palatal band discernible in the specimen: body subcylindrical, compressed, becoming more so to the tail.

AMB. CÆCUTIENS, nobis, *n. s.* Head broader than the body, flat, obtuse at the muzzle; the mouth moderate, its cleft scarcely continued back laterally: cirri large; the upper labial cirrus reaching to tip of pectoral fin, and the exterior lower one nearly as long. Body long and COBITIS-like. The number of fin-rays is difficult to determine, but seems to be

D. 1-6.—P. 1-2 or 3.—V. 6.—A. 6.

Colour dark brown above, paler beneath. Length of specimen 3 in. To describe this little mud-fish properly, a series of specimens are required, or the sacrifice of our only individual. It will, however, be readily identifiable from the above notice. The individual described was procured by Mr. W. Theobald, Junr., at Maulmein; and others, but in much injured condition, have since been received from Pegu, from Major Berdmore.

Although I have attended pretty regularly the Calcutta fish-bazars during the last year, and have procured many good specimens, and added largely to our collection of fish-skeletons, the only species new to the museum which have been obtained are SERRANUS LANCEOLATUS, C. and V. (small), GERRES POETÆ, C. and V., and OTOLITHUS MACULATUS, C. and V. (four individuals).\* I have procured, however, a fine series of a somewhat rare fish which is perhaps the CHRYSOPHRYS LONGISPINIS, C. and V., apud Bleeker, from Calcutta; but the dentition of which differs altogether from that of CHRYSOPHRYS, there being no palatal teeth, but only a band of "card-like" teeth in each jaw, with reverted tips, especially those in the upper jaw in front, which are much curved backwards. Now the teeth of CHR. LONGISPINIS are described in the *Hist. des Poissons* to be "small, and disposed in three ranges." Our species otherwise approximates the CHR. CALAMARA (Russell, pl. 92), but is less deep in the body, the eye is larger and is situate higher in the head, which last is throughout covered with small indistinct scales. Pre-operculum minutely toothed; mouth slightly protrusile. The dorsal spines are alternately stouter and more slender, as in Rüppell's figure of CHRYSOPHRYS SARBA, and also in DATNIA and DATNIOIDES, Bleeker (founded on the *Coius polota* of Buchanan Hamilton).†

\* Add MESOPRION RANGUS, C. and V.; July 2nd: and since GERRES FILAMENTOSUS.

† Is not this, however, an ANOPLUS of Temminck and Schlegel? Vide *Fauna Japonica*, which I have not seen.

*D.* 12-14.—*A.* 3-8.—*P.* 18.—*V.* 1-5.—*C.* 1-16.

The first dorsal spine is short, about half the length of the second, which is two-fifths that of the third, which nearly equals the fourth and longest: thence the spinous portion of the fin slopes gradually backward; and the soft portion is as high as the seventh spine and nearly even. The first anal spine is short, the second long and robust and much flattened, and the third one-sixth shorter than the second and much less robust. Ventral spine longer and more slender than the third anal. Pectorals pointed, their tips reaching to the vent. Ventrals also pointed, terminating in a slight filament. Tail scarcely furcate. Scales of the body somewhat large, especially below the lateral line; numbering about 20 in oblique series descending from the first dorsal spine: those composing the lateral line are about 50 in number.

Colour bright silvery, with a pink iridescence along the back and above the eyes; the membrane of the dorsal fin spotted with dusky, becoming nearly or quite obsolete in large individuals. Rest of the fins white, the tail slightly suffused with dusky towards its tip. Irides white with brilliant nacreous lustre. Our largest specimen measures  $17\frac{1}{2}$  in. in length, with longest dorsal spine  $2\frac{3}{4}$  in. In small specimens (3 in. long), about 9 or 10 transverse bands are faintly discernible on the body, traces of which appear in larger individuals, broken up into spots more or less obscure. As seen on a fish-stall, the brilliancy of the silvery hue of this species attracts attention even from a distance, considerably surpassing that of the common *DATNIA ARGENTEA*, and equalling that of the rarer *GERRES POETÆ*. Should both genus and species prove new, as I suspect, this fish may be named *POLOTUS NITIDUS*, nobis.

