

PROCEEDINGS
OF THE
LINNEAN SOCIETY
OF NEW SOUTH WALES.

WEDNESDAY, JANUARY 27TH, 1881.

The President, J. C. Cox, Esq., M.D., F.L.S., in the Chair.

DONATIONS.

Southern Science Record, from the Publisher.

Report of the Twenty-fifth Anniversary of the Societe Entomologique de Belgique, from the Society.

Journal of the Linnean Society, London, Vol. XIII., No. 65 to 83, from the Society.

PAPERS READ.

DESCRIPTIVE CATALOGUE OF THE FISHES OF AUSTRALIA.

BY WILLIAM MACLEAY, F.L.S., &c.

Part III.

DIVISION X. ACANTH. BLENNIIFORMES.

Body low, subcylindrical or compressed, elongate, rarely oblong. Dorsal fin very long: the spinous portion, if distinct, is very long, as well developed as the soft, or much more; sometimes the whole composed of spines only. Anal fin more or less long; caudal subtruncated or rounded, if present; ventrals thoracic or jugular if present.

FAMILY XXVIII. TRICHONOTIDÆ.

Body elongate, subcylindrical, covered with cycloid scales of moderate size. Eyes directed upwards. Teeth in villiform bands. One long dorsal fin with articulated, not branched rays, and without a distinct spinous portion; anal long; ventrals jugular, with one spine and five rays. Gill-opening very wide; seven branchiostegals. No anal papilla; no air-bladder or pyloric appendages; caudal vertebræ very numerous.

Genus TRICHONOTUS, Bl.

Head depressed, pointed, trunk subcylindrical, tail compressed; cleft of the mouth wide, nearly horizontal, with the lower jaw longest; eyes of moderate size, cycloid; lateral line continuous. One dorsal fin; ventrals jugular with one spine and five rays. Gill-opening very wide, with the gill-membranes scarcely united below the throat; seven branchiostegals. Villiform teeth in the jaws, on the vomer and the palatine bones. Air-bladder and pyloric appendages none.

Coasts of Netherlands India, and North Australia.

544. TRICHONOTUS BLOCHII, Casteln.

Researches on the Fishes of Australia, p. 21-22.

D. 46. A. 36. L. lat. 53.

Height of body over thirteen times in the length without the caudal fin; head five times and a-half. The lower jaw is long and swelled at the extremity receiving within it the upper. The first seven or eight rays of the dorsal fin elongate. Colour orange-yellow without spots; fins yellow. Length six inches.

Gulf of Carpentaria. Port Darwin.

The species which I believed to be *T. setigerus*, Bl., in my paper on the Fishes of Port Darwin (Proc. Linn. Soc. N. S. W., Vol. II., p. 359) is no doubt this species.

FAMILY XXIX. BLENNIIDÆ.

Body elongate, low, more or less cylindrical, naked, or covered with scales which are generally small. One, two, or three dorsal fins, occupying nearly the whole of the back—the spinous portion if distinct, being as much developed as the soft, or more, sometimes entirely composed of spines; anal fin long; ventrals jugular composed of a few rays, sometimes rudimentary or absent. Pseudobranchiæ.

Genus BLENNIUS, Artedi.

Body moderately elongate, naked; snout short. A single dorsal fin without detached portion; ventrals jugular formed by

a spine and two rays. Cleft of mouth narrow; a single series of immovable teeth in the jaws, generally a curved tooth behind the series in both jaws or in the lower. Tentacle above the orbit more or less developed, sometimes absent. Gill-opening wide. Branchiostegals six; pseudobranchiæ present. No air-bladder or pyloric appendages.

Coasts and freshwaters of nearly all parts of the world.

545. *BLENNIUS TASMANIANUS*, Richards.

Gunth., Cat. Fishes III., p. 214.

D. 12/17. A. 2 x 19.

Height of body four times and two-thirds in total length; the length of the head four times. Snout obtuse, with the anterior profile abruptly descending. A curved tooth in each of the jaws. Orbital tentacle well developed, posteriorly fringed; a small tentacle at the nostril. The width of the interorbital space is less than the vertical diameter of the eye; a transverse groove behind the tentacles. The dorsal fin commences in the vertical from the præopercular margin and has flexible spines; a distinct notch between the spinous and soft portions, the latter being separate from the caudal. Brownish-grey, dotted with brown; head and vertical fins blackish.

Tasmania.

546. *BLENNIUS VITTIPINNIS*, Casteln.

Researches on the Fishes of Australia, p. 25.

D. 12/19. A. 2/20.

Height of body six times in the total length, length of head five times; snout truncate, anterior profile vertical and convex. Teeth very small and similar. Orbital tentacles close together, well developed and fringed externally; the interorbital space concave; the operculum strongly emarginate on its upper part. The first dorsal fin commences over the origin of the pectorals,

and is united to the second by a low membrane, and that by a similar membrane to the caudal. Colour (in spirits) greyish-yellow, with faint marmorated brown spots; the fin membranes are obscure, with oblique transverse white lines; the caudal is covered with very small white spots, as is also the anal, which is black edged; pectorals and ventrals yellow. Length five inches.

Dampier's Archipelago. West Coast.

547. *BLENNIUS CINEREUS*, Casteln.

Researches on the Fishes of Australia, p. 26.

D. 12/19. A. 21.

Height of body five times and a half in the length, (without caudal), length of head four times and a-half; diameter of eye four and a-half times in the length of the head; anterior profile of head very oblique, almost straight; no curved tooth in the jaws; orbital tentacles long, not divided, pointed; interorbital space very narrow, with a transverse ridge over the eyes in front of the tentacles; head rugose, with a compressed, rounded crest on the posterior part. Caudal fin rounded. Body granular, entirely of a dark blackish-grey; dorsal fins with oblique stripes of black and whitish-grey; anal dark, with three series of white spots; the other fins dark and immaculate.

Queensland (Castelnau). Three and a-half inches in length.

548. *BLENNIUS PARDALIS*, Casteln.

Researches on the Fishes of Australia, p. 26.

No tentacles over the eyes. Height of body four times and one-fourth in the length (without caudal), length of head the same; eye very large, one-third of the length of the head, which is rounded and vertical in front; the dorsal fin increases slightly in height posteriorly. Colour brown, grey on the throat; the back on its anterior half, is marked with narrow longitudinal black lines; the body is entirely covered with oblong whitish

blotches; the dorsal fin is brown, with transverse whitish lines formed of oval or rounded blotches; a series of minute black blotches near the edge of the fin; caudal rounded, with three transverse series of black dots; anal brown, marked with whitish round blotches; pectorals grey, variegated with brown.

Cape York (Castelnau). Length three inches.

549. *BLENNIUS UNICORNIS*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 384.

Port Jackson. Length two inches.

550. *BLENNIUS CASTANEUS*, *n. sp.*

D. 12/13. A. 19.

Height of body about one fourth of the length. Head rounded and nearly vertical in front, the eyes about half their diameter apart; the tentacle above each orbit short, broad, and three or four-pointed; a lateral line consisting of skinny threads extending from the upper angle of the operculum in a curve to the middle of the sides where it seems to terminate. Colour yellowish, with reddish-brown spots along the back and sides, disposed in pairs, and some brownish bars on the head. Fins yellowish, the dorsal with a black spot between the first and second spines, and a few faint brownish marks throughout; anal with a slight blackish margin.

Port Jackson (Macl. Mus.)

Genus *PETROSCIRTES*, Rüpp.

Body moderately elongate, naked. Snout generally short, or of moderate extent. A single dorsal fin, (sometimes with a semidetached portion), ventrals jugular, composed of two or three rays. Cleft of the mouth narrow; a single series of immovable teeth in the jaws; a strong curved canine tooth behind the others, much longer and stronger in the lower jaw. Head sometimes with tentacles. Gill-opening closed beneath, and reduced

to a more or less small fissure above the root of the pectoral. Six branchiostegals; air-bladder and pseudobranchiæ present; pyloric appendages none.

Indian and Australian Seas.

551. *PETROSCIRTES VARIABILIS*, Cant.

Gunth., Cat. Fishes III., p. 234.

B. 6. D. 28-31. A. 17-21. Vert. 12/23.

The height of the body is one-sixth of the total length, the length of the head one-fifth. The snout is somewhat produced, truncated in front. The canine teeth of the lower jaw very large, those of the upper small. No orbital tentacle. The width of the interorbital space is greater than the diameter of the eye, which is one-fourth of the length of the head. The dorsal fin is not elevated, commences on a line with the posterior margin of the præoperculum, and terminates at a short distance from the root of the caudal. The two inner rays of the ventral fin equal in length. Caudal fin with some of the upper and lower rays prolonged. From the eye to the tail a broad blackish band; dorsal and anal fins spotted and dotted with black; caudal sometimes with a black central spot.

Port Jackson.

552. *PETROSCIRTES ANOLIS*, Cuv. & Val.

Gunth., Cat. Fishes III., p. 238.

D. 29. A. 22.

Head elevated into a high crest; snout somewhat elongate; five or six of the middle dorsal rays very elongate, filiform. Greenish, with darker vertical lines; head with some silvery streaks; cheek and base of the pectoral fin with a black spot; fins yellowish, dorsal blackish anteriorly, with numerous fine oblique brown stripes.

Port Jackson.

553. *PETROSCIRTES PUNCTATUS*, Cuv. & Val.

Gunth., Cat. Fishes III., p. 231.

D. 12/22. A. 23.

Height of body one-sixth of total length, length of head slightly more. Snout short; the upper canine tooth half the size of the lower. The dorsal fin extends to the root of the caudal. Greyish, with three longitudinal series of black spots; the upper along the base of the dorsal fin; the lower along the middle of the body.

Australia (Val.)

554. *PETROSCIRTES ELONGATUS*, Peters.

Gunth., Cat. Fishes III., p. 233.—Journ. Mus. Godef., Heft XIII., p. 196.

D. 32. A. 24. V. 2.

The height of the body is six times and a-half in the length (without caudal); the length of the head five times and one-third. Snout with a very convex profile, scarcely as long as the diameter of the eye. The width of the interorbital space is one-third of the diameter of the eye. Canine teeth of lower jaw twice the size of those of the upper. The dorsal fin is not elevated, it is emarginate, and begins rather before the vertical from the root of the pectoral. Caudal fin emarginate. Greenish: a white-edged, ocellated spot on the operculum; dorsal and anal fins brown, with white stripes, longitudinal on the former, and oblique on the latter. Male with an ocellated spot between the twenty-third and twenty-fifth dorsal rays.

North Australia (Günther).

555. *PETROSCIRTES SOLORENSIS*, Bleek.

Kner Voy. Novara, Ichth., p. 196.—Gunth. Cat. Fishes III., p. 235.

D. 30. A. 20.

Height of body one-sixth, and length of head one fifth of the total length; no orbital tentacles; diameter of eye one-fourth of the length of the head, and twice the length of the snout, and width of the interorbital space. The teeth in both jaws number twenty-eight or thirty; canines strong in both jaws and sometimes larger on one side than on the other. The vaulted forehead descends perpendicularly to the mouth. The dorsal fin begins over the operculum and extends to the tail, which is similarly continuous with the anal fin; the anterior rays of the dorsal fin are prolonged into short filaments and are equal to the height of the body; ventrals long. Colour brownish, the belly lighter, the sides clouded; ventral fins violet, the other fins blackish. Length fifteen lines.

Sydney (Kner).

556. *PETROSCIRTES FASCIOLATUS*, *n. sp.*

D. 33. A. 26.

Height of body about equal to the length of the head and one-eighth of the total length. Head and snout very convex and obtuse; the diameter of the eye about the length of the snout and twice the width of the interorbital space; cheeks swollen, ventral fins with two rays, the inner one longest; the last few rays of the dorsal and anal fins somewhat enlarged at their apex. Colour reddish-yellow, with numerous reddish-brown spots on the side of the head, and six to eight very fine, oblique, pearly or silvery streaks on the side of the body as far as two-thirds of its length, and about three longitudinal streaks of the same kind on the posterior third. The fins are a little paler than the body and transparent; the dorsal and anal with a narrow black margin with the extreme tips white; a cloudy blotch near the summit of the eighth to tenth dorsal rays, counting from the tail.

Port Jackson (Macl. Mus.) Length two to three inches.

557. PETROSCIRTES GUTTATUS, *n. sp.*

D. 12/18. A. 21.

Height of body about equal to the length of the head, and one-fifth of the total length. Snout slightly pointed, the profile oblique, rather longer than the diameter of the eye, which is about equal to the interorbital space; a low skinny ridge from between the eyes to the occiput; the latter part of the dorsal fin elevated, as high as the body and extending to the tail; ventral fins two-rayed, the inner much longer than the other. Reddish, with four irregular rows of deep blue small spots along the sides, and a few more minute ones on the thorax; the fins are immaculate; the rays dusky-yellow, the membranes transparent.

Port Jackson (Macl. Mus.) Length two to three inches.

558. PETROSCIRTES ROTUNDICEPS, *n. sp.*

D. 34. A. 24.

Height of body one-seventh, and length of head one-sixth of the total length. Head very round and obtuse above, below and in front. Diameter of eye rather more than the width of the interorbital space, and less than its distance from the extremity of the snout. Some of the rays of the vertical fins have a slight tendency to run into filaments. Colour reddish-yellow, with a broad longitudinal line of reddish-brown blotches along the middle of the body from the eye to the tail, a black spot behind the eye and another above the pectoral fin. The fins yellow, the anterior part of the dorsal, and the base of the entire dorsal faintly spotted with brown.

Port Jackson (Macl. Mus.) Length two and a-half inches.

559. PETROSCIRTES CRISTICEPS, *n. sp.*

D. 30. A. 21.

Height of body about equal to the length of the head, and one sixth of the total length. Head almost vertical in front and

surmounted by a very compressed elevated skinny crest, rounded above, and extending along the top of the head from before the vertical from the orbit to close to the origin of the dorsal fin. The posterior rays of the dorsal fin elevated and filamentose. Colour (in spirits) an obscure bluish-red, with darker red blotches on the side; fins more or less tinged with blackish.

Port Jackson (Macl. Mus.) Length two and a-half inches.

Genus SALARIAS, Cuv. & Val.

Body moderately elongate, naked; snout short, with the cleft of the mouth transverse; a series of numerous small teeth in the jaws, implanted in the gum and movable; generally a curved canine tooth on each side of the lower jaw. Dorsal fin continuous sometimes divided into two portions by a notch; ventrals jugular, with two, three, or four rays. Tentacle above the orbit more or less developed. Gill-opening wide; pseudobranchiæ. Branchiostegals six. Air-bladder and pyloric appendages absent.

All warm Seas.

560. SALARIAS FASCIATUS, Bl.

Gunth., Cat. Fishes III., p. 244.—Journ. Mus. Godef., Heft. XIII., p. 201, pl. 115, fig. H.

D. 12/18-19. A. 19-21.

Height of body one-fifth of the total length, length of head about one-sixth. Anterior profile nearly vertical; no canine teeth; a pair of fringed tentacles above the orbits, another on the nape; crest none. The dorsal fin is not notched, begins in the vertical from the extremity of the operculum, and is continuous with the caudal fin. The anterior anal rays are sometimes semi-detached and elongate. Brown, irregularly variegated, spotted and dotted with yellow and blue; immature specimens with eight brown vertical bands; throat and chest with three yellowish cross-bands, several whitish spots before the root of the pectoral.

Cape Grenville (Chevert Exp.)

561. SALARIAS DUSSUMERI, Cuv. & Val.

Gunth., Cat. Fishes III., p. 251.

D. 12/20. A. 22.

Height of body one-sixth or one-seventh of the total length. A short fringed tentacle above the orbit and at the nostril. No canine teeth. The dorsal fin deeply notched, extending to the caudal. Brownish, indistinctly marbled with reddish-brown; the rays of the dorsal and caudal fins dotted with brown; anal greyish, with blackish margin. (In life, green, with rose-coloured dots.—Val.)

Port Essington.

562. SALARIAS MELEAGRIS, Cuv. & Val.

Gunth., Cat. Fishes III., p. 256.

D. 12/20. A. 22. Vert. 11/26-17.

The height of the body is contained six times or six times and a-half in the total length; the length of the head five times and a-half. A crest on the head, a fringed tentacle half as high as the head, above the orbit, another small one at the nostril. No canine teeth; dorsal fin deeply notched, extending on to the caudal; the posterior portion lower than the body, but higher than the anterior portion. Greyish, with pairs of indistinct, brownish, vertical bands, and with round white dots; the dorsal fin with oblique stripes; anal blackish, with white spots.

Tasmania (Cuv. & Val.), Cape York (Gunther), Nepean Island (Chevert Exp.) mistaken for *S. biseriatus*.

563. SALARIAS LINEOLATUS, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 336, pl. 13, fig. 2.

Darnley Island (Chevert Exp.)

564. SALARIAS GEMINATUS, All. & Mael.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 336, pl. 13, fig. 3.

Torres Straits (Chevert Exp.)

565. *SALARIAS IRRORATUS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 337, pl. 13, fig. 4.
Low Island (Chevert Exp.)

566. *SALARIAS FILAMENTOSUS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 337, pl. 14, fig. 1.
Cape York (Chevert Exp.)

567. *SALARIAS AURIDENS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 338, pl. 14, fig. 2.
Darnley Island (Chevert Exp.)

568. *SALARIAS CRISTICEPS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., 338, pl. 14, fig. 3.
Darnley Island (Chevert Exp.)

569. *SALARIAS SPALDINGI*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. II., p. 358, pl. 9, fig. 4.
Port Darwin (Macl. Mus.)

570. *SALARIAS CHEVERTI*, *n. sp.*

D. 12/20. A. 20.

Height of body about equal to the length of the head, and one-sixth of the total length. Eyes prominent on the upper angle of the head, less than their diameter apart; face perpendicular, gape of mouth wide, a tentacle above the eyes, of about half their diameter in length, and ending in a single filament. The dorsal fin notched to about half its depth, the ventrals with two rays, fleshy and nearly equal in length; pectorals broad, of fourteen simple rays. Colour in spirits, bluish-brown, with the fins yellow, the dorsal and caudal spotted with brown; very pot bellied.

Darnley Island (Chevert Exp.)

Cuvier and Valenciennes have described a species of *Salarias* from New Holland, (*S. Kinyii*, Cuv. & Val., Hist. Poiss., Vol. XI., p. 334.), but it has never since been identified, and there is a doubt as to the correctness of the habitat given by them. Another species, *Salarias biseriatus*, (Kner., Voy. Nov. Fische, page 197, pl. 8, fig. 5), has been mentioned by Dr. Alleyne and myself (Proc. Linn. Soc. N. S. Wales, Vol. I., 336), as having been found at Nepean Island, Torres Straits, during the voyage of the Chevert. I have however, since satisfied myself that it is *S. meleagris*, and that there is no evidence of *S. biseriatus* being ever taken in Australian waters.

Genus LEPIDOBLENNIUS, Steind.

Body scaly; two dorsal fins, the first formed by flexible spines the second by simple rays; pectoral fin much developed, with the lower rays simple. A band of viliform teeth in both jaws, the outer series containing stronger teeth.

Dr. Steindackner formed this genus for the reception of a Fish from Queensland, to which he gave the specific name of *haplodactylus*.

I have never seen his description and cannot therefore include it in this Catalogue. The following species seems to enter this genus.

571. LEPIDOBLENNIUS GEMINATUS, *n. sp.*

D. 17/12. A. 19. L. lat about 70.

Height of body one-seventh, and length of head one-sixth of the total length. Eyes near the front angle of the head, the space between hollow and narrow, less than half their diameter; gape of mouth rather large, the maxillary reaching to below the middle of the eye; the profile straight and at an angle of 45° ; the snout as long as two diameters of the eye; teeth numerous and sharp, in the centre of each jaw there is an exterior row of

crowded large ones, directed outwards; gill membranes broadly connected beneath; scales small, none on the head; lateral line straight. The first dorsal fin commences above the præoperculum, is less than half the height of the body, and is joined to the second by a very low membrane; the second dorsal is slightly higher than the first; the caudal is rather long, narrow, and truncate; the anal consists of thick isolated rays, the membranes not, or scarcely joining them; the pectorals long, reaching to the fifth anal ray, with the six lower rays simple; ventrals two-rayed, fleshy, joined at the base. Colour in spirits, yellowish, with a number of rather faint reddish-brown spots and double vertical fasciæ along the body; fins of a more dusky yellow, with a brown spot at the extremity of the first dorsal spine, and another on the membrane between the third and fourth; anal margined with blackish.

Port Jackson (Macl. Mus.)

Genus CLINUS, Cuv.

Body moderately elongate, covered with small scales; snout rather short; a narrow band or sometimes a single series of small teeth in the jaws and on the palate. Dorsal fin long, formed by many spines and a few rays, without a detached anterior portion; anal spines two; ventrals jugular, composed of a small spine hidden in the skin, and two or three rays. Tentacle above the orbit more or less developed. Gill-opening wide; pseudobranchiæ; six branchiostegals; air-bladder and pyloric appendages absent.

Seas of temperate regions.

572. CLINUS DESPICILLATUS, Richards.

Gunth., Cat. Fishes III., p. 271.

D. 3/35/4. A. 2/25. V. 1/3.

Height of body five times and two-thirds in the total length, the length of the head four times and a-half. Snout rather

subconical, with the jaws equal. Palatine teeth none, those on the vomer form an angular band, narrowest in the middle. Interorbital space convex, its width equal to the vertical diameter of the eye; a small branched tentacle above the orbit. Scales exceeding small. The three anterior dorsal spines are remote from, but connected with the others; the height of the dorsal fin is about one-third of that of the body; with the spines rather slender, and is contiguous with the caudal. Greyish-brown (in spirits), with bars and spots of deeper brown along the back and sides, vertical fins dusky towards their margins, caudal spotted.

Tasmania. Length four inches.

Genus NEOBLENNIUS, Casteln.

Elongate; one dorsal fin extending over the entire back, almost all spines. Teeth strong, sharp, numerous and curved, larger on the upper jaw, on the vomer and palatines in transverse series. Body almost naked, a few scales embedded in the skin. Caudal fin free; ventrals thoracic, of four rays; eye large; lateral line on the anterior part of the body only; no barbel. (Casteln.)

573. NEOBLENNIUS FASCIATUS, Casteln.

Researches on the Fishes of Australia, p. 28.

D. 30/4. A. 2/24. V. 1/4.

Height of body five times and two-thirds in the total length, length of head over four times; eye three times and a-half in the length of the head; dorsal fin large; caudal pointed; ventrals with the two central rays long and articulated; pectorals large, of thirteen rays; the male organ very large and prominent. Colour (in spirits) of a fleshy-pink, with the head and fins yellow, the body is generally marked by five broad, transverse, faint bands of a darkish colour; fins sometimes speckled with black.

South Australia. Length under three inches.

Genus HETEROCLINUS, Casteln.

Body subelongate; mouth opening upwards; snout without tentacles; ventral fins jugular, formed of one short and two long rays; dorsals two, the first short, the second with numerous spines and three rays; the dorsal, caudal, and anal somewhat continuous; lateral line only marked on the anterior part of the body; gill membranes inflated.

South Australia.

Count Castelnau has omitted to state whether the body is scaly or naked, but from his description of the species given below, I am inclined to think it is without scales.

574. HETEROCLINUS ADELAIDE, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 68.

D. 3. 28/3. A. 2/25.

The height of the body is contained a little less than five times in the total length, the length of the head four times and two-thirds; the eye is half the length of the head, and prominent; the head appears truncate in front when the mouth is shut; the cleft of the mouth is oblique; the upper lip embraces the lower jaw. The first dorsal spine is strong and rather elongate, the second dorsal fin terminates with three soft rays which are attached by a membrane to the caudal, the anal fin is similarly attached to the caudal, which is rather long, Four longitudinal grooves on the body. Colour reddish-brown, yellowish-white beneath, with an irregular black, longitudinal band on the sides and some blackish blotches beneath; the dorsal and anal fins are obscure, with some white portions; the ventrals, caudal, and pectorals of a light colour, the last two sprinkled with black; the elongate portion of the first dorsal is red. Length three and a-half inches.

South Australia (Casteln.)

Genus OPHIOCLINUS, Casteln.

Body very elongate, mouth opening upwards; snout with two short filaments; ventral fins jugular, consisting of one short and two long rays; one dorsal fin, all spinous except the last two rays, and continuous with the caudal and anal; scales very minute and imbedded in the skin; teeth short, strong, and numerous; gill membranes inflated.

South Australia.

575. OPHIOCLINUS ANTARCTICUS, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 69.

D. 63/2. A. 39.

Height of body one-seventh, and length of head one-sixth of the total length; the diameter of the eye is one fourth of the length of the head; mouth very oblique; numerous short, thick, blunt teeth on the jaws and on the vomer and palatine bones; a short, broad, rounded barbel on the snout in front of the eyes, which are large and lateral; scales on the posterior part of the body more distinct; the lateral line only visible behind the gills; there are five longitudinal depressions or grooves on the body; the male organ very prominent. Colour uniform brownish-red, lighter beneath; some minute black spots on the fins, which are rather red; caudal and anal bordered with black. Length five inches.

South Australia (Castelnau).

Genus CRISTICEPS, Cuv. & Val.

Body moderately elongate, covered with small or rudimentary scales. Snout rather short, with the cleft of the mouth of moderate width. A band of small teeth in the jaws; teeth on the vomer. Two dorsal fins; the anterior short, of three spines, the posterior long and spinous, with a few posterior articulated rays. Ventral fins jugular, with one spine and two or three rays.

Head generally with tentacles. Gill-opening wide; six branchiostegals. Pyloric appendages none.

Viviparous Fishes; European, Indian and Australian Coasts and Rivers.

576. CRISTICEPS ANTINECTES, Gunth.

Cristiceps argentatus, var. *antinectes*, Gunth., Cat. Fishes III., p. 272, and note p. 273.

