

2.—*Descriptions of Fishes from the Coast of Natal* (Part III).* By
J. D. F. GILCHRIST, M.A., D.Sc., Ph.D., and W. WARDLAW
THOMPSON, F.Z.S.

THE following is a further contribution to the description of a collection of fishes from Natal. It will be seen that, as in the previous papers, the older classification and some of the older names are retained for local convenience and easy comparison with such readily accessible works of reference as Day's "Fishes of India."

FAMILY PERCIDÆ.

GEN. LUTIANUS, Bloch.

LUTIANUS ERYTHROPTERUS, Bl.

Teeth; a canine on each side of premaxillary, an outer row of curved canine-like teeth on either jaw, a triangular patch of villiform teeth on vomer, a narrow band on palatines, none on tongue. Depth of body $2\frac{1}{7}$ times in total length excluding caudal, length of head 3 times. Snout twice diameter of eye, which is $1\frac{1}{5}$ times in inter-orbital width and $4\frac{3}{4}$ times in length of head; maxillary reaches to vertical of posterior nostril; preoperculum with a shallow emargination on lower part of vertical limb, which is finely serrated, the serræ being slightly coarser at angle and extending a short distance along its horizontal border; scales on cheeks and opercles.

Dorsal xi 14, moderately strong; the 1st spine very short, 4th spine longest and nearly $\frac{1}{2}$ length of head, from the 4th to the last the spines are slightly lower; soft portion of fin higher than spinous,

* Parts I. and II. have appeared in Vol. VI.

5th to 10th rays longest and $1\frac{1}{8}$ times height of longest spine, their height nearly equalling base of soft portion of fin. Pectorals a little more than $\frac{4}{5}$ length of head, reaching the vent. Ventrals a little more than $\frac{7}{10}$ length of head, the spine as long as 3rd spine of dorsal fin. Anal iii 9, 2nd spine strongest and not quite as high as 3rd, which is $\frac{3}{4}$ the height of 4th spine of dorsal. Caudal truncate and about same length as ventral fin. Scales ciliated, in somewhat bent rows going diagonally upwards and forwards; extending over base of dorsal fin, reaching higher on soft rays than on spines and equally developed over bases of anal and caudal fins. Lat. l. 55, lat. tr. $\frac{1}{2}\frac{1}{5}$.

Colour when fresh, pinkish with wavy darker stripes; blackish on top of head. In preservative the colour is silvery, with about 8 irregular dark longitudinal lines; blackish on top of head and with a black patch above and on sides of tail; ventrals blackish, dorsal and anal with a dark shade.

One specimen, 185 mm. in length, from Mr. Romer Robinson, Natal, who describes it as having been caught in Durban Bay, and kindly furnishes a note of the colour when alive.

LUTIANUS LINEATUS, Q. and G.

Teeth villiform, strong slightly curved anterior canines on upper jaw, smaller ones laterally on lower; a curved band on vomer, a band on palatines, an oval patch of minute teeth on tongue. Depth of body equals length of head and is $2\frac{9}{10}$ times in total length excluding caudal. Snout $1\frac{1}{3}$ times diameter of eye, which is $2\frac{1}{8}$ times in interorbital width and $5\frac{1}{4}$ times in length of head; distance between eye and upper edge of maxilla $1\frac{1}{5}$ times diameter of eye, maxillary reaches vertical of anterior 3rd of orbit; preoperculum serrated, emarginate above angle and with a notch into which a small interopercular knob is received; operculum with 2 blunt points; 8 series of scales between preorbital and angle of preoperculum.

Dorsal x 13, spines strong, 4th and 5th longest and $\frac{1}{4}$ length of head, the last spine of the fin a little more than $\frac{1}{2}$ height of longest; soft portion of fin lower than spinous, the anterior rays a little longer than adjacent spine, posterior about $\frac{3}{4}$ height of longest spine. Pectorals $\frac{4}{5}$ length of head, falcate. Ventrals $\frac{1}{2}$ length of head. Anal iii 8, spines strong; 3rd spine longest, $\frac{2}{3}$ height of soft rays and $\frac{9}{10}$ height of longest spine of dorsal. Caudal deeply forked. Scales moderately large on body, covering cheeks and opercles; an

irregular oblique patch on each side of nape; base of soft dorsal and anal covered with smaller scales for about $\frac{1}{2}$ their height, base of caudal covered with small scales. Lat. l. 54, lat. tr. $\frac{7}{18}$.

Colour (when fresh), body below lateral line and side of head salmon-coloured, more gamboge yellow on head and pinkish on body; above lateral line and on top of head darker and purplish; dorsal fin dark red, other fins of same colour as body but rather darker.

Colour (of preserved specimen), body above lateral line and fins dark, below lateral line whitish. The oblique rows of scales above lateral line are marked by white streaks, the rows of scales below lateral line by a series of horizontal dark streaks.

One specimen, 500 mm. in length, from the Fish Market, Durban, Natal.

GEN. DIAGRAMMA, Cuv.

DIAGRAMMA GRISEUM, C. and V.

Teeth in jaws villiform, the outer row containing slightly larger ones. Depth of body nearly $2\frac{2}{3}$ times in total length excluding caudal, length of head a little more than $3\frac{3}{5}$ times. Snout $1\frac{4}{5}$ times diameter of eye, which is 4 times in length of head and $1\frac{3}{10}$ times in interorbital width. Upper profile of head descends parabolically from origin of dorsal fin to mouth, with a concave depression above nostrils; snout obtuse, lips thick and fleshy, cleft of mouth horizontal; maxillary reaches to vertical of posterior nostril; preoperculum slightly emarginate, distinctly serrated, with a rounded angle; 4 or 5 small pores below symphysis of lower jaw. Scales extend over the head to between the nostrils and laterally over the posterior portion of the preorbital; cheeks and preoperculum covered with small scales; suprascapula serrated.

Dorsal xiii 22, commences above suprascapula and ends above the middle of the distance between caudal and anal fins; the length of the spinous portion is more than that of the soft and the distance of the last soft ray from the caudal equals that between the 1st and 5th spines; spines strong, the 3rd is the longest and is nearly $\frac{2}{5}$ length of head, the remaining spines successively decreasing; anterior soft rays slightly longer than adjacent spine, remainder gradually rising to height of 3rd spine, the posterior rays decreasing so as to form a rounded edge to the fin. The spinous portion of the fin moves in a scaly sheath, which is deeper and more conspicuous below the last 3rd of the fin; the soft rays are covered with scales for about $\frac{1}{3}$ their

height. Pectorals $\frac{7}{10}$ length of head. Ventrals $\frac{2}{3}$ length of head, not reaching anus. Anal iii 7, 2nd spine stronger and longer than 3rd and $\frac{1}{3}$ length of head; soft rays longest anteriorly and about $\frac{1}{2}$ length of head; the lower half of the fin is covered with small scales as in the soft dorsal. Caudal emarginate, nearly $\frac{4}{5}$ length of head, lower half of the fin with a scaly sheath and the ray membranes with small scales for $\frac{3}{4}$ their length. Lat. l. 58, lat. tr. $\frac{1}{2}\frac{2}{3}$.

Colour (of preserved specimen), brownish grey; faint narrow longitudinal lines on head from snout and from behind eye to posterior border of opercle.

One specimen, 370 mm. in length, from Mr. Romer Robinson, Natal.

GEN. DENTEX, Cuv.

DENTEX FILOSUS, Val.

Teeth, 4 canines on each jaw. Depth of body nearly $2\frac{2}{5}$ times in total length excluding caudal, length of head $3\frac{1}{4}$ times. Snout slightly more than $1\frac{1}{3}$ times diameter of eye, which equals the inter-orbital width and is $3\frac{3}{5}$ times in length of head; nape convex, elevated, the profile from origin of dorsal fin to point of snout making a long curve; jaws equal; maxillary reaches to vertical of anterior margin of eye; height of preorbital about $\frac{2}{3}$ its length and about $\frac{9}{10}$ diameter of eye; 8 series of scales between preorbital and angle of preoperculum; opercle with a flat spine. Scales on top of head extend forward in a curve to nearly the vertical of front margin of eyes; opercles and cheeks scaled.

Dorsal xii 10; 3rd to 5th spines elongate and produced into a filament, especially the 3rd, which is $\frac{9}{10}$ length of head; soft portion of fin lower than spinous, the anterior rays $\frac{2}{3}$ length of head. Pectorals nearly as long as head, reaching to anal. Ventrals $\frac{3}{4}$ length of head, the rays slightly elongate. Anal iii 8; 2nd spine stronger than 3rd and about the same height, $\frac{1}{3}$ length of head; soft rays similar to those of soft dorsal and about the same height. Caudal slightly more than $\frac{9}{10}$ length of head, forked; upper lobe longer than lower. Lat. l. 62, lat. tr. $\frac{8}{15}$.