The *Siluroid* fishes have engaged my particular attention; but the following species only have been procured in the bazar.

*WALLAGO RUSSELLI*, Bleeker: *Silurus boalis*, B. H.; *S. wallago*, Val., &c. Extremely common: attaining to an immense size.

*W. PABDA*; *Silurus pabda*, B. H.: *S. microcephalus*, Val. *Pábdá* of Bengális, and certainly the true *pabda* of Buchanan Hamilton. Common: attaining to 9 or 10 in. long, at most.\*

*SCHILBE GARUA*; *Silurus garua*, B. H. Common: attaining to 14 in. in length.

*AILIA COILA*; *Malapterurus coila*, B. H.: *Malapterus (Ailia) bengalensis*, Gray; *Ailia bengalensis*, Val., &c. Common.

*BAGRUS AOR*; *Pimelodus aor*, B. H. Tolerably common.

*B. AORELLUS*, nobis, *n. s.* Hitherto confounded with the preceding, but a

\* *W. ANASTOMUS*, (Val.), is also enumerated from Calcutta by Dr. Bleeker.

much thicker fish in proportion to its length; the dorsal spine smaller, and uniformly granulose anteriorly,—instead of shewing a narrow white ridge, set off laterally with black, as in the AOR; the adipose dorsal fin less elongated, but higher, with the same black spot posteriorly; occipital bony process more developed, and posterior to this a small bony plate, not exceeding the occipital process in breadth (whereas the corresponding oval plate in B. AOR is fully twice as broad); at base of the first short dorsal spine, a bone formed of two lateral triangles well united in the middle,—whereas in B. AOR the union of the two lateral triangular bones is generally imperfect, and they are mostly quite distinct; occasionally, even in small specimens of B. AORELLUS, these bones are ankylosed to the oval bone in front of them,—but never in B. AOR. The palatal teeth in B. AOR are arranged in a subeven crescentic band; whereas in B. AORELLUS they are in two lateral sub-triangular masses united in the middle. Ten distinct soft rays to the pectorals and fourteen rays to the ventrals. Colouring much the same; but in B. AORELLUS there is a considerable admixture of black on the pectorals, ventrals, and membrane of the dorsal fin, which does not occur in the other. The two species are about equally common in the Calcutta bazar.\*

B. CAVASIUS; *P. cavasius*, B. H. Common: rarely exceeding 7 in. long.†

B. TENGARA; *P. tengara*, B. H. Common.

B. GULIO; *P. gulio*, B. H.: *B. albilabris*, Val.‡ The *Nuna Tenggara* of the Bengális, corrupted into *Nonatora* in the *Histoire des Poissons*. Extremely common: attaining to about 10 in. long.

\* Another, closely akin, exists in the B. SINGHALA (*Platystoma singhala*, Sykes); and a fourth in the B. AORINUS of Jacquemont. The latter is not represented to have the conspicuous black spot on the adipose dorsal seen in the others; but neither is it represented in Jacquemont's figure of B. AOR! Buchanan Hamilton's figure of B. AOR represents a young specimen, but still the dorsal spine is not represented of sufficient magnitude. There is also a *B. aorides*, Jerdon, *Madr. Journ.* XV, 336, with maxillary cirri reaching to the tail. In B. AORELLUS they reach to the middle of second dorsal. B. AOR, B. AORELLUS, and OSTEOGENIOSUS CANTORI, are frequently attacked by an ÆGA, which buries its head in the adipose flesh anterior to the second dorsal and the caudal fins.

† The nearly affined *B. keletius*, Val., is enumerated from Calcutta by Dr. Bleeker.

‡ Dr. Bleeker adds, as synonymes, *B. abbreviatus* and *P. fuscus* of the *Histoire*

**B. MENODA**; *P. menoda*, B. H.: *B. carsio*, Cuv. *R. A.* (nec *P. carcio*, B. H.); *B. corsula*, Val.; by mistake marked *Mugil corsula* in pl. 1 of Buchanan Hamilton's 'Fishes of the Ganges'; but the original drawing (or a copy of it) marked *P. menoda* in B. Hamilton's hand-writing. Tolerably common: attaining to 14 in. long. A very mucous fish; and those brought to the bazar are commonly much clotted over with an adhesive clayey mud, as if they had burrowed into it; and they are mostly brought many together, appearing as if dug out from the mud of ponds or *jhils* more or less dried up.