B. 6. D. $3/30/4$. A. $2/23$. V. $1/2$.

The height of the body is contained six times in the total length, the length of the head five times and a-third. The snout is of moderate extent, subconical, with the lower jaw somewhat prominent. Palatine teeth none. The width of the interorbital space is less than the diameter of the eye; a small, simple tentacle above the orbit. Scales exceedingly small. A short detached dorsal fin on the nape of the neck, the spines of which it is formed are slender and rather longer than those of the second dorsal; the latter is not emarginate and is united with the base of the caudal. Brown or yellowish, more or less spotted and marbled with darker; generally a series of whitish or yellowish spots along the sides.

West Australia.

577. CRISTICEPS NASUTUS, Gunth.

Gunth., Cat. Fishes III., p. 273.

D. $3/28/4$. A. $2/21$. V. $1/3$. P. 13. C. 9.

The height of the body is five times and a-half in the total length, the length of the head four times and a-half. The snout is subconical, somewhat longer than the eye, with the jaws equal. The width of the interorbital space is much less than the vertical diameter of the eye. A long fringed tentacle at the nostril, that above the orbit rather shorter. Scales minute. The detached dorsal fin is situated above the operculum, the last dorsal ray is

fixed to the tail, but not to the caudal fin. Uniform yellowish, (in spirits).

New South Wales (Gunther).

578. *CRISTICERS ROSEUS*, Gunth.

Gunth., Cat. Fishes III., p. 274.

B. 6. D. 3/25-26/4. A. 2/20-21. V. 1/3. P. 12. C. 9.
Vert. 14/26.

The height of the body is contained five times in the total length, the length of the head four times and two-fifths. Snout subconical, equal in length to the eye, lower jaw prominent. Teeth on the vomer, none on the palate. The width of the interorbital space is much less than the vertical diameter of the eye. A fringed tentacle at the nostril; that above the orbit well developed with obtuse fringes. Scales rudimentary. The detached dorsal fin situated above the operculum, somewhat higher than the second dorsal, the last ray connected by a membrane with the base of the caudal; the anal fin quite free from it; the inner ventral ray not half the length of the middle one. Yellowish (in spirits), head, body and first dorsal fin marbled with rose-colour; the second dorsal, anal, and pectoral fins with rose-coloured cross-bars.

Freycinet Harbour (Herald).

579. *CRISTICERS FASCIATUS*, *n. sp.*

D. 3/30/2. A. 21. V. 2. C. 10.

Height of body about one-fifth of the length. Head rather depressed; the interorbital space rather convex, its width being about equal to the diameter of the eye; tentacles at nostril and over orbit moderate; cleft of mouth wide; scales small, very distinct; lateral line continuous. The detached part of the dorsal fin situated over the operculum and connected by a membrane with the second, the three spines equal in length and of same

height as the rest ; the last dorsal ray is connected with the tail, the anal is free, pectoral fins rather large, the ventral rays conjoined for half their length. Reddish yellow with six equidistant broad reddish-brown fasciæ, of very irregular outline on the sides of the body, and not quite reaching the back or belly ; the fins are immaculate.

Port Jackson (Macl. Mus.)

This species and *Clinus despicillatus*. should be placed in a new genus, intermediate between *Clinus* and *Cristiceps*, and probably the three preceding species, *C. antinectes*, *nasutus*, and *roseus*, ought to accompany them. The compressed body and elevated first dorsal fin placed on the head, mark the species which should properly belong to *Cristiceps*.

580. CRISTICEPS AUSTRALIS, Cuv. & Val.

Gunth., Cat. Fishes III., p. 275.

D. 3/27-29/8-5. A. 2/23-25. V. 1/3. Vert. 15/31.

The anterior dorsal fin commences above the posterior margin of the orbit, and is much higher than the posterior ; both widely separated from each other. A simple tentacle above the orbit, and a pair of bifurcate ones above the snout.

Rivers of Tasmania. Swan River (Gunther).

The above is all the description given by Dr. Gunther of this species, and I cannot at present refer to Cuv. and Val., tome 9, p. 402, pl. 336, where the fish is described and figured. But Count Castelnau, who carefully studied the genus, gave a decided opinion that the present species is quite distinct from the Port Jackson species long believed to be *C. australis*, and to which he has given the specific name *C. Macleayi*. He suggests however, that his *C. Howittii* may be identical with *australis*, in this I believe he is entirely wrong.

581. CRISTICEPS MACLEAYI, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 385.

Port Jackson.

582. CRISTICEPS HOWITTHI, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 48.

The height of the body is contained about five times in the total length, the length of the head four times and one-third; the diameter of the eye four times and two-thirds in the length of the head. No scales. The lower jaw longer than the upper. The first dorsal fin is placed over the centre of the orbit, its first ray much prolonged; the second dorsal is high, and highest posteriorly, of thirty-five rays; caudal very long and lanceolate; the anal is like the second dorsal, and of twenty-seven rays; the ventrals have two rays one of them bifid. Colour in preserved specimens reddish-brown; the front part of the head is yellow, and there is a broad, black band running obliquely downwards below the orbit. Body marbled and banded with brown, with some ocellated light spots; dorsal and anal fins yellow, with five broad, obscure, transverse bands; the caudal is yellow at its base and brown on its terminal half, the pectorals are yellow with their base brown.

Western Port. Length four and a-half inches.

583. CRISTICEPS ROBUSTUS, Gunth.

Gunth., Ann. and Mag., Nat. Hist. 1867, Vol. XX., p. 62.

D. 3/32/7. A. 2/25.

The anterior dorsal fin commences over the hind margin of the præoperculum, and is not higher than the posterior. A fringed tentacle above the orbit, a small one at the nostril. Back with seven dark cross-bands, the first below the anterior dorsal, sub-ocellated.

Melbourne. Five inches long, (Gunther.)

584. CRISTICEPS SPLENDENS, Casteln.

Proc. Zool. Soc. Victoria, Vol. II., p. 66.

D. 3/28/6. A. 2/23. V. 1/4.

Head very convex above and in front. Height of body contained a little over four times in the total length, the length of the head three times and two-thirds, eye five times in the length of the head; snout longer than the diameter of the eye, which is equal to the width of the interorbital space. A long quadridigitate tentacle on the nostril; another, stronger and rather longer, above the orbit, compressed and simple, excepting a small angle anteriorly. Teeth numerous and sharp in the jaws, with in the lower jaw an external series of larger and more conical ones, the teeth on the vomer more blunt. Scales small, round, deciduous; lateral line continuous, formed of a succession of little ridges not contiguous. The first dorsal fin is placed over the orbit, the first spine as high as the body, the second shorter, the third half the length of the first, the second dorsal begins over the end of the operculum, and increases gradually in height to its posterior extremity, the last ray is attached by a membrane to the tail at some distance from the commencement of the caudal fin; the caudal is long, of nine rays, which extend beyond the uniting membrane, the ventrals are formed of two short and two long rays. Colour (in spirits) uniform carmine with the head and fins orange.

South Australia. Length seven inches.

585. CRISTICEPS AURANTIACUS, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 386.

Port Jackson.

586. CRISTICEPS MULTIFENESTRATUS, Casteln.

Proc. Zool. Soc. Victoria, Vol. I., p. 131, and Vol. II., p. 48 note.

D. 3/30/4. A. 2/23. V. 1/3.

Of rather elongate form. Height of body contained five times and a-half in the total length, length of head four times; diameter of eye four times and five-sixths in the length of the head; a long branched tentacle over the eye, a small simple one on the snout. Scales minute. Lower jaw longest. The first dorsal fin is situated above the end of the præoperculum, the two first spines longer and nearer together than the third, the space between the two dorsals equal to the transverse diameter of the eye; the second dorsal grows a little higher at its posterior extremity, which is rounded, the spines and rays are strong, and the membranes extend to the apex of the rays; the caudal is rounded and formed of nine rays; the anal in form resembles the second dorsal, but the rays extend beyond the connecting membrane; the ventrals have their rays united at the base, the middle one the longest. Of a handsome purple colour, with large, black, rounded blotches, forming a line on the back and on each side, the last being the smallest; between these there are numerous short, irregular, interrupted, white, longitudinal lines. The belly is of a pale and pinkish colour, with large white oval blotches; the head is punctured with red, and has two irregular longitudinal lines on the præoperculum, the second rather oblique; the lips are marbled with pale brown, and on the sides of the head are five or six silvery blotches. The dorsal and anal fins are transparent, covered with purplish-brown opaque lines, forming a sort of trellis work; the rays are brown, marbled with yellow; the rays of the caudal are similar, and that fin is bordered with orange, as is also the soft part of the dorsal; the ventrals are striped yellow and purple; the pectorals are dark; the eye is pink, with an external series of red spots.

Melbourne. Length ten inches.

587. CRISTICEPS AMÆNUS, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 48.

Count Castelnau says (*loc. cit.*) that this species resembles much the preceding species (*C. multifenestratus*) in having numerous transparent spots on the dorsal and anal fins, in a sort of trellis work arrangement; but the height of the body is contained four times and two-thirds in the present species in the length of the body, and the operculum is strongly striated. The general colour is a beautiful orange red.

Melbourne. Length eight inches.

588. CRISTICEPS FORSTERI, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 132.

D. 3/29/4. A. 26. V. 1/3.

Head elevated and gibbous. Height of body four times and a-half in the total length, length of head four times and one-third; diameter of eye four times and one-fourth in the length of the head. A single bifid filament over the eye. Lips thick and prominent. The first dorsal fin commences in front of the vertical from the end of the operculum and is elevated, the second dorsal is separated from it by only a small space; the caudal is rounded and formed of nine rays; the rays of the anal increase a little in length towards the posterior part, which is rounded; the ventrals have the external ray short, the others long and connected towards the base. General colour green, with the sides of the head and the anterior part of the lower side of the body ochreous-yellow; lips purple; lower portions of præoperculum carmine; dorsal, caudal, and anal fins green, with the spines and rays purple; ventrals yellow; pectorals purple. There are two rounded white spots between the bases of the ventral and pectoral fins and on the second dorsal there are fenestrated rounded spots between the fourth and fifth rays, the ninth, tenth, and eleventh, the twentieth, and twenty-first, the twenty-sixth and twenty-seventh, and the thirty-second and thirty-third; on the anal there are similar spots between the seventeenth and eighteenth, and the twentieth and twenty-first, and one covering nearly all the twenty-

third, twenty-fourth, and twenty-fifth, and between the twenty-fifth and twenty-sixth rays are two additional fenestrated spots, one over the other.

Melbourne. Length six and a-half inches.

589. *CRISTICEPS PICTUS*, *n. sp.*

D. 3/29/6. A. 25. V. 1/3.

Body very compressed. The first dorsal fin situated over the eye and twice the height of the second dorsal. A simple tentacle over the eye, a branched one on the nostril. No scales. The last two rays of the dorsal fin short, the body part of the tail long, narrow, compressed, becoming more expanded at the junction with the caudal fin; the fin elongate, pointed. Ventrals terminating in one short and two long filaments. Colour (in spirits) red on the body, yellow on the head and thorax, with a brown vertical band beneath the eye. Fins dark purple with minute blackish dots, on the second dorsal are four almost vertical transparent bands, one about the seventh and eighth spines, one about the thirteenth and fourteenth, one about the twentieth and twenty-first, and the fourth on the two last short rays, there is also a round spot of the same character about the twenty-sixth spine, the caudal and anal fins have also some of these transparent spots, but not so large. The pectoral and ventral fins are barred with yellow.

Port Jackson. Length three inches.

590. *CRISTICEPS ARGYROPLEURA*, Kner.

Kner., Voy. Novara, Fische, p. 199, Tab. 7, fig. 4.

D. 3/34. A. 27. V. 3. P. 10. C. 11.

The first dorsal fin situated over the anterior part of the eye, higher than the body, and attached by a low membrane to the second. Caudal fin elongate. Silvery lines under the eye and

at the base of the pectorals, and a series of silvery spots on the sides.

Port Jackson (Kner). Two inches long.

591. *CRISTICEPS PALLIDUS*, *n. sp.*

D. 3/29/6. A. 26. V. 3. P. 10.

Body compressed, height one-fifth of total length. The first dorsal fin over the middle of the eye, and scarcely higher than the last dorsal rays, which are longer than the first spines of the second dorsal. Head rather depressed, flat between the eyes, which space is less than the diameter of the orbit. Snout much shorter than eye; cleft of mouth oblique; scales very small; lateral line marked with distant, elongate scales; tail elongate. Colour uniform pale reddish-yellow; fins very pale yellow, and immaculate.

King George's Sound (Macl. Mus.)

Genus *TRIPTERYGIUM*, Risso.

Body not very elongate, covered with rather small or with scales of moderate size. Snout of moderate extent. Jaws with a band of villiform teeth; teeth on the palate. Three dorsal fins, the two anterior spinous, the middle one longest. Ventrals jugular with two soft rays. Six branchiostegals. Pseudobranchiæ.

European, New Zealand and Australian Coasts and Rivers.

592. *TRIPTERYGIUM MARMORATUM*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol III., p. 34, pl. 3, fig. 2.

King George's Sound (Macl. Mus.)

593. *TRIPTERYGIUM ATRIGULARE*, Gunth.

Journal Mus., Godef., Heft. IV., p. 91.

D. 3/12/8. A. 14. L. lat. 33.

The height of the body is less than the length of the head, which is two-sevenths of the length of the body without the caudal fin. Eyes large, more than one-third of the length of the head and longer than the snout. Scales with toothed edges. Lateral line distinct to the end of the second dorsal fin. Head without scales. The pectoral fins reach to the vertical from behind the termination of the second dorsal. The body is of a reddish-brown, without markings; the underside of the head and the base of the pectorals are black; the peduncle of the tail above and below with a small blackish spot.

Bowen (Gunther).

Genus *STENOPIIUS*, Castelnau.

Of elongate form. No ventral fins. Dorsal fin entirely spinous united by a membrane with the caudal and anal. Scales small; several lateral lines; gill-openings united below the throat. Teeth numerous, rather compressed and curved.

North Australia.

594. *STENOPIIUS MARMORATUS*, Casteln.

Researches on the Fishes of Australia, p. 27.

Height of body contained ten times and a-half in the length, without the caudal fin; length of head five times and one-third; lower jaw rather in advance of the upper; aperture of mouth extending below the anterior edge of the eye; upper part of head naked; præoperculum scaly; a longitudinal ridge on the the operculum ending in a point, the portion above this ridge is scaly, below, naked; a short lateral line above the point of the operculum formed of small granulations.

Gulf of Carpentaria (Castelnau).

595. *STENOPIIUS OBSCURUS*, Casteln.

Researches on the Fishes of Australia, p. 27.

Height of the body contained nine times and two-thirds in the length without the caudal fin, length of the head about six times; lower jaw considerably longer than the upper; teeth numerous, conical, rounded at their extremity. A few very small scales apart from one another on the posterior part of the head; operculum scaly; body covered with rather small scales; lateral line emitting an abbreviated upper branch behind the operculum. Colour obscure brown on the upper parts, dark yellow below.

Gulf of Carpentaria (Castelnau). Length eleven inches.

Genus *NEOGUNELLUS*, Casteln.

Form elongate, rather compressed. Scales very small and rudimentary. Vertical fins long, united to the caudal; dorsal entirely spinous; ventrals long, filamentary, of two rays. Teeth numerous, thick, conical, the outer ones larger. Head small.

One species from South Australia.

596. *NEOGUNELLUS SULCATUS*, Castelnau.

Researches on the Fishes of Australia, p. 27.

D. 67. A. 43.

Height of body about eight times in the total length, length of head six times and two thirds; diameter of eye five times and one-third in the length of the head. The dorsal spines are very feeble, but the twenty-sixth and thirty-first are much stronger; caudal fin pointed, the middle rays being much the longest; anal long and formed of flexible spines. The male has the sexual organ conspicuous, and a kind of thoracic corselet as in some of the *Scombridae*. Colour (in spirits) reddish-brown without spots the vertical fins are black, and the lower part of the head rather livid.

South Australia. Length about five inches.

Genus STICHARIUM, Gunth.

Body elongate, compressed, naked or with scarcely a trace of scales. Anterior part of lateral line distinct, near the dorsal profile. Snout short; small teeth in the jaws, without canines; palate apparently toothless. Dorsal fin long, formed by pungent spines only; ventrals jugular with two rays; caudal distinct. Gill-openings rather wide, the gill-membranes broadly united below the throat, and quite free from the isthmus.

597. STICHARIUM DORSALE, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 63.

D. 41. A. 2/36.

The height of the body is two-thirds of the length of the head, which is contained six times and a-half in the total length, (without caudal). Cleft of mouth extending to below the middle of the eye; lower jaw slightly prominent. Length of the trunk not much exceeding that of the head. Dorsal and anal fins very low, terminating in a low fold of the skin, which is continued to the caudal. Ventrals much longer than the pectorals. A broad white band runs along the upper surface of the head and back. Sides finely marbled with brown, the markings radiating from the eye on the head.

Port Jackson? (Gunth.)

Genus NOTOGRAPTUS, Gunth.

Body elongate, compressed, covered with minute scales. Lateral line complete, running along the base of the dorsal fin. Head longish and rather depressed; snout of moderate extent, somewhat pointed; cleft of the mouth wide; a short flat barbel at the symphysis of the lower jaw. Bands of villiform teeth in the jaws and palatine bones, none on the vomer; tongue narrow, long, free. Vertical fins confluent; dorsal and anal with numerous spines, the posterior becoming gradually stiffer and more pungent

than the anterior. Ventrals jugular, close together, reduced to a single bifid ray. The gill-membrane is attached to the isthmus before the ventrals. Pseudobranchiæ well developed. Intestinal tract short, simple, without pyloric appendages. Air-bladder none.

598. *NOTOGRAPTUS GUTTATUS*, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 64.

D. 69. C. 11. A. 43.

The height of the body is one-twelfth of the length without caudal, length of the head two-fifteenths. Eye small; barbel shorter than the ventrals, which are about twice as long as the eye. Reddish or brown, dorsal fin, upper and lateral parts with numerous blue dots, those on the head largest. Young with the spots on the body, indistinct and of a brown colour.

Cape York. Port Darwin (Macl. Mus.)

Genus *PATECUS*, Richardson.

Body oblong, anteriorly elevated, very compressed, and tapering to the tail. Forehead projecting beyond the snout; minute teeth in the jaws and on the vomer, none on the palatine bones. Mouth small, no scales. Dorsal fin long, some of the anterior spines strong, continuous with the caudal; ventrals none. Gill-openings wide; no pseudobranchiæ; branchiostegals six. No cleft behind the fourth gill.

Australia.

599. *PATECUS FRONTO*, Richards.

Ichth. Voy. Erebus and Terror, p. 20, pl. 13.—Gunth., Cat. III., p. 292.

B. 6. D. 24/16. A. 11/5. P. 8.

Head very high and compressed, front of the head more than perpendicular. Dorsal fin beginning before the eyes, the first spine short and stout, the next few stout and long, equalling the

height of the body behind the operculum. Pectoral fins longer than the head, reaching to the sixth anal spine. Colour uniform brownish red.

West Australia.

600. *PATECUS MACULATUS*, Gunth.

Cat. Fishes III., 292.—Castelnau, Proc. Linn. Soc. N.S.W., Vol. II., p. 231.

D. 31. A. 12. P. 8.

The pectoral fin shorter than the head. Olive, black-spotted.

Dr. Gunther's description of this Fish cannot be accurate, or its resemblance to *fronto* must be very slight. It will probably be found that for D. 31. we should read D. 41. Count Castelnau's description in the Third Volume of our transactions will assist in the identification of the species, which is from South Australia.

601. *PATECUS WATERHOUSEI*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 244.

The pectoral fin rather longer than the head, only extending to the anus; dorsal with thirty spines, the first sensibly longer than the others, and with its membrane deeply emarginated; caudal with the fifth, sixth and seventh rays considerably prolonged; anal with ten rays, the posterior ones elongated and pointed; mouth surrounded by several series of bifid papillæ. Brown, marbled with white.

South Australia.

602. *PATECUS SUBOCELLATUS*, Gunth.

Proc. Zool. Soc., London, 1871, p. 665, pl. 64.

D. 39. A. 15. C. 10. P. 8.

The first dorsal spine very short, the second is the longest, as long as the head. The interradial membrane of the anal fin is

so narrow, that the fin cannot be erected, and the last ray is attached to the lower edge of the tail. The three upper pectoral rays much shorter than the fourth. No orbital rim. Skin entirely smooth, without tubercles or tentacles. Four ocellated spots, about as large as the eye,—the anterior equidistant from each other—along the upper half of the body. Fins indistinctly reticulated with brown, some of the reticulations being distinct rings.

South Australia.

DIVISION XI. ACANTH. MUGILIFORMES.

Two dorsal fins more or less remote from each other, the anterior either short, like the posterior, or composed of feeble spines; ventral fins well developed, $1/5$, abdominal.

FAMILY XXX. SPHYRÆNIDÆ.

Body elongate, subcylindrical, covered with small cycloid scales; lateral line continuous. Cleft of mouth wide, armed with strong teeth. Eye lateral, of moderate size. Seven branchiostegals; pseudobranchiæ and air-bladder present. Two dorsal fins remote from each other; ventrals abdominal.

Genus SPHYRÆNA, Artedi.

Body more or less elongate, covered with small, smooth scales; cleft of the mouth wide. Large trenchant teeth in the jaws and on the palatine bones, none on the vomer. Two short dorsal fins situated at a great distance from each other, the ventrals opposite the anterior dorsal, and the anal opposite and of the length of the posterior. Seven branchiostegals; air-bladder large, bifurcate posteriorly. Pyloric appendages in great number.

Nearly all tropical and temperate seas.

603. SPHYRÆNA NOVÆ-HOLLANDIÆ, Gunth.

Gunth., Cat. Fishes II., p. 335.

D. 5. 1/9. A. 1/10. L. lat. 135.

Very slender and elongate; height of body one-eleventh of the total length, the length of the head one-fourth; the diameter of the eye one-seventh of the length of the head. Operculum rounded posteriorly. The length of the pectoral fin is one-twelfth of the total, and more than that of the ventral, the spine of the latter is not much shorter than the rays. The origin of the first dorsal fin is behind the vertical from the root of the ventral, and before the middle of the length of the fish, without caudal. The space between the dorsals is one-fourth of the total length. Colour above greenish, beneath silvery.

Port Phillip. Port Jackson, young specimens.

604. *SPHYRENA FORSTERI*, Cuv. & Val.

Gunth., Cat. Fishes II., p. 337.—Journ. Mus. Godef., Heft. XIII., p. 211, pl. 119, fig. A.

D. 5. 1/9. A. 1/9. L. lat. 110. L. trans. 30.

The height of the body is one-ninth of the total length, the length of the head nearly one-fourth; the diameter of the eye is nearly five times in the length of the head; the maxillary reaches to beneath the anterior edge of the orbit. Operculum with a single flexible point. Lower jaw with a conical tubercle in front, and with about nineteen stronger posterior teeth. The length of the pectoral fin is about one-eleventh of the total, and more than that of the ventrals. The root of the ventral fins falls below the posterior half of the pectorals. The first dorsal commences just above the extremity of the pectoral, but behind the root of the ventral. Above uniform greenish; beneath silvery. Dorsal and caudal fins violet, the others yellowish.

South Coast, New Guinea (Chevert Exp.)

605. *SPHYRENA COMMERSONII*, Cuv. & Val.

Gunth., Cat. Fishes II., p. 338.—Castelnau, Proc. Zool. Soc., Vict., II., p. 102.

D. 5. 1/9. A. 1/9. L. lat. 80-90.

The height of the body is about one-ninth of the total length, the length of the head about one-fourth; the diameter of the eye one-fifth of the length of the head; the maxillary bone reaches to the anterior edge of the orbit. Operculum with a flexible point. Lower jaw with a conical tubercle in front, and about fifteen to eighteen longer posterior teeth. The length of the pectoral fin is one-tenth or one-eleventh of the total, and more than that of the ventrals. The first dorsal fin commences just above the point of the pectorals, but behind the insertion of the ventrals. Above uniform bluish-green, beneath silvery; dorsal, caudal, and anal fins violet.

Knob Island, North Australia (Castelnau).

606. SPHYRÆNA OBTUSATA, Cuv. & Val.

Gunth., Cat. Fishes II., p. 339.—Journ. Mus. Godef., Heft. XIII., p. 212, pl. 119, fig. B.

D. 5. 1/9. A. 1/9. L. lat. 90.

The height of the body is contained seven or eight times in the total length, the length of the head three times and a-half; the diameter of the eye is more than a-fifth of the length of the head. Opercles scaly. Lower jaw without or with a very slight fleshy appendage in front. The first dorsal and the ventral fins commence in the vertical from the extremity of the pectorals. Præoperculum not rounded, with the angle slightly produced. Above uniform greenish lead-coloured, beneath silvery. Fins yellow.

Port Jackson.

This is the "*Pike*" of the Sydney Fishermen. I have given Dr. Gunther's description, there but may be are two species, as it is scarcely in accordance with what I have observed. In all the Sydney specimens I have seen, the ventral fins commence opposite the last fourth of the pectorals, and the first dorsal over the last

fourth of the ventrals. A dark band runs from the snout to the tail below the lateral line; the fins are all of a deep yellow colour with the outer rays black; there is also a black blotch under and at the root of the pectorals. L. lat. 85.

607. *SPHYRENA LANGSAR*, Bleek.

Gunth., Cat. Fishes II., p. 340.—Macl., Linn. Soc. N. S. W., II., p. 359.