Colour (of preserved specimen), pale reddish tint above, whitish below; dorsal fin and margin of caudal lobes tinged with black; faint irregular dark patches on back of head and behind soft dorsal.

One specimen, 163 mm. in length, from Mr. Romer Robinson, Natal.

GEN. LOBOTES, Cuv.

LOBOTES SURINAMENSIS, C. and V.

Teeth villiform, with an outer row of slightly enlarged conical ones. Depth of body $2\frac{1}{7}$ times in total length excluding caudal, length of head nearly 3 times. Snout $2\frac{1}{10}$ times diameter of eye, which is $2\frac{2}{3}$ times in interorbital width and nearly 9 times in length of head; preoperculum strongly serrated on vertical limb with 1 or 2 spinate teeth at the angle which is rounded and slightly produced and serrated on lower edge; horizontal limb of preopercle entire over its anterior portion; lower jaw projects beyond upper, maxillary reaches vertical of middle of orbit. Dorsal profile concave on occiput; shoulder-bone and bone above axilla serrated.

Dorsal xii 15; spines strong, 6th longest and nearly $\frac{2}{3}$ length of head; soft portion of fin higher than spinous and about $\frac{1}{2}$ length of head, with the posterior margin acutely rounded. Pectorals a little more than $\frac{1}{2}$ length of head. Ventrals $\frac{3}{5}$ length of head, not reaching anus. Anal iii 11; 3rd spine lanceolate in shape, strongest and longest, nearly $\frac{3}{10}$ length of head; soft portion of fin similar to soft dorsal. Caudal rounded, nearly $\frac{2}{3}$ length of head. Lat. l. 45, lat. tr. $\frac{9}{18}$. Scales on body large, head and cheeks as far as anterior margin of orbits covered with small scales, snout naked; a sheath of small scales on dorsal anal and base of caudal fins, low beneath the spinous dorsal and broader below the soft dorsal.

Colour (of preserved specimen), light brown, the belly a faint yellowish tint; pectorals and ventrals whitish; a whitish transverse patch near extremity of caudal.

One specimen, 515 mm. in length, from Tugela River mouth, from Mr. Romer Robinson, Natal, who states that the fish when fresh caught is silvery like the "Kabeljaauw."

GEN. GERRES, Cuv.

GERRES FILAMENTOSUS, C. and V.

Teeth fine on both jaws. Depth of body $2\frac{1}{3}$ times in total length excluding caudal, length of head $3\frac{3}{10}$ times. Snout slightly exceeds diameter of eye, which equals interorbital width and is $3\frac{1}{4}$ times in length of head; maxillary extends to vertical of anterior margin of eye; preopercle entire, its angle rounded; opercle with a blunt point.

Dorsal ix 10; 1st spine very short, 2nd produced and nearly $1\frac{2}{3}$ times length of head, extending to about posterior extremity of soft dorsal; the last 4 spines are shorter than the soft rays, which anteriorly are nearly $\frac{2}{5}$ length of head and decrease in height posteriorly. Pectorals $1\frac{1}{5}$ times length of head, reaching to anal. Ventrals $\frac{3}{4}$ length of head. Anal iii 7; 2nd spine stronger and about same length as 3rd, which is $\frac{1}{3}$ length of head. Lat. l. 45, lat. tr. $\frac{6}{12}$. A well-developed scaly sheath at base of dorsal and anal; about 5 rows of scales between lateral line and base of dorsal sheath.

Colour (of preserved specimen), silvery below, darker above; extremity of dorsal black edged, tip of caudal lobes dark, minute dark specks on anal and soft dorsal.

One specimen, 171 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY SQUAMIPINNES.

GEN. CHÆTODON, Lin.

CHÆTODON VAGABUNDUS, L.

Teeth fine and brushlike. Depth of body nearly $1\frac{2}{5}$ times in total length excluding caudal, length of head $3\frac{1}{3}$ times. Snout $1\frac{1}{3}$ times diameter of eye, which is slightly less than interorbital width and $3\frac{3}{4}$ times in length of head. Dorsal profile much elevated and concave from above eyes to snout; lips equal, upper very thick in the centre; maxillary scarcely reaches vertical of anterior nostril; snout a little produced and pointed; preopercle scarcely denticulated.

Dorsal xiii 25, commences above base of pectorals, spines strong; interspinous membranes deeply notched; soft portion of fin higher than spinous and obtusely angular, the middle rays longest. Pectorals a little more than $\frac{4}{5}$ length of head. Ventrals $\frac{4}{5}$ length of head, scarcely reaching anus, the spine strong. Anal iii 21; 2nd spine about same length as 3rd but stronger and slightly curved; soft portion of fin similar to soft dorsal. Caudal fan-shaped with slightly curved outer edge. Scales ciliated, entirely covering head.

Colour (of preserved specimen), silvery, a black band about the diameter of the eye in width passing upwards from angle of interopercle through eye to nape at origin of dorsal fin and descending thence to angle of interopercle on the other side; a black curved band from outer edge of last dorsal spine passing along lower half of soft dorsal across peduncle and on to anal as far as the 12th ray;

dorsal and anal fins margined with black, the outer edge of anal being slightly tipped with white; two black bands on caudal, the anterior of which is broader and crescent-shaped; about 6 dark lines passing upwards and backwards from opercle to base of spinous dorsal, with numerous others passing downwards and backwards from the lowest of these lines to the belly and anal fin.

One specimen, 107 mm. in length, from Mr. Romer Robinson, Natal, who mentions that when fresh the tail and posterior half of the body are of an orange colour, and that there are orange stripes across the snout and above the eye.

FAMILY SPARIDÆ.

GEN. PAGRUS, Cuv.

PAGRUS SPINIFER, Forsk.

Teeth, 4 conical incisors on each jaw, with rounded teeth behind them; 2 series of rounded molars along the sides of the jaws. Depth of body $2\frac{1}{3}$ times in total length excluding caudal, length of head $3\frac{2}{5}$ times. Snout equals 3 times diameter of eye, which is $1\frac{3}{5}$ times in interorbital width and 5 times in length of head. Dorsal profile elevated, with a protuberance in front of the eyes; maxillary reaches to vertical of posterior nostril; preorbital deep, nearly twice diameter of eye in height; 6 or 7 rows of scales between preorbital and angle of preoperculum; preopercle crenellated at angle and along lower limb; operculum with 2 blunt inconspicuous points.

Dorsal xii 10; compressed and flexible, first 2 spines very short, 3rd to 5th spines elongate; 3rd spine longest and equals length of head, the interspinous membrane cleft to base of 4th and the membranes between the rest of the spines deeply emarginate. Pectorals $1\frac{2}{5}$ times length of head, reaching to posterior 3rd of anal. Ventrals over $\frac{4}{5}$ length of head, reaching to anus; the spine nearly $\frac{3}{4}$ length of longest ray. Anal iii 8; 2nd spine a little stronger and slightly longer than 3rd and $\frac{2}{5}$ length of head. Caudal emarginate and a little longer than head. Scales cycloid. Lat. l. 54, lat. tr. $\frac{7}{8}$.

Colour (of preserved specimen), whitish, a black spot on axil.

One specimen, 375 mm. in length, from Mr. Romer Robinson, Natal.

The diameter of the eye is greater in description of *P. spinifer* than in this specimen, which is, however, probably larger.

FAMILY COTTIDÆ.

GEN. PLATYCEPHALUS, Bl. Schn.

PLATYCEPHALUS PUNCTATUS, C. and V.

Teeth in villiform bands on jaws, in two parallel bands on vomer and a long narrow band on palatines. Depth of body $5\frac{3}{4}$ to $6\frac{1}{3}$ times in total length excluding caudal, length of head $3\frac{1}{3}$ to $3\frac{1}{2}$ times. Snout $1\frac{3}{4}$ times diameter of eye, which is $7\frac{1}{2}$ to 8 times in length of head; interorbital width slightly concave and about $\frac{3}{4}$ diameter of eye; width of head between preopercular spines equals $\frac{3}{4}$ its length; maxillary reaches to vertical of anterior 4th of eye. Supraorbital margin with 5 teeth, the ridge from it to the occiput commences with a strong spine and a group of radiating ridges, with another spine near the nape; a bony ridge armed with spines passes from middle of posterior margin of eye to origin of lateral line, the last spine being long and blade-like; a strong spine, directed backwards, a little in advance of upper anterior angle of eye; a short bony ridge internal to either front nostril; a strong ridge, commencing in a stellate group of 5 ridges on snout, passes across preorbital armed with 2 spines and joins a strong spine at angle of preoperculum beneath the base of which is a smaller flat triangular spine pointing downwards; operculum with 2 spines, the lower continued in a bony ridge to preopercular border; nostrils tubular, the anterior terminating in a flap; a spine above axilla.