**B. URUA**; *P. urua*, B. H.: *B. exodon*, Val. Identified from a drawing by Buchanan Hamilton. Common; but not often brought to the bazar.

**ARIUS GAGORA** apud Bleeker; *P. gagora*, B. H. (in part). Excessively common; but I have not been able to obtain it over 17 in. long, whereas B. Hamilton's *gagora* is described to attain to about 3 ft.: he having evidently confounded this and the next species. The present is indeed the commonest of the whole tribe in the Calcutta fish-bazars, and *Bagrus gudio* is the next in abundance: both of these may daily be obtained of all sizes; but I have rarely met with any but adults of **A. GAGORIDES** and **A. ARIOIDES**, and only adults of **BAGRUS MENODA**, which when brought are generally in quantity. The spines of **A. GAGORA** are less strongly pectinated in front than in B. Hamilton's figure of the species; and there is the usual prolongation of the dorsal beyond its spine. Dorsal and pectoral spines moderate, comparatively slender, and granulated in front only, the sides being striated. The upper labial cirri reach back to base of pectoral spines. Mouth comparatively small, its cleft scarcely reaching back one-third to below the eye. *Palatal teeth mammilliform, and totally unlike the maxillary teeth*; whereas in the next two species, the palatal and maxillary teeth are similar. No blackish tinge on the ventral and anal fins; nor trace of aureous wash on the upper-parts. A specimen 10 in. long has the dorsal spine  $1\frac{1}{2}$  in.; and one of 15 in. has the dorsal spine 2 in.

**A. GAGORIDES**; *Bagrus gagorides* and *B. trachypomus*, Val.: *P. gagora*, B. H. (in part). Nearly affined to **A. ARIOIDES**; but the interparietal plate differs in shape, and the upper cirri reach only to base of pectorals, as in **A. GAGORA**. Upper lip, as seen from beneath, protruding in the middle, so as to be there twice as broad as at the sides. Dorsal and pectoral spines much stouter than in **A. GAGORA**, and granulated half-way on the sides towards the front. General hue dull lurid purple with a

*des Poissons*,—and *B. gudioides*, *B. melas*, *B. Schlegelii*, and *B. rhodopterygius*, Bleeker.

golden shine; the head browner: fins purple; no dark spot on the adipose dorsal; and the lower-parts subdued white, studded over with minute dusky specks (which also occur in *A. ARIOIDES*, but to a less extent). This species is rarely procurable of small size, and it commonly occurs 2½ ft. or more. In a specimen 5¼ in. long, the dorsal spine measures 1¼ in.; in one of 10 in., 1¾ in.; of 15 in., 2½ in.; of 2 ft., 4 in.; of 2½ ft., 4¾ in.; and of 2¾ ft., 5 in.: the membrane of the dorsal is scarcely prolonged beyond its spine, to a much less extent than in the two other species. Occasionally, though rarely, one or more of the cirri are divided in this fish, as usual in several of the Nilotic SILURIDÆ. It is not uncommon.

*A. ARIOIDES*; *Bagrus arioides*, Val.; *Pimelodus auratus*, B. H. (MS. on coloured drawing, nec *B. AURATUS*, Val.). Tolerably common, or rather now and then brought in quantity: attaining to about 12 or 13 in. long. Upper cirri reaching back to base of dorsal spine. The dorsal and pectoral spines proportionally larger than in *A. GAGORIDES*, also more strongly pectinated behind, and more extensively granulated on the sides; the membrane of first dorsal prolonged beyond the spine, as usual as in the present group. All the fins are suffused with black, more or less. A distinct aureous wash on the upper parts, which begins to make its appearance when the fish is about 6 in. long; prior to which the general hue is plain plumbeous or livid, with the fins conspicuously almost wholly purple-black. Eyes proportionally large. Mouth (as in *A. GAGORIDES*) broader than in *A. GAGORA*; its cleft reaching half-way to below the eye, as seen in profile. A specimen 12 in. long has the dorsal spine 2¾ in., and one exceeding 13 in. has it 2¾ in.

