

Natal Fishes obtained by Mr. H. W. Bell-Marley.

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With 14 Text-figures.

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Two collections of fishes received in Philadelphia from Mr. H. W. Bell-Marley, in 1929 and 1931, Principal Fisheries Officer of Natal, form the basis of the present paper. They include upwards of two hundred species represented by 336 specimens. A number are of special scientific interest; 5 are regarded as new and are described and figured, while 16 old species are redescribed or annotated, and some of them are figured.

The method of description is the same as that explained in my 1925 paper on the fishes of this region. The colour notes are all from the preserved material, except for a few quotations from Mr. Marley. The former are often quite unsatisfactory owing to considerable emphasis or evanescence of tints during preservation, though offered as features of value in the interpretation of the species. These tints are matched as far as possible with the 'Nomenclature of Colors for Naturalists', by Robert Ridgeway.

#### ENGRAULIDÆ.

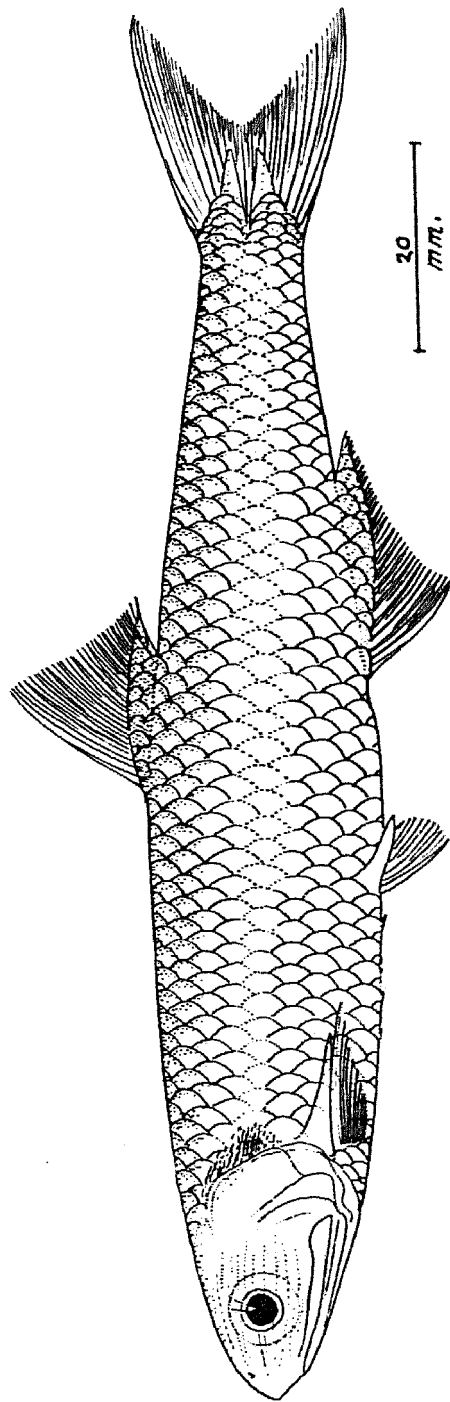
##### *Anchoviella indica* (*Van Hasselt*). Text-fig. 1.

Depth 5; head  $4\frac{1}{2}$ , width  $2\frac{1}{5}$ . Snout  $4\frac{1}{4}$  in head; eye  $3\frac{3}{8}$ , little greater than snout or interorbital, adipose membranes well developed and nearly opaque; maxillary not quite reaching mandibular joint, expansion 3 in eye, length from snout tip  $1\frac{1}{2}$  in head; teeth minute; interorbital  $3\frac{7}{8}$ , convex; head above and on upper sides venulose. Gill rakers 17 + 20, lanceolate,  $\frac{1}{2}$  of eye; gill-filaments  $\frac{1}{2}$  of gill-rakers. Gill-membrane forms very narrow free fold across front of isthmus.

Scales (pockets) 39 in median lateral series to caudal base and 3 more on latter; 10 transversely, 20 predorsal. Abdominal scutes 4 between pectorals and ventrals. Scales all fallen.

D. iii, 13, first branched ray  $1\frac{2}{3}$  in head; A. iii, 16, first branched ray  $2\frac{1}{4}$ ; caudal 1, deeply forked, lobes pointed; least depth of caudal peduncle 3; pectoral  $1\frac{2}{3}$ ; ventral  $2\frac{2}{3}$ .

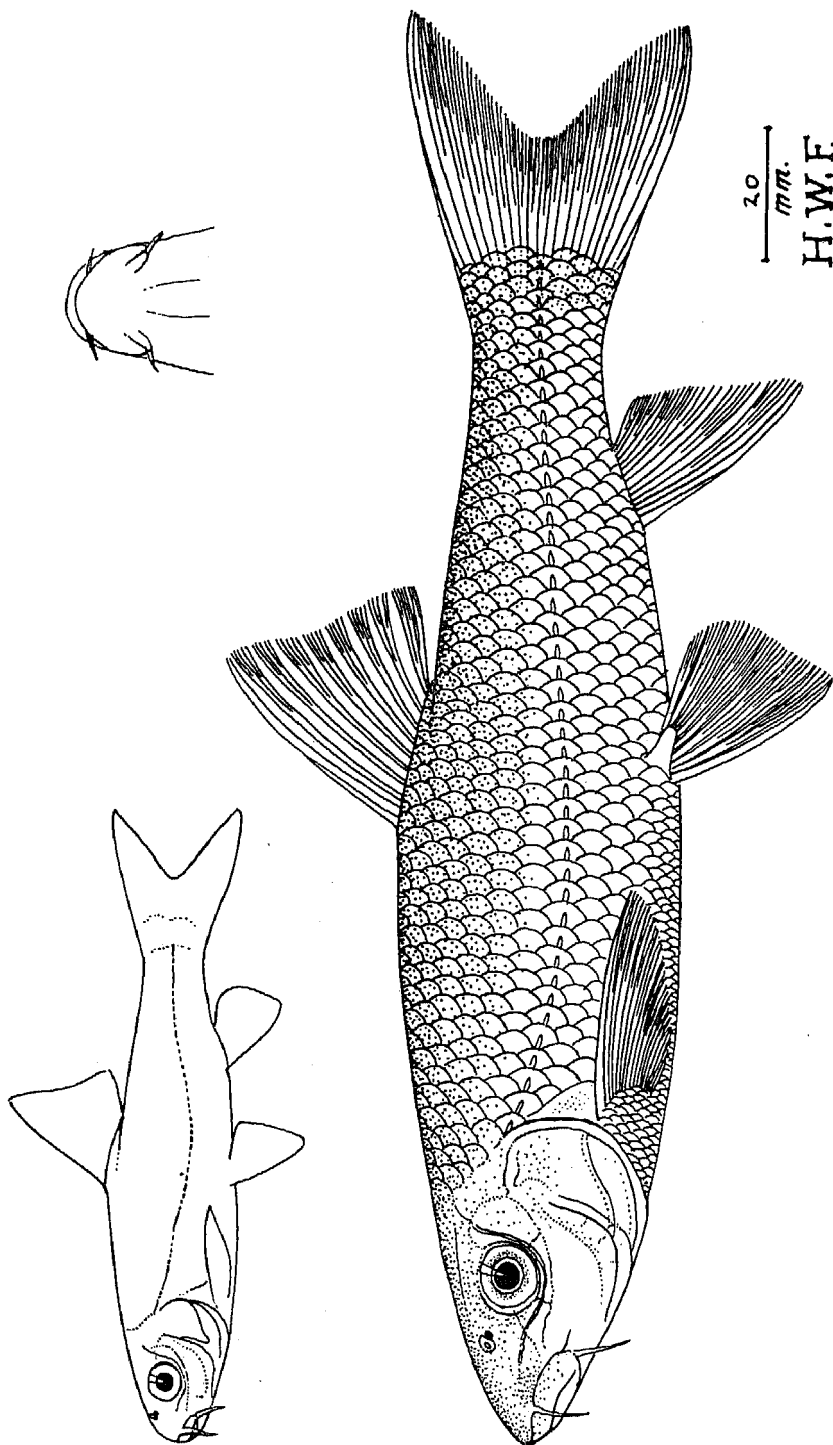
TEXT-FIG. 1.



20  
mm.  
H.W.F.

*Anchoviella indica* (Van Hasselt).

TEXT-FIG. 2.



*Barbus marleyi* sp. n. Type and paratype.

Pale clay colour generally. Head nearly buff, with silvery white reflections. Iris silvery white. Silvery white lateral band, little less than eye in width, narrow at first and wider on tail. Fins all pale, hind caudal edges greyish.

Length 135 mm. Durban, 1931.

New for the South African coast.

## CYPRINIDÆ.

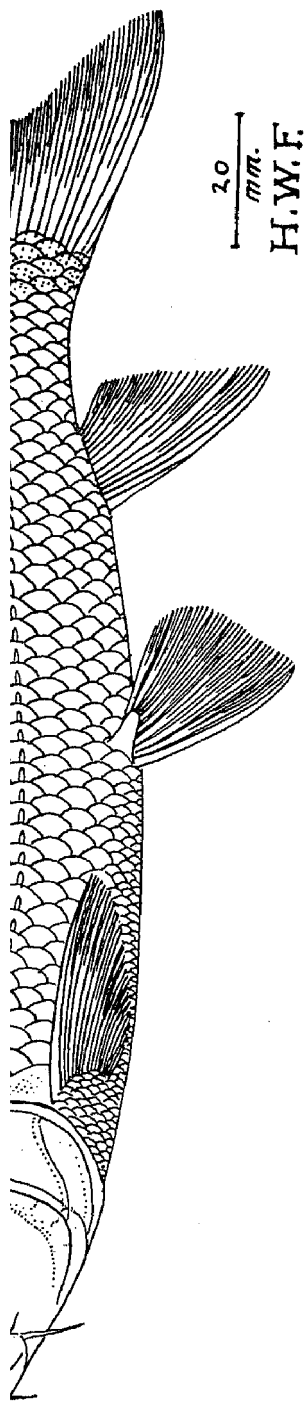
*Barbus marleyi* sp. n. Text-fig. 2.

Depth  $3\frac{7}{8}$ ; head  $2\frac{1}{2}$ , width  $1\frac{9}{10}$ . Snout  $2\frac{9}{10}$  in head; eye  $5\frac{1}{2}$ ,  $2\frac{1}{3}$  in snout,  $2\frac{1}{3}$  in interorbital; maxillary reaches opposite hind nostril or  $\frac{4}{5}$  in snout, length 3 in head; mouth inferior, broad, width  $3\frac{7}{8}$ ; lips fleshy, broad, not forming free hind edge over broad symphysial region; barbels subequal, all long as eye; interorbital 3, broadly convex; suborbitals narrow, cover only  $\frac{1}{3}$  of cheek. Gill-rakers 4 + 12, short points  $2\frac{1}{2}$  in gill-filaments. Pharyngeal teeth 2, 3, 5—5, 3, 2, with broad grinding surfaces, larger end in obtuse terminal hooks.