Dorsal i, viii 11; spines weak, 3rd spine longest and nearly $\frac{1}{2}$ length of head; soft dorsal lower than spinous. Pectorals a little more than $\frac{1}{2}$ length of head. Ventrals nearly $\frac{4}{5}$ length of head, reaching to 2nd anal ray. Anal 12, commencing below 2nd ray of soft dorsal and not so high. Caudal truncate, $\frac{3}{5}$ length of head. Lat. l. about 80, lat. tr. $\frac{8}{5}$; 6 rows of scales between lateral line and base of spinous dorsal.

Colour (of preserved specimens), light brown above, faint yellow beneath; 3 faint brown cross-bands below spinous dorsal; upper part of body and head sprinkled with small blackish spots which form irregular transverse lines on all the fins except the ventrals; spinous dorsal with a dark upper edge.

Two specimens, 235 mm. and 240 mm. in length respectively, from Mr. Romer Robinson, Natal.

FAMILY TEUTHIDÆ.

GEN. TEUTHIS, Lin.

TEUTHIS NEBULOSA (Q. and G.).

Teeth about 12 on either side of each jaw. Depth of body $2\frac{1}{2}$ to $2\frac{1}{2}$ times in total length excluding caudal, length of head about 4 times. Snout $1\frac{1}{3}$ to nearly $1\frac{1}{2}$ times diameter of eye, which is 1 to $1\frac{1}{5}$ times in interorbital width and $3\frac{1}{2}$ to $3\frac{2}{3}$ times in length of head; interorbital space flat; anterior upper edge of orbit prominent and finely serrated; snout blunt, with broad upper lip; maxillary reaches vertical of posterior nostril; preopercular angle slightly produced; soft portion of cheek about 1 diameter of eye in height and $1\frac{1}{4}$ to $1\frac{1}{2}$ times as long as high.

Dorsal xiii 10; spines weak, increasing in length to 4th or 5th, which is $\frac{1}{2}$ length of head, remainder decreasing to $\frac{1}{4}$ to $\frac{1}{3}$ length of head; soft rays nearly $\frac{1}{2}$ length of head. Pectorals about $\frac{3}{4}$ length of head. Ventrals slightly more than $\frac{3}{5}$ length of head. Anal vii 9; spines increase in length to 3rd which is nearly as high as longest spine of soft dorsal, decreasing in length to the last, which is slightly longer than the diameter of the eye; soft rays similar to soft dorsal. Caudal deeply emarginate, with pointed lobes, the upper slightly longer than the lower and about the length of the head; middle rays of caudal $\frac{3}{5}$ to $\frac{2}{3}$ length of outer rays of upper lobe. Scales minute.

Colour (of preserved specimens), brown, slightly marbled; spinous dorsal and anal with darker blotches, which in soft dorsal and anal form irregular lines; shoulder dark, narrow oblique lines passing upwards from behind ventrals across sides, of a faint white in one specimen and of an orange tint in the other; an indistinct light band on base of caudal.

Two specimens, 163 mm. and 161 mm. in length respectively, from Mr. Romer Robinson, Natal.

FAMILY NANDIDÆ.

GEN. PLESIOPS, Cuv.

PLESIOPS NIGRICANS, Rüpp.

Teeth, villiform on jaws, vomer and palatines, the outer row on both jaws slightly enlarged. Depth of body 3 times in total length

excluding caudal, length of head $2\frac{2}{10}$ times. Snout equals interorbital and nearly $1\frac{1}{4}$ times diameter of eye, which is $5\frac{1}{5}$ times in length of head. Snout somewhat obtuse, jaws about equal; maxillary extends to behind posterior margin of orbits; interorbital space convex.

Dorsal xii 7; commences above base of pectorals, spines much shorter than soft rays; anterior spine lowest, the posterior $2\frac{3}{5}$ in length of head; interspinous membrane extends beyond tips of spines and is very deeply emarginate, the spines somewhat tuberculous. Soft portion of fin lower anteriorly, rising to 5th ray, which is twice the length of the longest spine. Pectorals nearly $\frac{2}{3}$ length of head. Ventrals i 4, spine hidden, first 2 rays prolonged, reaching to origin of anal and about same length as head. Anal iii 8; 3rd spine longest and about same height as longest spine of dorsal; soft portion of fin similar to and about same height as soft dorsal. Caudal a little more than $\frac{3}{4}$ length of head, rounded. Scales finely ciliated in last half of body. There are 27 or 28 pierced scales in the upper lateral line and 13 or 14 in the lower.

Colour (of preserved specimen), dark greenish brown; a light patch on preoperculum, operculum and base of pectorals.

One specimen, 190 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY SCIÆNIDÆ.

GEN. UMBRINA, Cuv.

UMBRINA ANGUSTILINEATA, n. sp.

Teeth villiform in both jaws, a few on anterior portion of premaxillaries slightly larger than the rest. Depth of body $3\frac{1}{10}$ times in total length excluding caudal, length of head $3\frac{2}{5}$ times; depth of head equals its length, width of head nearly $\frac{1}{2}$ its length. Eyes $4\frac{1}{7}$ times in length of head, a little more than $1\frac{1}{4}$ diameters from end of snout and $1\frac{1}{6}$ diameters apart; distance between eye and maxilla equals $\frac{4}{5}$ diameter of orbit; snout obtuse, slightly swollen, overhanging the jaws; maxillary reaches to vertical of middle of eye; cleft of mouth lateral, upper jaw overhanging lower; preoperculum with vertical margin serrated, more coarsely so at angle; two blunt opercular points. Shoulder-flap serrated; 3 pores in line across base of snout; a central barbel below symphysis of lower jaw, nearly $\frac{1}{4}$ diameter of eye in length and with 2 open pores on each side.

Dorsal x, i 25 ; spines flexible, 1st minute, 3rd longest and nearly $\frac{3}{4}$ length of head, remainder decreasing rapidly in length, the last being minute ; soft rays about uniform in height, divided, a little more than $\frac{1}{2}$ length of longest spine and equal to postocular portion of head. Pectorals as long as head behind anterior 3rd of eyes. Ventrals $\frac{3}{5}$ length of head, reaching a little more than $\frac{2}{3}$ distance to base of caudal. Anal ii 7 ; 2nd spine strong, nearly $\frac{3}{5}$ length of head and $\frac{2}{3}$ height of anterior soft rays ; length of base of fin nearly $\frac{1}{4}$ that of soft dorsal. Caudal with straight outer edge, a little more than $\frac{3}{4}$ length of head. Lat. l. 52, lat. tr. $\frac{7}{15}$. Lateral line becomes straight above posterior margin of anal, tubes branched. Scales ctenoid ; a band at base of soft dorsal and anal fins.

Colour (of preserved specimen), brown, covered with minute dark specks ; about 11 sinuous narrow white lines on body passing downwards and forwards from behind, 2 or 3 extend on to the head ; a dark spot on opercle ; anal with 3 or 4 light blotches on lower half forming an irregular line.

One specimen, 208 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY CARANGIDÆ.

GEN. CARANX, Lacép.

CARANX NATALENSIS, n. sp.

Teeth, in a single series on each jaw with a few irregularly placed as a second row laterally and a short inner row at symphysis. Depth of body $2\frac{7}{10}$ to 3 times in total length excluding caudal, length of head 3 to slightly more than $3\frac{3}{4}$ times. Snout $1\frac{5}{7}$ times to twice diameter of eye, which is $1\frac{2}{3}$ to $1\frac{3}{5}$ times interorbital width and $4\frac{1}{2}$ to slightly more than 5 times in length of head ; eyes without adipose lids but with the skin slightly projecting over them ; greatest width of head nearly $\frac{1}{2}$ its length, depth of head nearly $\frac{4}{5}$ its length ; maxillary does not reach vertical of anterior margin of eye ; depth of preorbital $\frac{5}{7}$ to about 1 diameter of eye ; jaws equal, snout obtuse, occipital crest well developed. Body oval and compressed, dorsal and anal profiles equally convex, a slight depression above nostrils.

Dorsal viii, i 25 ; spines flexible, 2nd, 3rd, and 4th about equal and $\frac{2}{5}$ length of head ; 2nd dorsal highest anteriorly, lower than longest spines and about $\frac{1}{3}$ length of head. Anal ii, i 21 ; similar

to soft dorsal. The last ray of soft dorsal and anal slightly elongated. Pectorals a little longer than head, falciform. Ventrals nearly $\frac{1}{2}$ length of head. Caudal nearly $\frac{9}{10}$ length of head, deeply forked. Lateral line forms a low curve to below 12th or 13th ray of dorsal, the length of curve $1\frac{1}{3}$ to $1\frac{2}{5}$ times that of the straight portion; scutes on straight portion commence below 16th ray of dorsal and are about 25 in number, becoming most developed on the free portion of the tail. Lat. l. sc. 105 (circa); a narrow band of fine scales along base of soft dorsal and anal; scales on chest. Scales on body ciliated.