*RITA BUCHANANI*, Bleeker: *Pimelodus rita*, B. H.; *Arius rita* et *A. ritoides*, Val. Common, chiefly in the hot season.

*OSTEOGENEIOSUS CANTORI*, Bleeker: *Arius militaris* of Gangetic rivers, *auctorum*. Somewhat rarely brought.

*PANGASIUS BUCHANANI*, Val.: *Pimelodus pangasius*, B. H. Very common.

*SILUNDIA GANGETICA*, Val.: *Pimelodus silundia*, B. H. Very common.

*BAGARIUS BUCHANANI*, Bleeker: *Pimelodus bagarius*, B. H. Not rare. Attains an enormous size, but large specimens are seldom brought to the bazar.

*PIMELODUS GAGATA*, B. H. Not rare during the rains.

*CLARIAS MAGAR*; *Macropteronotus magur*, B. H. Very common.

*SACCOBRANCHUS FOSSILIS*; *Silurus fossilis*, Bloch: *S. singio*, B. H. Extremely common.

*PLOTOSIUS CANIUS*, B. H. Very common.

Of ESOCIDÆ, Buchanan Hamilton notices only three species, all of which are assigned by him to the old genus *ESOX*. These are—*BELONE CANCILA*, (B. H.), *HEMIRHAMPHUS ECTUNTIO*, (B. H.—*ANGULATUS*, *ibid.*, on unpublished drawing), and *PANCHAX BUCHANANI*, Val. Two species of *BELONE* and three of *HEMIRHAMPHUS*, however, are about equally common in the Calcutta provision-bazars; and another species of each genus occurs at the Sandheads, at the mouth of the Hughli. A second *PANCHAX* also is sometimes brought in great numbers to the fish-bazars.

*BELONE TENUIROSTRIS*, nobis, *n. s.* As compared with *B. CAUDIMACULA*, Cuv., the general form is more slender, elongated, and compressed; with jaws of equal length (minus the cartilaginous tip of the lower), narrow and considerably more tapering in width to the extremity. Head a third of the entire length. Eyes moderately large, occupying about three-fifths of the vertical diameter of the head. Series of longer teeth slender and uniform in both jaws, becoming gradually smaller towards their tips; the minute intermediate teeth being so small as to be barely perceptible. Cheeks distinctly scaled. Low hind portion of the dorsal and anal fins much developed: the other fins of the usual proportions.

D. 19.—A. 24.—P. 11.—V. 6.—C. 15 (exclusive of the short exterior rays).

Colour greenish above, silvery below, with a very brilliant silvery stripe along each side, broadening posteriorly; the lower portion of the operculum also brilliant silvery, and likewise the sides of the lower jaw. Fins yellow more or less, with some black at the tips of the pectorals, and middle of the fork of the caudal—no spot at base of caudal, as in *B. CAUDIMACULA*.—From the Sandheads.

Our other species are—

*B. CAUDIMACULA*, Cuv.; Russell, pl. 176. Found also in the China seas.

*B. CANCILA*; *Esox cancila*, B. Hamilton.

The *B. ANNULATA*, C. V., keeps further out to sea, but is common on the coast of Orissa.

Of *HEMIRHAMPHUS*, the next three species are brought commonly to the Calcutta bazars.

*H. ECTUNTIO*; *Esox ectuntio*, B. H. With upper jaw about a third as long as the lower, flat, and tapering from about the middle to an obtuse point. Eyes but half the vertical diameter of the head. Tail rounded, Ventral fins small, placed near the anal, and reaching close to the anus. In a specimen  $6\frac{3}{4}$  in. long, the lower jaw exceeds the upper by 1 in., and the upper from cleft of mouth measures  $\frac{1}{2}$  in. According to Buchanan Hamilton, this fish “does not exceed a foot in length.” I have not obtained it so large as 7 in. He states, also, that “each side has a broad

longitudinal stripe, shining like silver." The sides are indeed silvery, but ill-defined, except where forming a narrow streak towards the tail.