Scales 40 in lateral line to caudal base and 2 more on latter; 7 above, 6 below, 18 predorsal, 18 round caudal peduncle; 35 from isthmus to ventral origin, much smaller on belly than on sides of abdomen. Scales with 20 basal radiating striæ, 54 apical; circuli very fine.

D. iii, 8, i, first branched ray  $1\frac{1}{2}$  in head, origin nearer caudal base than snout tip, third simple ray rather thin, flexible terminally and smooth or without serræ; A. iii, 6, first branched ray  $1\frac{1}{2}$ , third simple ray flexible and smooth; caudal well forked, slightly less than head; least depth of caudal peduncle  $2\frac{2}{5}$ ; pectoral  $1\frac{1}{3}$ ; ventral  $1\frac{2}{3}$ .

Back olive brown, pocket of each scale darker or dusky. Head brown above, paler on sides and under-surfaces whitish. Dorsal and caudal brownish. Lower fins pale to whitish.



Type 53444 A.N.S.P. Length 216 mm. Sinclair, Broadmoor. April 30th, 1928. H. W. Bell-Marley. Also a smaller example, paratype, 53445 A.N.S.P.; from Umzimkulu District, Natal, length 94 mm.

Allied to *Barbus polylepis Boulenger*, but differs, since that species is said to have the lower lip "continuous across the chin". It also has a narrower preorbital and much shorter paired fins.

#### AMPHILIIDÆ.

##### *Amphilius natalensis Boulenger*. Text-fig. 3.

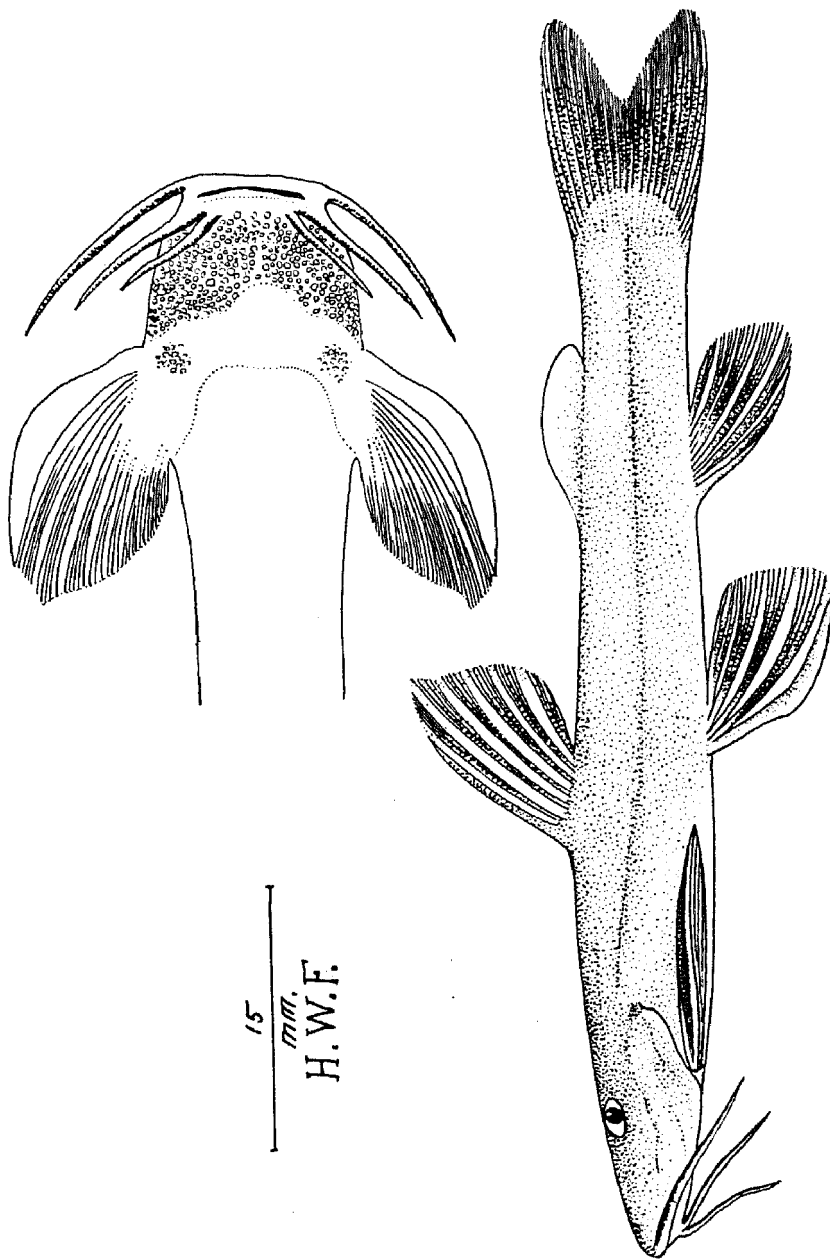
Depth 7; head  $4\frac{1}{4}$ , width  $1\frac{1}{3}$ . Snout  $2\frac{1}{4}$  in head; eye 7, without free lids,  $3\frac{1}{2}$  in snout,  $2\frac{2}{3}$  in interorbital; mouth width  $2\frac{1}{3}$  in head; lips rather fleshy, papillose; maxillary barbel reaches 2 eye diameters beyond pectoral origin, outer mental barbel reaches pectoral origin, inner mental barbel  $\frac{2}{3}$  outer; 2 rounded, rather wide, though small patches of minute teeth, villiform, in front of upper jaw, lower similarly wide though continuous and longer band; interorbital 3 in head, very slightly convex. Gill-rakers 1 + 4, lanceolate,  $\frac{1}{3}$  in gill-filaments, which 3 in snout.

Body everywhere smooth. Lateral line median and complete along side.

D. I, 6, i, slender spine smooth and flexible, first branched ray  $1\frac{1}{3}$  in head; A. ii, 6, i, first branched ray  $1\frac{1}{5}$ ; adipose fin length  $1\frac{1}{4}$ ; least depth of caudal peduncle  $2\frac{1}{3}$ ; ventral  $1\frac{1}{8}$ , spine similar to pectoral spine, rays 4 with last divided to base; caudal deeply emarginate, broad rounded lobes end in points,  $4\frac{1}{8}$  in rest of body; pectoral 4, spine bent or shaped like a boomerang, flat, smooth, largely flexible, especially terminally, rays 9.

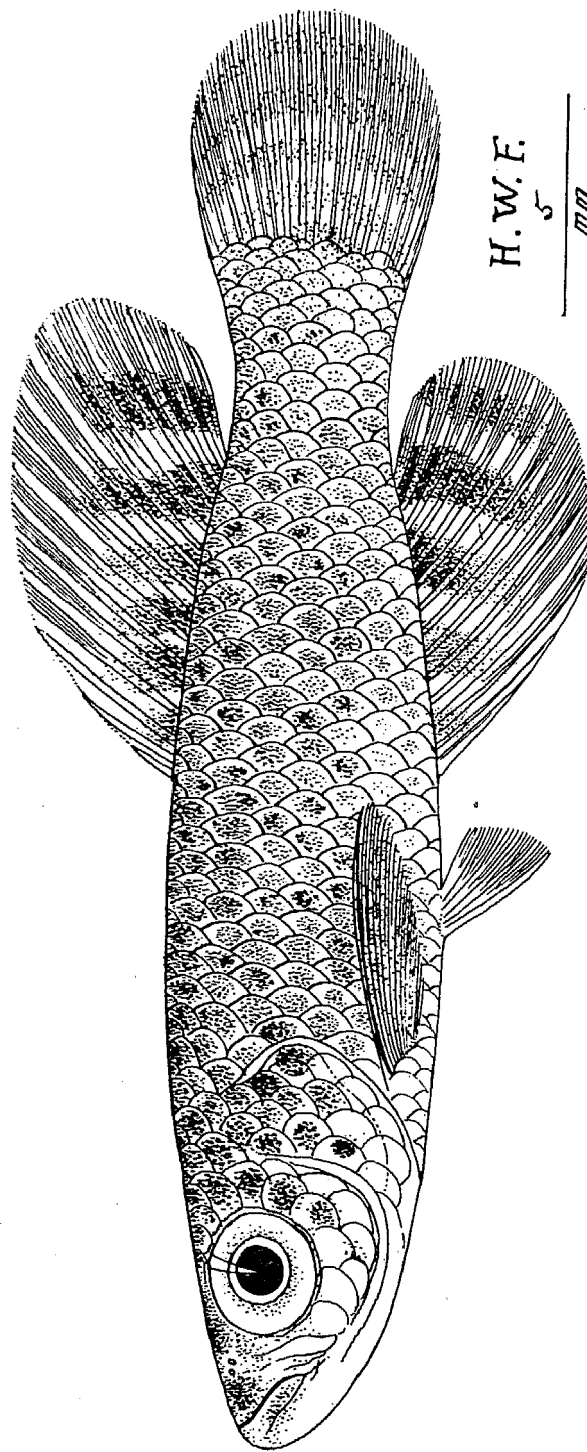
Back nearly burnt umber, sides paler and under-surfaces fawn colour. Iris grey. Maxillary barbel burnt umber above, fawn colour below; other barbels pale like under-surface of head. Dorsal membranes pinkish buff, spine and rays medially burnt umber. Caudal pale pink buff terminally and basally,

TEXT-FIG. 3.



*Amphilius natalensis* Boulenger.

TEXT-FIG. 4.



H.W.F.  
5  
mm.

*Fundulus mkuziensis* sp. n. Type.

rays burnt umber medially. Adipose fin pale, little brownish at origin. Paired fins like dorsal. Anal largely fawn colour, lower margin pale or whitish.

One, 74 mm. Krantz Kloof, Natal. May 24th, 1917. This specimen much larger than the type, which is given as 50 mm. ('Ann. Durban Mus.', vol. i, 1917, Pt. 4, May 21st, 1917, p. 432). Boulenger says, "Gill-rakers short, 10 on lower part of anterior arch", though in my specimen much fewer, larger and well spaced.

PÆCILIDÆ.

*Fundulus mkuziensis* sp. n. Text-fig. 4.