Colour (of preserved specimens), uniform yellowish, with a dark shade along back and a dark blotch on opercles; body and fins covered with minute dark specks. The smaller specimen is silvery on the belly.

Two specimens, 194 mm. and 265 mm. in length respectively, the larger one taken off Umhloti in 6 fms.; from Mr. Romer Robinson, Natal.

GEN. CHORINEMUS, Cuv. and Val.

CHORINEMUS LYSAN, Forsk.

Teeth, anteriorly in 2 rows, posteriorly in one, on premaxillaries; in 2 rows on lower jaw, the outer row directed outwards and upwards; in a pear-shaped patch, slightly prolonged posteriorly, on vomer; in a pyriform band, widest anteriorly, on palatines; teeth on tongue. Depth of body 3 times in total length excluding caudal, length of head $4\frac{1}{2}$ times; greatest width of head $2\frac{3}{10}$ times in its length; height of head $\frac{4}{5}$ its length. Snout obtuse; $\frac{4}{5}$ diameter of eye, which equals interorbital width and is $3\frac{1}{5}$ times in length of head; cleft of mouth deep; maxillary extends to about $\frac{1}{2}$ diameter of eye beyond orbits and is narrow, uncovered by preorbital from beneath the first 3rd of the eye and slightly widened and rounded posteriorly; length of premaxillary $\frac{5}{8}$ that of head. Profile of head in front of nape slightly concave and swollen in front of orbits.

Dorsal vii, i 19; anal ii, i 18; anterior rays of both dorsal and anal elevated, $\frac{3}{4}$ length of head; last 10 rays on each fin semi-detached, the last ray being a little elongated. Pectorals over $\frac{2}{3}$ length of head. Ventrals nearly $\frac{3}{5}$ length of head. Caudal $1\frac{1}{10}$ times length of head, the lobes deeply forked. Scales distinct and lanceolate. Lateral line has a slight angular elevation soon after its commencement and is slightly wavy.

Colour (of preserved specimen), dark on back, white below ; with 6 irregular dark blotches on the sides, one below lateral line at its commencement, the others above it.

One specimen, 290 mm. in length, from Durban; from Mr. Romer Robinson, Natal.

FAMILY SCOMBRIDÆ

GEN. CYBIUM.

CYBIUM LINEOLATUM, C. and V.

Teeth, 16 to 18 on each jaw, triangular and strongly compressed, the central ones on the mandibles being the stronger; a triangular pointed patch on vomer, a band on palatines. Depth of body equals length of head and is $4\frac{4}{5}$ times in total length excluding caudal. Snout $1\frac{4}{5}$ times diameter of eye, which is $1\frac{2}{3}$ times in interorbital width and $4\frac{1}{5}$ times in length of head; jaws about equal; maxillary reaches to vertical of posterior 3rd of eye and partly concealed by preorbital; preoperculum emarginate on its vertical border, with its lower edge about as long as the vertical.

Dorsal xvi, 16, ix; spines of 1st dorsal weak, higher anteriorly where they are about $\frac{1}{3}$ length of head; soft dorsal higher anteriorly, a little over $\frac{1}{2}$ length of head and with 9 detached finlets. Pectorals as long as the head behind middle of eye. Ventrals a little more than $\frac{1}{2}$ length of pectorals. Anal ii 14, x; similar to soft dorsal and about the same height, with 10 detached finlets. Caudal deeply forked, nearly $1\frac{2}{3}$ times length of head. Lateral line at first in upper 4th of body, descends gradually with undulations towards the end of the soft dorsal fin until it arrives below the 5th finlet, after which it is nearly straight; central keel well developed on free portion of tail.

Colour (of preserved specimen), dark neutral tint on back and upper part of body, light-coloured on sides and belly; rows of elongated dark blotches on body, 3 below lateral line like interrupted lines; spinous dorsal and posterior margin of upper lobe of caudal black; pectorals, soft dorsal and anal covered with minute dark specks.

One specimen, 374 mm. in length, from Mr. Romer Robinson, Natal; said to be common at Durban, where it is netted off the beach.

FAMILY MUGILIDÆ.

GEN. MUGIL, Arted.

MUGIL DIADEMA, n. sp.

(Diamond Mullet.)

Depth of body equals length of head and is $4\frac{1}{5}$ times in total length excluding caudal. Snout $1\frac{1}{7}$ times diameter of eye, which is $2\frac{3}{5}$ times in interorbital width and $5\frac{1}{3}$ times in length of head; width of head nearly equals $\frac{2}{3}$ its length. Eye without adipose lid; upper profile of head almost straight; interorbital space slightly convex, its width contained nearly $2\frac{1}{4}$ times in length of head; cleft of mouth twice as wide as deep, upper lip broad in the centre, lower jaw with a hollow knob at symphysis which is received into a corresponding depression on upper jaw; extremity of maxillary bone visible, preorbital broad, about $\frac{1}{2}$ diameter of eye in width, serrated at its posterior lower border; uncovered space below chin long and lanceolate; nostrils close together and about midway between eye and snout; about 20 scales between snout and origin of spinous dorsal.

Dorsal iv, i 8; commences nearer to base of caudal than to point of snout; spines of 1st dorsal moderately strong, 1st spine longest and $\frac{3}{5}$ length of head; soft dorsal higher than spinous, anterior rays somewhat produced and nearly $\frac{4}{5}$ length of head, posterior border of fin emarginate, length of base $2\frac{3}{5}$ times in longest ray. Pectorals nearly as long as head. Ventrals $\frac{4}{5}$ length of head, inserted midway between base of pectorals and origin of spinous dorsal. Anal iii 9, similar to soft dorsal but a little higher. Caudal deeply emarginate. Scales large, extending over upper surface of head to snout; fins more or less covered with small oblong scales; a very small axillary scale. Lat. l. 30 to root of caudal, lat. tr. 12.

Colour (of preserved specimen), grey, dark above light on abdomen; thin, dark, hair-like streaks on each scale.

One specimen, 313 mm. in length, from Durban Bay, from Mr. Romer Robinson, Natal.

It differs from *M. ceylonensis*, Günth., in length of pectorals and soft dorsal, fewer scales in l.l. and maxillary not entirely hidden; differs from *M. Smithii* in elongate soft dorsal and anal which are characteristic of this species among South African Mulletts.

MUGIL NATALENSIS, Cast.

(Flathead Mullet.)

Depth of body $3\frac{7}{10}$ times in total length excluding caudal, length of head $4\frac{1}{4}$ times. Snout equals diameter of eye, which is a little more than $2\frac{1}{5}$ times in interorbital width and $4\frac{3}{5}$ times in length of head. Eye with a very narrow posterior adipose lid; interorbital space slightly convex and nearly $\frac{1}{2}$ length of head; cleft of mouth twice as broad as deep, maxillary almost entirely concealed; pre-orbital strongly serrated; upper lip thickened in the centre; nostrils close together; uncovered space on chin long and lanceolate; width of head equals its length behind the middle of the eye, its height about the same.

Dorsal iv, i 8; commencing midway between base of caudal and middle of eye, spines moderately strong, 1st spine longest, about $\frac{3}{5}$ length of head; soft dorsal emarginate, covered with scales, length of base about $\frac{3}{5}$ height of anterior rays, which are not quite as high as longest spine of 1st dorsal. Pectorals $\frac{2}{3}$ length of head and situated about the middle of the depth of the body. Ventrals about $\frac{7}{10}$ length of head, and arise on the vertical of midway between base of pectorals and 1st spine of dorsal. Anal iii 9; slightly higher anteriorly than 2nd dorsal, its base equals about $\frac{4}{5}$ its height; 3rd spine about $\frac{3}{10}$ length of head and nearly $1\frac{1}{4}$ times the length of the 2nd. Caudal deeply emarginate, slightly more than length of head. Scales 25 rows between snout and spinous dorsal; 14th and 27th scales of lateral line correspond to origin of spinous and soft dorsals; preorbital scaled; scales on all fins except 1st dorsal; no elongated axillary scale. Lat. l. 42, lat. tr. $14\frac{1}{2}$.

One specimen, 270 mm. in length, from Mr. Romer Robinson, Natal; taken in tidal waters, common.

MUGIL CEYLONENSIS, Gthr.

(Blue-tail Mullet.)