D. 5. 1/9-10. A. 10-11. L. lat. 80.

The height of the body is contained nine times in the total length; the length of the head three times and three-quarters; the diameter of the eye is one-fifth of the length of the head. Operculum without spine; præoperculum obliquely emarginate, with an acute membranaceous angle. The maxillary bone does not reach to the level of the eye; lower jaw with a conical point but without appendage. The first dorsal fin commences just above the extremity of the pectoral, but behind the root of the ventrals. The distance between the dorsal fins is twice the length of the second dorsal. Above uniform greenish, beneath silvery; fins scarcely coloured.

Port Darwin, young specimens, (Macl. Mus.)

GENUS *LANIOPERCA*, Gunth.

Body compressed, elongate, covered with deciduous scales of moderate size. Head with the snout produced and pointed, entirely covered with small scales. Cleft of the mouth wide, with the lower jaw projecting. Jaws, vomer, and palatine bones with narrow bands of villiform teeth, and with an outer series of stronger teeth. A pair of very strong canine teeth in the upper jaw. Tongue smooth. Eye of moderate size. Seven branchiostegals; pseudobranchiæ. Two dorsal fins, the first short; the anal with two spines. No denticulations on the cranial bones, the opercular margins being very thin and membranaceous.

608. LANIOPERCA MORDAX, Gunth.

Ann. and Mag., Nat. Hist. 1872, Vol. X. p. 183.

Dinolestes Mulleri, Klunz., Arch. f. Nat., 1872, p. 29, tab. 3.

Neosphyraena multiradiata, Casteln., Proc. Zool. Soc., Vict. I., p. 96.

D. 5. 1/19. A. 2/25. L. lat. 66.

The height of the body is contained five times in the length (without caudal); the length of the head three times and one-fourth. The eye is nearer to the end of the opercle than to that of the snout, its diameter being two-elevenths of the length of the head, and equal to the width of the interorbital space. The maxillary does not quite reach the vertical from the front margin of the eye, which is immediately below the upper profile. The teeth of the outer series in the upper jaw are subequal in size, and much smaller than those in the lower, the four or five posterior of which are enlarged, distant, and canine like. Posterior margin of the præoperculum deeply emarginate. Pectoral fin not quite half as long as the head, the upper rays the longest; root of the ventrals at a very short distance behind that of the pectorals. Dorsal spines very feeble. Caudal forked. Coloration silvery-grey, fins yellowish, sometimes a black spot on the upper lobe of the tail. Length twelve to eighteen inches.

Tasmania. Port Phillip. Port Jackson.

FAMILY XXXI. ATHERINIDÆ.

Body more or less elongate, subcylindrical, covered with scales of moderate size; lateral line indistinct. Cleft of the mouth of moderate width, with the dentition feeble. Eye lateral, well developed. Gill-opening wide; four gills; pseudobranchiæ; five or six branchiostegals. Two dorsal fins; the spines of the first feeble, the second of moderate length; anal like the second dorsal or rather longer. Ventral fins abdominal, with one spine and five rays. Vertebrae very numerous in the caudal and abdominal portions.

Genus *ATHERINA*, Artedi.

Body subcylindrical or slightly compressed; snout more or less obtuse, with the cleft of the mouth straight, oblique, extending to or beyond the anterior margin of the eye. Teeth minute, those on the palate sometimes indistinct. Scales cycloid, of moderate size. Ventral fins some distance behind the pectorals. Air-bladder present. No pyloric appendages. A silvery band along the side.

Nearly all temperate and tropical seas entering rivers.

609. *ATHERINA HEPSETOIDES*, Richards.

Ann. and Mag. Nat. Hist., 1843, XI., p. 187.—Gunth., Cat. Fishes III., p. 397.

D. 9. 1/11. A. 1/14. P. 15. Vert. 48.

The anterior dorsal fin is between the base of the ventral and the vent. The height of the body is one-eighth of the total length, the length of the head nearly one-sixth; the diameter of the eye is one-third of the length of the head, and a little more than the length of snout. Cleft of mouth oblique; teeth minute.

Port Arthur, Tasmania (Richardson).

610. *ATHERINA PRESBYTEROIDES*, Richards.

Ann. and Mag. Nat. Hist. 1843, XI., p. 179.—Gunth., Cat. III., p. 397.

D. 9/10-11. A. 1/12. P. 11. Vert. 46.

The first dorsal fin stands wholly anterior to the anus, commencing just perceptibly behind the ventrals. The height of the body equals the length of the head and is one-fifth of the total. The diameter of the eye is one-third of the length of the head, and more than that of the snout. Teeth distinct. There are two series of scales above the silvery band.

Port Arthur, Tasmania (Richardson).

611. *ATHERINA PINGUIS*, Lacep.

Gunth., Cat. Fishes III., p. 399.

“*Hardyhead*” of Sydney Fishermen.

D. 6. 1/10. A. 1/14-15. L. lat. 42-45. L. transv. 7. Vert. 20/23.

The origin of the spinous dorsal is at some distance behind the vertical from the vent, and its distance from the operculum is equal to one and a-third of the length of the head. The height of the body is five times and two-thirds in the total length, the length of the head four times and two-thirds. The diameter of the eye is two-fifths of the length of the head, equal to the width of the interorbital space, and much longer than the snout. Snout short, obtuse, with the cleft of the mouth very oblique, and the upper jaw overlapping the lower; the maxillary extends beyond the vertical from the anterior margin of the eye. Teeth distinct in the jaws, on the vomer and the palatine bones. The silvery streak occupies the third series of scales and the adjoining quarter of the fourth. The membrane in which the dorsal scales are rooted, is minutely dotted with white; a blackish blotch on the posterior extremity of the pectoral; iris with a blackish spot superiorly.

Port Jackson. South Australia.

612. *ATHERINA LACUNOSA*, Bleek.

Gunth., Cat. Fishes III., p. 400.—Proc. Linn. Soc. N.S. Wales, Vol. I., p. 340.

D. 6. 1/9. A. 1/13-15. L. lat. 44.

The spinous dorsal is nearer to the anal fin than to the ventrals. The height of the body is two-thirteenths in the total length, the length of the head two-ninths. Snout much shorter than the eye, the maxillary extending to below the pupil; teeth in the jaws, less distinct than on the vomer and palatine bones. Margin of the scales denticulated. No black spot on the pectoral fin.

Capo York (Chevert Exp.)

613. *ATHERINA ENDRACHTENSIS*, Quoy & Gaim.

Gunth., Cat. Fishes III., p. 401.

D. 5. 1/8. A. 1/10. L. transv. 7. Vert. 36.

Height of body one-sixth of total length; the width of the head between the eyes is two-thirds of its length; snout half as long as the eye; pectoral fin long, somewhat less than one-fourth of total length. A series of black dots along the middle of the silvery band; two other series along the side of the back, and a single series on the belly.

South West Coast of New Holland, (Val.)

614. *ATHERINA MICROSTOMA*, Gunth.

Gunth., Cat. III., p. 401.

D. 6. 1/10. A. 1/12. P. 12. L. lat. 40. L. tr. 8.

The whole of the spinous dorsal is above the ventral fin; the height of the body is six times and a-half in the total length, the length of the head five times; the diameter of the eye is one-third of the length of the head, equal to the width of the inter-orbital space, and more than the extent of the snout, which is short and slightly pointed. The cleft of the mouth is very oblique with the jaws equal anteriorly; the mouth is rather small, the maxillary not extending to the anterior margin of the eye. Teeth conspicuous, on jaws and vomer. The silvery band occupies half of the fourth and fifth series of scales, and it has two or three rows of dots running along its whole length.

Tasmania.

615. *ATHERINA PAUCIRADIATA*, Gunth.

Gunth., Cat. Fishes III., p. 491.

D. 5-6. 1/6. A. 1/7. L. lat. 25. L. transv. 6.

The spinous dorsal fin is above the posterior half of the ventral. The height of the body is one-fifth of the total length, the length

of the head one-fourth; the diameter of the eye is three times and two-thirds in the length of the head, equal to the extent of the snout, but much less than the width of the interorbital space. Mouth very protractile, oblique, with the jaws equal anteriorly; the maxillary extends to below the anterior margin of the eye. Minute teeth in the jaws. The silvery band is narrow, occupying the central half of the third series of scales.

North-west Coast of Australia.

616. *ATHERINA STERCUS-MUSCARUM*, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 64.

D. 7. 1/8. A. 1/9. L. lat. 33. L. transv. 8 or 9.

Origin of the spinous dorsal behind the root of the ventrals. The height of the body is contained four times and two-thirds in the total length (without caudal), length of the head thrice and two-thirds. Snout not much shorter than the eye. Dorsal spines feeble. Pectoral fin short, extending to the root of the ventral. A black band from the snout through the eye to the root of the pectoral. A silvery band along the fourth series of scales. Each scale with a black dot at the base.

Cape York. Length two inches.

617. *ATHERINA SIGNATA*, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 64.

Pseudomugil signifer, Kner., Voy. Novara, p. 275, pl. 13.

D. 3. 1/6. A. 1/10. L. lat. 28. L. transv. 7.

Origin of the first dorsal fin behind the root of the ventrals. The height of the body is thrice and three-fourths in the total length (without caudal), length of the head four times. Snout obtuse, shorter than the eye. The three dorsal spines are united into a narrow lobe, terminating in a long filament. Anterior dorsal and anal rays, lobes of the caudal fin, and the ventrals

prolonged into long filaments. The middle of the sides silvery ; the prolonged parts of the fins deep black ; ventrals white.

Cape York. Length one and a-half inch.

Genus *ATHERINICHTHYS*, Bleek.

Characters of *Atherina*, but with the snout produced and the cleft of the mouth not reaching the orbit.

618. *ATHERINICHTHYS JACKSONIANA*, Quoy & Gaim.

Gunth., Cat. Fishes III., p. 402.

D. 8. 1/11. A. 1/18.

The spinous dorsal is above the interspace between the ventral fins and the anal. The height of the body is one-ninth of the total length.

Port Jackson. Tasmania (Gunther).

619. *ATHERINICHTHYS DUBOULAYI*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 143.

Richmond River.

620. *ATHERINICHTHYS MODESTA*. Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 136.

D. 6. 1/9. A. 1/10. L. lat. 40.

Height of body five times and a-half in the total length, length of head four times and a-quarter ; diameter of eye three times in the length of the head, and considerably more than the length of the snout ; mouth protractile ; scales large. The distance from the origin of the first dorsal fin to the snout is equal to that from the termination of the same fin to the origin of the caudal ; from the origin of the first dorsal to that of the second, the distance is equal to that between the origin of the second dorsal and the base of the caudal ; the height of the first dorsal is equal to the distance from the point of the snout to the centre of the eye ; the

caudal fin is strongly bilobed; the anal is inserted very slightly in advance of the first dorsal; the pectorals are longer than the height of the dorsal, and are composed of twelve rays. Colour light greyish-green, with the edges of the scales on the back of a dark colour. A broad silvery band on the sides; dorsal, caudal, and pectoral fins yellow; anal and ventrals white; eye silvery.

Hobson's Bay and lower Yarra. Length two to three inches.

621. *ATHERINICHTHYS EDELENSIS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 134.

More elongate than *A. modesta*, the height being about one-seventh in the total length, the length of the head three times and three-quarters. The first dorsal fin is inserted at an equal distance from the snout and the base of the caudal. In all else the description of *A. modesta* applies to this species.

Western Australia.

622. *ATHERINICHTHYS PICTA*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 137.

D. 8/10. A. 11. C. 17. L. lat. 44.

Height of body six and a-half times in the total length, the length of the head four times; the diameter of the eye three times and one-fifth in the length of the head. Body elongate; scales large, snout considerably shorter than the diameter of the eye. The two dorsal fins are placed as in *A. modesta*; the anal a little in front of the dorsal; the ventrals under the first dorsal; caudal long, emarginate. Of a pretty light green, with the lower parts of the body white and silvery, a broad longitudinal red band on each side; fins diaphanous; caudal yellow; eye silvery; a few very minute black points on the sides of the head.

Capt. Tinnot's Dock, Lower Yarra. Under two inches.

623. *ATHERINICHTHYS CEPHALOTES*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 137.

D. 7. 1/8. A. 1/12. L. lat. 42.

Height of body seven times and one-third in the total length, the length of the head three times and two-thirds. Eye very large, its diameter three times and one-third in the length of the head. Lower jaw longer than upper, the teeth in the lower rather longer, in both, curved and pointed. Mouth large, but the cleft does not reach the orbit. The first dorsal fin commences a little nearer to the snout than to the base of the tail, its first spine is considerably shorter than the others; the anal is inserted below the second dorsal, but is much longer; the ventrals are inserted a little in advance of the first dorsal; the caudal is forked. Colour light green, with the belly white, a broad silvery band on the side, a large round, black spot, (sometimes indistinct) on the base of the caudal fin. The head has an olive tint, the dorsals are greyish, the caudal and pectorals yellow, anal and ventrals white.

Hobson's Bay. Length six inches.

624. *ATHERINICHTHYS OBSCURA*, Casteln.

Researches on the Fishes of Australia, p. 31.

D. 7. 1/11. A. 1/16.

The cleft of the mouth far in advance of the anterior margin of the orbit; body very elongate, its height being eight times and a-half in the total length. Eye large, about one-third of the length of the head, and equal to the length of the snout. The first dorsal fin is inserted a little behind the base of the ventrals, caudal very deeply forked. Colour blackish, the width of the silvery band varies from one to three series of scales in different specimens.

Swan River. Length one and a-half inch.

Genus NEMATOCENTRIS, Peters.

Distinguished from *Atherinichthys*, by the presence of vomerine and palatine teeth, absence of a lateral line, pungent first spine of the two dorsal fins, the other spines of the first dorsal being flexible.

925. NEMATOCENTRIS NIGRANS, Richards.

Atherina nigrans, Richards., Ann. and Mag., Nat. Hist., 1843, XI., p. 180. *Nematocentris splendida*, Peters, Monatsb. Ak. Wiss., Berlin, 1866.

D. 14/1/12. A. 1/18. L. lat. 35. L. transv. 10.

The height of the body is one-fourth of the total length, the length of the head one-fifth; the diameter of the eye equals the length of the snout (in mature specimens) and is nearly one-fourth of the length of the head. The first dorsal spine pungent, the others filiform; the last dorsal rays produced, reaching to the base of the caudal. The ventrals end in a thread-like tip which overlaps the commencement of the anal. The dorsal and anal fins commence in nearly the same vertical. An even black stripe replaces the usual silvery band and is continued forward over the gill-cover, upper half of the eye, and sides of the snout; it occupies the fifth series of scales and the adjoining parts of the fourth and sixth. Length three inches.

Freshwaters of Port Essington, Severn River, Fitzroy, Clarence and Brisbane Rivers.

626. NEMATOCENTRIS PUSILLA, Casteln.

Zantecla pusilla, Casteln., Proc. Zool. Soc., Victoria, Vol. II., p. 88.

D. 15/1/9. A. 1/17. L. lat. 35. L. transv. 10.

Height of body three times and a-third in the total length, diameter of eye twice and one-third in the length of the head; head attenuated and pointed; lower jaw longer and thicker than the upper. The first dorsal fin is inserted at an equal distance

from the snout and the base of the caudal, the second is separated from the first by a space equal to the diameter of the eye, its spine is long and curved as is also that of the anal fin, the last rays of both fins prolonged. Colour silvery, with the back of a light lilac, a broad silvery band bordered with black on each side, the dorsal rays and extremities of the anal blackish.

Port Darwin. Length two inches.

Genus *ATHERINOSOMA*, Casteln.

Form and characters of *Atherina*, but with numerous large, hooked teeth in the jaws, and with the vomer, palatine bones, tongue, and all the upper surface of the mouth strongly toothed.

For the reception of this and the following genus Count Castelnau suggested a new Family, to be named *Neoatherinidæ*, the dentition being so very much stronger than in the *Atherinidæ* proper.

627. *ATHERINOSOMA VORAX*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 138.

D. 6. 1/9. A. 1/8. L. lat. 36.

Height of body seven times in the total length, length of head four times and a-half, diameter of eye three times and one-third in the length of the head. Lower jaw longer than upper; snout considerably shorter than the diameter of the eye. The first dorsal fin rather rounded, its posterior membrane attached to the back; it is inserted nearer to the muzzle than to the root of the caudal; caudal forked; ventrals rather large, situated a little in front of the first dorsal. Head scaly to between the eyes. Colour light green, beneath white and silvery, a broad brilliant band along the side, dorsal and caudal fins yellow; anal and ventrals white.

Cape Schanck. Length three inches.

Genus NEOATHERINA, Casteln.

Form compressed, subelongate; snout rather projecting. Teeth strong, on the upper jaw in two series, those in front long and blunt, those on the sides triangular; in the lower jaw numerous and pavement like, with an external series of larger and conical teeth; several transverse lines of strong teeth on the palate. Scales large, ciliated. Two dorsal fins, each with one strong spine.

628. NEOATHERINA AUSTRALIS, Casteln.

Researches on the Fishes of Australia, p. 32.

D. $1\frac{1}{4}/1/11$. A. $1/17$. L. lat. 28.

Subelongate, convex on the anterior part of the back; height of body four times in the length, length of head four times and a-third, the diameter of the eye three times and a-half in the length of the head, and equal to the length of the snout; anterior teeth directed forwards; cheeks and opercles covered with large scales; mouth rather wide, resembling that of a *Clupea*. The four soft rays of the first dorsal are much longer than the spine, and higher than the second dorsal; ventrals with six long rays; pectorals small, of twelve rays. Colour (in dried specimens) purplish above and whitish below, with a bluish longitudinal band on the side.

Swan River. Length four inches.

FAMILY XXXII. MUGILIDÆ.

Body more or less oblong and compressed, covered with cycloid scales of moderate size; lateral line none. Cleft of the mouth narrow, or of moderate width, without, or with feeble teeth. Eye lateral, well developed. Gill-openings wide; four gills; pseudobranchiæ; five or six branchiostegals. Two short dorsal fins, the anterior with four stiff spines, anal longer than second

dorsal. Ventrals $1\frac{1}{5}$, abdominal, suspended from the elongate coracoid bone. Vert. 24.

Coasts and freshwaters of all temperate and tropical regions.

Genus *MUGIL*, Artedi.

See Macl. Mon. Mug., Proc. Linn. Soc. N.S.W., Vol. IV., p. 412.

629. *MUGIL GRANDIS*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 386.

From Brisbane to Gipps Land Lakes.

630. *MUGIL DOBULA*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 414.

Rivers of East Coast; Hawkesbury River.

631. *MUGIL CEPHALOTUS*, Cuv. & Val.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 416.

Port Jackson. (Kner.)

632. *MUGIL ARGENTEUS*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 417.

Rocklampton (Gunther).

633. *MUGIL OCCIDENTALIS*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 418.

West Australia, rivers.

634. *MUGIL WAIGIENSIS*, Quoy. & Gaim.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 420.

North Coast. Cape York.

635. *MUGIL PERONII*, Cuv. & Val.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 421.

Western Port. Port Jackson.

636. *MUGIL COMPRESSUS*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 421.

New South Wales rivers.

637. *MUGIL PETTARDI*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 422.

Richmond River.

638. *MUGIL DELICATUS*, All. & MacI.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 422.

Cape York, (Chevert Exp.)

639. *MUGIL VENTRICOSUS*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 423.

Nicol Bay, West Australia.

640. *MUGIL CRENIDENS*, Kner.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 424.

Sydney, (Kner.)

Genus *AGONOSTOMA*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 424.

641. *AGONOSTOMA DIEMENSIS*, Richardson.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 425.

Port Phillip, Tasmania, and West Australia.

642. *AGONOSTOMA LACUSTRIS*, Casteln.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 425.

Gipps Land Lakes.

Genus *MYXUS*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 426.

643. *MYXUS ELONGATUS*, Gunth.

Proc. Linn. Soc. N.S. Wales, Vol. IV., p. 426.

Hobson's Bay. Port Jackson.

DIVISION XII. ACANTH. GASTEROSTEIFORMES.

Spinous dorsal fin composed of isolated spines if present; the ventrals have an abdominal position in consequence of the prolongation of the pubic bones, which are attached to the humeral arch.

FAMILY XXXIII. FISTULARIDÆ.

Of greatly elongated form; the anterior bones of the skull much produced, forming a long tube terminating in a narrow mouth. Teeth small. Parts of the skeleton and dermal productions form external mails; scales none or small. The spinous dorsal either absent or formed of isolated feeble spines; the soft dorsal and anal of moderate length; ventral fins abdominal, of six rays, without spine, separate from the pubic bones, which remain attached to the humeral arch. Five branchiostegals; air-bladder large; four gills; pseudobranchiæ; pyloric appendages in small number; intestinal tract short; vertebræ very numerous.

Genus *FISTULARIA*, L.

Body scaleless. Caudal fin forked, with the two middle rays prolonged into a filament; no free dorsal spines. Teeth small.

Tropical Seas.

644. *FISTULARIA SERRATA*, Cuv.

Gunth., Cat. Fishes III., p. 533.

B. 7. D. 13-15. A. 14-15. V. 6. C. 2 x 6/2/6 x 2. Vert.
47/34 (Rüp.). 47/29 (Rosenth.)

The outer edge of the tube is very distinctly serrated. Brownish-grey, silvery beneath, sometimes some bluish spots on the back or on the sides.

Port Jackson. All Australian Seas.

Genus *AULOSTOMA*, Lacep.

Body covered with small scales. Caudal fin rhombic, without filiform rays; a series of isolated, feeble dorsal spines. Teeth rudimentary.

Tropical Seas.

645. *AULOSTOMA CHINENSE*, L.

Gunth., Cat. Fishes III., p. 538.

D. 8-12/24-27. A. 27/28. V. 6.

The base of the soft dorsal and anal fins is black; sometimes another short, black streak above, across the anterior rays. Ventral fin with a round black spot at the base, sometimes nearly uniform brown without markings. A barbel at the end of the maxillary and another on the chin.

Knob Island, Torres Straits (Castelnau).

DIVISION XIII. ACANTH. CENTRISCIFORMES.

Two dorsal fins, the spinous short, the soft and the anal of moderate extent. Ventral fins truly abdominal, imperfectly developed.

FAMILY XXXIV. CENTRISCIDÆ.

Form of body compressed, oblong or elevated, the anterior bones of the skull much produced, forming a long tube which terminates in a narrow mouth. Teeth none. Body either covered with a cuirass, or with non-confluent ossifications, scales none or small. Two dorsal fins; the spinous short, with one of the spines strong; the soft and the anal of moderate extent. Ventral fins

small, without spine, or rudimentary, abdominal. Branchiostegals three or four; air-bladder large, four gills, pseudobranchiæ. Pyloric appendages none; intestinal tract rather short. Vertebrae in small number.

Genus *CENTRISCUS*, Cuv.

Body scaly or covered with prickles.

All Seas.

646, *CENTRISCUS HUMEROSUS*, Richards.

Voy. Erebus and Terror, p. 56, pl. 34.—Gunth., Cat. III., p. 522.

D. 7/15. A. 17. C. 4 x 4 x 5 x 5.

The height of the body is somewhat less than the distance of the operculum from the base of the caudal. The second dorsal spine is exceeding long and strong, its length being a little more than one-half the distance of the opercle from the caudal. The body is strongly compressed and elevated, covered with very small scales each terminating in a spine, and with two series of bony plates on the side of the back. The first dorsal fin is situated far back and immediately above the second.

South Australia (Richardson).

Genus *AMPHISILE*, Cuv.

Body elongate, strongly compressed, provided with a dorsal cuirass formed by portions of the skeleton; the longitudinal axis of the tail is not in the same line with that of the trunk. Scales none. Teeth none. Two dorsal fins situated on the hindmost part of the back; ventrals rudimentary.

Indian and Chinese Seas.

647. *AMPHISILE STRIGATA*, Gunth.

Gunth., Cat. Fishes III., p. 528.

D. 3/10. A. 12. C. 10. P. 12. V. 4.

The distance of the posterior margin of the operculum from the root of the pectoral is somewhat less than its distance from the anterior margin of the orbit. A black streak runs from the snout, through the eye and the base of the pectoral fin, along the lower edge of the dorsal cuirass; it is double between the eye and the gill-opening, and undulated along the side.

Cape York.

DIVISION XIV. ACANTH. GOBIESOCIFORMES.

No spinous dorsal, the soft dorsal and anal fins short, or of moderate length, situated on the tail; ventral fins subjugular, with or without an adhesive apparatus between them.

FAMILY XXXV. GOBIESOCIDÆ.

Body rather elongate, anteriorly depressed, naked. Teeth conical, compressed. A single dorsal fin on the tail without spinous portion; anal short; ventrals widely apart with one spine hidden in the skin and four or five rays. Between the ventrals is a large adhesive apparatus, the posterior portion of which is suspended on the coracoid bones, which are partly free, in the axil of the pectoral fins. Three or three and a-half gills. No air-bladder; intestinal tract short, wide, without pyloric appendages. Skeleton firm. Vert. 13-14/13-22.

Genus CREPIDOGASTER, Gunth.

Anterior part of the body depressed; snout produced, much depressed. Dorsal fin situated on the tail. Posterior portion of the adhesive disk with the anterior margin free. Villiform teeth in both jaws without incisors. Gills three; pseudobranchiæ none or rudimentary; gill membranes united under the throat and not attached to the isthmus.

Australia and Tasmania.

648. CREPIDOGASTER TASMANIENSIS, Gunth

Gunth., Cat. Fishes III., p. 507.

B. 5. D. 10. A. 9.

Caudal fin quite free from dorsal and anal. The coracoid extends upwards somewhat beyond the middle of the base of the pectoral. Snout produced, somewhat pointed, much narrower than the head.

Tasmania. Length twenty-six lines.

649. CREPIDOGASTER SPATULA, Gunth.

Gunth., Cat. Fishes III., p. 508.

D. 6. A. 7.

Dorsal and anal fins terminating at some distance from the caudal. The coracoid extends upwards to the middle of the base of the pectoral fin. Snout very broad and long, much depressed, scarcely narrower than the posterior part of the head.

Mouth of Swan River, dredged in three fathoms. Length twenty-one lines.