Depth  $3\frac{2}{3}$  to 4; head  $2\frac{1}{3}$  to 3, width  $1\frac{1}{5}$  to  $1\frac{1}{8}$ . Snout  $3\frac{1}{2}$  to 4 in head from snout tip; eye 3 to  $3\frac{1}{5}$ , greater than snout,  $1\frac{1}{4}$  to  $1\frac{2}{3}$  in interorbital; maxillary small, extends along front of eye and slightly beyond front eye edge; teeth biserial, simple, conic, outer row larger, fewer, well spaced and curved, inner close set and more or less uniformly small; interorbital  $2\frac{1}{2}$  to  $2\frac{7}{8}$  in head from snout tip, very slightly convex. Gill-rakers  $3 + 9$ , lanceolate,  $1\frac{1}{2}$  in gill-filaments, which  $1\frac{1}{2}$  in eye.

Scales 24 or 25 in median lateral series to caudal base and 3 or 4 more on latter; 9 transversely, 18 predorsal, 3 rows on cheek. Scales with 17 basal parallel short marginal striæ; circuli coarse, complete.

D. iii, 13, longest median rays reach beyond caudal base,  $1\frac{1}{5}$  in total head length; A. iii, 12, first branched ray  $1\frac{1}{2}$  to  $1\frac{2}{3}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{2}{5}$ , rounded convexly behind; least depth of caudal peduncle  $2\frac{1}{5}$  to  $2\frac{1}{2}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{2}{5}$ ; ventral  $2\frac{2}{5}$  to  $2\frac{2}{3}$ .

Back dull olive, belly and under-surfaces paler to whitish. Iris grey. Paired fins and caudal pale olivaceous, latter with some dark grey medially. Dorsal and anal grey, spotted with darker or dusky grey, forming more or less oblique bands.

Type 53442 A.N.S.P., 34 mm., and paratype 53443 A.N.S.P., 32 mm., Mkuzi River, Natal. 1931.

Allied to *Fundulus melanospilus* *Günther* from the Seychelles, also *Fundulus neumanni* *Hilgendorf* and *Fundulus guentheri* *Pfeffer*, from East Africa, but all with different coloration. The dorsal and anal with dark oblique bands are especially characteristic of *Fundulus mkuziensis*.

#### EXOCETIDÆ.

*Cypselurus furcatus* (*Mitchill*). Text-fig. 5.

One from St. Lucia Lake, 20 miles up, Zululand, 76 mm., 1931. A. 9. My specimen far more ornate than the young specimen figured by Roule and Angel in 1930.

#### PEGASIDÆ.

*Pegasus draconis* *Linnaeus*. Text-fig. 6.

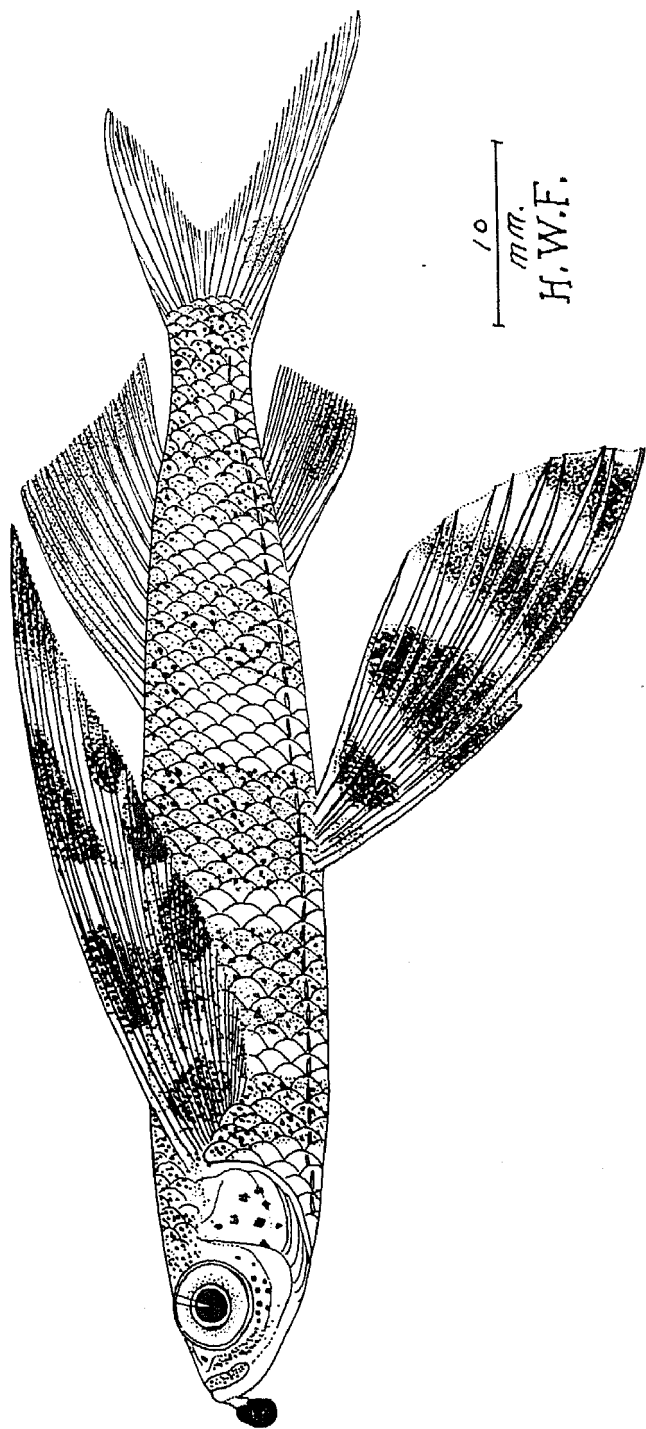
One, Durban beach, 69 mm., June 30th, 1928. The two figures given by Kaup as *Pegasus natans* ('Cat. Lophobr. Fish Brit. Mus.', 1856, pl. 1, fig. 3) show the under-surface of the present species, and *Pegasus draco* (*op. cit.*, pl. 1, fig. 4) shows the upper surface, but with the snout damaged. These figures are quite crude, and the latter has a dark submarginal band around each pectoral, not seen in my specimen.

#### ATHERINIDÆ.

*Atherina afra* *Peters*.

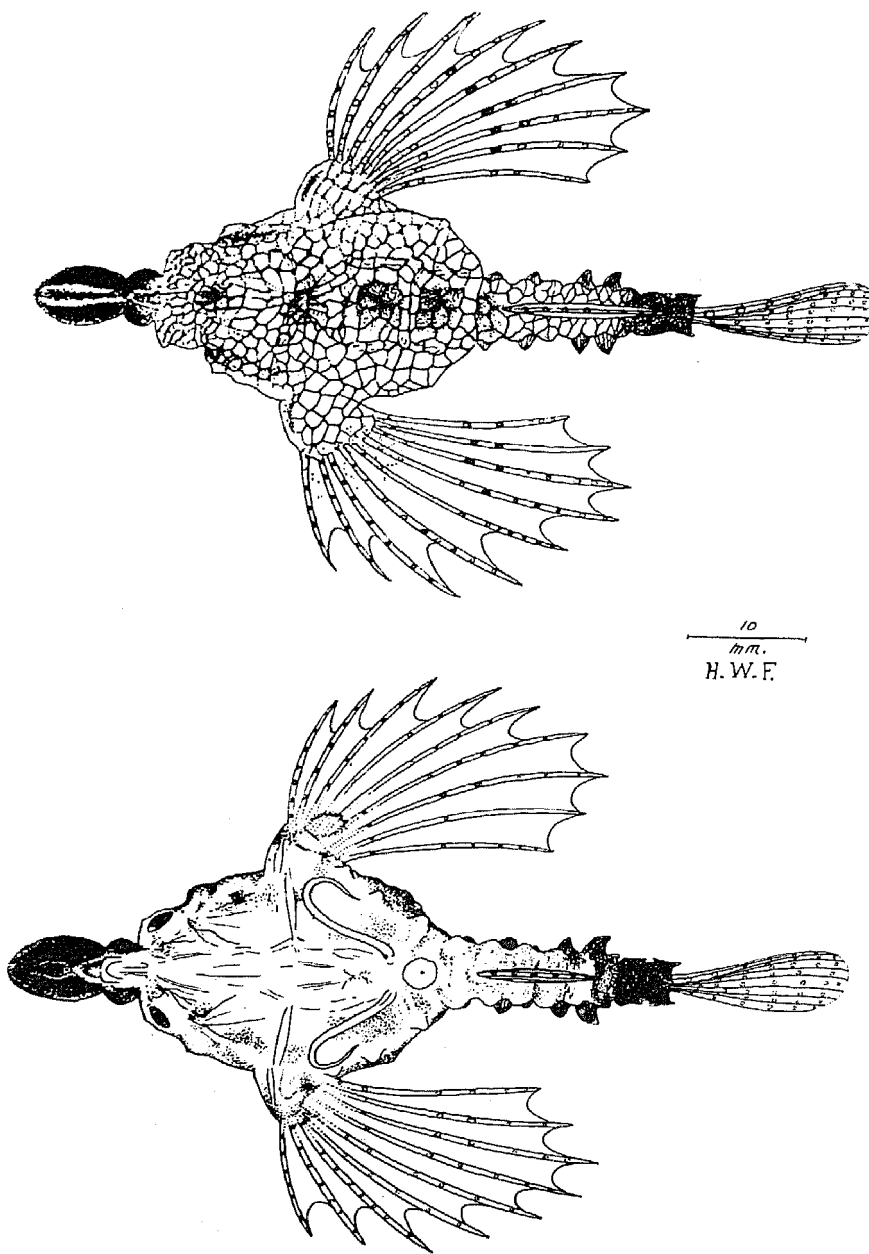
Depth  $5\frac{1}{8}$ ; head 4, width  $1\frac{3}{4}$ . Snout 4 in head; eye  $2\frac{7}{8}$ , much less than snout, equals interorbital; maxillary reaches  $\frac{1}{2}$  in eye, slender, length 3 in head; rami of mandible well elevated inside mouth; teeth villiform, minute, in bands in jaws, upper exposed when jaw closed and apparently obsolete or absent from vomer and palatines; interorbital  $2\frac{7}{8}$ , level. Gill-rakers  $7 + 21$ , lanceolate, equal gill-filaments or  $1\frac{1}{2}$  in eye.

TEXT-FIG. 5.



*Cypselurus furcatus* (Mitchill). Young.

TEXT-FIG. 6.



*Pegasus draconis* Linn.

Scales 40 in median lateral series to caudal base and 3 more on latter; 7 transversely, 19 predorsal; median lateral row of scales or those 3 from dorsal edge each with distinct pore. Scales with 3 basal points, 19 parallel basal striæ and terminal half entire.

D. VI-1, 10, i, third spine  $2\frac{1}{2}$  in total head length; A. I, 15, i, first ray  $2\frac{1}{5}$ ; ventral  $1\frac{2}{3}$ .

Pale brown, scarcely lighter below. Each scale on back with submarginal row of blackish dots. Bright silvery white sharply defined lateral band from shoulder to caudal base medially, less than eye diameter in width. Iris silvery white, also side of head. Snout dusted with dusky. Fins pale brown, caudal slightly dusky terminally.