No teeth. Depth of body slightly more than $3\frac{2}{5}$ times in total length excluding caudal, length of head $4\frac{1}{5}$ times. Snout nearly $\frac{3}{4}$ diameter of eye, which is $4\frac{1}{4}$ times in length of head; interorbital width $\frac{1}{2}$ length of head; greatest width of head nearly $\frac{3}{4}$ its length, greatest height $\frac{4}{5}$ its length. Snout short, broad, obtuse; upper jaw overhangs lower; lower lip thin with a tubercle at symphysis which fits into a corresponding notch on upper lip which is moderately thick; maxillary hidden by preorbital, which has its lower margin finely serrated and bent and its angle serrated; cleft

of mouth small, its depth $\frac{2}{5}$ the breadth; free space on chin very narrow and short; eyes without adipose membrane.

Dorsal iv, i 8; commences midway between point of snout and base of caudal; spines of 1st dorsal flexible and moderately strong 1st spine longest and $1\frac{3}{5}$ times in length of head; 5 rows of scales between 1st and 2nd dorsals. Anterior rays of 2nd dorsal nearly $1\frac{2}{5}$ times height of longest spine of 1st dorsal; upper margin of fin concave, the posterior rays being slightly produced; base of fin nearly $\frac{1}{2}$ its height. Pectorals $1\frac{1}{10}$ times length of head, inserted above the middle of the depth of the body and extending to vertical of 3rd spine of 1st dorsal; a moderately enlarged axillary scale at the base. Ventrals nearly $\frac{3}{4}$ length of head, inserted about midway between base of pectorals and origin of 1st dorsal. Anal iii 8; situated opposite to soft dorsal, which it closely resembles in length, height, and shape. Caudal deeply forked, more than $1\frac{1}{2}$ times in length of head; least depth of free portion of tail equals $\frac{1}{2}$ length of head. Scales striated, extending over head to point of snout and on cheeks; 20 rows between point of snout and origin of 1st dorsal fin; soft dorsal, anal and base of caudal entirely covered with scales. Lat. l. 33, lat. tr. 12.

Colour (of preserved specimen), silvery, darker above than below; a dark spot superiorly at base of pectorals.

One specimen, 268 mm. in length, from Mr. Romer Robinson, Natal.

MUGIL CAPITO, Cuv.

(Grey Mullet.)

Depth of body $4\frac{1}{7}$ to $4\frac{1}{4}$ times in total length excluding caudal, length of head $3\frac{3}{4}$ to 4 times. Snout slightly greater than diameter of eye, which is $\frac{1}{2}$ interorbital width and nearly 5 to $5\frac{2}{3}$ times in length of head; width of head equals $\frac{3}{5}$ its length; eyes without adipose lids; snout broad and depressed; interorbital space slightly convex, its width contained $2\frac{2}{5}$ times in length of head; preorbital with extremity truncated and well serrated; maxillary reaches to vertical of anterior nostril; nostrils less distant from each other than the posterior is from the eye; angle made by mandibular bones obtuse; space at chin elongate, pointed, cuneiform. About 30 scales between snout and spinous dorsal.

Dorsal iv, i 8; 1st dorsal commences midway between middle of eye and base of caudal; spines moderately strong and flexible, 1st spine longest and about $\frac{3}{5}$ length of head; anterior rays of soft dorsal about as high as 2nd spine of 1st dorsal, upper surface of the

fin concave and its base $\frac{2}{3}$ length of longest ray. Pectorals $\frac{2}{3}$ to $\frac{7}{10}$ length of head, situated slightly above centre of body. Ventrals $\frac{3}{5}$ length of head, inserted midway between origin of pectorals and of spinous dorsal. Anal iii 9; commences slightly in advance of soft dorsal, 3rd spine moderately strong and $\frac{3}{5}$ height of soft rays, which are slightly longer than the rays of the soft dorsal; base of fin $\frac{4}{5}$ length of longest ray, upper margin of fin strongly emarginate, the posterior rays being produced. Caudal forked. Lat. l. 42-45, lat. tr. 14; the 12th, 16th, and 30th scales correspond respectively to extremity of pectorals and origin of dorsal fins; no elongated axillary scale; small scales on all fins except spinous dorsal; a dark stripe along the middle of each series of scales on the body.

Colour (of preserved specimens), uniform greyish.

Two specimens, 236 mm. and 320 mm. in length respectively; the smaller from Mr. Romer Robinson, Natal, the larger from Durban market.

FAMILY LABRIDÆ.

GEN. JULIS, Cuv. and Val.

JULIS HEBRAICA, Lacép.

Depth of body $3\frac{1}{3}$ to $3\frac{1}{2}$ times in total length excluding caudal, length of head $3\frac{1}{5}$ to $3\frac{1}{3}$ times. Snout about twice diameter of eye, which is $1\frac{5}{7}$ to 2 times in interorbital width and $5\frac{6}{7}$ to $6\frac{1}{4}$ times in length of head; jaws about equal, the anterior teeth of upper jaw projecting outwards and overlapping lower; maxillary reaches to vertical of anterior nostril, cleft of mouth lateral; infraorbital ring striated. Upper profile of snout very obtuse in the larger specimen.

Dorsal viii 13; spines weak and lower than soft rays, which are of uniform height and about $\frac{1}{3}$ length of head. Pectorals $\frac{4}{5}$ length of head. Ventrals $\frac{1}{2}$ length of head. Anal ii 11; similar to soft dorsal but slightly higher anteriorly. Caudal lunate, the lobes produced and equal to or $1\frac{1}{3}$ times length of head. Scales comparatively large, cycloid. Lat. l. 27, lat. tr. $\frac{2}{3}$.

Colour (when fresh), blue, with irregular violet bands on head and body in front of pectorals, a light vertical band from back to belly behind pectorals; head and anterior half of body darker than posterior half; caudal dark base and lobes, light in centre.

Colour (of preserved specimen), purplish brown, with dark lines from eye to opercular margin and to base of pectorals, a dark

interrupted line on isthmus; a light cross-band passing from anterior spines obliquely behind pectorals almost to belly behind ventrals.

Two specimens, 137 mm. and 178 mm. in length respectively, taken off breakwater, Durban; from Mr. Romer Robinson, Natal, who has supplied the note of the colouring when fresh.

GEN. COSSYPHUS, Cuv. and Val.

COSSYPHUS MACRURUS, Lacép.

A strong posterior canine tooth, strong canines on upper jaw projecting forwards. Depth of body slightly greater than length of head and about 3 times in total length excluding caudal. Snout twice diameter of eye, which is $1\frac{3}{5}$ times in interorbital width and a little more than $5\frac{1}{2}$ times in length of head; cleft of mouth oblique; jaws about equal, the upper slightly overlapping lower; upper lip broad in centre, with folds; maxillary reaches to vertical of anterior 3rd of eye and is entirely hidden by the preorbital; preoperculum indistinctly serrated, emarginate above the angle, which is rounded. Head longer than high, its greatest height equals its length behind posterior nostril, flat on top.

Dorsal xii 10; spines weak and produced in a short filament, the 1st spine slightly lower than the remainder, which are subequal and nearly $\frac{1}{4}$ length of head; soft portion of fin higher posteriorly. Pectorals $\frac{2}{3}$ length of head. Ventrals with outer rays produced but not reaching anus, about same length as pectorals. Anal iii 12; similar to soft dorsal. Caudal $\frac{2}{3}$ length of head, truncate, outer rays produced. Lat. l. 33, lat. tr. $\frac{6}{13}$.

Colour (when fresh), "reddish on sides shading to dark on back. Dark patch on side near base of tail. Belly yellowish shading to smoky colour below pectorals. Under side of lower jaw light yellow. Dorsals dark. Tail reddish with dark edges. Anal dark. Pectorals transparent with red at base. Eye red with black pupil."

Colour (of preserved specimen), grey, a large black blotch along the whole of the spinous dorsal fin extending on to the spines; a dark blotch between lateral line and base of soft dorsal; whitish longitudinal lines on cheeks and behind eyes, soft dorsal and anal with brown dots in rows, ventrals blackish, pectorals diaphanous.

One specimen, 256 mm. in length, from Mr. Romer Robinson, Natal; who has kindly furnished a note of the colouring when fresh.

COSSYPHUS NIGROMACULATUS, Gilchr. and Thomp.

Chæropsodes pictus, Gilchr. and Thomp.

Teeth, 4 strong canines in front on either jaw, the inner pair on lower jaw being small; lateral teeth in a continuous cutting edge; the larger specimen has 2 canines at the angle of upper jaw on left side, the smaller specimen has only 1. Depth of body $2\frac{3}{5}$ to $2\frac{2}{3}$ times in total length excluding caudal, length of head 3 times. Snout 3 times diameter of eye, which is $\frac{1}{2}$ to $\frac{2}{3}$ interorbital width and $5\frac{1}{16}$ to 7 times in length of head; interorbital space convex; preorbital emarginate, its least depth about twice diameter of eye; preoperculum minutely serrated; upper lip thick, cleft of mouth oblique, maxillary reaches vertical of anterior margin of eye and nearly hidden by preorbital.