DIVISION XV. ACANTH. CHANNIFORMES.

Body elongate, covered with scales of moderate size; no spine in any of the fins, dorsal and anal long. No superbranchial organ, only a bony prominence on the interior surface of the epitympanic bone.

FAMILY XXXVI. OPHIOCEPHALIDÆ.

Body elongate, anteriorly subcylindrical; covered with scales of moderate size; head depressed, covered with shield-like scales superiorly; lateral line with an abrupt curve or subinterrupted. Cleft of mouth lateral, wide; teeth in the jaws and on the palate. Eye lateral. Gill-opening wide, the gill membranes of both sides joined below the isthmus; four gills; no pseudobranchiæ. A cavity accessory to the gill cavity, for the purpose of retaining

water. An air-bladder. One long dorsal and anal fin without spines. Ventrals absent or thoracic, of six rays, the outer not branched. Vertebrae numerous; the caudal vertebrae provided with ribs, the abdominal cavity being continued to below the caudal portion.

Genus OPHIOCEPHALUS, Bl.

Ventral fins present. Pyloric appendages two. Fine teeth in the jaws, on the vomer and the palatine bones, sometimes intermixed with larger ones.

Freshwaters of the East Indies.

650. OPHIOCEPHALUS STRIATUS, Bl.

Gunth., Cat. Fishes III., p. 474.—Bleek., Atl. Ichth. Oph., Tab. 3, fig. 1.

D. 40-45. A. 26-27. L. lat. 57. L. tr. 5-6/12-13. Vert. 53-55.

Several large teeth on the side of the lower jaw, those of the palatine bones cardiform. Height of body nearly seven times in the total length; the length of the head three times and three-fourths, the length of the caudal six times; the width of the interorbital space is rather more than the length of the snout and two-ninths of the length of the head. Cleft of the mouth large, the maxillary extending behind the orbit. Eight or ten scales between the orbit and the angle of the præoperculum. The pectoral fin does not reach to the origin of the anal, and its length is one-half of that of the head; the length of the ventral is three-fourths of that of the pectoral. Brownish-grey (in spirits) on the back and the sides, emitting vertical processes towards the belly, which is white. Dorsal and anal fins sometimes with oblique dark streaks; frequently some white dots on a black ground on the hindmost part of these fins.

Sydney (Knor., Voy. Novara, p. 234).

DIVISION XVI. TENIIFORMES.

Anal fin absent; caudal rudimentary, or not in the longitudinal axis of the fish. Skeleton soft.

FAMILY XXXVII. TRACHYPTERIDÆ.

Body elongate, strongly compressed, naked; eye lateral; mouth small, dentition feeble. One dorsal fin occupying the whole back with a detached anterior portion, composed of flexible rays. Ventrals thoracic; gill-opening wide, pyloric appendages in very great number. Vertebræ numerous.

GENUS REGALECUS, Brünn.

Each ventral fin reduced to a long filament, dilated at the extremity; caudal fin rudimentary or absent.

Europe, Africa, India.

651. REGALECUS GLADIUS, Cuv. & Val.

Gunth., Cat. Fishes III., p. 308.

B. 6. D. 342. A. 0. C. 0. P. 14. V. 1.

The length of the head equals the height of the body, which is contained five times and two-thirds in the distance of the vent from the snout; the snout is truncated, the cleft of the mouth vertical, and the upper jaw very protractile; a series of minute teeth in each of the jaws; the single ventral ray very long, terminating in a broad lobe, and another cutaneous flap on the second third of its length; the anterior twelve dorsal rays are produced, the first five forming a separate division over the eye; skin covered with small tubercles. Colour light grey, purplish on the back; dorsal fin margined with red; head bluish-grey.

Said to have been seen on the Tasmanian Coast.

652. REGALECUS JACKSONENSIS, Ramsay.

Proc. Linn. Soc. N.S. Wales, Vol. V., p. 631 pl. 20.

Port Jackson.

DIVISION XVII. NOTACANTHIFORMES.

Soft dorsal fin absent or quite rudimentary ; ventrals abdominal composed of several articulated and unarticulated rays.

FAMILY XXXVIII. NOTACANTHI.

Body elongate, covered with very small scales, snout protruding beyond the mouth. Eye lateral, of moderate size. Dentition feeble. Dorsal fin short, composed of short free spines ; anal very long, anteriorly with many spines ; ventrals abdominal, composed of more than five soft, and of several unarticulated, rays.

Genus NOTACANTHUS, Bl.

Characters the same as of the Family.

All Seas.

653. NOTACANTHUS SEPPINIS, Richards.

Vog. Erebus and Terror, p. 54, pl. 32, figs. 4-11.—Gunth., Cat. III., p. 545.

D. 6/1. A. 14/?. P. 13-14. V. 2/7.

The ventral fins are completely united to each other, so as to form but one fin, its base being before the vertical from the first dorsal spine. A small forked jointed ray stands in the axil of the last dorsal spine.

King George's Sound.

ORDER II. ACANTHOPTERYGII PHARYNGOGNATHI.

The inferior pharyngeal bones are coalesced, with or without a median longitudinal suture. Part of the rays of the dorsal, anal, and ventral fins not articulated, forming spines. Air-bladder without pneumatic duct.

FAMILY I. POMACENTRIDÆ.

Body compressed, more or less short, covered with etenoid scales. Dentition feeble, palate smooth. The lateral line does not extend

to the caudal fin or it is interrupted. One dorsal fin, with the spinous portion as well developed as the soft, or more. Two, sometimes three, anal spines; the soft anal similar to the soft dorsal. Ventral fins thoracic, with one spine and five rays. Branchiostegals five, six, or seven; gills three and a-half; pseudobranchiæ and air-bladder present. Pyloric appendages in small number; intestinal tract of moderate length. Vertebrae 12/14.

Genus AMPHIPRION, Bl.

All the opercles and the præorbital are denticulated, the teeth of the operculum and suboperculum being very long. Teeth in the jaws in a single series, small, conical. Dorsal fin with nine to eleven spines, anal with two. Scales rather small; the lateral line ceases below the end of the dorsal fin. Branchiostegals five. Pyloric appendages two or three.

Indian and Polynesian Seas, Western Pacific.

654. AMPHIPRION CLARKII, Benn.

Gunth., Cat. Fishes IV., p. 5.

Amphiprion polymnus, Bleek., Atl. Ichth. Pomac. Tab. 1, fig. 7-8.

D. 10/16. A. 2/14. L. lat. 55. L. transv. 6/19.

Ground colour brown or black, with three pearl-coloured cross-bands, the last round the tail; thorax, chin, and pectoral, ventral and caudal fins yellow. The dorsal fin is scarcely notched and has the spines stout and short. The caudal fin is emarginate. The height of the body is rather less than one-half of the total length (exclusive of the caudal fin).

Endeavour, Cooktown.

655. AMPHIPRION PERCULA, Lacep.

Gunth., Cat. Fishes IV., p. 6.—Bleek., Atl. Ichth. Pomac. t. 1, f. 2.

D. 11/15. A. 2/12. L. lat. 55. L. transv. 7/23.

Ground colour light brown or brown, with three broad white cross-bands, edged with black; the anterior is curved and encircles completely the hind part of the head, its convexity being directed backwards; the middle descends from the notch of the dorsal fin to the vent, and is angularly produced on the middle of the side; the posterior encircles the free part of the tail; fins with a black and white margin. The dorsal spines are moderately long and strong, the posterior ones much shorter than the middle ones, there being a deep notch between the spinous and soft portions. The height of the body is two-fifths of the length, (caudal fin excluded).

North Australian Seas. Darnley Island.

656. AMPHIPRION BICINCTUS, Rupp.

Gunth., Cat. Fishes IV., p. 8.

B. 5. D. 10/16. A. 2/14. L. lat. 58. L. transv. 8/20.

Brownish, with two white cross-bands, one across the head and neck, the other across the middle of the body; the soft dorsal fin is greenish, the others yellow, the ventral having the outer margin brown. Caudal fin emarginate, sometimes with the upper lobe produced. Dorsal fin scarcely notched, with the spines of moderate strength and length. The height of the body is one-half or a little more than one-half the length, (exclusive of the caudal fin).

Port Darwin.

657. AMPHIPRION MELANOPUS, Bleek.

Atl. Ichth. Pomac., Tab. 2, fig. 7.—Gunth., Cat. Fishes IV., p. 8.

D. 10/17. A. 2/14. L. lat 48-50. L. transv. 5/18.

Brownish black, lighter anteriorly, with a pearl-coloured band from the neck to the opercles; tail yellow posteriorly; ventral and anal fins black; dorsal, caudal, and pectoral fins yellow.

Dorsal spines moderately strong. The height of the body is one-half of the length (the caudal fin not included).

Port Darwin. One very young specimen almost entirely yellow.

658. *AMPHIPRION TRICOLOR*, Gunth.

Gunth., Cat. Fishes IV., p. 8.

D. 10/16-17. A. 2/14-15. L. lat. 56. L. transv. 7/19.

Blackish-brown: thorax, all the lower parts, and the free portion of the tail dull orange-coloured; a pearl-coloured band, edged with black, from the nape of the neck across the opercles. Ventral, anal, and caudal fins dull orange-coloured; the two former edged with black—the ventral exteriorly, the anal inferiorly. Præorbital and præoperculum strongly serrated. The dorsal fin is nearly even, the middle and posterior spines being about the same length. Caudal rounded. The height of the body is one-half of the length, (caudal fin not included).

Port Darwin.

659. *AMPHIPRION RUPPELII*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 91.

D. 10/18. A. 2/14. L. lat. 38.

Height of body twice and two-thirds in total length, diameter of eye three times in the length of the head; the upper profile very convex; the lower jaw longer than the upper; the infra-orbital very strongly serrated; the snout considerably shorter than the diameter of the eye; the præoperculum feebly denticulated on its posterior edge, and not at all on the inferior one; the operculum is very strongly serrated and four-lobed. Dorsal fin equal, without notch, caudal rounded, with the central rays prolonged. General colour dark brown, much paler in young specimens, with a very large, black blotch covering all the back and the sides up to the base of the pectoral fins, and two pearly

cross-bands one from the nape, the other narrow about the middle of the body.

Port Darwin. Cape York.

660. AMPHIPRION BICOLOR, Casteln.

Proc. Zool. Soc. Victoria, Vol. II., p. 92.

D. 13/13. A. 2/12.

The height of the body is twice and two-thirds in the total length, the length of the head four times; the diameter of the eye three times in the length of the head. Præoperculum bilobed and strongly serrated. The thirteenth spine of the dorsal fin much the longest, the caudal fin is oblong. The colour is deep black, with three transverse, pearly bands; the first arched and covering the posterior part of the head, the second beginning on the ninth, tenth, and eleventh dorsal spines, straight on its posterior edge, but dilated on the anterior below the pectoral fins, the third on the tail; the edge of the second dorsal, caudal, and anal fins, and the pectorals white.

Port Darwin.

GENUS PREMNAS, Cuv.

All the opercles serrated, the præorbital terminating in a very strong and long spine posteriorly. Teeth small, conical, in a single series. Dorsal fin with nine or ten spines, anal with two. Scales small; the lateral line ceases below the end of the dorsal fin. Branchiostegals five or six; gills three and a-half, pseudo-branchiæ present; pyloric appendages three.

Indian Seas. Australia.

661. PREMNAS GIBBOSUS, Casteln.

Researches on the Fishes of Australia, p. 34.

Body oval, compressed, the profile descends abruptly from the back; the head is rounded and convex above and almost truncate

in front. The eye is large, its diameter being about twice and a-half in the length of the head; snout very short; teeth large, square, truncate; præorbital with two spines the upper one long and straight, the other half the length. The operculum has five or six moderate and equal obtuse teeth on the lower edge. Black, with the sides of an olive yellow; four pearl-coloured cross-bands, bordered with black, one on the posterior part of the head, one towards the middle of the body and two on the tail.

Cape York, (Castelnau).

Genus DASYLLUS, Cuv.

Præoperculum and sometimes the præorbital serrated. Teeth small, villiform, in a narrow band, with an outer series of somewhat larger ones. Dorsal fin with twelve or thirteen spines, anal with two. Scales of moderate size, in less than thirty transverse series; the lateral line ceases below the soft dorsal fin. Branchiostegals five; pseudobranchiæ; air-bladder large; pyloric appendages two or three.

Indian and Polynesian Seas.

662. DASYLLUS ARUANUS, L.

Gunth., Cat. Fishes IV., 12.

Tretradachnum arcuatum, Cant.—Bleek., Atl. Ichth. Pomac., tab. 10, fig. 6.

D. 12/12. A. 2/12. L. lat. 26-27. L. transv. 3/9. Cæc. pylor. 3. Vert. 12/14.

Three black cross-bands: the first descending obliquely from the origin of the spinous dorsal fin through the orbit to the chin, leaving a greyish patch on the forehead; the second slightly curved, from the sixth to ninth dorsal spines to the ventral fins, which are black; the third from the soft dorsal to the anal; dorsal and anal fins black; caudal whitish.

Queensland (Castelnau).

663. *DASYLLUS FASCIATUS*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. II., p. 361, pl. 10, fig. 2.

Port Darwin.

Genus *HEPTADECANTHUS*, All. & Macl.

Body high, compressed. Præoperculum and præorbital finely serrated. Teeth conical, in a single series, with minute teeth between. Dorsal fin with seventeen spines, anal with two. Scales moderate; the lateral line extends to the commencement of the soft dorsal. Gills three and a-half; pseudobranchiæ.

Australia.

664. *HEPTADECANTHUS LONGICAUDIS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 343, pl. 15, fig. 3.

Cape Grenville (Chevert Exp.)

Genus *POMACENTRUS*, Cuv. & Val.

Præoperculum and generally the infraorbital ring serrated; operculum with one or two small spines. Teeth small, compressed, with the crown entire or slightly emarginate, in a single series. Dorsal fin with twelve or thirteen spines, anal with two. Scales of moderate size, of less than thirty transverse series; the lateral line ceases below the soft dorsal fin. Branchiostegals five; pseudobranchiæ; an air-bladder; pyloric appendages three.

All tropical seas; chiefly Indian and Polynesian.

665. *POMACENTRUS LITTORALIS*, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 32.—Bleek., Atl. Ichth. Pomac., tab. 5, fig. 8.

D. 12-13/15-13. A. 2/14-15. L. lat. 26-27. L. transv. $3\frac{1}{9}$.
Vert. 11/15.

The height of the body is twice and four-fifths in the total length; præorbital strongly denticulated with one or two stronger

teeth anteriorly; the dorsal spines increase in length backwards, caudal fin emarginate, with the lobes rounded. Brown, either uniform or with darker spots—one at the base of the pectoral, one at the commencement of the lateral line, and one on the back of the tail behind the dorsal fin.

Port Darwin, Endeavour, Palm Islands.

666. *POMACENTRUS CHIRYSURUS*, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 29.

D. 13/15 A. 2/15. L. lat. 26. L. transv. 3/10.

The height of the body is contained twice and three-fourths in the total length. Snout rather shorter than the eye; the diameter of which is nearly one-third of the length of the head; interorbital space slightly convex, as broad as the orbit. Præorbital naked, half as broad as the orbit, with a shallow notch anteriorly, and a spinous tooth posteriorly; scales on the cheek in two series; the lower præopercular limb with another series of very small scales; præoperculum strongly serrated. Teeth narrow. The two last dorsal spines rather longer than the middle ones, three-fifths as long as the head; the soft dorsal and anal rounded; caudal fin emarginate, its length being a little more than one-fifth of the total. Brown: caudal fin yellow, the others blackish, sometimes a round, black spot, edged anteriorly with bluish, near the base of the six last dorsal rays; an indistinct brown dot superiorly in the axil of the pectoral. No spot at the origin of the lateral line.

Darnley Island.

667. *POMACENTRUS SCOLOPSIS*, Quoy. & Gaim.

Gunth., Cat. Fishes IV., p. 28.

D. 12/16-17. A. 2/13-14. L. lat. 27. L. transv. 2/10. Vert. 12/15.

The height of the body is two-fifths of the total length; the præorbital is serrated. The posterior dorsal spines are scarcely

longer than the middle ones; caudal fin slightly emarginate, with the lobes rounded. Blackish-brown, each scale with a silvery dot; a curved silvery line round the lower part of the orbit. A black spot on the base of the last three dorsal rays and another superiorly in the axil of the pectoral.

Port Darwin.

I have several specimens about four inches long. In all of them there are two silvery lines in front of the eye, and a distinct black spot on the upper margin of the operculum. It may prove to be another species.

668. *POMACENTRUS BANKANENSIS*, Bleek.

Gunth., Cat. Fishes IV., p. 26.

D. 13/14. A. 2/14-15. L. lat. 26-28. L. trans. 3/9.

The height of the body is contained twice and two-thirds in the total length; præorbital denticulated. The dorsal spines increase in length backwards; caudal fin subtruncated. Brownish: caudal fin yellow, each scale with a bluish dot; two bluish lines along the forehead, convergent on the snout, and extending on to the back; two similar lines through the iris to the maxillary; a dark blue spot superiorly on the operculum; a black ocellus edged with white on the base of the ninth, tenth, and eleventh dorsal rays.

Port Darwin.

669. *POMACENTRUS OBSCURUS*, All. & MacI.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 343, pl. 15, fig. 2.

Torres Straits.

670. *POMACENTRUS BILINEATUS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 89.

D. 13/14. A. 2/14. L. lat. 30. L. transv. 3/9.

Height of body twice and two-thirds in the total length, length of head four times; diameter of eye twice and a-half in the length of the head. Præorbital and præoperculum strongly crenulated; the dorsal spines increase in length backwards; the two outer rays of the ventral fins terminate in filaments which extend to the second anal spine. Colour (in spirits) light purple brown; a narrow blue line runs over each eye, from the mouth to the base of the dorsal fin, these lines unite over the mouth; several other blue lines, irregular and interrupted, run on the sides of the head; two or three light blue dots on each scale; fins yellow, extremity of dorsal rather obscure.

Port Darwin.

671. *POMACENTRUS MODESTUS*, Casteln.

Researches on the Fishes of Australia, p. 35.

D. 13/12. A. 2/? L. lat. 18.

Height of the body twice and one-third in the length, without the caudal fin; length of head a little over three times in the same; infraorbital ring entire; præoperculum strongly serrated, operculum sinuous on its edge; scales of the body very large and ciliated; the second anal spine is very long; the ventrals are elongate, nearly as long as the head; the inferior profile convex behind the operculum. The colour (in spirits) is brownish red; the caudal, ventral, and pectoral fins have a yellow tinge. Length two inches.

Gulf of Carpentaria.

672. *POMACENTRUS DOLII*, *n. sp.*, (Plate I., fig. 1.)

D. 13/12. A. 3/12. L. lat. 20.

Body much more convex on the under side than on the back. The height of the body one-third of the total length, the length of the head one-fifth, the diameter of the eye is greater than the length of the snout, which is short and obtuse, with the cleft of

the mouth very oblique. A single row of incisor teeth in each jaw, the intermaxillary bone is covered with a rather large uniformly broad lip, the maxillary showing largely behind and beneath it. The operculum and præoperculum completely covered with ctenoid scales, the spines of the former very small, as are also the serrations of the latter. The lateral line is marked on twenty scales. The vertical fins are low and increase slightly backwards, the dorsal commencing above the origin of the pectorals; the caudal fin is broad and bilobed. The colour (in spirits) is a pale brownish-yellow, with a small black spot at the upper root of the pectoral fins.

Port Jackson. Length from three to four inches.

Two specimens found in a large *Dolium* shell. A very curious Fish, which might well be placed a in new genus.

Genus GLYPHIDODON, Gill.

Præoperculum not denticulated. Teeth compressed, in a single series; the series sometimes composed of alternate teeth. Dorsal fin with twelve or thirteen spines, anal with two. Scales of moderate size, in thirty or less transverse series; the lateral line ceases below the posterior portion of the dorsal fin. Branchiostegals five or six; pseudobranchiæ present; an air-bladder, pyloric appendages three.

Tropical and temperate seas of both hemispheres.

Glyphisodon is the name given to this genus by Lacepede and Cuvier. Dr. Gunther has substituted *Glyphidodon* as being more correct.

673. GLYPHIDODON CÆLESTINUS, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 38.—Bleek., Atl. Ichth. Pomac., tab. 9, fig. 5.

D 13/13. A. 2/12-14. I. lat. 29-30. I. transv. 4/11. Vert. 11/15.

The height of the body is one-half or somewhat more of the length, (exclusive of caudal fin). The width of the interorbital

space equals that of the orbit, in adult specimens rather more; the breadth of the infraorbital ring below the centre of the eye is one-third of the greatest breadth of the præorbital. The soft dorsal fin is produced into a point, the fourth and fifth rays being the longest; caudal fin forked. Body with five blackish cross-bands, which are not broader than the interspaces between them; the first from before the origin of the spinous dorsal to the base of the pectoral fin; the second from the fourth, fifth, and sixth dorsal spines towards the middle of the ventral fin; the third from the tenth, eleventh, and twelfth dorsal spines towards the anal spines; the fourth from the middle of the anal fin; the fifth across the middle of the free portion of the tail.

Port Darwin (Macl. Mus.)

674. GLYPHIDODON WAIGIENSIS, Bleek.

Dr. Gunther places this species as a synonym of *G. celestinus*, but with some doubt, as he notices the more elevated form of the body. Count Castelnau regards it as undoubtedly distinct. The height of the body is three-fifths of the length, (exclusive of the caudal fin). The colour is olive-yellow, with the upper part of the head, the fins and five *narrow* transverse bands, black. Pectoral fins transparent. Length four inches.

Cape York.

675. GLYPHIDODON BANKIERI, Richards.

Gunth., Cat. Fishes IV., p. 54.—Bleek., Atl. Ichth. Pomac., tab. 9, fig. 8.

D. 13/10-11. A. 2/10-11. L. lat. 26-28.

The height of the body is two-fifths of the length, (the caudal fin not included); the snout is shorter than the eye; the width of the infraorbital ring below the orbit is less than one-third of that of the orbit; each jaw with about forty teeth, the anterior ones short, distinctly compressed. The middle rays of the dorsal

and anal fins form an angular point; caudal deeply forked, with the lobes more or less produced into filaments. Violet; tail and caudal fin orange-coloured; the scales on the head and tail with a blue dot, those on the trunk with a transverse streak; a blue ocellus edged with brown at the origin of the lateral line. Dorsal fin brownish-violet, yellow posteriorly; anal brownish-yellow; pectoral with a large brown spot superiorly at the base.

Cape Grenville (Chevert Exp.)

676. GLYPHIDODON VICTORIÆ, Gunth.

Ann. and Mag. Nat. Hist., 1873, Vol. XI., p. 115.—Castelnau, Proc. Zool. Soc., Victoria, Vol. I., p. 146.

“*Rock Perch*” of the Melbourne Fishermen.

D. 13/17. A. 2/15. L. lat. 30. L. transv. 4/10.

The height of the body is somewhat less than one-half of the length (without the caudal fin). Teeth narrow, not emarginate, twenty-one on each side of the upper jaw. Infraorbital scaly; the width of the præorbital is two-thirds of that of the orbit. Five or six series of small scales on the cheek. Vertical fins scaly nearly to their margins. The third and seventh dorsal spines nearly equal, one-half the length of the head. Caudal fin forked. Reddish-violet (in a dried state); fins yellowish; a broad purplish white stripe round the operculum.

Port Phillip. Length eight to ten inches.

Glyphisodon nigroris, Cuv. and Val. belongs evidently to the vegetable feeding division of the *Sparidæ*; Dr. Gunther refers it to the genus *Melambaphes*, described by him in “Ann. and Mag. Nat. Hist., 1863, Vol. XI., p. 115.

Genus PARMA, Gunth.

Præoperculum not denticulated. Teeth compressed, in a single series. Dorsal fin with twelve or thirteen spines, anal with two. Scales of moderate size, in more than thirty transverse series;

the lateral line ceases below the posterior portion of the dorsal fin.

Pacific Ocean.

677. *PARMA MICROLEPIS*, Gunth.

Gunth., Cat. Fishes IV., p. 57.

D. 13/18. A. 2/16. L. lat. 37. L. transv 4/13.

The height of the body is two-fifths of the length exclusive of the caudal fin; teeth very narrow and slender; præorbital much narrower than the orbit. The fourth and fifth dorsal spines are the longest, the posterior being shorter than those in the middle; caudal fin emarginate. Brown, with two blue lines on each side of the back: the upper commences below the spinous dorsal fin, and extends above the orbit to the snout; the lower from the ocellus above the lateral line to the orbit. A large black ocellus edged with blue on the four posterior dorsal spines; body with scattered blue dots, the dots forming a series or an uninterrupted line below the orbit; anal and ventral fins blackish; a blue spot posteriorly in the axil of the dorsal fin.

Port Jackson.

678. *PARMA SQUAMIPINNIS*, Gunth.

Gunth., Cat. Fishes IV., p. 58.

D. 12-13/15-17. A. 2/15. L. lat. 40. L. transv. 5/14.

The height of the body is one-half the length, exclusive of the caudal fin. Snout a little longer than the eye. Teeth narrow, compressed, of moderate length, about fifty in the upper jaw. Præorbital scaly, rhombic, its width above the angle of the mouth, being two-thirds of that of the orbit. The scales on the upper surface of the head advance nearly to the extremity of the snout; præoperculum covered with small scales, a narrow space round its margins being naked. Scales on the operculum half the size of those on the middle of the body. The fourth to eighth dorsal

spines are the longest, and of moderate strength. The anterior half of the soft dorsal fin is much higher than the spinous, and the posterior part of its upper margin is vertical. Caudal fin deeply forked, with the lobes somewhat pointed, the upper lobe being as long as the head. The second anal spine is as long as, but stronger than the longest dorsal spine; the basal half of the dorsal, and nearly the whole of the caudal and anal fins are covered with scales. The ventral extends to the anal. Uniform brownish (in a preserved state), with the fins blackish; posterior margin of the soft dorsal white. The colour during life appears to have been red with golden reflections.