One, Durban Bay, 61 mm. 1929.

## SCOMBRIDÆ.

*Scomberomorus lineolatus* (Cuvier). Text-fig. 7.

Depth  $4\frac{2}{5}$  to  $4\frac{3}{4}$ ; head  $4\frac{7}{8}$  to 5, width  $1\frac{2}{10}$  to  $2\frac{1}{10}$ . Snout 3 in head; eye  $4\frac{4}{5}$  to  $5\frac{1}{2}$ ,  $1\frac{2}{3}$  to 2 in snout,  $1\frac{3}{8}$  to  $1\frac{3}{4}$  in interorbital; maxillary reaches  $\frac{2}{3}$  in eye or to hind eye edge, expansion  $1\frac{4}{5}$  to 2 in eye, length 2 in head; teeth compressed, lanceolate, 30 to 36 above, 26 to 28 below; interorbital  $2\frac{1}{4}$  to  $2\frac{4}{5}$ , broadly convex. Gill-rakers 2 + 8 to 11, short, robust, triangular, pointed,  $2\frac{1}{2}$  in gill-filaments.

Scales very minute. Lateral line dorsal along back, little irregularly waved, more so below middle finlets and then with slight expanded keel along side of caudal peduncle.

D. XVI-iv, 14 + 9, third spine  $2\frac{2}{3}$  in head, third branched ray  $1\frac{4}{5}$  to  $1\frac{7}{8}$ ; A. iv or v, 12 to 14 + 8 or 9, first branched ray  $1\frac{3}{4}$  to  $1\frac{9}{10}$ ; caudal  $3\frac{2}{3}$  to  $4\frac{1}{8}$  in rest of body, widely forked, slender lobes pointed; least depth of caudal peduncle  $4\frac{1}{4}$  to  $4\frac{1}{2}$  in head; pectoral  $1\frac{3}{4}$ ; ventral  $3\frac{1}{8}$  to 4.

Back brown to neutral olive, sides and lower surfaces paler to whitish. Along upper side of back within pale areas of sides variable longitudinal short streaks or blotches of darker grey.

*Pegasus draconis* Linn.

10  
mm.  
H. W. F.

Spinous dorsal neutral black. Soft dorsal brown, also caudal. Other fins pale brown, with grey terminally on pectoral and anal lobe. Iris olivaceous grey.

Two, Durban, 395 to 443 mm., 1931. Griffith's figure of *Cybiium lineolatum* ('Animal King. Cuvier', vol. x, 1834, pl. 48, fig. 1, opposite p. 186) is crude, though shows the median lateral longitudinal dark streaks well represented. Belanger's figure ('Voy. Indes Orient., Zool.', 1834, p. 366, pl. 2, fig. 1) has a golden longitudinal shade on the trunk close above the lateral line.

#### SCOMBRIDÆ.

##### *Sarda chilensis* (Valenciennes).

Depth  $4\frac{3}{4}$ ; head  $3\frac{2}{5}$ , width  $2\frac{1}{3}$ . Snout  $2\frac{7}{8}$  in head; eye 7,  $2\frac{2}{5}$  in snout, 2 in interorbital; maxillary reaches opposite hind eye edge, expansion  $1\frac{3}{5}$  in eye, length  $1\frac{9}{10}$  in head; interorbital  $3\frac{1}{3}$ , convex. Gill-rakers 4 + 10, lanceolate,  $1\frac{1}{3}$  in gill-filaments, which  $2\frac{1}{8}$  in snout.

Lateral line little undulated. Lanceolate scales on cheek and postocular. Corselet small and only moderate scales above pectoral, lanceolate below.

D. XVIII-iii, 12 + 8, third spine  $2\frac{7}{8}$  in head, first branched ray  $5\frac{1}{5}$ ; A. iv, 11 + 6, first branched ray  $5\frac{1}{5}$ ; caudal  $1\frac{1}{5}$ , widely lunate; least depth of caudal peduncle  $1\frac{2}{3}$  in eye; pectoral  $2\frac{1}{2}$  in head; ventral  $3\frac{1}{2}$ .

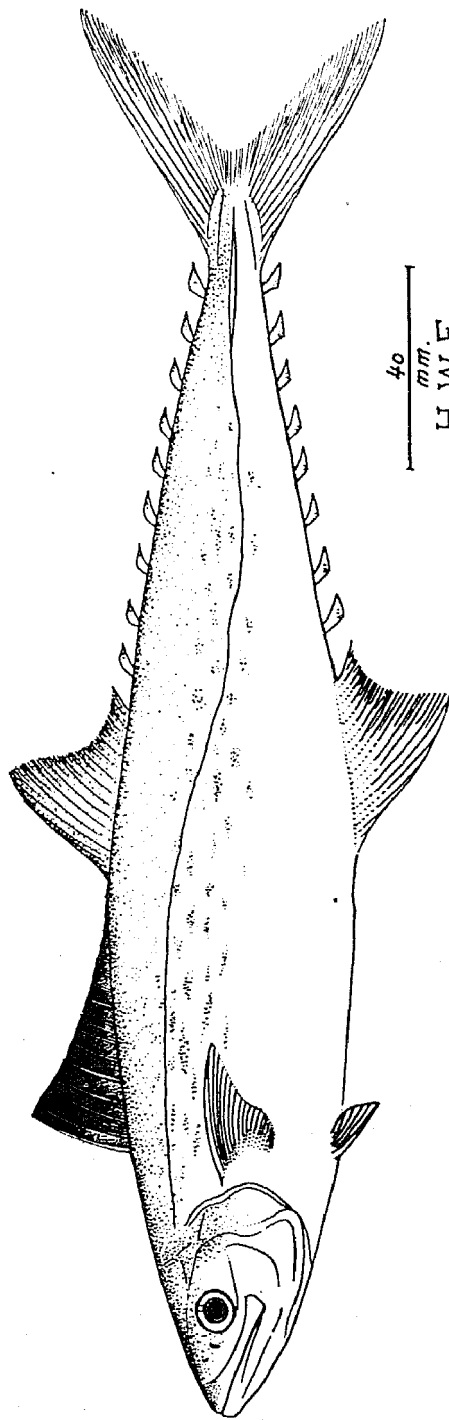
Back neutral brown, below whitish. Six slightly inclined dark longitudinal bands on back. Spinous dorsal blackish, other fins brown. Iris brown.

One, Durban, 335 mm. 1929.

##### *Auxis thazard* (Lacépède).

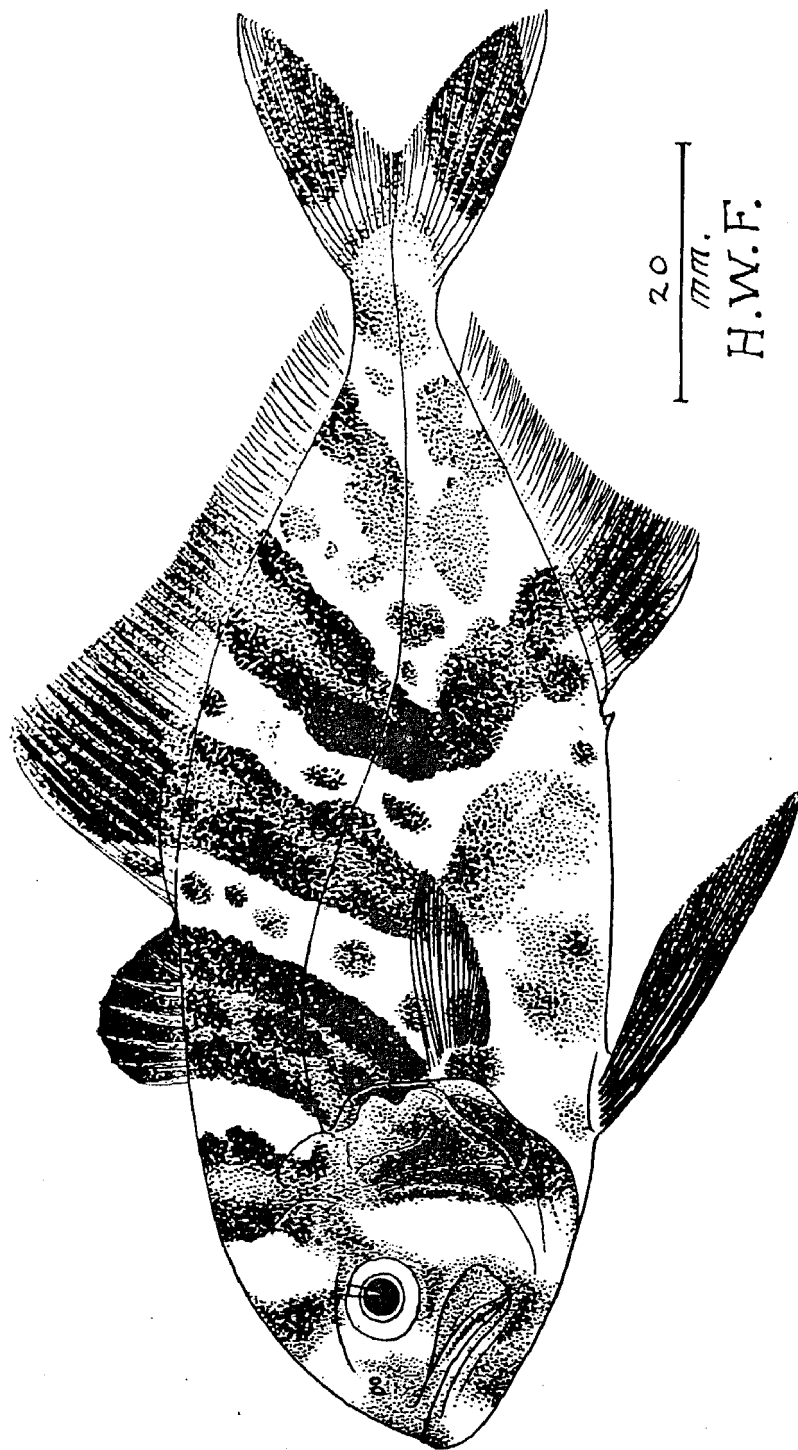
Depth  $4\frac{1}{4}$ ; head  $3\frac{2}{3}$ , width  $1\frac{9}{10}$ . Snout 4 in head from snout tip; eye  $6\frac{3}{4}$ ,  $1\frac{2}{3}$  in snout, 2 in interorbital; maxillary reaches half way in eye, expansion  $2\frac{1}{3}$  in eye, length 3 in head; interorbital  $3\frac{3}{4}$ , broadly convex. Gill-rakers 10 + 31, finely lanceolate,  $1\frac{3}{4}$  in gill-filaments, which nearly long as snout.