Dorsal xi-xii 10-12; commences above base of pectorals; spines short, strong and embedded in thick skin, which is produced as a short lobe covering end of each spine; interspinous membranes deeply cleft; 1st spine shortest, the remainder about subequal and $\frac{1}{5}$ to $\frac{3}{10}$ length of head; soft portion of fin anteriorly about as high as adjacent spines rising posteriorly to about $\frac{1}{3}$ length of head. Pectorals $\frac{7}{10}$ to $\frac{3}{4}$ length of head, superior rays longest. Ventrals with first 2 rays produced, about $\frac{4}{5}$ length of head and reaching to origin of anal. Anal iii 12; resembles soft dorsal but not so high. Caudal emarginate, outer rays produced and nearly as long as head. Scales on body large, smaller ones covering throat, opercles, cheeks, and top of head as far as eyes. Lat. l. 33, lat. tr. $\frac{6\frac{1}{2}-7}{14-18}$.

Colour (of larger specimen when fresh), very brilliant, pinkish red with a tinge of lemon-yellow markings as follows: Dots and short irregular lines on head and anterior dorsal part of body, on interspinous membranes of all fins except spinous dorsal where they are black and on margin of caudal fin; a black blotch at distal end of pectorals and one on the body between the spinous and soft portions of the dorsal fin.

Colour (of preserved specimens), yellow or grey with a reddish tinge in places; a large black patch above lateral line extending on to base of dorsal fin, a black patch on distal extremity of pectorals; spinous dorsal black.

Two specimens, one 425 mm. in length, from Durban market; the other, 240 mm. in length, procured from line fishermen at Durban, caught outside the harbour.

On reconsideration of specimens we have found that these two fish, which we have formerly described as different, apparently may

be varieties of the same species, and that it seems preferable to extend the definition of the genus *Cossyphus* to include *Chæropsodes*.

FAMILY SCLERODERMI.

GEN. BALISTES, Arted.

BALISTES NIGER, Mungo Park.

Teeth compressed, notched. Depth of body about twice in total length excluding caudal, length of head $2\frac{7}{10}$ times. Snout $4\frac{1}{3}$ times diameter of eye, which is about $1\frac{1}{3}$ times in interorbital width and $5\frac{1}{3}$ times in length of head. A groove in front of the eyes. Cheeks entirely scaled. Some enlarged scutes behind gill-openings.

Dorsal iii 27; commences above first 3rd of pectorals, 1st spine strong and more than $\frac{2}{5}$ length of head; soft rays of 2nd dorsal higher anteriorly, 3rd ray longest and about same height as 1st spine of anterior dorsal, remaining rays shortening to the last which is $\frac{1}{3}$ height of the longest; margin of fin curving from 3rd to last ray. Pectoral $\frac{1}{3}$ length of head. Ventral spine movable, a series of sharp spines from its base to the vent. Anal 24, similar to soft dorsal, but margin of fin a little rounder. Caudal $\frac{3}{5}$ length of head, truncate. Lat. l. sc. 45 (circa); about 25 series of scales in a transverse line from origin of soft dorsal to vent; 6 rows of small recurved spines on tail.

Colour (when fresh) "yellow brown; violet blue from mouth to ventrals; 2 white bands under mouth. Tail brown with longitudinal yellow stripes and broad white outer edging, and narrow white edging above and below. Dorsal and anal chocolate base shading to lighter brown, pectorals ditto."

Colour (of preserved specimen), bluish brown, a light ring round lower jaw; soft dorsal, anal and pectorals light-coloured; caudal with a light upper and lower edge and a white posterior extremity.

One specimen, 130 mm. in length, taken off the breakwater at Durban; from Mr. Romer Robinson, who kindly supplied a note of the colouring when fresh.

GEN. MONACANTHUS, Cuv.

MONACANTHUS NATALENSIS, n. sp.

Depth of body $1\frac{1}{5}$ times in total length excluding caudal, length of head nearly $3\frac{1}{2}$ times. Snout $4\frac{3}{5}$ times diameter of eye, which

is $1\frac{3}{5}$ times in interorbital width and about 5 times in length of head; eyes placed high up at posterior angle of head, over the gill-openings and just behind dorsal spine; profile of head from dorsal spine to point of snout slightly concave.

Dorsal i 34; spine $\frac{4}{5}$ length of head, strong and slightly curved, situated nearer to point of snout than to origin of soft dorsal and just in front of the vertical of anterior margin of eye, armed posteriorly for about $\frac{3}{4}$ its length with a series of barbs on each side pointing outward and upward. Soft dorsal highest anteriorly, the rays lengthening to the 5th which is $\frac{3}{5}$ height of spinous dorsal, the succeeding rays decreasing in height to the last, which is about $\frac{1}{4}$ the height of the 5th ray. Pectorals a little more than $\frac{2}{5}$ length of head and situated in the vertical of posterior margin of orbits. Ventral small, immovable. Anal 31, rays of uniform height and about $\frac{2}{3}$ length of longest rays of soft dorsal, except posteriorly, where they are shortened and give the fin a rounded edge. Caudal $\frac{3}{4}$ length of head, subtruncate and with the corners rounded; caudal peduncle swollen at the sides. Scales small, skin velvet-looking with a rough surface, scales setiform and turned forward on side of tail; minute black hair-like processes occurring in clumps in the form of a few black spots.

Colour (of preserved specimen), dark brown; soft dorsal, anal and pectoral fins whitish; a few dark black spots occurring irregularly on the body.

One specimen, 170 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY GYMNODONTES.

GEN. TETRODON, Cuv.

TETRODON IMMACULATUS, var. VIRGATA, Bl. Schn.

Teeth of about equal size in both jaws. Length of head scarcely equals its distance from base of dorsal fin and is nearly $2\frac{5}{6}$ times in total length excluding caudal. Eyes prominent, situated slightly nearer to gill-opening than to point of snout, longitudinal diameter $2\frac{1}{3}$ times in distance from point of snout and twice in interorbital width, which is broad and flat, the osseous part only extending $\frac{3}{4}$ the distance between the eyes; snout short, obtusely pointed, nearly $\frac{1}{2}$ length of head and scarcely longer than interorbital width; 2 well-developed nasal tentacles on each side on a single base. Profile of head from orbits to snout slightly concave.

Dorsal 9; situated in last 3rd of distance from middle of eye to base of caudal, its height twice the length of its base and $\frac{2}{3}$ length of the head. Pectorals $\frac{2}{5}$ length of head. Anal 9; commencing behind posterior margin of dorsal and of similar shape, but slightly higher. Caudal nearly $\frac{2}{3}$ length of head, truncate. Minute spines on body as far as snout, becoming larger on abdomen. No fold on lower part of tail or body.

Colour (when fresh), dark brown above; belly yellowish, striped longitudinally with brown lines; fins yellowish; back dark with lighter patches.

Colour (of preserved specimen), dark brownish black on upper part of body including cheeks and snout; light drab colour below, with many dark curving lines running from throat and round base of pectorals along the sides and abdomen to base of tail.

One specimen, 83 mm. in length, taken off breakwater, Durban; from Mr. Romer Robinson, Natal, who kindly supplies a note of the colouring when fresh.

TETRODON HISPIDUS, Lacép.

Teeth equal on both jaws. Length of head equals the distance from base of dorsal fin and is $2\frac{3}{4}$ times in total length excluding caudal. Eyes of moderate size situated slightly nearer to gill-opening than to point of snout and $2\frac{3}{4}$ times in length of snout, which is slightly more than $\frac{1}{2}$ length of head; interorbital width slightly less than length of snout, flat, the osseous part twice the diameter of the eye in width; orbits prominent; profile of snout slightly concave; two prominent nasal papillæ on a single base on each side.

Dorsal 10; situated in last 3rd of distance from anterior margin of eye to base of caudal fin, height $2\frac{1}{2}$ times the length of the base and nearly $\frac{1}{2}$ length of head. Pectorals $\frac{2}{5}$ length of head. Anal 10; commencing behind posterior margin of base of dorsal, which it resembles, but is not so high. Caudal nearly $\frac{3}{4}$ length of head, truncate, with a slightly rounded posterior margin and equal to its distance from anterior margin of dorsal. Spines on body extend superiorly from interorbital space to near base of caudal, more or less widely separated and in patches and hidden in the skin; inferiorly they extend from throat and cheeks below line of pectorals to vent, being prominent and denser on abdomen, and with a patch on the side below the dorsal fin.

Colour (when fresh), yellowish on back, shading to dirty white on belly. Many small white spots on back, thicker near tail; pec-

torals yellow, white circular line round base of pectorals with smaller yellow circle inside, yellow vertical line at base of pectorals and another below it; other fins yellowish. Several black vertical bands below line of pectoral extending to belly on each side of body.