Port Jackson. Length six inches.

679. *PARMA POLYLEPIS*, Gunth.

Gunth., Cat. Fishes IV., p. 59.

D. 13/18. A. 2/14. L. lat. 40. L. transv. 5/15.

The height of the body is more than one-half of the length exclusive of the caudal fin; the profile between the dorsal fin and the snout is arched, forming nearly a-quarter of a circle. Snout elevated, a little longer than the eye; teeth very narrow, compressed, about fifty in the upper jaw. Præorbital naked, subquadrangular, nearly as wide as the eye. The scales on the upper surface of the head do not advance to the front margin of the eye; præoperculum covered with small scales, a narrow space round the margin, naked. Scales on the operculum of about the same size as those on the body. The dorsal spines are of moderate length and strength, increasing in length posteriorly; they are nearly entirely enveloped in scales; the soft dorsal is angular, with the posterior part of its upper margin vertical. The second anal spine is as long as, but stronger than the longest of the dorsal fin. Anal and caudal fins scaly. Caudal fin forked, with the lobes rounded, the upper lobe being as long as the head. The ventral fin extends to the anal. Colour apparently greenish, with the fins and snout blackish, and two broad brown cross-bands,

one below the middle of the spinous dorsal fin, the other between the soft dorsal and anal.

Norfolk Island.

Genus HELIASTES, Gunth.

Præoperculum not denticulated. Teeth small, conical, in a narrow band, or irregular series. Dorsal fin with twelve to fourteen spines, anal with two. Scales of moderate size; the lateral line ceases below the posterior portion of the dorsal fin. Branchiostegals five; pseudobranchiæ; pyloric appendages two.

Tropical and temperate Seas.

680. HELIASTES HYPHILEPIS, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 66.

D. 13/14. A. 2/13-14. L. lat. 29.

The height of the body is a little less than one-half the length exclusive of the caudal fin. The scales on the sides are twice as deep as long; the soft dorsal and anal fins are pointed; the caudal is deeply forked, and the second anal spine is longer and stronger than those of the dorsal. Yellowish (in spirits) with a white spot below the end of the soft dorsal fin, and with the upper half of the base of the pectorals black.

Port Jackson.

FAMILY II. LABRIDÆ.

Body oblong or elongate, covered with cycloid scales. The lateral line extends to the caudal fin, or is interrupted. One dorsal fin, with the spinous portion as well developed as, or more than, the soft; the soft dorsal similar to the anal. Ventral fins thoracic, with one spine and five soft rays. Palate without teeth; only one lower pharyngeal bone without median suture. Branchiostegals five or six; gills three and a-half; pseudobranchiæ and air-bladder. Pyloric appendages none; stomach without cæcal sac.

Genus *CHÆROPS*, Rüpp.

Body compressed, oblong, covered with rather large scales; snout obtuse; cheeks high, with very small scales which are generally not imbricate; operculum scaly. Each jaw anteriorly with four strong canine teeth, the lateral teeth being more or less confluent into an obtuse osseous ridge. Dorsal spines thirteen, anal three. Lateral line not interrupted.

Indian and Australian seas.

681. *CHÆROPS MACRODON*, Bleek.

Gunth., Cat. Fishes IV., p. 94.—Bleek., Atl. Ichth. Labr., tab. 47., fig. 1.

D. 13/7. A. 3/9. L. lat. 32.

A posterior canine tooth. Serrature of the præoperculum minute in young specimens, and lost with age. Head obtuse, with the forehead elevated, its length being two-sevenths of the total. Scales on the cheek subimbricated. Ground colour of the head and of the back darker than that of the posterior and inferior parts and dotted with red; a more or less distinct white blotch below the lateral line, covered by the hinder third of the pectoral fin. Dorsal fin blue, with orange-coloured spots along the base, and with two bands of the same colour along the middle; anal blue, reticulated with orange; caudal greenish; pectoral yellow, dark blue at base.

North Coast of Australia.

682. *CHÆROPS OMMOPTERUS*, Richards.

Gunth., Cat. Fishes IV., p. 94.

Charops Schönleini, Bleek., Atl. Ichth. Labr., tab. 46, fig. 3.

D. 13/7. A. 3/10. L. lat. 29. L. trans. 4/12.

No posterior canine tooth. Serrature of the præoperculum very distinct. Head obtuse, as high as long; præorbital very high; scales on the cheek not imbricate. Green, each scale

with a blue spot in the centre; an oblique, blue band from the angle of the mouth to the interoperculum; a blue streak round the gill-opening; dorsal fin with a series of blue spots along the middle and with a round, black spot on and before the last spine; anal fin with a blue streak along the base, two series of blue spots and a purple margin; corners of the caudal fin purplish.

Cape York. Port Darwin.

683. *CHLÆROPS NOTATUS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 344, pl. 16, fig. 1.

Cape Grenville (Chevert Exp.)

684. *CHLÆROPS CYANODON*, Richards.

Voy. Erebus and Terror, Fishes, p. 131, pl. 55, fig. 5-7.—Gunth.,
Cat. IV., p. 96.

D. 13/7. A. 3/10. L. lat. 30. L. transv. 3/10.

No posterior canine tooth. Præoperculum not serrated. Head obtuse, as high as long; præorbital very high; scales on the cheek not imbricate. Back crossed by three or four dark bands, separated by shining silvery interspaces; dorsal and anal fins with yellow longitudinal lines; caudal greyish, with small round transparent spots, and with an intramarginal line; pectoral with a blackish upper margin. The dark cross-bands are sometimes indistinct.

Western Australia, Port Essington, and Cape York.

685. *CHLÆROPS RUBESCENS*, Gunth.

Gunth., Cat. Fishes IV., p. 97.

D. 13/7. A. 3/10. L. lat. 30. L. transv. 4/12.

No posterior canine tooth. Serrature of the præoperculum very distinct. Uniform reddish.

West Coast of Australia.

686. *CHÆROPS CRASSUS*, Casteln.

Researches on the Fishes of Australia, p. 39.

D. 13/12. A. 3/13.

No posterior canine tooth. Præoperculum not serrated. Scales on the cheeks imbricate, in five series; body short and thick; the extremities of the dorsal and anal fins rather prolonged; caudal fin truncate. Coloration (in a preserved state) dark bluish purple on the upper parts, white or yellow beneath, sometimes a dark narrow submarginal line on the dorsal fin.

Dampier's Archipelago. Length one foot.

Salted and used as food by the pearl fishers.

687. *CHÆROPS CEPHALOTES*, Casteln.

Researches on the Fishes of Australia, p. 39.

D. 14/7. A. 3/10. L. lat. 30.

Head one-third of the length of the fish, (exclusive of caudal fin), and nearly as high as long; forehead prominent and very convex; snout very obtuse and convex; head covered with small tubercles formed by scales buried in the skin; operculum with large scales; canine teeth very large; no posterior canine. Eye one-sixth of the length of the head. Dorsal and anal fins pointed behind; caudal rounded. Coloration above purple, beneath yellow or white; the cheeks and operculum covered with small white spots; the spinous dorsal has an obscure band on its base; the anal and caudal are dotted with white, the other fins greyish. Præoperculum without serrature.

Cape York. Cape Grenville. Length thirteen inches.

Genus *XYPHOCHILUS*, Bleek.

Body oblong, covered with large scales. Head scaly, nearly as high as long; snout obtuse; both limbs of the præoperculum naked. Lateral line continuous. Fins not scaly at the base;

dorsal spines eleven or twelve; anal, three. The upper lip is thin, sword-shaped and can be nearly entirely hidden beneath the præorbital. Both jaws anteriorly with four canine teeth; the lateral teeth united into an osseous ridge; a posterior canine tooth. Six branchiostegals.

Indian Ocean and Archipelago.

688. *XYPHOCHILUS FASCIATUS*, Gunth.

Proc. Zool. Soc., London, 1867, p. 101, pl. 10.

D. 12/8. A. 3/10. L. lat. 29. L. transv. 4/10.

The height of the body is one-third of the total length; the length of the head nearly one-fourth. Head rather longer than high, compressed, the width of the interorbital space (which is flat) being equal to the diameter of the eye. Eye immediately below the upper profile, in the middle of the length of the head. Anterior and posterior canine teeth greenish-blue. Scales on the cheek in six series. Opercular membrane of moderate extent. Pectoral fin without a notch behind, nearly as long as the head, extending to the vent. Caudal fin truncate. The head and upper part of the body seems to have been reddish-orange, the hinder and lower parts greenish. Head and body with bluish-ashy cross-bands edged with violet: two narrow in front of the eyes, one broad, between the eyes, one from the eye to the mouth and round the chin, one from the nape to the throat and five on the body. Dorsal fin orange with the base and tips violet; anal and ventral similar; pectoral and caudal orange-coloured. Length eight inches.

Cape York.

Genus *TROCHOCORUS*, Gunth.

Body oblong, covered with rather small scales; head scaly, as long as, or longer, than high, with the snout of moderate extent; both limbs of the præoperculum naked and without serrature.

Lateral line continuous. Base of the soft dorsal not scaly. Both jaws with four canine teeth anteriorly; lateral teeth distinct; a posterior canine tooth.

Indian and Australian Seas.

689. *TROCHOCOPUS UNICOLOR*, Gunth.

Ann. and Mag. Nat. Hist., 1876, Vol. XVII., p. 398.

D. 11/11. A. 3/11. L. lat. 45.

Eight longitudinal series of scales between the lateral line and spinous dorsal fin. Snout rather obtuse; the small eye nearly in the middle of the length of the head. The height of the body is little more than the length of the head, and one-third of the total length, exclusive of the caudal fin. The membrane behind each dorsal spine deeply excised. Dorsal spines short and stout. Coloration uniform brownish black.

Port Jackson. (Damel.)

690. *TROCHOCOPUS RUFUS*, MacL.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 35, pl. 5, fig. 3.

King George's Sound.

Genus *COSSYPHIUS*, Gunth.

Body compressed, oblong, with scales of moderate size; snout more or less pointed; imbricate scales on the cheeks and opercles; vertical fins scaly on their basal portion. Lateral line not interrupted. Teeth in the jaws in a single series; four canine teeth in each jaw anteriorly; generally a posterior canine tooth. Formula of fins D. 11-12-13/9-11. A. 3/10-12-14.

Tropical and semitropical seas.

691. *COSSYPHIUS VULPINUS*, Richards.

Ann. and Mag. Nat. Hist., 1851, Vol. VII., p. 287.

Br. 4. D. 12/11. A. 3/12. C. 14. 2/2. P. 16. V. 1/5.

The height of the body is one-fourth of the total length, and about equal to the length of the head. The profile rises in a concave line at an angle of 30° from the acute snout to above the back of the orbit, from that to the commencement of the dorsal fin the profile almost horizontal. The lateral teeth are widely set, six on each upper jaw and fourteen on each lower. The præ-orbital and lower jaw are without scales; the posterior line of the præoperculum is finely serrated; there are six rows of scales on the cheek and on the interoperculum, those on the disk of the præoperculum are smaller than these, and those on the operculum and suboperculum larger. L. lat. 30. The first dorsal spine stands over the axil of the ventrals, and the ventral spine beneath the base of the lowest pectoral ray. The soft parts of the dorsal and anal fins are somewhat peaked and rise above the spines. The angles of the caudal project a little beyond the straight intermediate border. Colour uniform, faded.

Australia. Length sixteen inches.

The above is a curtailed description of this Fish as given by Sir John Richardson. It seems to resemble very closely the next species.

692. *COSSYPHUS UNIMACULATUS*, Gunth.

Gunth., Cat. Fishes IV., p. 109.

“*Pig Fish*” of Sydney Fishermen.

D. 12/11. A. 3/12. L. lat. 36. L. trans. 6/12.

Snout pointed, its length being more than one-third of the head; head longer than high; præoperculum minutely serrated; pectoral fin obliquely rounded, more than half the length of the head; the ventral longer, the first ray produced. The dorsal fin increases gradually in height from the first spine to the seventh soft ray, the last spine is twice as long as the first and equal to the ventral spine. The anal spines are exceedingly strong, the third longest, nearly as long as the twelfth dorsal spine; the longest ray of the

anal is shorter than the base of the fin. Caudal fin emarginate with the lobes produced. Colour uniform red, with an oblong deep black spot at the base of the sixth and eighth dorsal spines, and a small black speck on the fifth and ninth.

Port Jackson.

693. *COSSYPHIUS GOULDII*, Richards.

Ann. and Mag. Nat. Hist., 1851, Vol. VII., p. 288.—Gunth., Cat. Fishes IV., p. 111.

“*Blue Groper*” of Sydney Fishermen.

D. 11/11. A. 3/11. L. lat. 39. L. transv. 6/14.

No posterior canine teeth. Upper profile of head bent downwards in a regular curve; præorbital elevated; scales on the cheek not imbricate; præoperculum not serrated; dorsal fin scaly; caudal truncated. Colour uniform dark purple.

Western Australia. Port Jackson.

This species should be placed in another genus. It is a very large fish, attaining a length of from three to four feet.

Genus *LABRICHTHYS*, Bleek.

Body compressed, oblong, covered with large scales; snout more or less pointed. Opercles scaly; cheeks more or less scaly; præoperculum not serrated; lateral line continuous. Teeth in the jaws in a single series; sometimes an interior series of smaller teeth to replace the others. Posterior canine tooth generally present. Formula of the fins D. 9/11. A. 3/10.

Pacific and Indian Archipelago.

694. *LABRICHTHYS CELIDOTA*, Forst.

Gunth., Cat. Fishes IV., p. 113.—Richards., Voy. Erebus and Terror, p. 53, pl. 31, f. 1-5.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/9. Vert. 10/13.

A posterior canine tooth, (absent in young specimens). Reddish olive (in spirits), with some irregular cloudy spots, several forming indistinct cross-bands; a large round brown patch on the lateral line, below the origin of the soft dorsal fin; two brown streaks radiate from the orbit to the shoulder and to the operculum, another across the præorbital. Anal fin with two brown spots near the base. Cheeks with several series of scales, base of dorsal fin not scaly.

Port Essington. Botany Bay?

695. *LABRICHTHYS BOTHRYCOSMUS*, Richards.

Voy. Erebus and Terror, p. 53, pl. 31, f. 6-10.—Gunth., Cat. Fishes IV., p. 114.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/9.

A posterior canine tooth. Reddish or greenish-olive (in spirits); a cluster of black spots between the lateral line and the hind part of the spinous dorsal fin. Infraorbital ring with a bluish streak. Dorsal and anal fins with a dark longitudinal band. Dorsal fin not scaly; cheek with several series of scales.

South Australia. Tasmania.

696. *LABRICHTHYS PSITTACULA*, Richards.

Voy. Erebus and Terror, p. 129, pl. 56, f. 7-10.—Gunth., Cat. Fishes IV., p. 114.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/9. Vert. 9/16.

A posterior canine tooth. Two anterior canines in each jaw; cheek entirely scaly below the eye, the scales arranged in four series. Uniform hyacinth-red; the soft dorsal and anal fins with five or six series of yellow spots; a few streaks behind the angle of the mouth.

Tasmania.

697. *LABRICHTHYS INSCRIPTA*, Richards.

Voy. Erebus and Terror, p. 134, pl. 56, f. 1-2.—Gunth., Cat. Fishes IV., p. 115.

D. 9/11. A. 3/10. L. lat. 25-27. L. transv. 3/9.

A posterior canine tooth. The anterior pair of mandibulary teeth long, subhorizontal. Cheek with five to seven series of small scales. Dark brown, with a pale mark on each scale, bearing some resemblance to the characters of the Persian alphabet. Some dark marks on the cheek and præoperculum, and one on the base of the pectoral fin; the membrane connecting the three first dorsal spines is blackish, sometimes with pale specks. Anal fin uniform, or with many pale specks.

Norfolk Island.

698. *LABRICHTHYS LATICLAVIUS*, Richards.

Voy. Erebus and Terror, p. 128, pl. 56, f. 3-6.—Gunth., Cat. Fishes IV., p. 115.

D. 9/11. A. 3/10. L. lat. 26. L. transv. 3/9. Vert. 9/16.

A posterior canine tooth. Two anterior canine teeth in each jaw. Caudal fin rounded. Green, with two red (blackish in spirits) longitudinal bands, which are confluent on the side of the tail; another, rather indistinct and interrupted, along the lower side of the tail. Dorsal and caudal fins purplish, edged with vermilion and blue, and spotted posteriorly with round blue spots. The anal fin has along the base a narrow vermilion stripe, then a broad yellow one, edged above and below with blue, and lastly a band of purple, spotted thickly with blue and edged with the same.

Tasmania. King George's Sound. Port Jackson.

699. *LABRICHTHYS LUCULENTA*, Richards.

Voy. Erebus and Terror, p. 130.—Gunth., Cat. Fishes IV., p. 116.

D. 9/11. A. 3/10. L. lat. 25. L. transv. 3/7.

A posterior canine tooth. The interopercles overlapping each other. Four anterior canine teeth in the lower jaw, two in the upper; cheek with about six series of small scales. Greenish or reddish, each scale below the lateral line with a vertical silvery line; a black spot on the two first dorsal spines; sometimes two irregular brown lines along the snout, and two blackish spots on the base of the soft dorsal fin. Scales of the back extending on to the base of the dorsal fin.

East and West Coast of Australia. Norfolk Island.

700. *LABRICHTHYS TETRICA*, Richards.

Voy. Erebus and Terror, p. 126, pl. 55, f. 1.—Gunth., Cat. Fishes IV., p. 116.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/9.

A posterior canine tooth. Two anterior canine teeth in each jaw; cheek with only two series of narrow scales, a large portion of it being naked. Uniform purplish-red: vertical fins dark at the base, whitish towards the margins, and black at the tips; pectorals with a black spot superiorly at base.

Tasmania, South Australia, and King George's Sound.

701. *LABRICHTHYS PARILA*, Richards.

Ann. and Mag. Nat. Hist. 1851, Vol. VII., p. 286.—Gunth., Cat. Fishes IV., p. 117.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/10.

No posterior canine tooth. Two anterior canine teeth in each jaw; cheek with only one (indistinct) series of scales, the greater part of it being naked. Greenish, irregularly spotted and dotted with brown, the spot on the anterior dorsal spines being darker than the others.

West Australia (Richardson). Port Jackson (Castelnau, Proc. Linn. Soc. N.S. Wales, Vol. III., p. 389.)

702. LABRICHTHYS GYMNOGENIS, Gunth.

Gunth., Cat. Fishes IV., p. 117.—Castelnau, Proc. Linn. Soc. N.S. Wales, Vol. III., p. 389.

D. 9/11. A. 3/10. L. lat. 25. L. transv. 3/10.

A posterior canine tooth. Cheek nearly naked, only a single series of small scales descending from behind the eye to below the infraorbital ring. Greenish (in a dried state), in life purplish brown, with more or less numerous whitish-red spots, anal fin with a dark longitudinal band; vertical fins with a narrow dark edge.

Port Jackson.

703. LABRICHTHYS PUNCTULATA, Gunth.

Gunth., Cat. Fishes IV., p. 118.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/10.

A posterior canine tooth. Cheek nearly naked, some rudimentary scales being situated near the limb of the præoperculum. Yellowish-olive (in a dried state) with numerous bluish dots; they are edged with brownish on the middle of the length of the fish, and entirely brownish posteriorly on the tail.

West Australia.

704. LABRICHTHYS GUNTHERI, Bleek.

Gunth., Cat. Fishes, app. Vol. IV., p. 507.

D. 9/11. A. 3/10. L. lat. 26-27.

A posterior canine tooth; jaws with four canine teeth anteriorly. Cheek with four series of scales; tubules of the lateral line branched; the scaly sheath of the dorsal and anal fins low. Caudal fin convex, with the lobes not produced. Rose-coloured olive, with six or seven indistinct brown cross-bands; six brown streaks radiate from the eye; a deep blue spot between the first and third dorsal spines and at the root of the pectoral fin superiorly;

a blue band along the middle of the dorsal and anal fins; a brownish band across the middle of the caudal fin.

Australia (Bleeker).

705. *LABRICHTHYS BLEEKERI*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 148.

D. 9/11. A. 3/10. L. lat. 25. L. transv. 3/7.

Two posterior canine teeth; two anterior canines in each jaw, the lateral teeth decreasing in size backwards with an inner series of smaller and blunter teeth. The opercles are scaly, there are two series of scales on the cheeks, and the whole head is rough and covered with irregular lines which radiate from the orbit. The height of the body is three times and one-third in the total length; the length of the head four times; eye four times and one-third in the length of the head; the dorsal scales do not extend on the base of the fin; caudal fin rounded, of thirteen long rays; pectorals large. Greenish above, dark blue beneath; a broad black band from the eye to the operculum; cheeks covered with small white spots; throat purple, spotted with white; the scales of the body bordered with carmine. Fins green: the spinous dorsal with a red tinge, the soft spotted with purple and bordered with red; the caudal is orange, spotted with carmine; the anal has three series of large, round carmine spots; the ventrals are pink; the pectorals yellow.

Port Phillip. Length ten to twelve inches.

706. *LABRICHTHYS RICHARDSONII*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 150.

D. 9/11. A. 3/11. L. lat. 26.

A posterior canine tooth; the other teeth as in the last species. Three series of scales on the cheek; the surface of the head very rough; the dorsal scales do not extend on the base of the fin. Colour light bluish-green, with a black spot on the extremity of

the operculum, and two broad transverse bands on the body, one from the third or fourth dorsal spine, the other behind; a few dark spots on the fifth, sixth, and seventh dorsal spines; caudal fin with a posterior orange margin.

Port Phillip. Length fourteen inches.

707. *LABRICHTHYS EPHIPIUM*, Gunth.

Ann. and Mag. Nat. Hist, 1863, Vol. XI., p. 116.

Labrichthys vestita, Casteln., Proc. Zool. Soc., Victoria, Vol. I.,
p. 151.

D. 9/11. A. 3/10. L. lat. 27. L. transv. 3/10.

A posterior [canine tooth. Cheek with three series of very small scales. Base of dorsal fin not scaly. Each tube of the scales of the lateral line with numerous branches. Coloration in a dried specimen: back violet-olive to the end of the spinous dorsal fin; head, belly, and tail reddish, the latter with a broad violet-olive band between the posterior halves of the soft dorsal and anal fins. A blackish spot behind the operculum; the pectoral, ventral, caudal, and spinous dorsal fins reddish or yellowish; the first with a black spot superiorly in the axil; the soft dorsal and the anal blackish-violet.

Port Phillip. Length seventeen inches.

This is not *Labrus ephippium* of Cuv. and Val., as Dr. Gunther seems to think.

708. *LABRICHTHYS CUVIERI*, Casteln.

Proc. Zool. Soc. Victoria, Vol. II., p. 53.

D. 9/11. A. 3/10. L. lat. 27.

No posterior canine teeth; a well formed inner series of teeth in the upper jaw. Profile of head not very convex; head rugose; cheeks with a narrow band formed of two series of scales; no scales on base of dorsal fin. Colour greenish, with two broad red transverse bands, the second nearly covering the posterior

half of the body. The pectoral fins are of a brilliant orange yellow; the spinous dorsal is of the same colour, and the soft is dark and almost black; the caudal olive.

Hobart Town.

709. *LABRICHTHYS BOSTOCKII*, Casteln.

Proc. Zool. Soc. Victoria, Vol. II., p. 53.

D. 9/11. A. 3/10. L. lat. 25.

Like *L. tetricus*. A small posterior canine tooth; two large anterior ones in each jaw; cheeks with two series of indistinct scales; head covered with minute tubercles; caudal fin truncate, the upper ray longer than the others; the dorsal and anal prolonged posteriorly; the arbuscles of the lateral line more complicated than in *tetricus*. Colour (in spirits) is dark purplish red; the fins are lighter; the base of the dorsal black.

West Australia. Length seven and a-half inches.

710. *LABRICHTHYS EDELENSIS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 137.

Allied to *L. punctulata*; scales of the operculum as large as those of the body; præoperculum almost naked, with one line of scales; the arbuscles of the lateral line are much ramified and cover the scales; no scales on the base of the dorsal fin; a posterior canine tooth; body more convex than in most of the genus, with the scales covered with strong transverse striæ. Colour uniform brown, with the fins yellow; no spots.

Western Australia. Length eight inches.

711. *LABRICHTHYS UNICOLOR*, Casteln.

Researches on the Fishes of Australia, p. 37.

“The upper profile very little curved, cheeks without scales, covered like the head with very strong granulations; operculum with three series of large scales; one posterior canine tooth, and

two others in front of each jaw ; scales of the body covered with strong longitudinal striæ ; those of the lateral line having a large fan-like arbuscule which covers the greatest part of them and presents no transverse reticulation ; caudal truncated ; colour of a dark brown rubyish tint." (Castelnau.)

West Australia. Length eight inches.

712. *LABRICHTHYS RUBRA*, Casteln.

Researches on the Fishes of Australia, p. 37.

" Cheeks covered with strong granulations, but without scales ; one posterior canine tooth ; two anterior ones in each jaw ; caudal fin slightly rounded ; no scales on base of dorsal ; scales of lateral line covered by very large arbuscules, formed of a fan-like series of concentric lines ; these do not extend to the base of the scale, which is covered with strong granulations ; lips very long, the upper one when extended, covering entirely the teeth. The general colour (in spirit specimens) is of a fine brick-red ; on the lower parts of the body the centre of the scales is of a silvery white ; the eye is surrounded by indistinct and concentric obscure lines, and numerous spots of similar hue are seen on the head and back ; in some specimens these form indistinct transverse bands, four or five in number ; the dorsal fin is scarlet, with rounded dark spots ; the caudal has a yellow tinge ; the anal red, with the rays marked with white spots, sometimes intermixed with black ones ; the pectorals of a beautiful orange ; none of the fins have a coloured margin." (Castelnau.)