TEXT-FIG. 7.



*Scomberomorus lineolatus* (Cuv.).

TEXT-FIG. 8.



*Seriola nigrofasciata* (Rippell).

Scales only present in corselet, largest above pectoral. Lateral line irregularly undulous, becoming straight along side of caudal peduncle.

D. XII-iv, 7 + 8, second spine  $2\frac{2}{3}$  in head, first branched ray 5; interdorsal space  $1\frac{1}{2}$ ; A. iv, 10 + 7, first branched ray  $5\frac{1}{2}$ ; caudal widely lunate, upper lobe  $1\frac{1}{5}$ ; pectoral 2; ventral  $2\frac{1}{2}$ ; least depth of caudal peduncle 2 in eye.

Back neutral dusky, below pale brownish, apparently silvery white in life. Grey band or streak infra-laterally on belly. Fins pale brown.

One, Natal coast, 357 mm. 1929.

## CARANGIDÆ.

*Seriola nigrofasciata* (Rüppell). Text-fig. 8.

Depth  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{5}$ , width  $1\frac{3}{4}$  to  $1\frac{1}{2}$ . Snout  $3\frac{3}{4}$  in head from snout tip; eye  $3\frac{3}{4}$ , subequal with snout,  $1\frac{1}{2}$  in interorbital; maxillary reaches  $\frac{1}{2}$  to  $\frac{2}{3}$  in eye, expansion  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in eye, length  $1\frac{9}{10}$  in head from snout tip; teeth small, in bands and jaws, on vomer and palatines; interorbital  $2\frac{2}{3}$  to  $2\frac{2}{3}$ , convexly elevated. Gill-rakers 1 + 9, lanceolate, pointed, length  $2\frac{1}{2}$  in gill-filaments, which  $1\frac{2}{3}$  in eye.

Scales minute. Lateral line complete, little arched over pectoral, then slopes until opposite last  $\frac{2}{3}$  of soft dorsal length when midway on side of caudal peduncle.

D. VI-iii, 28, second spine  $3\frac{2}{3}$  in head, first branched ray  $1\frac{2}{3}$  to  $1\frac{1}{2}$ ; A. I-ii, 15 or 16, first branched ray  $2\frac{1}{3}$  to  $2\frac{3}{4}$ ; caudal 1 to  $1\frac{1}{10}$ , deeply forked, slender, lobes pointed; least depth of caudal peduncle  $4\frac{1}{2}$  to  $5\frac{1}{3}$ ; pectoral  $1\frac{2}{3}$  to  $1\frac{3}{5}$ ; ventral  $2\frac{4}{5}$  to  $3\frac{1}{4}$  in combined head and body without caudal.

Back pale drab grey, whitish on sides and yellowish white below. Seven dusky to dark grey transverse broad bands extend obliquely forward and downward from above; each band with anterior and posterior border broadly darker than middle of band; paler interspaces each with scattered or irregular dark spots or blotches. Iris grey white. Spinous

dorsal neutral black. Soft dorsal neutral black anteriorly, white posteriorly. Anal white, with neutral black bar anteriorly. Caudal white, with broad blackish blotch on each lobe and median dusky or black horizontal bar. Pectoral white. Ventral neutral black, inner basal faces grey to grey white.

Two, Durban 110 to 111 mm. 1931.

*Caranx microbrachium* sp. n. Text-fig. 9.

Depth  $2\frac{3}{5}$ ; head  $3\frac{4}{5}$  to  $3\frac{7}{8}$ , width 2 to  $2\frac{1}{10}$ . Snout  $3\frac{2}{5}$  to  $3\frac{1}{2}$  in head from snout tip; eye  $3\frac{3}{4}$  to 4, 1 to  $1\frac{1}{8}$  in snout,  $1\frac{1}{8}$  to  $1\frac{1}{5}$  in interorbital, adipose lids cover  $\frac{1}{3}$  of iris; maxillary reaches  $\frac{1}{4}$  to  $\frac{1}{3}$  in eye, length  $2\frac{1}{2}$  in head from snout tip; teeth minute, simple, uniform, pointed, uniserial in jaws, none on vomer, palatines or tongue; interorbital  $3\frac{3}{5}$  to  $3\frac{3}{4}$ , convex. Gill-rakers 12 + 26, finely lanceolate,  $1\frac{1}{8}$  in gill filaments, which  $1\frac{1}{8}$  in eye.

Scales very small, without striæ; circuli rather large or coarse, 15 to 20 counted horizontally. Breast entirely covered with fine scales. Lateral line with strong arch anteriorly which 2 in straight section; scutes 41 or 42, of which last 3 or 4 on caudal base.

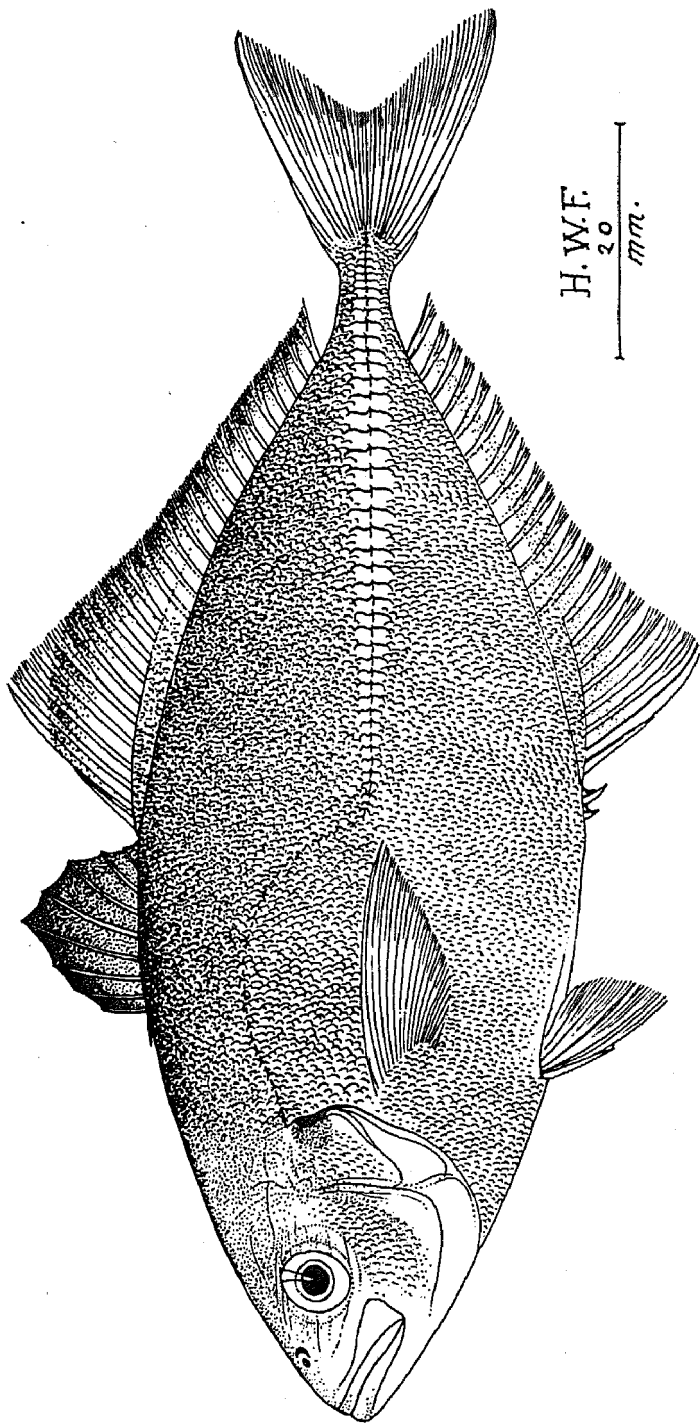
D. 1, VIII-ii, 22, i to ii, 24, i, erect third spine  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in total head length, first branched ray  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; A. II-ii, 19, i, first branched ray  $1\frac{9}{10}$  to 2; caudal 1 to  $1\frac{1}{8}$ , moderately emarginate, pointed lobes triangular; least depth of caudal peduncle 6 to  $6\frac{1}{2}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ; ventral 2.

Back drab to grey brown, sides and below bright silvery white. Iris silvery white. Black blotch on opercle above posteriorly little smaller than eye. Spinous dorsal dusky black. Soft dorsal and caudal greyish, little darker terminally. Other fins whitish, with grey median band on anal longitudinally.

Type 53448 A.N.S.P., 125 mm., and paratype 53449 A.N.S.P., 113 mm.

Greatly like *Caranx djeddaba*, but differs in its strikingly short pectoral, much less than head or  $4\frac{2}{5}$  to  $4\frac{3}{4}$  in combined head and body to caudal base ( $3\frac{3}{5}$  in *Caranx djeddaba*).

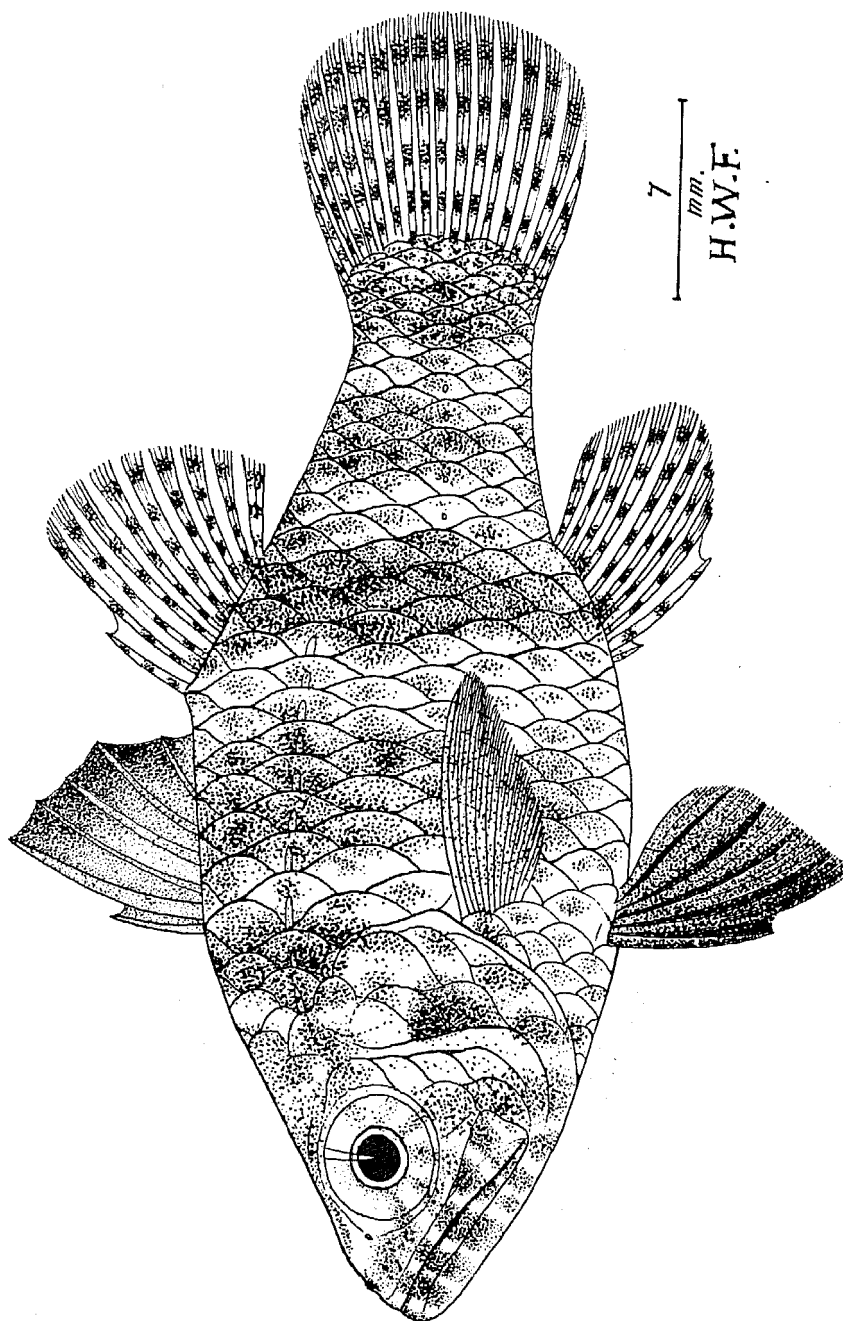
TEXT-FIG. 9.