Colour (of preserved specimen), blackish brown above, white on abdomen, with a few scattered small white spots on back, which become more numerous and well defined on the sides from below dorsal fin and especially on free portion of tail; 4 or 5 subvertical black blotches on each side of abdomen; pectorals dark near the base, white on outer $\frac{2}{3}$, a whitish ring round base including gill-openings. Caudal dark brown.

One specimen, 135 mm. in length, taken off breakwater, Durban; from Mr. Romer Robinson, Natal, who has kindly supplied the note of the colouring when fresh.

TETRODON HYPSELOGENION, Blkr.

Teeth about the same size on each jaw. Length of head equals its distance from dorsal fin and is nearly 3 times in total length excluding caudal. Osseous interorbital space narrow and about $\frac{3}{4}$ diameter of eye, which is prominent, situated on upper margin of head, a little nearer to point of snout than to gill-opening, and is $3\frac{2}{3}$ times in length of head; snout $1\frac{2}{3}$ times diameter of eye; chin prominent and vertical, its depth nearly equals length of snout and is $\frac{1}{3}$ length of head; lower jaw projects beyond upper, mouth small; posterior nostrils have a prominent papilla on each with two openings; gill-openings fringed with coarse papillæ.

Dorsal commences in last 3rd of distance from snout to base of caudal; anterior rays highest; length of base equals $\frac{2}{3}$ the height of the fin, which is $\frac{3}{5}$ length of head. Anal commences below middle of dorsal, similar to but not as high as dorsal. Caudal truncate.

Body covered with small spines from interorbital space nearly to dorsal fin, abdomen covered with numerous similar spines; a cross band of small spines across the side to abdomen, behind pectorals; remainder of sides naked.

Colour (of preserved specimen), upper half of body dark brown with irregular larger and smaller whitish spots; lower half of body white; sides with a silvery longitudinal band; irregular sub-vertical bars on cheeks; caudal fin dark brown, with a whitish inferior edge.

FAMILY MURÆNIDÆ.

GEN. MURÆNESOX, McCall.

MURÆNESOX CINEREUS, Forsk.

(Silver Eel.)

Vomerine teeth compressed, with a basal lobe in front and behind, teeth of middle row fang-like and powerful; teeth of inner series of mandible similar in form to but much smaller than those of the vomer and but rarely with basal lobes, those of the outer series rudimentary and not bent outwards; fang-like canines at symphysis. Length of head contained nearly $2\frac{1}{2}$ times in distance between point of snout and vent; snout slender, produced into a point beyond lower jaw; cleft of mouth wide, $2\frac{3}{10}$ times in length of head; eyes situated nearly in middle of length of head, $1\frac{1}{4}$ times interorbital width and $2\frac{3}{4}$ times in length of snout.

Dorsal commences in advance of gill-openings. Pectorals well developed, $\frac{1}{3}$ length of head. Tail about $1\frac{1}{2}$ times length of trunk.

Colour (of preserved specimen), uniform dark brown on back, lighter below.

One specimen, 735 mm. in length, from Mr. Romer Robinson, Natal.

GEN. MURÆNA, Arted.

MURÆNA NEBULOSA, Ahl.

Teeth obtuse, molar-like. Length of head $5\frac{3}{4}$ times in distance from point of snout to vent; tail slightly longer than the trunk. Eyes about 2 diameters from point of snout and situated midway between it and cleft of mouth, which is $2\frac{7}{8}$ times in length of head; gill-opening about equals diameter of eye.

Dorsal fin fairly well developed and commencing a little in front of gill-opening.

Colour (of preserved specimen), whitish ground, covered with numerous dark specks; a row of about 30 large irregular black spots on back, some of them with white spots in them, running through dorsal fin and a similar row of black blotches below them extending through abdomen.

One specimen, 260 mm. in length, caught at the Bluff, Durban; from Mr. Romer Robinson, Natal.

MURÆNA MELEAGRIS, Shaw.

(Spotted Eel.)

Canines fairly well developed; teeth on mandibles uniserial, on maxillary and premaxillary biserial, in a single row longitudinally on vomer. Length of head about 4 times in distance between point of snout and vent; length of tail $1\frac{3}{5}$ to $1\frac{7}{10}$ times in length of trunk. Eyes small, $2\frac{1}{5}$ to $2\frac{1}{3}$ diameters from end of snout and situated nearer to it than to angle of mouth; cleft of mouth about $\frac{1}{2}$ length of head; mouth cannot be entirely closed; anterior nasal tube $\frac{1}{2}$ to $\frac{3}{5}$ vertical diameter of eye; gill-opening $1\frac{2}{5}$ diameters of eye. A row of widely separated open pores on mandibles and maxillary and 3 or 4 pores about the nostrils.

Dorsal low and anteriorly enveloped in skin, commencing a little in advance of gill-opening.

Colour (of preserved specimens), dark brown above, light on belly; covered with small white spots smaller than the eye.

Two specimens, 437 mm. and 435 mm. in length respectively, from Mr. Romer Robinson, Natal.

MURÆNA NUDIVOMER, Günth.

Teeth uniserial on both jaws, anterior ones serrated; a large curved tooth behind the row at symphysis of upper jaw; no vomerine teeth. Length of head nearly 4 times in distance from point of snout to vent; tail nearly $1\frac{2}{5}$ times length of trunk. Eyes small, $2\frac{5}{7}$ diameters from point of snout and situated nearer to it than to angle of mouth; snout of moderate length, about $5\frac{3}{4}$ times in length of head; cleft of mouth $2\frac{3}{5}$ times in length of head; gill-openings equal twice diameter of eye; nasal tube small, $\frac{3}{7}$ diameter of eye.

Dorsal and anal fins well developed, covered with thick skin; dorsal commences in the vertical of nearly midway between cleft of mouth and gill-opening. Body slender and tapering to tail.

Colour (of preserved specimen), head white with small brown spots on lower half and vermiculated brown lines on upper, gradually merging a short distance behind the head into brown with numerous white oval spots, sometimes confluent, over the rest of the body and extending through the fins.

One specimen, 908 mm. in length, from Mr. Romer Robinson, Natal.

MURÆNA TESSELLATA, Rich.

Teeth in a single row, triangular and slanting backwards, large ones interspersed with smaller; 2 strong pointed teeth pointing backwards at symphysis of upper jaw. Length of head $4\frac{1}{3}$ times in distance from snout to vent; tail $1\frac{1}{2}$ times length of trunk. Snout compressed and rounded; eyes situated midway between angle of mouth and end of snout, diameter equals $\frac{1}{2}$ length of snout; cleft of mouth $2\frac{1}{3}$ times in length of head. Profile of head boldly convex to eyes; gill-opening equals diameter of eye; anterior nasal tubes equal $\frac{1}{2}$ diameter of eye; mouth can be shut completely.

Colour (of preserved specimen), body, fins, and head covered with irregular black blotches, with many round spots in a more or less irregular row on body; interspaces light.

One specimen, about 380 mm. in length, from Mr. Romer Robinson, Natal.

MURÆNA POLYZONA, Rich.

(Banded Eel.)

Teeth, biserial on lower jaw, molar-like and slightly pointed at anterior end of mandible, a row of rather pointed teeth on maxillary with a few smaller teeth on the outside; a band of 4 longitudinal rows of molar-like rounded teeth on vomer. Length of head $3\frac{1}{2}$ to $3\frac{7}{10}$ times in distance from point of snout to vent; tail $1\frac{1}{2}$ times length of trunk; eyes situated in upper half of head, $1\frac{3}{5}$ to 2 diameters from end of snout and situated nearer to point of snout than to angle of mouth; cleft of mouth $2\frac{1}{2}$ to $2\frac{4}{5}$ times in length of head. Profile of head boldly convex to the eyes, slightly convex thence to point of snout, which is slightly longer than the lower jaw; gill-opening equals diameter of eye; anterior nasal tube $\frac{2}{5}$ diameter of eye.

Dorsal well developed, commences in advance of gill-opening.

Colour (of preserved specimens), yellowish brown, darker above than below, crossed by about 28 irregular narrow white or yellow transverse bands, which extend through dorsal and anal fins and across caudal.

Two specimens, 374 mm. and 518 mm. in length respectively, from Mr. Romer Robinson, Natal.

FAMILY SCYLLIIDÆ.

GEN. SCYLLIORHINUS, Gill.

SCYLLIORHINUS NATALENSIS, Regan.

(Striped Dog-fish.)

Teeth long, with a central setose cusp and 2 cusps at the base on each side. Head broad, depressed; snout obtusely pointed; length of snout $\frac{7}{10}$ width of mouth and $2\frac{3}{5}$ times the space between the nasal valves; diameter of eye $1\frac{4}{5}$ times in length of snout; no labial folds; gill-openings $1\frac{1}{5}$ times diameter of eye. Scales of body trispinate.