Swan River. Length eight inches.

713. *LABRICHTHYS CONVEXA*, Casteln.

Researches on the Fishes of Australia, p. 38.

Body elevated behind the head, the upper profile very convex. No posterior canine tooth ; two strong canines in front of each jaw, the other teeth long and sharp ; cheeks with four series of

very large scales, the two external very strongly granulated; operculum scaly; scales of the body very large, with strong longitudinal striæ, and other much finer transverse ones; scales of tail more elongate; arbuscules of the lateral line very large, expanded, and intricate. Colour purplish, beneath lighter.

Swan River. Length seven inches.

714. *LABRICHTHYS NIGROMARGINATA*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 35, pl. 3, fig. 3.

Port Jackson.

715. *LABRICHTHYS FUCICOLA*, Richards.

Proc. Zool. Soc., 1840, p. 26.—Voy. Erebus and Terror, p. 127,
pl. 54, figs. 1-2.

B. 6. D. 9/11. A. 3/10. C. 14. P. 13. V. 1/5.

Like *L. tetricus*. Bones of the head less uneven; some small scales are scattered among the larger ones on the operculum; the cheek has four rows of small scales near the angle of the mouth, towards the temples three rows. L. lat. 27. Teeth larger than in *tetricus*; the canine tooth at the angle of the jaw curved; the caudal fin is rounded, the anal somewhat arched; the soft dorsal is a little higher anteriorly than posteriorly. Colour dark plum-purple, towards the belly buff, with four pale spots on the back; one on the the suprascapular, another near the eighth spine of the dorsal fin, and the other two at the base of the soft dorsal. Some faint curved lines are traceable about the cheek and nose; a dark bar crosses the pectoral fin at a-third of its length, and at its base there is a black spot. Length fourteen inches.

Tasmania and South Australia.

716. *LABRICHTHYS DORSALIS*, *n. sp.*

D. 9/11. A. 3/10. L. lat. 25. L. transv. 3/8.

Body much compressed; snout rather pointed, its length from the eye equal to two diameters of the orbit; posterior canine teeth very small; anterior—two in the upper jaw and four in the lower, the two middle ones received between those of the upper jaw. Head rugose; four series of scales on the check below the eye, reduced to two series of larger scales behind the eye; scales on the operculum large; those on the body larger, with many radiating striæ; tubes of lateral line long, with two branchlets at the extremity on the body, and without branchlets towards the tail; caudal fin subtruncate; dorsal scales extending on to base of dorsal fin. Colour (in spirits) uniform dull reddish-brown, with the outer half of the fins much paler; a black blotch between the second and third dorsal spines.

Port Jackson. Length seven inches.

717. *LABRICHTHYS LABIOSA*, *n. sp.*, (Plate I., fig. 2.)

D. 9/11. A. 2/10. L. lat. 25.

Oblong, the length of the body about one-fourth of the total length. Snout rather short; lips fleshy; mouth protractile; a posterior canine tooth, the others strong and conical, the anterior pair in each jaw longer; three series of scales on the check; scales of the lateral line with the tubes six-branched; caudal fin truncate, with the angles rounded, and the rays clothed with elongate scales to near the apex. Spines and rays of the dorsal and anal fins soft, and enveloped in a dense membrane without scales. Colour (in spirits) yellowish, with a more or less distinct brown stripe from the eye to the tail and another (broader) from the operculum to the tail, there are also some indistinct cross-bands on the body. The dorsal fin has a blackish blotch near its commencement and a series of round black spots along its base.

Port Jackson.

718. LABRICHTHYS MACULATA, *n. sp.*

Height of body one-fourth of the total length, snout little longer than the diameter of the eye; teeth acute, the two anterior of the lower jaw received between the anterior two of the upper. Head rugose; two series of scales on the cheek; scales of the lateral line twenty-five, the tubes divided at their extremity into three or four branchlets until near the tail; scales extending on the dorsal and caudal fins. Colour (in spirits) reddish-brown, with a distinct black spot on each scale on the operculum and upper part of the body: the spots becoming smaller below the middle, and disappearing towards the belly. A large black blotch across the upper part of the tail behind the dorsal fin; the anal fin is margined with black.

King George's Sound. Length four inches.

719. LABRICHTHYS MELANURA, *n. sp.*

Height of body about a-third of the total length; snout rather pointed; eye small; a strong posterior canine tooth; anterior ones moderate; five series of scales on the cheek below the eye; scales on the operculum as large as those on the body. L. lat. 26; the under profile of the body more convex than the upper; scales extending a little on the dorsal fin, and for quite one-third on the caudal; the latter is truncate. Colour (in spirits) yellowish, with a brownish centre to every scale, darkest above the lateral line; three parallel dark streaks extend from the hinder part of the orbit to the end of the operculum; a small black spot on the upper part of the root of the pectoral fin; a broad brownish band occupies the second third of the caudal; a faint trace of a dark band on the dorsal and anal fins, and a dark spot on the second and third spine of the former.

Port Jackson. Length six inches.

720. LABRICHTHYS RUBICUNDA, *n. sp.*

D. 9/11. A. 3/10. L. lat. 25.

Height of body about one-fourth of the total length; head slightly convex and swollen looking between and in front of the eyes; lips large; teeth strong and acute, two posterior canines on each side, numerous small asperities on the head; four series of small scales on the cheeks under the eyes; tubules of the lateral line much branched with long foot stalks; caudal fin subtruncate, the lobes very slightly produced. Colour (in spirits) yellowish-red, with the basal portion of all the scales of a brilliant pinkish-red, with the appearance of a few paler or pearly longitudinal stripes; the fins are paler; a deep bluish-black patch on the back at the base of the three last dorsal rays, and a trace of another spot behind it on the free part of the tail. Length nine inches.

King George's Sound.

Genus *TORRESIA*, Castelnau.

Body compressed, oblong, covered with large scales; cheek and opercles scaly; præoperculum serrated; dorsal fin with thirteen spines.

Australia.

721. *TORRESIA AUSTRALIS*, Casteln.

Researches on the Fishes of Australia, p. 36.

D. 13/7. A. 3/10. L. lat. 28.

Convex profile; height of body twice and two-thirds of the length (exclusive of caudal fin); and about equal to the length of the head; the diameter of the eye is one-fourth of the length of the head; teeth equal, of moderate size, and in a single series; four canines in the upper jaw and six in the lower; the two front ones of the upper jaw much the largest; no posterior canine teeth. Colour olive-green; head with three abbreviated, longitudinal blue stripes, bordered with black; a large round black blotch on

the back at the end of the spinous dorsal fin. Length four and a-half inches.

Cape York.

Genus CHEILINUS, Lacep.

Body compressed, oblong, covered with large scales; lateral line interrupted; cheeks with two series of large scales; preoperculum entire; teeth in a single series, two canines in each jaw, not bent outwards; no posterior canine tooth; lower jaw not produced backwards. Dorsal spines sub-equal in length; the third anal spine longest.

Tropical seas of India, China, and Polynesia.

722. CHEILINUS OXYRRHYNCHUS, Bleek.

Atl. Ichth. tab. 28, f. 2.—Gunth., Cat. Fishes IV., p. 133.—Casteln. Researches on the Fishes Australia, p. 40.

D. 9/10. A. 3/8. L. lat. 23.

The height of the body is less than the length of the head, and a little more than one-fourth of the total length; the depth of the head is contained once and three-fifths in its length; snout produced, conical, with the jaws equal; tubules of the lateral line simple. Caudal fin rounded. Yellowish-olive (in spirits); snout without markings; reticulated brown lines on the hinder half of the head, on the body, and on the soft portions of the vertical fins; suboperculum crossed by several brown lines; two irregular blackish blotches on the tail; dorsal fin with a blackish spot between the first and second spines.

Cape York. Length eleven inches.

723. CHEILINUS CHLORURUS, Bl.

Gunth., Cat. Fishes IV., p. 32.—Bleek., Atl. Ichth., tab. 27, f. 3.

Cheilinus guttatus, Bleek., Casteln., Res. Fishes Aust. p. 40.

D. 10/9. A. 3/8. L. lat 22.

The height of the body is a little more than one-third of the total length; snout subconical; canine teeth of moderate size. Caudal fin rounded, with the lobes slightly produced in adult specimens. Tubules of the lateral line moderately branched. Greenish-brown: head with round yellow spots, body with series of smaller dots. The spinous dorsal fin brownish, with red margin, and black dots on the spines; the soft dorsal red; *anal and ventral with numerous, very small yellow dots*; caudal green, yellow spotted.

Cape York. Length eight inches.

724. CHEILINUS AURANTIACUS, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 70.

D. 9/11. A. 3/10. L. lat. 23. L. transv. 3/7.

Body rather elongate and compressed, the height three times and three-quarters in the total length; head four times and one-third in the same; eye four times in the length of the head. Head rather concave; two rows of scales on the cheek; radiant and reticulated round the eye and præoperculum; canine teeth rather long; snout pointed, not longer than the eye; the lower jaw longer than the upper; caudal fin large, formed of four long and five or six shorter rays. Colour (in spirits) orange with the back carmine; the dorsal and anal fins yellow, with a broad external black band and a series of feeble, obscure spots near the body; the space between the first and second dorsal spines is black, and the sides of the caudal fin are obscure, there are also traces of brown spots on the back, and on the head round the eyes; the ventral fins have their first half orange, the other black; the pectorals are entirely of a fine reddish-orange.

South Australia (Castelnau).

Genus CHEILOLABRUS, All. & Mael.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 345.

North-east Australia.

725. CHEILOLABRUS MAGNILABRIS, All. & Maccl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 345, pl. 16, fig. 2.

Darnley Island (Chevert Exp.)

Genus HEMIGYMNUS, Gunth.

Body compressed, oblong, with scales of moderate size; cheek rather high. Opercles naked, cheek with a stripe of very small scales; præoperculum not serrated; lateral line continuous. Teeth in the jaws in a single series, two canines in each jaw anteriorly, the lower pair received between those of the upper; generally a posterior canine.

From the Red Sea to the North Coast of Australia.

726. HEMIGYMNUS MELANOPTERUS, Bleek.

Atl. Ichth. Lab., tab. 45, f. 2-3.—Gunth., Cat. Fishes IV., p. 139.

Tautoga melapterus, Richards., Ann. and Mag. Nat. Hist. 1843,
XI., p. 358.

D. 9/11. A. 3/11. L. lat. 29. L. transv. 5/14.

A posterior canine tooth, hidden by the skin. Lips very thick, with folds; the lower lip notched anteriorly, each lateral part pendent, like a wattle. Cheek with a band of small scales. Back and sides, between the vertical fins, brownish, abdomen and thoracic region yellowish; a blackish blotch behind the orbit; dorsal and anal fins with a light margin and with a bluish intra-marginal band, edged with darker.

Port Essington. Endeavour Reef.

727. HEMIGYMNUS BLEASDALII, Casteln.

Researches on the Fishes of Australia, p. 38.

D. 9/10. A. 3/10. L. lat. 24.

A short posterior canine tooth; the head and cheeks are rough but without scales; the height of the body is one-third of the

length; the caudal fin not included; the tubules on the lateral line are much branched, nearly covering the whole scale; caudal fin rounded. General colour green, with numerous crimson spots on the body, but not on the head; the opercle is whitish; the lower parts are pink, with a large rounded silvery spot on each scale; the dorsal fin is red with the spines spotted with brown, the soft portion has its external half green; caudal green; anal similar to soft dorsal; ventrals white; pectorals of the same colour, with the outer half pink.

South Australia.

Genus STETHOJULIS, Gunth.

Body compressed, oblong, covered with scales of moderate size; head entirely naked; lateral line not interrupted; scales on the thorax as large as, or larger than, those on the side of the body. A posterior canine tooth. Dorsal spines nine.

Indian and Pacific Seas.

728. STETHOJULIS STRIGIVENTER, Benn.

Gunth., Cat. Fishes IV., p. 140.—Bleek., Atl. Ichth. Lab., tab. 43, fig. 1.

D. 9/11. A. 2/11. L. lat. 26. L. trans. 2/9.

The height of the body is one-fourth of the total length, the length of the head two-sevenths; caudal fin rounded; ventral rather short. Greenish: *lower parts of the sides with several yellow longitudinal lines* and with some black dots; a brownish band from the mouth below the eye to the operculum; a black dot at the base of the penultimate dorsal ray; sometimes a small black spot on the base of the caudal fin.

Low Island (Chevert Exp.)

Genus PLATYGLOSSUS, Bleek.

Body compressed, oblong, covered with scales of moderate size (L. lat. 30. or less); head naked; lateral line not interrupted;

scales on the thorax smaller than those on the body. A posterior canine tooth; none of the anterior canine teeth are bent outwards and backwards. Dorsal spines nine.

Tropical Seas.

729. *PLATYGLOSSUS DUSSUMIERI*, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 113.

Halichæres nigrescens, Bleek., Atl. Ichth. Labr., p. 118, tab. 37, f. 4.

D. 9/12. A. 3/12. L. lat. 29. L. transv. 3/10. Vert. 10/15.

The height of the body is two-sevenths to two-ninths of the total length, the length of the head one-fourth. Caudal fin rounded; dorsal spines rather slender; the first ventral ray produced. A bluish-black yellow edged ocellus between the fifth and seventh dorsal spines; corners of the caudal fin broadly yellow. Brownish-green, with eight or nine dark cross-bands on the back; pectoral fin with a bluish-black spot in the axil; dorsal and anal fins with one or two series of large, round, yellow spots along the basal half.

Port Darwin (Macl. Mus.)

My specimens have none of the bands on the back, mentioned above, nor is there any trace of yellow spots on the dorsal and anal fins, so that I may be wrong in ascribing them to this species, but the colours of all these Labroid fishes are so completely effaced by spirits, that no dependence can be placed on marking or colouring.

730. *PLATYGLOSSUS IMMACULATUS*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. II., p. 363 pl. 10, fig. 1.

Port Darwin.

731. *PLATYGLOSSUS MINIATUS*, Cuv. & Val.

Gunth., Cat. IV., p. 150.—Bleek., Atl. Ichth. Labr., p. 114, tab.

41, fig. 5.

D. 9/11. A. 3/11. L. lat. 28. L. trans. 2/9.

The height of the body is equal to the length of the head, and rather less than one-fourth of the total length. Caudal fin rounded. Red: most of the scales along the middle of the sides with a blackish spot; six blackish spots along the back; sides of the belly with numerous crescent-shaped vertical streaks; a deep violet spot behind the eye; a curved silvery streak from the angle of the mouth to below the orbit, bent downwards over the operculum to the interoperculum. Dorsal fin with numerous, oblique, undulated violet lines, descending obliquely backwards, and generally with two black ocelli between the two anterior spines and behind the first ray; anal dotted all over with black; caudal rays with small red dots.

Australia (Macgillivray).

Genus PSEUDOJULIS, Bleek.

Body compressed, slender, covered with scales of moderate size (L. lat. less than 30); head naked; lateral line not interrupted; scales on the thorax smaller than those of the body. No posterior canine tooth; anterior teeth conical. Dorsal spines nine.

Indian and Australian Seas; California.

732. PSEUDOJULIS LINEATA, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 138.

D. 9/12. A. 3/12.

The height of the body is contained a little over four times in the total length, and is about equal to the length of the head; the teeth are conical and directed forwards, two long ones in front; caudal fin rounded and scaly on the basal half; the pectorals have thirteen rays; the ventrals are pointed. The general colour (in spirits) is an uniform light brown, with numerous longitudinal and regular lines of a darker colour, extending all along the body;

the dorsal and anal fins appear to have been yellow, on the first of these there is a narrow black spot behind the first spine. Length over eight inches.

West Australia.

733. *PSEUDOJULIS MACULIFER*, Casteln.

Researches on the Fishes of Australia, p. 35.

D. 9/11. A. 2/11. L. lat. 31.

The height of the body is three times and two-thirds in the length, exclusive of the caudal fin, the length of the head twice and three-fourths in the same; diameter of the eye one-fourth of the length of the head; the lateral line consists of twenty-four scales before its deflection, and is formed of a succession of small ridges which are bifid posteriorly. Colour yellowish-white: on the head a round spot behind the eye, three bands—one oblique before the eye and two angular on the cheeks—the end of the operculum, and a few spots on the top of the head, black; the body has two very broad nebulous longitudinal bands with a black spot at the base of the pectorals and another between the first and third dorsal rays. Length three and a-half inches.

Queensland.

Genus *JULIS*, Cuv. & Val.

Body compressed, oblong, covered with scales of moderate size; head entirely naked; lateral line not interrupted; snout of moderate extent, not produced; no posterior canine teeth. Dorsal spines eight.

Tropical and subtropical seas.

734. *JULIS ANEITENSIS*, Gunth.

Gunth., Cat. Fishes IV., p. 183.

D. 9/11. A. 3/11. L. lat. 28. L. transv. 3/9.

“The height of the body equals the length of the head, and is somewhat more than one-fifth of the total length; the outer caudal rays are produced into filaments; the length of the ventral fins is two-thirds of that of the pectoral in half grown specimens, three-fourths in adults. Colours of dried specimens: anterior part of back and thorax brownish-olive; body greenish, each scale with a vertical streak; head violet, with three green bands edged with darker: the upper from the eye to the origin of the lateral line, the middle from below the eye to the hind part of the suboperculum, the lower from the angle of the mouth to the suboperculum; sometimes a fourth on the interoperculum. Pectoral fin with a broad, oblique, black band across its posterior half, and with a black spot in the axil; a black spot between the second and third dorsal spines; two fine brown lines run along the whole length of the dorsal fin, one along its base, the other above the middle of its height; they are the edges of a broad, brownish band running along the middle of the fin; anal with a similar line running nearer to its base than to its margin, and separating the brown basal portion from the green outer one; a yellow band along the upper and lower margins of the caudal.” (Gunther).

North-east Australia (Rayner).

735. *JULIS ADELAISENSIS*, Casteln.

Researches on the Fishes of Australia, p. 35.

The height of the body is one-fourth of the length exclusive of the caudal fin, the length of the head is three times and one-third in the same. Dorsal spines and rays very much alike; caudal fin rounded; lateral line about 50. Body of a beautiful pink colour, silvery beneath; head pearly white with its upper parts of an obscure blue; on the anterior part of the cheek are three or four narrow blue lines, bordered with black, and directed obliquely downwards; dorsal fin yellowish, with a broad longitudinal pink band extending on all its length higher than the width of the fin,

the portion of this band on the three first spines is black ; caudal without spots ; anal with the rays pink. Length nine inches.

South Australia.

Genus *CORIS*, Lacep.

Body compressed, oblong, covered with small scales (L. lat. 50 or more); head entirely naked, lateral line not interrupted; dorsal spines nine.

All warm seas.

736. *CORIS AYGULA*, Lacep.

Gunth., Cat. Fishes IV., p. 201.

D. 9/12. A. 3/12. L. lat. 60-65. Vert. 9/16.

The height of the body equals the length of the head, and is contained thrice and three-fourths in the total length. A prominent hump on the nape, more developed in large specimens. Posterior canine tooth small, hidden, sometimes absent. The upper lip broad with folds, the lower not continuous with that of the other side, pendent. The anterior dorsal spine produced; caudal fin subtruncate; ventral long, pointed. Black or blackish, sometimes with a light vertical band above the vent. Back and vertical fins with some blue dots. Three red angular cross-bands on the neck; edges of the præoperculum and operculum red; extremity of the operculum blue. Vertical fins with green margins. Dried specimens nearly uniform black.

Australia (Gunther).

737. *CORIS AURICULARIS*, Cuv. & Val.

Richards., Ann. and Mag. Nat. Hist., 1843, XI., p. 422.—Gunth., Cat. Fishes IV., p. 206.

D. 9/12. A. 3/12. L. lat. 78. L. transv. 6/28.

The height of the body equals the length of the head, and is four times and a-half in the total length. No posterior canine

tooth. Caudal fin rounded ; dorsal and anal rather elevated, the spines being flexible and slender ; the length of the posterior spines is two-thirds of that of the head. Uniform reddish-yellow (in a dried state) ; opercular point with a black spot, edged with white anteriorly ; dorsal fin with a black spot between the two first spines and with numerous undulated brownish lines in its upper half ; anal with three lines near the margin ; caudal with irregular transverse bands.

West and South Australia.

738. *CORIS LINEOLATA*, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 206.

Described by Count Castelnau, Proc. Linn. Soc. N. S. Wales, Vol. III., p. 390.

Port Jackson. West Australia.

739. *CORIS PALLIDA*, *n. sp.*

D. 9/12. A. 3/12. L. lat. about 50.

Compressed, snout rather elongate, pointed ; eye large ; caudal fin somewhat rounded. Colour pale yellow, with some small black spots on the head, a few indistinct dark transverse marks on the sides, and a minute black spot on the second dorsal spine and another larger about the second ray. Fins colourless, immaculate.

Endeavour River. Length two inches.

Genus *PSEUDOSCARUS*, Bleek.

The upper jaw projecting beyond the lower ; two or more series of scales on the cheek ; dorsal spines more or less flexible ; anterior teeth soldered together, arranged in quincuncial order ; the dentigerous plate of the lower pharyngeal longer than broad. D. 9/10. A. 2/8. L. lat. 23-25.

Tropical Seas.

740. *PSEUDOSCARUS RIVULATUS*, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 222.—Bleek., Atl. Ichth. Labr., p. 44, tab. 9, fig. 3.

Two series of scales on the cheek, and two scales on the lower præopercular limb; the middle series composed of six scales. Upper lip broad. Jaws whitish, each with two small pointed teeth at the corner; teeth of moderate size. Anterior dorsal spine shortest; fourteen or fifteen pectoral rays; caudal fin subtruncate. Green, each scale with a reddish margin; snout and lower half of the head reddish, the former with rather numerous undulated green lines. A narrow green band along the base and margin of the dorsal fin, and an irregular band of the same colour, or series of spots along its middle. Anal fin green, lighter towards the margin, which is broadly edged with dark green. Caudal with irregular green spots.

Cape Grenville (Chevert Exp.)

741. *PSEUDOSCARUS FLAVOLINEATUS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 346, pl. 16, fig. 3.

Cape Grenville (Chevert Exp.)

742. *PSEUDOSCARUS NUDIROSTRIS*, All. & Macl.

Proc. Linn. Soc. N.S. Wales, Vol. I., p. 346, pl. 17, fig. 1.

Cape Grenville (Chevert Exp.)

743. *PSEUDOSCARUS OBSCURUS*, Casteln.

Researches on the Fishes of Australia, p. 41.

“This sort belongs to the Division having two series of large scales on the cheeks; the teeth are white and well marked, and distinct on the edge. The general form is oblong; the height is contained three times in the total length without the caudal; the head is about equal to the height; the lateral line is marked by tubercles, almost all simple, and the others simply bifide at their

extremity. The opercule is produced and very broad; the pectorals have fifteen rays; the caudal truncate; the eye is nearly twice and two-thirds in the length of the snout; colour of a dark purple (in spirits); a whitish blotch covers the chin; another is visible on the opercle, and a broad transverse one extends on the back behind the opercule; the fins are purple, without spots, as is also the snout. The length of specimen is about twelve inches."

"NOTA.—This sort seems to resemble the *Scarus nigricans*, of Ehrenberg (Cuv. & Val.), which is only imperfectly known. Cape York."

744. PSEUDOSCARUS MODESTUS, Casteln.

Researches on the Fishes of Australia, p. 41.

"Upper jaw projecting slightly beyond the lower; three series of scales on the cheek, the lower præopercular limb being entirely naked; teeth white, the two of the upper jaw strongly denticulated; those of the lower jaw distinct laterally by longitudinal lines in the laminated pieces. Form, oblong; the greatest height of the body contained rather more than four times and a-half in the total length of the fish; the upper profile of the head pointed; caudal rounded; fourteen pectoral rays; general colour pink, with the head yellow; no spots; fins white; length three inches. Adelaide."

"NOTA.—This sort would come in Dr. Gunther's Division with *Pulchellus* and *Harid*, but appears different from both. It is probably a young specimen."

745. PSEUDOSCARUS DUMERILII, Casteln.

Researches on the Fishes of Australia, p. 41.

"The teeth soldered together into a broad lamina. The large scales of the body and the two series of scales on the cheeks, place this fish in Dr. Bleeker's genus *Pseudoscarus*. Its jaws of a white colour, and its broad upper lip, place it in a small section which

contains *Ghobban*, *Collana*, and a few other sorts from the Indian Archipelago. The height is contained four times and a-half in the total length; the head three times and two-thirds in the same; the diameter of the eye is four times in the length of the head; upper lip broad; no tooth at the angle; the edge of the præoperculum is finely denticulated; the lateral line is strongly curved over the pectoral, and runs over thirty-six transverse series of scales; the scales over the base of the caudal are pointed; the dorsal has twenty-one rays, the two last rather prolonged; the caudal is pointed, of twelve long rays, the central ones being the longest; the anal is rather large, of twelve rays, the two last rather prolonged. The general colour is of a pinkish-brown, with the back purple; the lower parts pink; the sides appear to have been marbled with brown; fins light yellow. One single specimen, four and a-half inches long. Adelaide."

746. PSEUDOSCARUS RICHARDSONII, Casteln.

Researches on the Fishes of Australia, p. 42.