H.W.F.  
20  
mm.

*Caranx microbrachium* sp. n. Type.

TENT-FIG. 10.



*Apogonichthys zuluensis* sp. n. Type.

*Caranx chrysophryoides* Bleeker.

Depth  $2\frac{1}{5}$ ; head  $3\frac{1}{4}$ , width  $2\frac{1}{6}$ . Snout 3 in head; eye  $4\frac{1}{4}$ ,  $1\frac{1}{3}$  in snout,  $1\frac{1}{5}$  in interorbital, with only narrow marginal adipose lids; maxillary reaches  $\frac{1}{4}$  in eye, expansion  $1\frac{2}{5}$  in eye, length  $2\frac{1}{4}$  in head; teeth villiform, in bands in jaws, on vomer, palatines and patch on tongue; interorbital  $3\frac{1}{3}$ , convex; preopercle flange venulose. Gill-rakers  $9 + 18$ , lanceolate, little longer than gill-filaments or  $1\frac{1}{2}$  in eye.

Scales 60 in arch of lateral line and scutes 30 in straight section, of which last 2 on caudal base; scute depth  $2\frac{1}{2}$  in eye; chest and breast naked upward  $\frac{2}{3}$  to pectoral base and back to ventral bases, but not posteriorly. Scales with 9 to 12 complete circuli.

D. 1, VIII-1, 18, i, fourth erect spine  $2\frac{7}{8}$  in head, first branched ray 1; A. 11-1, 16, i, third spine  $3\frac{1}{8}$ , first branched ray  $2\frac{1}{3}$  in combined head and body to caudal base; caudal 3, sharply and deeply forked; pectoral  $2\frac{7}{8}$ , not quite to straight section of lateral line; least depth of caudal peduncle 5 in head; ventral  $1\frac{2}{3}$ .

Brown, paler below. Eight obscure vertical dark bars, ill-defined and wider than interspaces. Iris slaty. Opercle largely neutral blackish. Dorsals dusky terminally. Caudal greyish darker terminally. Other fins brownish, ventrals dusky terminally.

One, Durban, 197 mm. 1929.

*Decapterus punctatus* (Agassiz).

Depth  $5\frac{1}{4}$  to  $5\frac{4}{5}$ ; head  $3\frac{2}{5}$  to  $3\frac{7}{8}$ , width 2 to  $2\frac{1}{4}$ . Snout  $3\frac{1}{8}$  in head from snout tip; eye  $3\frac{2}{3}$  to 5,  $1\frac{1}{8}$  to  $1\frac{2}{5}$  in snout,  $1\frac{1}{8}$  to  $1\frac{1}{5}$  in interorbital, adipose lids broad; maxillary reaches eye, expansion  $1\frac{1}{2}$  to 2 in eye, length  $2\frac{1}{2}$  to  $2\frac{3}{4}$  in head from snout tip; interorbital  $3\frac{2}{5}$  to  $4\frac{3}{4}$ , broadly convex or depressed. Gill-rakers 11 to 13 + 28 to 33, lanceolate.

Scutes 48 to 53 in straight section of lateral line, which  $1\frac{1}{4}$  to 2 in arch.

D. VII or VIII-1,  $32 + 1$ , third spine  $1\frac{3}{4}$  to 2 in total head length, first branched ray  $2\frac{1}{4}$  to  $2\frac{1}{3}$ ; A. 11-1,  $28 + 1$ , first branched ray  $2\frac{3}{4}$  to 3; caudal  $1\frac{1}{2}$  to  $1\frac{3}{4}$ ; least depth of caudal peduncle 8 to  $8\frac{1}{5}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{3}{4}$ ; ventral  $2\frac{1}{4}$ .

Back neutral grey, sides and below silvery white. Iris silvery white. Sometimes traces of small dark dot on upper hind edge of opercle. Dorsals, caudal and pectoral pale brownish, other fins whitish.

Four, Durban, 94 to 193 mm., of which two from the stomach of a sparoid. November 17th, 1925.

#### AMIIDÆ.

*Apogonichthys zuluensis* sp. n. Text-fig. 10.

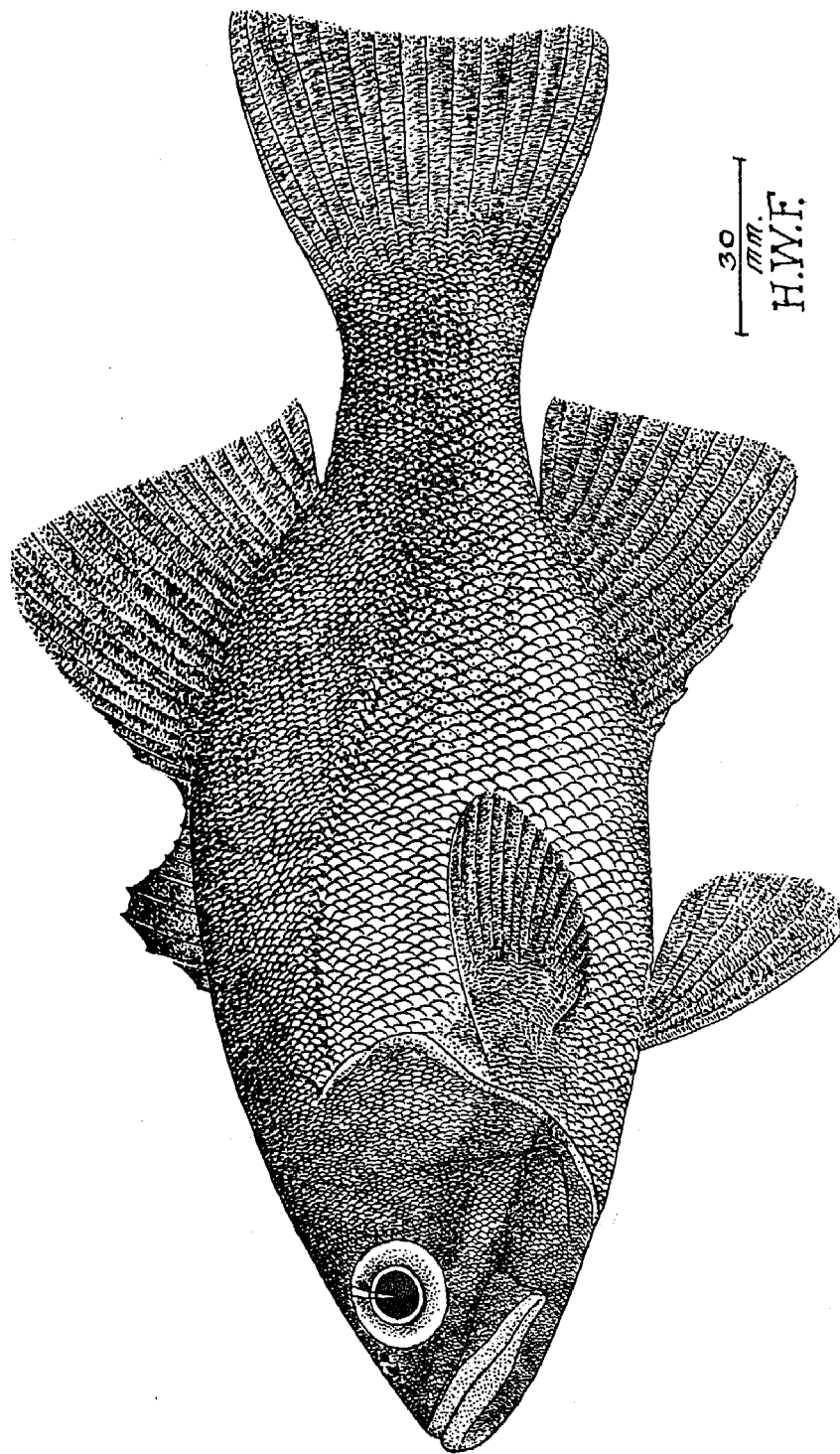
Depth  $2\frac{1}{2}$ ; head  $2\frac{1}{2}$ , width 2. Snout  $4\frac{2}{3}$  in head from snout tip; eye 3, greater than snout or interorbital; maxillary reaches  $\frac{7}{8}$  in eye, expansion  $1\frac{4}{5}$  in eye, length  $1\frac{7}{8}$  in head from snout tip; villiform teeth in jaws, on vomer and palatines, none on tongue; interorbital  $4\frac{2}{3}$ , very slightly convex; preopercle ridge and edge entire. Gill-rakers ii,  $1 + 6$ , iv, lanceolate,  $\frac{3}{4}$  of gill-filaments, which  $2\frac{1}{2}$  in eye.

Tubular scales 10 in upper section of lateral line, followed by 2 or 3 pores and lower section as 10 pores to caudal base; 2 scales above, 5 below, 4 predorsal, 2 rows on cheek. Scales with 7 basal radiating striæ; 55 small apical denticles, with 5 transverse series of basal elements; circuli fine, obsolete apically.