The 1st dorsal originates slightly in front of posterior base of ventrals, the 2nd dorsal over posterior end of base of anal. Dorsal fins equal; the length of their respective bases is $2\frac{3}{5}$ times in the distance between them, which is nearly $1\frac{1}{2}$ times the distance between the posterior margin of base of 2nd dorsal and base of caudal; posterior margin of pectorals situated less than $\frac{1}{2}$ the distance between posterior end of its base and anterior end of ventrals; posterior end of ventrals pointed.

Colour (of preserved specimen), grey, white underneath; with transverse irregular bars across back which are dark-edged and enclose a bar of the same shade as the ground colour; 1 bar crosses the head from eye to eye; the 3 bars across the back anterior to the origin of the ventrals extend to abdomen, the remainder only reach to median line, 1 being at the base of each dorsal fin, 1 midway between these fins, 1 midway between 2nd dorsal and base of caudal; there are fainter bars between each dark bar. Pectorals with transverse blotches. Ventrals with a large blotch at base. Caudal with 2 partial bars only visible on edge of fin, tip of fin dark; tip of dorsals with a dark blotch.

One specimen, 438 mm. in length, from Durban Museum.

FAMILY RHINOBATIDÆ.

GEN. RHINOBATUS, Müll. and Henl.

RHINOBATUS BLOCHII, M. and H.

Teeth on both jaws about equal in size. Snout elongate, its length $7\frac{1}{10}$ times in total length; interorbital width $3\frac{1}{5}$ times in length of snout; distance between outer angles of nostrils equals

$\frac{1}{2}$ distance of mouth from end of snout; anterior nasal valve continued towards median line by a fold that nearly meets that of the other side; cleft of mouth straight, longer than nostril; rostral ridges more distant from each other behind than in front and separated by a shallow groove.

Dorsal fins about the same height and pointed; their distance apart equals $1\frac{1}{2}$ times interspace between 2nd dorsal and root of caudal.

Back finely granular, with a row of compressed spines along the middle of the back, 1 on each shoulder, and a row round upper margin of eyes.

Colour (of preserved specimen), pale, slightly mottled brown above, nearly white on lower side; scattered small round whitish spots on back.

One specimen, 640 mm. in length, from Mr. Romer Robinson, Natal.

FAMILY TRYGONIDÆ.

GEN. PTEROPLATEA, Müll. and Henl.

PTEROPLATEA NATALENSIS, n. sp.

Disk nearly twice as broad as long. Tail a little more than $\frac{1}{2}$ as long as disk, with a minute rudimentary fin at extremity and a slight upper and lower ridge semi-annulated with black. A short tentacle behind spiracle. Lower dental laminae concave in the centre, the points of the curve being received into corresponding depressions in the convex curve of the upper laminae.

Teeth small, unicuspid. Spine not serrated. Interorbital space convex with a V-shaped depression and 2 or 3 small knobs or blunt spines. Two large tuberculous lumps behind spiracles.

Colour (of preserved specimen), light brown mottled with darker; upper surface of tail with brown patches.

One specimen, 157 mm. in length excluding caudal, from Mr. Romer Robinson, Natal.

GEN. ÆTOBATIS, Müll. and Henl.

ÆTOBATIS NARINARI, Euphrasen.

Teeth, lower dental laminae projecting. Disk about twice as broad as long, distance from mouth to anus nearly $\frac{2}{5}$ width of disk. Head

distinct from pectoral fins, elevated. Snout projecting and acutely pointed; eyes small; interorbital width broad and convex, about $8\frac{1}{2}$ times diameter of eye; nasal valves forming a quadrangular flap, the lower edge fringed and divided in the centre.

Dorsal fin very small, arises opposite centre of ventrals, which are $\frac{5}{8}$ as broad as long; tail whiplike and produced, $3\frac{1}{5}$ times length of body, with a spine situated just behind termination of dorsal fin (broken off in specimen).

Back smooth; colour brown, spotted with small oval spots (which in the preserved specimen are whitish), margins of pectorals of a lighter shade of yellowish brown and the edges crenellated.

One specimen, 290 mm. in length excluding caudal, from Mr. Romer Robinson, Natal.

LIST OF SPECIES DESCRIBED.

FAMILY PERCIDÆ.

							PAGE
Lutianus erythropterus, Bl. ...	...	...	...	...	...	...	29
„ lineatus, Q. and G. ...	...	...	...	...	...	...	30
Diagramma griseum, C. and V. ...	...	...	...	...	...	...	31
Dentex filusus, Val. ...	...	...	...	...	...	...	32
Lobotes surinamensis, C. and V. ...	...	...	...	...	...	...	33
Gerres filamentosus, C. and V. ...	...	...	...	...	...	...	33

FAMILY SQUAMIPINNES.

Chætodon vagabundus, L.	34
-----------------------------	-----	-----	-----	-----	-----	-----	----

FAMILY SPARIDÆ.

Pagrus spinifer, Forsk.	35
-----------------------------	-----	-----	-----	-----	-----	-----	----

FAMILY COTTIDÆ.

Platycephalus punctatus, C. and V.	36
--	-----	-----	-----	-----	-----	-----	----

FAMILY TEUTHIDÆ.

Teuthis nebulosa (Q. and G.)	37
----------------------------------	-----	-----	-----	-----	-----	-----	----

FAMILY NANDIDÆ.

Plesiops nigricans, Rüpp	37
------------------------------	-----	-----	-----	-----	-----	-----	----

FAMILY SCIÆNIDÆ.

Umbrina angustilineata, n. sp.	38
------------------------------------	-----	-----	-----	-----	-----	-----	----

FAMILY CARANGIDÆ.

								PAGE
Caranx natalensis, n. sp.	...	...	...	...	...	...	...	39
Chorinemus lysan, Forsk.	...	...	...	...	...	...	...	40

FAMILY SCOMBRIDÆ.

Cybbium lineolatum, C. and V.	41
-------------------------------	-----	-----	-----	-----	-----	-----	-----	----

FAMILY MUGILIDÆ.

Mugil diadema, n. sp.	...	...	...	...	...	...	...	42
„ natalensis, Cast.	...	...	...	...	...	...	...	43
„ ceylonensis, Günth.	...	...	...	...	...	...	...	43
„ capito, Cuv.	...	...	...	...	...	...	...	44

FAMILY LABRIDÆ.

Julis hebraica, Lacép.	...	...	...	...	...	...	...	45
Cossyphus macrurus, Lacép.	...	...	...	...	...	...	...	46
„ nigromaculatus, Gilchr. and Thomp.	...	...	...	...	...	...	...	47

FAMILY SCLERODERMI.

Balistes niger, Mungo Park	...	...	...	...	...	...	...	48
Monacanthus natalensis, n. sp.	...	...	...	...	...	...	...	48

FAMILY GYMNODONTES.

Tetrodon immaculatus, var. virgata, Bl. Schn.	...	...	...	...	...	...	...	49
„ hispidus, Lacép.	...	...	...	...	...	...	...	50
„ hypselogenion, Blkr.	...	...	...	...	...	...	...	51

FAMILY MURÆNIDÆ.

Murænesox cinereus, Forsk.	...	...	...	...	...	...	...	52
Muræna nebulosa, Ahl.	...	...	...	...	...	...	...	52
„ meleagris, Shaw	...	...	...	...	...	...	...	53
„ nudivomer, Günth.	...	...	...	...	...	...	...	53
„ tessellata, Rich.	...	...	...	...	...	...	...	54
„ polyzona, Rich.	...	...	...	...	...	...	...	54

FAMILY SCYLLIIDÆ.

Scylliorhinus natalensis, Regan	55
---------------------------------	-----	-----	-----	-----	-----	-----	-----	----

FAMILY RHINOBATIDÆ.

Rhinobatus blochii, M. and H.	55
-------------------------------	-----	-----	-----	-----	-----	-----	-----	----

FAMILY TRYGONIDÆ.

Pteroplatea natalensis, n. sp.	...	...	...	...	...	...	...	56
Aëtobatis narinari, Euphrasen	...	...	...	...	...	...	...	56

ERRATUM.

On page 181 of Vol. VI., Part II., read *Umbrina striata* Blgr.



Gilchrist, J. D. F. and Thompson, W. Wardlaw. 1911. "Descriptions of fishes from the coast of Natal. (Part 3)." *Annals of the South African Museum. Annale van die Suid-Afrikaanse Museum* 11, 29–58.

<https://doi.org/10.5962/bhl.part.5070>.

View This Item Online: <https://www.biodiversitylibrary.org/item/17263>

DOI: <https://doi.org/10.5962/bhl.part.5070>

Permalink: <https://www.biodiversitylibrary.org/partpdf/5070>

Holding Institution

MBLWHOI Library

Sponsored by

MBLWHOI Library

Copyright & Reuse

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.