"General form rather short; upper profile convex; height less than twice and two-thirds in the length without the caudal; two series of scales on the cheeks; the lower row composed of six; lateral line marked by a series of nearly simple tubes. General colour of an olive-green; on the cheeks a large lilac blotch, extending over the throat; this and the lower part of the opercles covered with oblong, narrow, irregular pink spots, bordered with dark brown; these form two irregular, transverse lines on the chin; teeth yellow; a transverse blotch, light colour, on the sides, behind the end of the pectorals; posterior part of the tail flesh colour; dorsal, caudal, ventrals, and anal flesh colour; the dorsal has a dark violet longitudinal line on its upper part, another near its base, and between these there is a series of circles, the centre of which is yellow; the outer third of the anal is yellow; pectorals large, dark, almost black, with the two anterior fins yellow; a very large and pointed free scale at the base of the pectoral;

caudal emarginate ; the scales behind the eye strongly granulate ; thirteen rays to the pectorals. Length thirteen inches and a-half. Cape York."

747. *PSEUDOSCARUS VIRIDESCENS*, Casteln.

Researches on the Fishes of Australia, p. 42.

"This also enters division having two series of large scales on the cheeks ; teeth white, with their edge well marked, and the separation of each tooth marked by a faint line on all its length. The general form of the body is short and inflated ; the height of the body is twice and two-thirds in the total length without the caudal ; or a little less than three times in the same with this fin ; the head is contained over three times and one-third in the length (without caudal) ; the diameter of the eye is not quite twice and a-half in the snout ; the pectorals have thirteen rays ; the lateral line is marked by a succession of complicated arbuscules on its first half, and of more simple but irregular ones on its posterior part ; caudal subtruncate. The general colour (in spirits) is green, becoming rather lilac on the cheeks and the lower part of the head ; the dorsal, caudal, and anal appear to have been red ; the other fins yellow. Length of specimen, eight inches. From Cape York."

Genus *HETEROSCARUS*, Casteln.

Upper jaw longer than the lower ; teeth soldered together, forming a sharp cutting ridge on both sides, with a median suture in the upper and none in the lower jaw. Scales large ; fourteen or fifteen stiff dorsal spines ; head naked, porous, cheeks dotted with imbedded and impressed non-imbricate scales ; large scales on the operculum ; lateral line continuous.

East and South Coasts of Australia.

748. *HETEROSCARUS FILAMENTOSUS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 74.

D. 15/11. A. 2/12. L. lat. 29. L. transv. 12.

Form oblong, oval, rounded in front, gibbous on the back; height of body three times and one-eighth in the total length, length of head nearly four times in the same, diameter of eye five times in the length of the head; two rows of large scales on the operculum, the first of six or seven, the second four or five scales. Operculum striated; the two first dorsal spines ending in long filaments; caudal fin truncate; pectorals large, rounded, of fourteen rays; ventrals united at the base, smaller than the pectorals, with one long slender spine and four rays. Colour (in spirits) reddish pink, becoming light brown on the back, with faint traces of three or four irregular transverse brown bands, which are interrupted a little under the lateral line, and reappear as blotches on the belly. The head is brown above and pink below and on the sides; a narrow well defined blue stripe, bordered with black, extends from the eye to the scaly part of the operculum; a second runs below the eye from the front of the mouth; a third extends from the angle of the mouth to the serrated part of the præoperculum. The spines of the dorsal fin are white, but the membranes and filaments black; the rest of the fin is yellow, with a broad dark blue stripe nearer the margin than the base; the anal and ventral fins similar; the caudal and pectorals are of a fine yellow.

South Australia. Length seven inches.

749. *HETEROSCARUS MODESTUS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. II., p. 75.

D. 14/10. A. 2/11. P. 13. L. lat. 32. L. transv. 13.

Shorter than *H. filamentosus*. Cheeks covered with large thin, flat scales; minute scales on the upper limb of the præoperculum, which is striate-serrate; the operculum is naked on its anterior half and covered with pores, on its posterior portion there are three series of large scales, behind which again it is naked and

striated. The first few spines of the dorsal end in filaments; the caudal fin is truncate; ventrals united at the base, of one spine and four rays. Colour (in spirits) of a fleshy pink, with the sides of the head brilliant; no trace of coloured stripes on the head; the fins are yellow, with a black tinge on the anterior and posterior parts of the dorsal; the caudal has four transverse black bands; the anal with a broad, faint, black stripe along the middle, and the second half of the ventral is of the same colour.

South Australia. Length six inches.

750. HETEROSCARUS CASTELNAUI, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 36, pl. 5, fig. 2.

Port Jackson.

Genus ODAX, Cuv. & Val.

Checks and opercles scaly; scales of the body small or rather small; lateral line continuous; Snout conical. The edge of each jaw is sharp, cutting, without distinct teeth anteriorly; the dentigerous plate of the lower pharyngeal triangular, much broader than long.

Coasts of Australia and New Zealand.

751. ODAX BALEATUS, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 240.

“*Kelp Fish*” of Tasmania.

Odax algensis, Richards., Ann. and Mag. Nat. Hist., 1840, p. 26.

D. 16-17/12. A. 3/12. L. lat. 39. L. transv. 4/13. Vert. 19/17.

Præoperculum finely serrated posteriorly. Sides of the head with red and blue streaks; dorsal and anal fins with dark purple edges and with many very short, slender, oblique bars, regularly crossing the rays. Specimens in spirits show a dark band running from the snout, through the eye, to the curve of the lateral line,

where it disappears, or is replaced by a series of indistinct dark blotches.

Tasmania. Port Jackson.

752. ODAX FRENATUS, Gunth.

Gunth., Cat. Fishes IV., p. 241.

D. 31. A. 13. L. lat. 42. L. transv. 3/11.

Præoperculum entire; dorsal fin nearly even; a dark brown band from the snout, through the eye, to the end of the operculum; a silvery band below the brown one, and continued on to the tail, where it is gradually lost; a blackish spot anteriorly on the dorsal fin.

West Australia.

753. ODAX RICHARDSONII, Gunth.

Gunth., Cat. Fishes IV., p. 241.—Castelnau, Proc. Zool. Soc., Victoria, Vol. I., p. 152.

“*The Stranger*” of the Melbourne Fishermen.

D. 17/13. A. 3/11-12. L. lat. 60. L. transv. 7/20.

Præoperculum finely serrated posteriorly; none of the fin rays produced; dorsal fin even; caudal rounded. Colour of fresh specimens green, or blue, or red, tinged with yellow, with six to eight rather obscure dark cross-bands; belly white; sides of head with blue and yellow bands.

Port Phillip.

754. ODAX SEMIFASCIATUS, Cuv. & Val.

Gunth., Cat. Fishes IV., p. 241.—Castelnau, Proc. Linn. Soc., N.S. Wales, Vol. III., p. 390.

“*Rock Whiting*” of the Sydney Fishermen.

D. 18/12. A. 2/11. L. lat. 63. L. trans. 15-20.

Very much like *O. Richardsonii*, but with the præoperculum entire. The colour is sky-blue with a golden spot on each scale,

or green with the belly white, and with transverse black spots on the back.

Port Jackson. Length fourteen inches.

755. *ODAX RADIATUS*, Quoy. & Gaim.

Gunth., Cat. Fishes IV., p. 242.

Odax lineatus, Richards., Voy. Erebus and Terror, p. 133, pl. 60, fig. 1-5.

D. 30/31. A. 13. L. lat. 44. L. transv. 4/10.

Præoperculum entire; the first dorsal spine slightly produced; caudal fin with the middle prolonged, rhombic. Back violet, belly orange-coloured, a carmine red band along the side of the back; a reddish violet line commences behind the eye, and is forked at the origin of the lateral line, one part running above; the other below, the convex portion of the lateral line; a single reddish-violet line runs along and above its straight portion. Sides of the head with blue longitudinal lines; operculum with a dark green spot. Dorsal fin with greenish, darker-edged longitudinal lines, and with a blackish band within its margin; the anterior spine dark; a black band, edged with red posteriorly occupies the anterior third of the base of the fin. Caudal fin blackish posteriorly; anal yellowish; pectoral rose-coloured; the outer ventral ray produced, with a red, black-edged longitudinal band.

West Australia.

756. *ODAX OBSCURUS*, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 154.

D. 28. A. 15. P. 14. C. 13. L. lat. 45.

Snout not so produced as in *O. Richardsonii*, and the scales much larger. Præoperculum very finely denticulated. General colour purplish-black, the upper part of the head lighter, the sides of the head with numerous narrow, flexuous red lines; eye

red, with a broad external blue circle; dorsal and anal fins of a light blue colour, covered with oblique scarlet lines, border black; the other fins black.

Port Phillip.

757. *ODAX PUSILLUS*, Casteln.

Proc. Zool. Soc., Vict., Vol. II., p. 72.—Researches on the Fishes of Australia, p. 36.

D. 28. A. 15. P. 15.

Height of body one-sixth of the total length. Scales large; præoperculum ciliated; caudal fin pointed, the middle rays being the longest. Colour lilac, with a faint but broad band from the mouth, over the eye, to the base of the caudal fin.

South Australia. Length three inches.

758. *ODAX WATERHOUSEI*, Casteln.

Neodax Waterhousei, Casteln., Res. Fishes Aust. p. 37.

D. 27. A. 14.

Body elongate; eye rather large; præoperculum serrated; dorsal fin of very flexible rays. Caudal fin rounded; scales moderate; several series of scales on the cheeks. General colour (in spirits) yellowish-pink, with a faint longitudinal and rather obscure streak on each side of the body, and of the head; fins yellow.

South Australia. Length about two inches.

Count Castelnau formed the genus *Neodax* for this species, and others of the genus *Odax*, having a serrated præoperculum and soft flexible dorsal fin. I scarcely think the genus is necessary.

759. *ODAX BRUNNEUS*, *n. sp.*

D. 28. A. 14. L. lat. 30.

Height of body one-fifth of the total length; præoperculum rounded, and finely crenulated; caudal fin rounded; ventrals close together, the space between covered by two long, pointed scales. Colour chocolate-brown, the fins redder, five or six series of small spots on the dorsal fin.

Port Jackson. Length three and a-half inches.

Genus OLISTEROPS, Richards.

Head entirely naked; scales of moderate size; lateral line continuous; snout of moderate extent; dorsal spines numerous, flexible. Teeth as in *Odx*.

Australia.

760. OLISTEROPS CYANOMELAS, Richards.

Ann. and Mag. Nat. Hist., 1851, p. 291.—Gunth., Cat. Fishes IV., p. 243.

D. 18/10. A. 3/10. L. lat. 48. L. transv. 7/14.

The height of the body is contained five times and a-half in the total length. Blackish-green: a bluish streak along the upper and lower margins of the caudal and along the upper margin of the pectoral fins.

Melbourne. King George's Sound.

This species is subject to very great variations in colour, seeming to change at different seasons. The following species I believe to be distinct, though placed by Count Castelnau as a synonym of *O. cyanomelas*.

761. OLISTEROPS BRUNNEUS, Maccl.

Proc. Linn. Soc. N.S. Wales, Vol. III., p. 36, pl. 5, fig. 1.
Port Jackson.

Genus SIPHONOGNATHUS, Richards.

Head and body very elongate; snout long as in *Fistularia*, upper jaw terminating in a long, pointed skinny appendage;

opercles and cheeks scaly; scales of moderate size; lateral line continuous; dorsal spines numerous, flexible. Teeth as in *Odar*.

Australia.

762. SIPHONOGNATHUS ARGYROPHANES, Richards.

Proc. Zool. Soc. 1857, p. 238, pl. 6.—Gunth., Cat. Fish. IV., p. 244.

D. 24/22. A. 14. L. lat. 105. L. transv. 3/12.

A brownish violet band on the median line of the back, another from the snout, through the eye, to the tip of the caudal fin, which is lanceolate, a silvery band along and below the brown lateral one.

King George's Sound. Length sixteen inches.

ORDER III. ANACANTHINI.

Vertical and ventral fins without spinous rays (Gadopsis excepted). The ventral fins, if present, are jugular or thoracic. Air-bladder, if present, without pneumatic duct.

FAMILY I. GADOPSIDÆ.

A small portion of the dorsal and anal fins is formed of true spines. Ventrals jugular. Gill-openings wide.

Genus GADOPSIS, Richards.

Body slightly elongate, covered with very small scales. Snout of moderate extent, obtuse, with the upper jaw overlapping the lower; cleft of the mouth of moderate width, small cardiform teeth in the jaws, on the vomer and the palatine bones. One dorsal, the spinous portion rather shorter than the soft; anal spines three; caudal distinct. Ventrals jugular, composed of a single bifid ray. Branchiostegals six; gills four, with a narrow slight slit behind the fourth; pseudobranchiæ present, glandular; gill-opening wide; gill-membrane not united. An air-bladder; pyloric appendages in moderate number.

Fresh-waters of Australia.

763. *GADOPSIS MARMORATUS*, Richards.

Voy. Erebus and Terror, p. 122, pl. 59, fig. 6-11.—Gunth., Cat. Fishes IV., p. 318.

B. 6. D. 10-11/25-26. A. 3/18-19. V. 1.

The dorsal and anal fins are enveloped in thick skin ; ventral longer than pectoral. Reddish-brown, marbled with darker.

Fresh-waters of New South Wales, Victoria, Tasmania, and South Australia.

FAMILY II. LYCODIDÆ.

Vertical fins confluent into one, without any spines. Ventral fin if present, small, attached to the humeral arch, jugular ; gill opening narrow ; gill-opening attached to the isthmus.

Genus *BLENNODESMUS*, Gunth.

Body elongate, compressed, band-like, rudimentary scales being imbedded in the mucous integuments of the body. Lateral line rather indistinct. Eye of moderate size. Head compressed, with the snout pointed and lower jaw prominent. Small conical teeth in both jaws ; palate smooth. Barbels none. Gill-opening and verticals as in the other genera of the family. Ventral fins reduced to two short filaments, jugular. No prominent anal papilla.

Australia.

764. *BLENNODESMUS SCAPULARIS*, Gunth.

Proc. Zool. Soc., 1871, p. 667, pl. 67, fig. A.

D. + C. + A. 50 + 9 + 40. V. 1.

The height of the body is one-twelfth of the length, exclusive of the caudal fin, the length of the head one-seventh. Interorbital space convex, much narrower than the eye, the diameter of which is one-fifth of the length of the head ; snout pointed, compressed, rather longer than the eye. The maxillary extends beyond the

front margin of the orbit. The vent is twice as distant from the extremity of the caudal as from the snout. The dorsal fin commences above the posterior half of the pectoral, and is lower than the body; caudal fin rounded. The anal commences immediately behind the vent. Pectorals half as long as the head. Ventrals close together, reduced to a pair of filaments, about as long as the eye. Body brownish, marbled with darker, sides of the head with small round yellowish spots; a black, yellow-edged ocellus in the scapular region; an undulated yellowish line along the middle of the nape and head.

Port Mackay (Queensland). Length three inches.

FAMILY III. GADIDÆ.

Body more or less elongate, covered with small, smooth scales. One, two, or three dorsal fins, occupying nearly the whole of the back; rays of the posterior dorsal well developed; one or two anal fins. Caudal fin free from dorsal and anal, or if united, the dorsal with a separate anterior portion. Ventrals jugular, composed of several rays; or if they are reduced to a filament, the dorsal is divided into two. Gill openings wide; the gill-membranes generally not attached to the isthmus. Pseudobranchiæ none or glandular, rudimentary; an air-bladder and pyloric appendages generally present.

Cold and temperate seas of the Northern hemisphere, rare in the Southern.

Genus *LOTELLA*, Kaup.

Body of moderate length, covered with small scales. A separate caudal fin; two dorsal fins and one anal; ventral fins with a flat base, and composed of several rays. Teeth in the upper jaw in a band, with an outer series of larger ones. Vomerine or palatine teeth none. Chin with a barbel. Branchiostegals seven or six,

Western Pacific.

765. *LOTELLA FULIGINOSA*, Gunth.

Gunth., Cat. Fishes IV., p. 347.

D. 9. 50 A. 54. V. 9.

Head rather short and broad, one-fourth of the total length, and about as high as long; the snout is equal in length to the diameter of the eye and is obtuse; the maxillary extends beyond the vertical from the middle of the eye; barbel rather longer than the eye; nostrils close together, immediately in front of the eye. Interorbital space flat, its width being equal to the vertical diameter of the orbit. The teeth in the upper jaw form a band, with an outer series of widely set stronger teeth; lower jaw with a single series like the outer series of the upper. Body and tail compressed, the latter tapering posteriorly, so that its least depth is equal to one diameter of the eye; the two outer ventral rays produced into filaments, extending nearly to the vent. Uniform brown; fins blackish; ventral filaments white.

Port Jackson (Castelnau).

766. *LOTELLA CALLARIAS*, Gunth.

Ann. and Mag. Nat. Hist., 1863, p. 116.

"Cod" of Melbourne Fishermen.

D. 6. 65. A. 57. P. 22. V. 7.

Similar to *L. fuliginosa*, but with a shorter head, it being one-fifth of the total length (caudal fin excluded). The two outer ventral rays produced into a filament. Colour uniform brown. The ventrals with the filaments are as long as the pectorals; the barbel is not quite half the length of the head.

Port Phillip. Length nineteen inches.

767. *LOTELLA MARGINATA*, *n. sp.*

D. 5. 56. A. 47. P. 21. V. 6.

"Beardy" of Fishermen.

The width of the head behind the eyes is about equal to its length, and considerably less than the height of the body below the first dorsal fin; the body tapers towards the tail which is much compressed before the fin and not higher than the diameter of the eye. Snout very obtuse and rounded, projecting beyond the mouth; the maxillary reaches to the vertical behind the posterior margin of the orbit; the barbel is about equal in length to nearly two diameters of the eye. Ventral fins much shorter than the pectorals, the two first rays white and produced into filaments; dorsal and anal fins pointed behind, caudal long and rounded. Scales very small. Colour uniform brownish, with the margins of all the fins white.

Port Jackson. Length twelve to twenty inches.

768. *LOTELLA GRANDIS*, Ramsay.

Proc. Linn. Soc. N.S. Wales, Vol. V., p. 464.

Wollongong.

Genus *PSEUDOPHYCIS*, Gunth.

Body of moderate length, covered with small scales. A separate caudal fin; two dorsal fins and one anal; ventral fins with an exceedingly narrow styliiform base, but composed of several rays. Teeth in the jaws in a band, of equal size; no vomerine or palatine teeth. Chin with a barbel. Branchiostegals seven.

Australia and New Zealand.

769. *PSEUDOPHYCIS BARBATUS*, Gunth.

Ann. and Mag. Nat. Hist., 1863, p. 116.—Castelnau, Proc. Zool. Soc., Victoria, I., p. 162.

“*Rock Cod*” of the Melbourne Market.

B. 7. D. 9. 50. A. 55. V. 5. L. lat. 140.

Oblong, becoming compressed a little and tapering towards the tail; the head is broad and flat above; the snout rounded but

not very convex, overlapping the mouth; the eye is large; the maxillary reaches the vertical from the posterior margin of the orbit; the barbel is very short and slender; the space between the snout and the anus is not quite so long as the anal fin; fins very scaly. Colour brownish above, whitish beneath, all or nearly all the fins have a blackish margin.

Port Phillip. Tasmania.

FAMILY IV. OPHIDIIDÆ.

Body more or less elongate, naked or scaly. Vertical fins generally united into one; no separate anterior dorsal or anal; dorsal occupying the greater portion of the back. Ventral fins rudimentary, or absent, jugular. Gill-openings wide, the gill-membranes not attached to the isthmus. Pyloric appendages none, or in small number.

Genus DINEMATICHTHYS, Bleek.

Body elongate, covered with very small scales. Eye small; one dorsal and anal fin not continuous with the caudal; each ventral reduced to a single filament, both close together and inserted at the throat, but behind the isthmus. Bands of teeth in the jaws, on the vomer, and on the palatine bones. Upper jaw scarcely longer than the lower; barbels none. Six branchiostegals; gill-opening very wide; pseudobranchiæ none. An anal papilla.

Indian Archipelago, California, and Australia.

770. DINEMATICHTHYS MIZOLEPIS, Gunth.

Ann. and Mag. Nat. Hist., 1867, Vol. XX., p. 66.

D. 83. A. 69. C. 14. L. lat. 90.

Like *D. iluocateoides*, but the scales much larger. Head naked; palatine teeth in a long stripe.

Cape York. Length two inches.

Genus GENYPTERUS, Philippi.

Body elongate, compressed, covered with minute scales. Eye of moderate size. Vertical fins continuous; ventral fins replaced by a pair of bifid filaments (barbels) inserted below the glossohyal. Teeth in the jaws, on the vomer, and the palatine bones; the outer series in the jaws and the single series of the palatines contain strong teeth. Lower jaw received within the upper. Vent situated at some distance behind the pectoral fin. Seven or eight branchiostegals; gill-openings wide; gills four, a slit behind the fourth; pseudobranchiæ and air-bladder present. Pyloric appendages in small number.

South Pacific Ocean, South Africa.

731. GENYPTERUS AUSTRALIS, Casteln.

Proc. Zool. Soc. Victoria, Vol. I., p. 164.

“*The Rock Line*” of the Melbourne Market.

Height of body eight times in the total length, diameter of eye seven times and a-half in the length of the head; the barbels in the young specimens one-third, and in the adults one-half of the length of the head. The teeth in the jaws are in two series, in the outer the teeth are large, thick, conical and wide apart; in the inner, smaller, closer and sometimes in pairs. The lateral line is well marked until the posterior eighth of the body; it is formed of several lines placed near one another and having a notch from distance to distance; the number of these notches is about forty-seven. The scales are small, the transversal lines numbering nearly three hundred; the pectoral fins are contained about twice and a-half times in the length of the head. Colour light lilac, the belly white; the body is covered with large marbled blotches, of irregular shape, confluent on the back and extending over the head. Eye silvery. Dorsal and anal fins marbled like the body, the margin of the first white, of the anal flesh-colour. Pectorals spotted.

Port Phillip. Length about two feet.

Genus *TYPHLONUS*, Gunther.

“Head large, compressed, with most of the bones in a cartilaginous condition; the superficial bones with large muciferous cavities not armed. Snout a thick protuberance, projecting beyond the mouth, which is rather small, inferior. Trunk very short, the vent being below the pectoral; tail thin, strongly compressed, tapering, without separate caudal. Eye externally not visible, reduced to a minute rudiment hidden below the skin. Bands of villiform teeth in the jaws, on the vomer and palatine bones. Barbel none. Ventrals reduced to simple filaments, placed close together on the humeral symphysis. Gill-openings very wide, the gill-membranes being but slightly united in front. Gills four; gill-laminæ rather short; gill rakers of moderate length. Scales thin, deciduous, small.

Pacific.”

772. *TYPHLONUS NASUS*, Gunth.

Ann. and Mag. Nat. Hist., 1878, Vol. II., p. 21.

“The head of this most remarkable form is somewhat compressed, deep, as thick in the rostral as in the opercular portion; its length is more than one-fourth of the total. Protuberances formed by projecting portions of the cranium, occupy the upper and lateral surfaces of the head; and more especially, one in front and another on each side of the snout, are very conspicuous.

North-east of Australia in 2,440 fathoms, (Challenger).”

Genus *APHYONUS*, Gunth.

“Head, body, and tapering tail strongly compressed, enveloped in a thin, scaleless, loose skin. Vent far behind the pectorals. Snout swollen, projecting beyond the mouth, which is wide. No teeth in the upper jaw; small conical teeth in the lower, pluriserial in front, uniserial on the side. Vomer with a few rudimentary teeth; palatine teeth. Nostrils close together, small. No

externally visible eye. Barbel none. Ventrals reduced to simple filaments placed close together, and near to the humeral symphysis. Gill-membranes not united. Four branchial arches, the posterior without gill-laminæ, the anterior with very short gill-rakers and rather short gill-laminæ. Head covered with a system of wide muciferous channels and sinuses, the dermal bones being almost membranaceous, while the others are in a semicartilaginous condition. Notochord persistent, but with a superficial indication of the vertebral segments, (as in some *Leptocephaline* forms).

Australian Seas."

773. *APHYONUS GELATINOSUS*, Gunth.

Ann. and Mag. Nat. Hist., 1878, Vol. II., p. 22.

"The head in the preserved specimen is compressed, rather deep, and enveloped in loose skin; especially on the upper side of its anterior half the skin forms a long, loose bag, which during life is probably filled with mucus. Transparent, colourless, like a *Leptocephalus*.

North-east Australia in 1,400 fathoms (Challenger)."

GENUS *FIERASFER*, Cuv.

Body produced into a very long and tapering tail, naked. Eye moderate. Vertical fins continuous, very low; no ventrals; no barbels. Cardiform teeth in the jaws, on the vomer and the palatine bones, sometimes with canines; the teeth on the vomer form an oblong patch and are generally stouter than the others. Lower jaw received within the upper. Vent situated at the throat. Seven branchiostegals; gill-openings wide, the gill-membranes united below and not attached to the isthmus; gills four, a slit behind the fourth; pseudobranchiæ none; air-bladder present. No pyloric appendages.

Inhabitants of nearly all seas.

774. *FIERASFER HOMEI*, Richards.

Voy. Erebus and Terror, p. 74, pl. 44, figs. 7-18.—Gunth., Cat. Fishes IV., p. 382.

The length of the head is seven times and a-half or eight times in the total length; its width one half its length. Gill-openings of moderate width, the united gill-membranes leaving half of the isthmus uncovered. Vent a little in advance of the vertical from the root of the pectoral fin. Teeth small, cardiform; two larger ones anteriorly in the upper jaw and on the vomer; an outer series of stronger teeth along the side of the lower jaw. Dorsal fin very low, but distinct. Yellowish with some scattered darker dots on the back.

Torres Straits (Chevert Exp.)

Genus *CONGROGADUS*, Gunth.

Body elongate, compressed, eel-like, covered with very small scales; vertical fins united, long. Ventrals none. Cleft of the mouth moderate, with the lower jaw prominent. Jaws with a single series of small teeth, closely set; palate smooth. Branchiostegals six; gill-openings of moderate width, gill-membranes united below the throat, not attached to the isthmus; gills four, a slit behind the fourth; pseudobranchiæ well developed. Vent remote from the head. Air-bladder and pyloric appendages none.