D. VI-1, 9, i, second spine 2 in total head length, third ray  $1\frac{3}{4}$ ; A. 11, 8, second spine  $3\frac{1}{4}$ , second ray  $1\frac{4}{5}$ ; caudal  $1\frac{1}{3}$ , convex behind; least depth of caudal peduncle  $2\frac{1}{2}$ ; pectoral  $1\frac{1}{2}$ ; ventral  $1\frac{3}{4}$ .

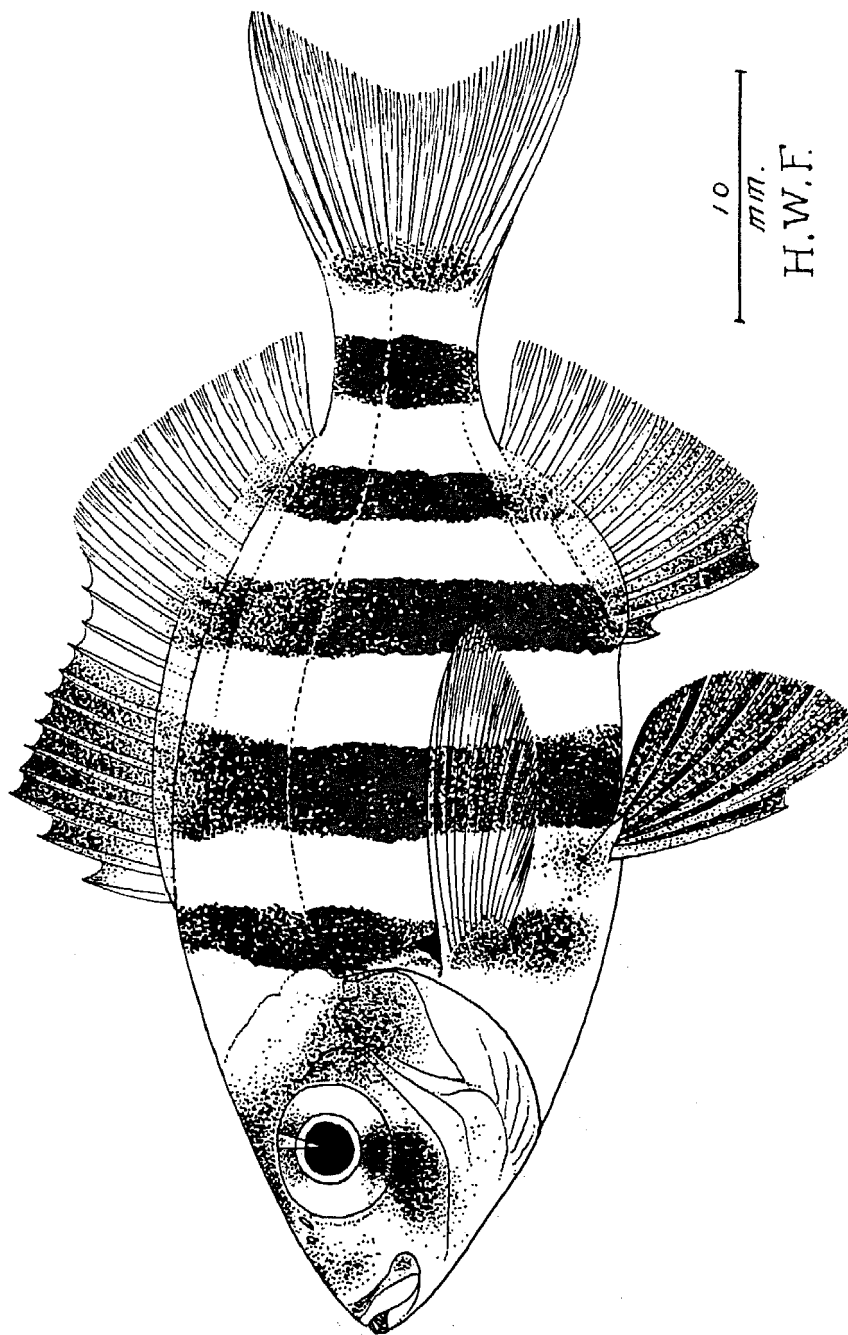
Back brown, slightly paler on belly. Five indistinct, transverse, slightly darker bands on back and sides. Body everywhere more or less variegated with darker, under a lens seen to be aggregations of dark dots, with a few scattered dark to blackish brown small spots. Iris slate. Opercle with dark blotch forward

TEXT-FIG. 11.



*Dinopercia queketti* (Boulenger).

TEXT-FIG. 12.



*Diplodus cervinus* (Lowe).

and mostly below, obscure dark bar from front of eye, another forward crosses jaws, third posterior over cheek and fourth on postocular. Lower surface of head with several obscurely defined brownish transverse bars. Spinous dorsal dark brown, other vertical fins whitish with grey cross-bars, mostly as blotches on rays. Pectoral pale. Ventral neutral black.

Type 53447 A.N.S.P., St. Lucia Lake, 20 miles up, Zululand, 47 mm. 1931.

Resembles *Apogonichthys brachygrammus* (Jenkins) somewhat, though with few dorsal spines, and its soft vertical fins all barred darker.

## SERRANIDÆ.

*Dinoperca queketti* (Blgr.). Text-fig. 11.

Depth  $2\frac{4}{5}$ ; head  $2\frac{7}{8}$ , width 2. Snout  $3\frac{7}{8}$  in head from upper jaw tip,  $4\frac{1}{2}$  as seen in profile; eye  $3\frac{2}{3}$ , little greater than snout or interorbital; maxillary reaches  $\frac{2}{3}$  in eye, expansion  $1\frac{1}{2}$  in eye length  $2\frac{1}{10}$  in head from upper jaw tip,  $2\frac{1}{2}$  as seen in profile; teeth in rather narrow villiform bands in jaws, outer row all round little enlarged, though only about 8 above and 6 below anteriorly slightly protruded; moderately large patch of villiform teeth across vomer and rather long band on each palatine; tongue smooth, interorbital  $4\frac{1}{4}$ , broadly convex; preopercle edge finely denticulate, denticles little enlarged above angle. Gill-rakers 16 + 26, lanceolate, subequal with gill-filaments or  $1\frac{7}{8}$  in eye.

Scales 77 in lateral line to caudal base; tubes 53 in lateral line to caudal base; 16 scales above, 23 below, 60 predorsal to front end of snout, 28 rows obliquely across cheek; 7 rows transversely at end of maxillary expansion, with 4 or 5 transverse series of basal elements; circuli fine, terminate abruptly apically.

D. XII, 18, i, fourth spine  $3\frac{4}{5}$  in total head length, fourth ray  $1\frac{3}{4}$ ; A. III, 13, i, third spine  $3\frac{1}{3}$ , third ray  $1\frac{2}{3}$ ; caudal  $1\frac{1}{2}$ , little concave behind, truncate as expanded; least depth of caudal peduncle  $2\frac{1}{2}$ ; pectoral  $1\frac{2}{3}$ ; ventral  $1\frac{3}{5}$ .

Nearly dark vandyke brown, slightly paler on under-surface. Dark streak from low preorbital edge obliquely back on cheek to preopercle angle and dark spot behind lower hind end of maxillary. Obscure dark, ill-defined broad medial band on side of caudal peduncle, its course marked by slightly pale scales, also other scattered pale scales on trunk. Indistinct broad dark streak along lower side of body below pectoral until above anal. Vertical fins and ventrals blackish brown. Iris dark grey.

53434 A.N.S.P., Durban, 240 mm. 1931.

SPARIDÆ.

*Diplodus cervinus* (Lowe). Text-fig. 12.

Three, Natal coast, 53 to 220 mm. 1931.

GOBIIDÆ.

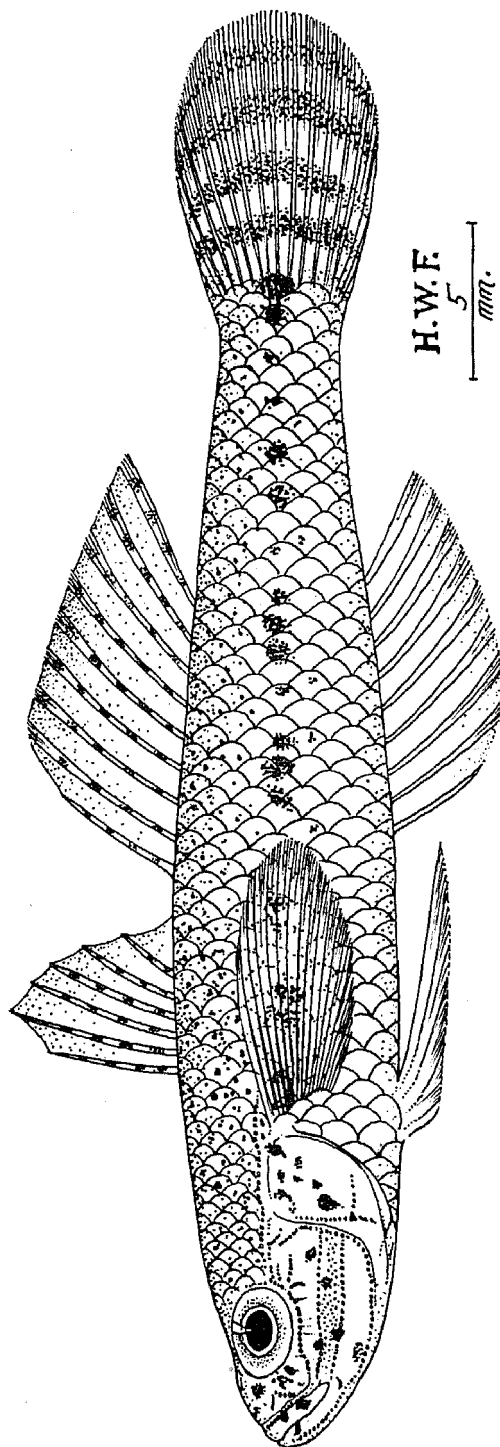
*Rhinogobius robinsoni* sp. n. Text-fig. 13.

Depth 5; head  $3\frac{3}{4}$ , width  $1\frac{1}{2}$ . Snout  $4\frac{1}{8}$  in head from snout tip; eye  $3\frac{3}{4}$ , greater than snout, 4 times interorbital; maxillary reaches  $\frac{1}{2}$  in eye, length  $2\frac{1}{8}$  in head from snout tip; teeth minute, simple, conic, triserial above, biserial below, with outer row becoming slightly longer and flaring out laterally; no teeth on palate or tongue; tongue truncate; interorbital narrowly and slightly concave. Gill-openings small, lateral.

Scales 26 in median lateral series to caudal base and 1 more on latter; 9 transversely, 12 predorsal forward to eyes. Except occiput and top of head, head scaleless. Check with 2 horizontal rows of papillæ, with many other papillæ between; row round orbit, another on preorbital and 1 close behind preopercle on opercle. Scales with 6 or 7 basal radiating striæ; 37 to 42 apical denticles; circuli rather coarse.