D. 13.—A. 11.—P. 7.—V. 5.—C. 14.

This species seems to be affined to *H. REYNALDI* of Valenciennes.

*H. BRACHYNOTOPTERUS*, Bleeker: *Esox angulatus*, B. H. (MS. on drawing). Upper jaw very short, triangular, broader than long, almost flat but with distinct angulate ridge. Eyes three-fifths of the vertical diameter of the head. Tail furcate. Ventrals placed midway on the body, far anterior to the anus. In a specimen 7 in. long, the lower jaw exceeds the upper by  $1\frac{1}{8}$  in., and the upper jaw from cleft of mouth measures  $\frac{3}{16}$  in. I have not seen it larger. A narrowish well defined silvery stripe extends from the base of the pectorals to the middle of the caudal. The dorsal fin contains 11 to 13 rays in perfect specimens.

D. 11 to 13.—A. 15.—P. 7.—V. 6.—C. 14.

*H. STRIGA*, nobis, *n. s.* With upper jaw subtriangular, rounded in front, a little longer than broad, flat, with very indistinct trace of angulate ridge; the lower jaw much longer than in the two preceding species. Eyes three-fifths of the vertical diameter of the head. Tail rounded. Ventrals small, placed near but not reaching to the anus. In a specimen  $8\frac{1}{2}$  in. long, the lower jaw exceeds the upper by  $2\frac{1}{8}$  in., and the upper jaw from cleft of mouth measures  $\frac{1}{4}$  in. Lateral silvery stripe narrow and little perceptible, excepting towards the tail, where broader and distinct. A medial dusky line along both mandibles and middle of the fore-part of the back. Operculum brilliant silvery.

D. 12 or 13.—A. 8 or 9.—P. 9 or 10.—V. 6.—C. 14.

*H. PLUMATUS*, nobis, *n. s.* General aspect of preceding species, but the eye less than half of the diameter of the head: the lateral scales of the body also much larger; and the upper jaw tapering to an obtuse point, and distinctly angulated. Each nostril covered by a remarkable plume of filaments. Tail furcate. Ventrals placed near the anus, but not reaching to it. In a specimen 11 in. long, the lower jaw exceeds the upper by  $2\frac{1}{2}$  in., and the upper from cleft of mouth measures  $\frac{1}{2}$  in. A well defined silvery stripe from base of pectorals, becoming rather broad towards the tail.

D. 15.—A. 13.—P. 9.—V. 6.—C. 15.

From the Sandheads, and also the coast of Ceylon.

Our species of *PANCHAX* are—

*P. BUCHANANI*, Valenciennes; *Esox panchax*, B. H. To the numerous synonymes of this species collated by Dr. Bleeker, add *Aplocheilus rubrostigma*, Jerdon, *Madr. Journ.* XV., 331.

*P. CYANOPHTHALMA*, nobis, *n. s.* Smaller than *P. BUCHANANI*, not

exceeding  $1\frac{1}{4}$  in. long, with fins less elevated and tail much less pointed; the eyes also less distantly apart, and of a brilliant pale nacreous azure (those of the other being yellow). Colour whitish, diaphanous, studded with dark specks which are less numerous below the lateral line: scales large, barely discernible.

D. 7.—A. 22 or 23.—V. 3.—P. 5?—C. 14.

This minute fish is sometimes brought to the bazar in considerable quantities, many pounds' weight of them together. Occasionally, a few of the P. BUCHANANI may be picked out of the mass, and some fry of other fishes, especially MUGIL CORSULA; but the present species, remarkable for its conspicuous light blue irides, predominates in the rate of 50 or more to 1 of any other. Wherever it occurs, therefore, it would seem to abound excessively.

The following CYPRINIDÆ may likewise be here described.

SYSTEMUS MICROLEPIS, nobis, n. s. Much resembling S. OGILBII (*Rohtee Ogilbii*, Sykes);\* but with still smaller scales, and the dorsal spine is more finely pectinated behind. Scales larger on the anterior two-fifths of the body; and a series of 44 of them, counting obliquely downward, and of 73 along the lateral line.