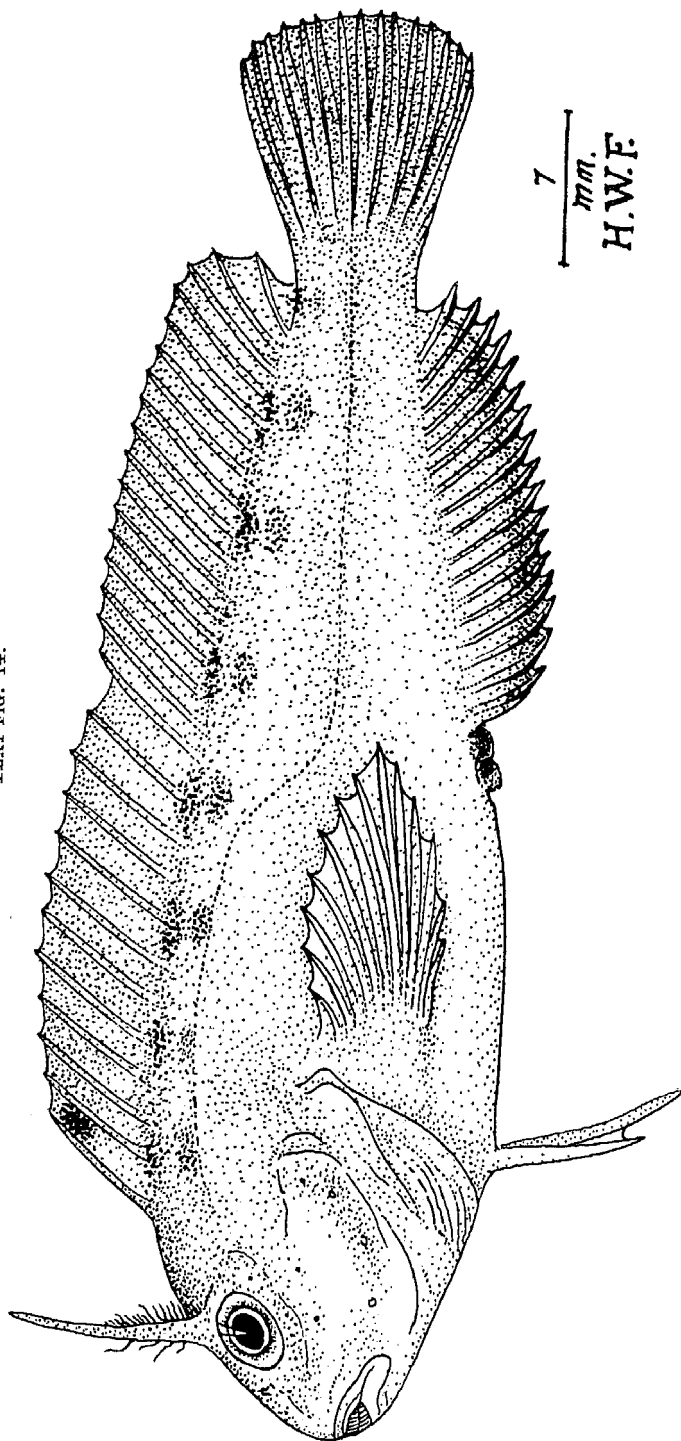
D. VI-9, second spine  $1\frac{2}{3}$  in total head length, second ray  $1\frac{2}{3}$ ; A. i, 8, last ray  $1\frac{4}{5}$ ; caudal  $1\frac{1}{4}$ , rounded; least depth of caudal peduncle  $2\frac{7}{8}$ ; pectoral  $1\frac{1}{3}$ ; ventral 1.

TEXT-FIG. 13.



*Rhinogobius robinsoni* sp. n.

TENT-FIG. 14.



*Blennius sculleyi* Gilchrist & Thompson.

Back pale brown, whitish below. Back sprinkled with darker dots and small spots. Along middle of side 5 dark spots, each made up of 2 or 3 smaller spots. Iris dark grey. Dorsals with dark grey spots, on spinous fin forming 3 or 4 horizontal dark bands and on soft fin forming dark inclined bars. Caudal with 5 dark grey transverse bands. Other fins pale or whitish, with dark spot below fin origin.

Type 53437 A.N.S.P., Natal coast, 47 mm. 1931. Named after Mr. Romer Robinson of Natal.

Known by its short maxillary, in combination with its large scales, dentition and coloration, especially the banded vertical fins.

#### BLENNIIDÆ.

*Blennius sculleyi* Gilchrist & Thompson. Text-fig. 14.

Depth  $3\frac{3}{8}$  to  $3\frac{5}{8}$ ; head  $3\frac{1}{8}$  to  $3\frac{1}{4}$ , width  $1\frac{3}{8}$  to  $2\frac{1}{8}$ . Snout 3 to  $3\frac{1}{8}$  in head; eye  $3\frac{1}{8}$  to  $4\frac{2}{5}$ ,  $1\frac{3}{8}$  to  $1\frac{1}{2}$  in snout, greater than interorbital; maxillary reaches  $\frac{1}{3}$  to  $\frac{2}{5}$  in eye, length  $2\frac{3}{8}$  to  $2\frac{5}{8}$  in head; lips wide, smooth, entire; teeth uniserial, compressed, ends rounded, entire, 30 in each jaw and 2 small canines posteriorly each side; interorbital narrow,  $6\frac{1}{4}$  to  $8\frac{3}{4}$  in head; long simple, single fleshy flap over each eye,  $1\frac{3}{8}$  to  $2\frac{1}{2}$  in head; short fringed nasal flap. Gill-opening broadly free across broad isthmus. Gill-rakers 7 short rudimentary points, greatly less than gill-filaments.

Skin smooth; 40 tubes in lateral line, of which 15 in upper anterior arch, which  $1\frac{3}{8}$  in straight section.

D. XII, 16 or 17, without dividing notch, third spine  $1\frac{1}{8}$  to  $2\frac{1}{2}$  in head, fifth ray  $1\frac{3}{4}$  to  $2\frac{1}{8}$  and last ray joined by membrane to caudal peduncle; A. II, 18, spines each with large fleshy pad, third ray 3 in head; caudal  $1\frac{3}{8}$ , convex behind; least depth of caudal peduncle  $3\frac{1}{4}$  to  $3\frac{2}{5}$ ; pectoral  $1\frac{3}{8}$  to  $1\frac{1}{2}$ ; ventral  $1\frac{1}{8}$  to 2.

Generally dull olivaceous, marked all over with minute dusky dots and so crowded on back to form 6 dark obscurely defined saddles or blotches. Fins all dark neutral grey, especially terminally. Tips of anal rays whitish. Iris slaty.

Two, Durban, 60 to 63 mm. 1929. Also two 63 to 66 mm. in 1931.

ACROMPOMIDÆ.

*Acropoma japonicum* (Günther).

Depth  $3\frac{1}{5}$ ; head  $2\frac{2}{3}$ , width  $2\frac{1}{4}$ . Snout  $3\frac{1}{2}$  in head from snout tip; eye  $3\frac{1}{8}$ , greater than snout or interorbital; maxillary reaches  $\frac{2}{3}$  in eye, expansion  $2\frac{1}{8}$  in eye, length 2 in head; teeth above minute, villiform band, with pair of wide-set canines, left double; lower teeth uniserial, moderate, conic, with group of several behind symphysis, of which one canine directed back; narrow band of fine teeth on vomer and palatines; interorbital  $4\frac{2}{3}$ , level. Gill-rakers 6 + 16, lanceolate, little longer than gill-filaments or  $\frac{1}{2}$  of eye.

Scales (all fallen) 30 in lateral line to caudal base and 4 more on latter; 4 above, 11 below, 24 predorsal, 4 rows on cheek.

D. X-1, 10, i, third spine  $2\frac{1}{2}$  in total head length, second ray  $2\frac{1}{8}$ ; A. III, 7, i, third spine  $3\frac{1}{4}$ , first ray  $2\frac{1}{4}$ ; caudal  $1\frac{2}{5}$ , deeply forked; least depth of caudal peduncle  $4\frac{1}{8}$ ; pectoral  $1\frac{1}{8}$ ; ventral  $1\frac{7}{8}$ .

Back brown, paler below; fins all more or less dusted with darker. Iris greyish.

One, Durban, 135 mm. 1929.

PLATYCEPHALIDÆ.

*Platycephalus grandidieri* Sauvage.

Depth  $6\frac{1}{4}$ ; head  $2\frac{4}{5}$ , width  $1\frac{4}{5}$ . Snout  $2\frac{4}{5}$  in head from snout tip; eye  $7\frac{3}{5}$ ,  $2\frac{3}{4}$  in snout,  $1\frac{1}{4}$  in interorbital width; maxillary reaches eye, expansion 2 in eye, length  $2\frac{1}{2}$  in head; low, broad supraorbital papilla; bony interorbital  $2\frac{1}{5}$  in interorbital width, which  $5\frac{2}{3}$  in head, deeply concave. Gill-rakers 2 + 4, lanceolate, equal gill-filaments or  $\frac{1}{2}$  of eye.

Scales 86 in lateral line to caudal base and 5 more on latter; tubes 53 in lateral line to caudal base and 3 more on latter;

9 scales above, 20 below and 15 predorsal. Scales with 13 to 16 basal radiating striæ; 36 to 40 apical denticles, with 7 to 9 transverse series; circuli very fine.

D. VIII-11, i, third spine  $2\frac{3}{4}$  in total head length, first ray  $3\frac{1}{4}$ ; A. II, i, third ray 4; caudal 2, convexly rounded behind; least depth of caudal peduncle 7; pectoral  $2\frac{1}{2}$ ; ventral  $1\frac{1}{2}$ .

Upper surface dark brown, clouded and blotched with dusky to blackish. Under-surface whitish. Dorsals pale brownish, with large median blackish blotch and several smaller posteriorly on spinous fin. Soft dorsal rays, each with 2 or 3 dark spots. Caudal with 2 blackish basal bands transversely and 3 bands broken as spots terminally. Pectoral brown, each ray with 5 or 6 dark spots. Ventral with 5 transverse rows of broad blackish blotches.

One, Durban Bay, 420 mm., 1929. Compared with the figure of the head and the description by Sauvage in 1891 ('Hist. Nat. Madagascar, Poiss.', p. 308, pl. 36, figs. 3, 3a), my example certainly agrees in armature, though the colour of the caudal is not given. Madagascar and Zanzibar are given as localities. The species approaches the East Indian *Insidiator bosschei* (Bleeker), as described by McCulloch ('Biol. Results Endeavour', vol. ii, pt. 3, July 3rd, 1914, p. 139).