D. 3-7.—A. 1-18.—P. 13.—V. 7.—C. 19.

Spinous ray of anal fin minute: the pectorals not reaching to base of ventrals: tail furcate. Colour (*blanched* in spirit) silvery throughout. Length of specimen, to end of tail-lobes,  $6\frac{1}{2}$  in.; and depth at base of dorsal fin.  $2\frac{3}{8}$  in. Form very Bream-like.

*Hab.* ——— ?

LEUCISCUS SALMOIDES, nobis, n. s. Affined to *L. goha* (*Cyprinus—Barilius goha*, B. H., v. *Opsarius gracilis*, McClelland); but larger and deeper in the body, with the spots smaller, much more numerous, and more regularly disposed, many of them occurring below the lateral line, and others on the opercula and præ-opercula: upper lip studded with pores.

D. 10.—A. 13.—P. 14.—V. 9.—C. 18.

Lateral line composed of 88 to 90 scales; and oblique series of 26 scales descending from anterior base of dorsal. Length of specimen 11 in. Colour blanched in spirit. Procured at Alláhábád by the late Major Wroughton.

L. LINEOLATUS, nobis, n. s. A PERILAMPUS of McClelland, affined in

\* Dr. Jerdon refers the species of *Rohtee*, Sykes, to ABRAMIS; but they clearly appertain to SYSTEMUS, as assigned by Dr. Bleeker: *vide* dorsal spines, &c.

form to *L. DANICONIUS* (*Cyprinus daniconius*, B. H.), but the lateral line placed very low, as in *DANGILA*; and readily distinguished by its peculiar markings. A dusky spot behind the gill-covers, placed in a whitish space; beyond which a broad darkish band extends to the middle of the tail, bordered by a narrow pale line above and below, the lower not reaching so far forward as the upper: below this again another dark band, and then white; and above a second and trace of a third pale line.

D. 12.—A. 14.—P. 11.—V. 8.—C. 18?

Series of 10 oblique scales, the lateral line on the 9th of them, and numbering about 32 scales. Length of specimen  $3\frac{1}{4}$  in. Procured at Darjiling by Major Sherwill.

*L. BINOTATUS*, nobis, *n. s.* Affined to *L. CASUATIS*, (B. H., v. *Systomus malacopterus*, McCl.), but less deep in the body, and the dorsal fin much smaller; with a conspicuous black spot on the middle of base of tail, and another at hind base of dorsal: the rest green, with silvery lateral streak and below, and traces of a dark band along the lateral line; which last is medial and is composed of about 25 scales: oblique series of scales 7; the line passing along the fourth of them from above. Eyes rather large, and silvery.

D. 9.—A. 6.—

Length of specimen  $1\frac{1}{2}$  in. From Ceylon. Dr. E. F. Kelaart.\*

\* The *SYSTEMUS TRIPUNCTATUS*, Jerdon, is perhaps a *LEUCISCUS* akin to the above.

From Messrs. T. H. Hamilton & Co. The nest of a common Crow (*CORVUS SPLENDENS*), constructed in great part of the wires used in fastening down the corks of soda-water bottles. Two Crows' nests thus composed are noticed in the 'Calcutta Review,' Vol. XXVIII. p. 137; where it is observed that—"As it may well be wondered where such an accumulation of these could be procured, we may remark that Bengali servants are in the habit of treasuring them up till they amount to a saleable quantity; and that enormous heaps of them may accordingly be seen in the shops of those not very respectable small dealers, whose proper avocation is, with similar shops in England, indirectly purported by the announcement.—'Dealer in Marine Stores.' The supply of materials, therefore is comprehensible, however curious its application.—E. B.

#### NOTE ON THE HOGS OF THE NICOBAR ISLANDS (*vide* p. 268.)

In some "Sketches at the Nicobars," published in the *Journal of the Indian Archipelago*, Vol. III, we read (p. 265) of preparations made for a feast. "Enormous Pigs strung by their legs to long poles, were carried, some by four others by six athletic men. These Pigs were truly most gigantic animals." This was in the island of Car Nicobar; and the Pigs in question were doubtless originally derived from the shipping. We have met with another notice referring to the large size of the Pigs in the Nicobar Islands.—E. B.