Indian Archipelago and North Australia.

775. *CONGROGADUS SUBDUCENS*, Richards.

Gunth., Cat. Fishes IV., p. 388.

Machærium subducens, Richards., Voy. Erebus and Terror, pl. 44, figs. 1-6.

B. 6. D. 71. C. 10. A. 60-65.

The height of the body is three-fifths of the length of the head, which is contained six times and a-half to seven times in the total length. The dorsal fin commences above the end of the pectoral.

Each jaw on each side has more than forty small teeth. Body brownish, uniform or irregularly marbled or spotted; a black ocellus on the operculum; lower part of the cheeks with pearl-coloured spots; base of the dorsal and anal fins with bluish spots.

Port Darwin, Port Essington, and West Australia.

Count Castelnau described in "Researches on the Fishes of Australia, p. 43-44," a large Fish from Western Australia, which he refers with some doubt to the family *Ophidiidæ*. It cannot, however, possibly belong to this family, and the very defective condition of the specimen from which the Count manufactured the genus and species, leaves it a matter of great doubt as to its being even of the Order *Anacanthini*. I therefore omit it altogether from the Catalogue. He gave it the name of *Othos cephalotes*.

FAMILY V. MACRURIDÆ.

Body terminating in a long, compressed, tapering tail, covered with spiny, keeled or striated scales. One short anterior dorsal fin, the second very long, continued to the end of the tail, and composed of very feeble rays; anal like the second dorsal; no caudal. Ventral fins thoracic or jugular, composed of several rays. Pseudobranchiæ none; six or seven branchiostegals; air-bladder present. Pyloric appendages numerous.

Genus MACRURUS, Bl.

Scales of moderate size, keeled or spiny. Snout produced, conical; mouth inferior. Head with rough ridges; the suborbital ring forms a strong lateral ridge, joined with, and supporting the angle of the præoperculum, which has a very distinct ridge. Teeth in a band, villiform or cardiform, without larger ones in the outer series; palate smooth. Ventral fins below, or immediately behind or before the pectorals. A barbel.

All temperate seas.

776. *MACRURUS AUSTRALIS*, Richards.

Proc. Zool. Soc., 1839, p. 100.—Gunth., Cat. Fishes IV., p. 391.
D. 13. 88. A. 87. V. 7. L. lat. 130. L. trans. 4/15. Vert. 14/53.

Each scale with twelve or thirteen keels, and with the margin crenulated. The second dorsal ray smooth, extending beyond the origin of the second dorsal fin, if laid backwards. Vent situated behind the vertical from the last ray of the first dorsal. The projecting part of the snout trihedral, scarcely longer than the diameter of the eye, which is rather less than one-third of the length of the head.

Port Arthur, Tasmania. Length seventeen inches.

Genus *CORYPHÆNOIDES*, Gunner.

Scales of moderate size, spiny or smooth. Snout short, obtuse, obliquely truncated; cleft of mouth lateral. Head without prominent ridges; the suborbital ring is not joined to the angle of the præoperculum, nor is the latter supported by it. Præopercular angle with a very indistinct ridge. Teeth in the upper jaw in a narrow band, those of the outer series larger than the others; palate smooth. Ventrals below the pectorals. A barbel.

Northern Atlantic. Southern Australian Seas.

777. *CORYPHÆNOIDES DENTICULATUS*, Richards.

Voy. Erebus and Terror, p. 53, pl. 32, f. 1-3.—Gunth., Cat. Fishes IV., p. 396.

First dorsal fin of eleven rays. Ventrals eight; other fins imperfect. Five series of scales between the anterior dorsal and the lateral line; scales spiny. The first dorsal ray very slender, and not serrated. Snout very short and obtuse; head without ridges. Teeth in the upper jaw in a very narrow band, those of the outer series being much stronger and widely set. The vent is situated vertically behind the anterior dorsal.

South Australia.

778. *CORYPHÆNOIDES VARIABILIS*, Gunth.

Ann. and Mag. Nat. Hist. 1878, Vol. II., p. 27.

Snout obtusely conical, projecting beyond the mouth, the cleft of the mouth extends beyond the middle of the eye. The teeth of the outer series are visibly stronger than the remainder. Barbel nearly as long as the eye. The interorbital space is flat, its width being much less than the diameter of the eye, which is comparatively small. The scales are provided with five ridges, each ridge composed of several spines, the central ridge being the strongest. There are eight scales in a transverse series between the first dorsal and the lateral line. Lower limb of the præoperculum scaleless. Second dorsal spine armed with barbs in front, which are rather distantly set. The second dorsal fin commences at a distance from the first, which is less than the length of the head.

South of Australia over 2,000 fathoms (Challenger).

FAMILY VI. PLEURONECTIDÆ.

Body strongly compressed, flat, with one of the sides, which is always turned upwards, coloured, whilst the other is colourless. Both eyes placed on the coloured side; and although the bones of the skull are present on both sides, they are not symmetrical. Dorsal and anal fins exceedingly long, without divisions. Gills four; pseudobranchiæ well developed; air-bladder none.

Carnivorous Fishes frequenting all coasts and rivers and living on the bottom.

Genus *ARNOGLOSSUS*, Bleek.

Mouth wide or rather wide, the length of the maxillary being more or not much less than one-third the length of the head. Teeth minute, of equal size, in a single series in both jaws; vomerine and palatine teeth none. The dorsal fin commences on the snout; dorsal and anal rays simple. Scales of moderate size; deciduous; lateral line with a strong curve above the pectoral.

Eyes on the left side. Gill-membranes broadly united below the throat; gill rakers slender, styliform.

European seas. East Indian Archipelago, &c.

779. *ARNOGLOSSUS BLEEKERI*, *n. sp.*

D. 87. A. 67. L. lat. about 40.

Greatest height of body a little less than half the length, exclusive of caudal fin; length of head less than half the height of body. Mouth very oblique, the maxillary not extending beyond the vertical from the anterior margin of the orbit. Eyes very close together, the lower slightly in advance; the profile of the head is slightly concave or emarginate in front of the eyes; pectoral fins small; ventrals of about seven rays; caudal rather pointed; scales very deciduous, large; lateral line somewhat angularly curved above the pectorals; scales of the operculum very large. Colour uniform pale reddish-yellow, a spot on the upper part of the operculum.

Endeavour River.

Genus *PSEUDORHOMBUS*, Bleek.

Mouth wide, the length of the maxillary being more than one-third of the head. Teeth in both jaws in a single series, of unequal size; vomerine and palatine teeth none. The dorsal fin commences on the snout; dorsal and anal rays simple. Scales small or rather small; lateral line with a strong curve anteriorly. Eyes on the left side; interorbital space not concave. Gill-membranes united below the throat, not attached to the isthmus; gill-rakers lanceolate.

Nearly all seas.

780. *PSEUDORHOMBUS RUSSELLII*, Gray.

Gunth., Cat. Fishes, Vol. IV., p. 424.

“*Flounder*” of Colonists.

B. 7. D. 70. A. 56. L. lat. 75.

The height of the body is one-half or less, of the length (caudal fin excluded); the length of the head two-sevenths of the same. Scales ciliated, those on the cheeks and anterior part of body, smaller than those on the tail; interorbital ridge very narrow and naked; no spines or tubercles along the lateral line or base of the fins. Lateral line with a semicircular curve over the pectoral fins. Snout a little longer than the orbit, the diameter of which is one-fifth or one-sixth of the length of the head. Lower jaw prominent; the length of the maxillary is two-fifths of that of the head. Teeth conical, pointed. Upper jaw with two or three pairs of strong teeth in front, and a series of very small ones laterally; lower jaw with about five strongly widely set teeth on each side. Front margins of the orbits nearly on the same level. Each fin-ray has a series of small smooth scales, and the anterior rays of the dorsal and anal have their tips prolonged beyond their membranes; the distance of the dorsal from the caudal is one-third of the depth of the free portion of the tail; the longest dorsal rays are in the posterior third of the fin; the pectoral is not quite twice as long as the ventral. Gill-rakers compressed, lanceolate, at moderate distances, half as long as the orbit. Yellowish-brown, generally with two or three dark spots on the lateral line.

Port Jackson. Port Essington.

781. PSEUDORHOMBUS MULTIMACULATUS, Gunth.

Gunth., Cat. Fishes IV., p. 427.

D. 71. A. 55. L. lat. 78.

The height of the body is contained once and three-fourths to once and four-fifths in the length, caudal fin excluded; the length of the head thrice and a-half in the same. Scales ciliated. Eyes very close together, with an elevated, naked ridge between. Snout very short, as long as the eye, the jaws equal anteriorly;

the maxillary has its dilated portion scaly, and extends to behind the middle of the eye. The upper jaw has three pairs of strong teeth in front and a series of smaller ones laterally; the lower has about fifteen on each side. The dorsal fin terminates at a short distance from the caudal, the posterior rays longer than the anterior; caudal rounded, rather prolonged; pectorals two-thirds of length of head; ventrals extend beyond the origin of the anal. Gill-rakers lanceolate, disposed at moderate distances, half as long as the eye. Greyish-brown, with smaller and larger sub-ocellated blackish-brown spots; fins finely spotted with brown, a series of larger distant spots along the basal half of the dorsal and anal fins.

Port Jackson (Aust. Mus.)

Genus TERATORHOMBUS, *n. gen.*

Mouth large; dentition very strong. The dorsal fin commences on the top of the head, the rays of that and the anal simple. Scales rather small, lateral line with a strong curve over the pectoral fin. Eyes on the left side, rather close together, the head very deeply excavated above the upper orbit. The blind side coloured like the other.

I looked upon this as an abnormal specimen of *Pseudorhombus Russellii*, which had had the forehead bitten out in its youth by some other fish, but I have lately seen, with Mr. Ramsay, another specimen so exactly resembling it in all its peculiarities, that I am compelled to look upon it as not accidental.

782. TERATORHOMBUS EXCISICEPS, *n. sp.*, (Plate II.)

D. 73. A. 60. L. lat. 77.

Height of body about one-half of the total length and twice the length of the head. Teeth long, strong, acute and distant. The snout is very convex about the mouth, behind this there is a very deep excavation, much more than semicircular; the upper

eye is situated in the lower part of the excavation, and on the upper part the nape projects in a point over the eye. The colour is brownish on both sides and a good deal speckled. The fins are minutely spotted with a deeper shade of brown.

Port Jackson. Length about eight inches.

Genus RHOMBOIDICHTHYS, Bleek.

Mouth of moderate width or small, the length of the maxillary being one-third, or less than one-third, of that of the head. Teeth minute, of equal size, in a single or double series; vomerine and palatine teeth none. Eyes separated by a concave more or less broad space. The dorsal commences on the snout; dorsal and anal rays simple. Scales ciliated; lateral line with a strong curve anteriorly. Eyes on the left side.

Tropical seas, Mediterranean, Japan, and Australia.

783. RHOMBOIDICHTHYS SPINICEPS, *n. sp.*

D. 84. A. 64. L. lat 40.

Height of the body one-half of the total length. Scales large, deciduous, those of the lateral line square. Mouth small; teeth minute, in a single series. Eyes rather large, about one-third of the length of the head, the lower a little in advance of the upper; the interspace concave and scaly, and about two diameters of the orbit apart. The profile of the head almost vertical, with a slight concavity above the mouth; a horny point on the snout immediately above the maxillary, another on the upper front of the lower eye, and a-third on the lower front of the upper eye. The rays of the dorsal and anal fins are simple and clothed with smooth small scales, the rays are equally long throughout, those on the dorsal begin immediately above the snout, and in both fins they terminate close to the caudal; ventral fins close together; pectorals about the length of the head, and smallest on the blind side, but slight and narrow on both sides. Colour brownish-red, faintly mottled all over with blackish, two larger black spots on

the caudal fin, one on the upper, the other on the lower edge, behind the middle. Length four and a-half inches.

Port Jackson.

Genus *AMMOTRETIS*, Gunth.

Eyes on the right side, on the same level, or the lower rather in advance. Mouth unsymmetrical, narrower on the right side than on the left, the length of the left maxillary being less than one-third of the head; teeth on the blind side only, where they are villiform, forming bands; no vomerine or palatine teeth. Dorsal and anal rays branched and scaly; the dorsal fin commences on the snout and is not continued on to the caudal. Two ventrals, the right in the same line, and continuous with, the anal. Scales small, ctenoid; lateral line straight. Gill-openings narrow, the gill-membranes broadly united below the throat; gill-rakers short, conical.

Australia.

784. *AMMOTRETIS* *ROSTRATUS*, Gunth.

Gunth., Cat. Fishes IV., p. 458.

B. 7. D. 80. A. 53. P. 12. V. dext. 6, sin. 4. L. lat. 90.

The upper part of the snout is produced into a flap overhanging the lower jaw. Colour uniform brownish-olive.

Port Jackson. Tasmania.

Genus *RHOMBOSOLEA*, Gunth.

Eyes on the right side, the lower in advance of the upper. Mouth unsymmetrical, narrower on the right side than on the left, the length of the left maxillary being less than one-third of that of the head; teeth on the blind side only, where they are villiform, forming bands; no vomerine or palatine teeth. Most of the dorsal and anal rays branched; the dorsal fin commences on the foremost part of the snout. One ventral fin, continuous

with the anal. Scales very small, cycloid; lateral line straight. Gill-openings narrow, the gill-membranes being broadly united below the throat, gill-rakers short, conical.

Australian and New Zealand Seas.

785. RHOMBOSOLEA MONOPUS, Gunth.

Gunth., Cat. Fishes IV., p. 459.

B. 5. D. 59. A. 42.

The height of the body is contained once and four-fifths in the length (without caudal), the length of the head thrice and two-thirds. Eyes separated by a naked space, the width of which is less than the vertical diameter of the eye; the lower eye is slightly in advance of the upper. Snout as long as the eye, the diameter of which is one-fifth of the length of the head. The maxillary on the right side extends to below the anterior margin of the eye; teeth in narrow bands. Jaws equal in front; the upper lip has a slight notch, in which the symphysis of the lower jaw is received. The cutaneous fold above the maxillary is not prolonged. The gill-opening does not extend upwards beyond the base of the pectorals. The dorsal fin commences on the foremost part of the snout, and terminates at a distance from the caudal, which is rather more than half the depth of the free portion of the tail; the anterior dorsal rays produced beyond the connecting membrane but considerably shorter than those behind the middle of the fin, which are nearly half the length of the head. Caudal fin, slightly rounded, one sixth of the total length. The six ventral rays are arranged in the same line with those of the anal fin, both fins being connected by a broad, complete, rayless membrane; the vent is situated on the blind side. The length of the pectoral is two-thirds of that of the head. Uniform brownish (in spirits); pectorals blackish posteriorly.

Australia (Gunther).

786. RHOMBOSOLEA TAPIRANA, Gunth.

Gunth., Cat. Fishes IV., p. 459.

B. 6. D. 66. A. 50.

The height of the body is contained once and three-fourths in the length (without caudal), the length of the head nearly three times. Eyes separated by a very narrow ridge, the lower being slightly in advance of the upper. Snout as long as the eye, the diameter of which is one-fifth of the length of the head; the maxillary of the right side extends to below the anterior margin of the eye; teeth in very narrow bands; jaws equal in front, overlapped anteriorly by a cutaneous flap half as long as the eye. Gill-opening and ventral fin as in *R. monopus*. The dorsal fin commences at the base of the rostral flap, and terminates close by the caudal; the two anterior dorsal rays are prolonged beyond the connecting membrane, but are much shorter than the longest rays, which are behind the middle of the fin. Caudal fin slightly rounded, its length being contained five times and a-half in the total. The pectoral is little more than half the length of the head. Brown (in spirits), marbled with darker, and spotted with white.

King George's Sound. Tasmania.

787. RHOMBOSOLEA LEPORINA, Gunth.

Gunth., Cat. Fishes IV., p. 460.

B. 6-7. D. 65. A. 43.

The height of the body is contained twice and a-third in the length (without caudal), the length of the head four times. Eyes separated by a naked space, the width of which is less than the vertical diameter of the eye. The lower eye is in advance of the upper. Snout longer than the eye, the diameter of which is one-seventh or one-eighth of the length of the head. The maxillary of the right side extends to below the anterior margin of the eye; teeth in rather broad bands. The upper jaw slightly overlaps the lower, which is received in a notch of the upper lip. The

cutaneous fold above the maxillary is well developed, bearing the first dorsal rays. The gill-opening does not extend upwards beyond the base of the pectorals. The dorsal fin terminates at a distance from the caudal which is rather more than half the depth of the free portion of the tail; the anterior dorsal rays produced beyond the connecting membrane with their tips split into two fine filaments, but considerably shorter than the rays behind the middle of the fin, the length of which is two-fifths of that of the head. Caudal fin rounded, one-sixth of the total length. Ventral and anal fins as in *R. monopus*. The length of the pectoral is not much more than one-half of that of the head. Uniform-brownish (in spirits).

Australia (Richards.) Length nine inches.

788. RHOMBOSOLEA FLESOIDES, Gunth.

Gunth., Ann. and Mag. Nat. Hist., 1863, Vol. II., p. 117.

B. 6. D. 62. A. 41.

Similar to *R. leporina*, but with the body more elevated. The height of the body is rather less than one-half the length (without caudal), the length of the head two-sevenths. Eyes separated by a narrow, low, naked ridge, the lower being in advance of the upper. A cutaneous flap is suspended from the maxillary, overhanging the mouth. The gill-opening does not extend upwards beyond the base of the pectoral. The dorsal fin terminates at a distance from the caudal, equal to one-fourth of the depth of the free portion of the tail; the first dorsal ray is inserted immediately behind the maxillary appendage, and the four or five anterior rays are produced beyond the connecting membrane, but are considerably shorter than those behind the middle of the fin, which are nearly half as long as the head. Caudal subtruncated, its length being rather more than one-sixth of the total. The pectoral is somewhat more than half the length of the head.

Ventral as in *R. monopus* and *leporina*. Uniform brown. Length fourteen inches.

Port Phillip. "*Flounder*" of the Fishermen.

789. RHOMBOSOLEA BASSENSIS, Casteln.

Proc. Zool. Soc., Victoria, Vol. I., p. 167.

"*The Sole*" of the Melbourne Fishmarket.

D. 75. A. 51. P. 12. C. 18. V. 7. L. lat. 90.

The height of the body is contained twice and a-half in the total length, the length of the head five times; the space between the eyes is covered with scales and is one-half the longitudinal diameter of the eye in width; the lower eye is considerably in advance of the upper; the length of the snout is contained three times and two-thirds in the length of the head, the eye five times. The dorsal fin begins at the extremity of the snout, the first twenty-five rays are prolonged into short filaments. Teeth on the blind side numerous, conical and sharp, in four or five irregular lines. Scales of body punctate-striate and strongly ciliated; the fin rays scaly. Dark brown, marbled with black, sometimes nearly entirely black.

Yarra River, Melbourne.

790. RHOMBOSOLEA VICTORIÆ, Casteln.

Pleuronectes ? Victoriæ, Casteln., Proc. Zool. Soc., Victoria, Vol. I., p. 168.

D. 56-57. A. 41-42. P. 11. C. 19. V. 6. L. lat. 85.

The height of the body is twice and one-third in the total length, the length of the head a little over four times; diameter of eye five times in the length of the head; the space between the eyes narrow and scaleless; teeth on the blind side long, slender, and numerous; the snout up to the edge of the lower eye, is as long as the diameter of the latter; the lateral line is straight, a branch from the operculum runs obliquely to the fifth

or sixth dorsal ray. Scales small, rounded and concave. The dorsal fin is highest in the middle, and the rays are all longer than the membranes, the first is bifid and free or only connected with the others by a very low membrane. Colour olive-green, with large marbled blotches of a darker and brownish colour, blind side white. Eye black, with an orange circle.

Port Phillip. "*The Melbourne Flounder.*"

This is clearly a *Rhombosolea*, a genus apparently abundant on the South Coast of Australia, but never as yet taken so far north as Sydney. Count Castelnau proposed separating the present species from *Rhombosolea*, because the dorsal fin does not commence so near the snout as in the other species.

Genus NEORHOMBUS, Casteln.

Jaws and dentition equally developed on both sides; dorsal fin commencing above the eye; eyes on the left side. Teeth strong, in form of canines, apart one from the other, in a single series; eyes large, about on the same line; the space between them forming a narrow curved ridge; mouth wide; the maxillary large, being contained a little more than twice in the length of the head; caudal well separated from the other fins; ventrals and pectorals well developed; lateral line very strongly curved over the pectoral fin, and extending on to the caudal; the scales bordered and very finely ciliated."

Australia.

791. NEORHOMBUS UNICOLOR, Casteln.

Researches on the Fishes of Australia, p. 45.

D. 55. A. ?. P. 13. C. 17.

Height of body contained twice and a-half in the total length, the length of the head three times and two-thirds, and less than its height. Snout convex in front of the eyes; dorsal fin rounded;

pectorals two-thirds of the length of the head. Colour (in spirits) dark brown.

Fremantle (Castelnau). Length nine and a-half inches.

Genus *PELTORHAMPIUS*, Gunth.

Mouth small, twisted towards the left side, toothless on the other; teeth minute, in two distinct series on the left branches of the jaws; vomerine and palatine teeth none. Eyes on the right side, of moderate size; snout dilated, flat, sharp, bent downwards, hook-like. Dorsal and anal rays branched, naked. The dorsal fin commences on the foremost part of the snout. Pectorals well developed. The right ventral is continuous with the anal, the left very small. Scales small, ctenoid; the lateral line straight. Gill-openings narrow, the gill-membranes being broadly united below the throat; gill-rakers short.

New Zealand. Norfolk Island.

792. *PELTORHAMPAUS NOVÆ-ZEALANDIÆ*, Gunth.

Gunth., Cat. Fishes IV., p. 461.

B. 5. D. 92. A. 57. P. dextr. 11, sin. 7. V. dextr. 6, sin. 5.
L. lat. 78.

Brownish-olive, marbled with darker. Two blackish blotches on the lateral line.

Norfolk Island.

Genus *SOLEA*, Cuv.

Eyes on the right side, the upper being more or less in advance of the lower. Cleft of mouth narrow, twisted round to the left side. Teeth on the blind side only, where they are villiform, forming bands; no vomerine or palatine teeth. The dorsal fin commences on the snout and is not confluent with the caudal. Scales very small, ctenoid; lateral line straight.

Inhabitants of all seas.

793. *SOLEA MICROCEPHALA*, Gunth.

Gunth., Cat. Fishes IV., p. 466.

D. 79. A. 65. P. 11. L. lat. 90.

The height of the body is contained twice and three-quarters in the length (without caudal), the length of the head nearly six times. Each scale with about thirteen spines on its margin. Jaws equal in length anteriorly; the nostril on the coloured side is prolonged into a tube as long as the eye; the left side of the snout with numerous short papillæ. Eyes very close together, the upper slightly in advance. Pectoral fin with broad base, not much shorter than the head; that on the left side is very short and attached to the gill-membrane by a fold; ventrals separate, not continuous with the anal. The dorsal and anal fins terminate immediately before the root of the caudal, their posterior rays extending beyond the middle of the caudal. Anterior dorsal rays short; caudal entirely free, its length being eight times and a-half in the total length. Brown, with eleven or thirteen dark cross-bands, broader than the interspaces: the first on the snout, the second immediately behind the eyes, the last across the root of the caudal; vertical fins black.

Port Jackson.

794. *SOLEA MACLEAYANA*, Ramsay.

Proc. Linn. Soc. N. S. Wales, Vol. V., p. 462.

Port Jackson.

Genus *PARDACHIRUS*, Gunth.

Eyes on the right side, the upper in advance of the lower. Mouth unsymmetrical, narrow, narrower on the left side than on the right; teeth minute, on the blind side only. Dorsal and anal rays scaly; the dorsal commences on the extremity of the snout, and terminates at the root of the caudal. Pectorals none. Two separate ventrals. Scales small, not or only slightly ciliated;

lateral line straight, a second on the blind side along the upper profile of the neck, commencing from the snout; each dorsal and anal ray with a pore at the base. Gill-openings narrow, the gill-membranes being broadly united below the throat; gill-rakers rudimentary.

Indian Ocean and Archipelago.

795. *PARDACHIRUS PAVONINUS*, Lacep.

Gunth., Cat. Fishes IV., p. 479.—Bleek., Atl. Ichth. Pleuron., tab. 10, fig. 1.

D. 67. A. 50-52. L. lat. 90.

Dorsal and anal rays branched. Only the scales on the head and a few on the body minutely ciliated. The height of the body is two-fifths or one third of the total length (without caudal). Yellowish-brown; the head and body with numerous larger and smaller rounded white spots, edged and minutely dotted with dark brown, and with a round black dot in the centre; vertical fins with numerous whitish ocelli.

East Indian Archipelago, and Australia, Cape Grenville (Chevert Exp.).

Genus *SYNAPTURA*, Cant.

Eyes on the right side, the upper in advance of the lower. Cleft of the mouth narrow, twisted to the left side; teeth minute, on the blind side only; no vomerine or palatine teeth. Vertical fins confluent. Scales small, ctenoid. Lateral line straight.

Indian and Australian Seas.

796. *SYNAPTURA QUAGGA*, Kaup.

Gunth., Cat. Fishes IV., p. 485.

D. 68. A. 58-60. C. 18. P. 9. L. lat. 90.

The upper eye slightly in advance of the lower. The height of the body is rather less than one-third of the total length, the

length of the head somewhat less than one-sixth. Jaws equal in length anteriorly; nasal tube not prolonged; eyes contiguous, each with a small tentacle. The upper rays of the right pectoral are prolonged, two-thirds of the length of the head; the left pectoral is very short, but rather broad. The gill-membranes are dilated on both sides and annexed to the pectorals. Yellowish, with eleven brown cross-bands, broader than the interspaces: only the anterior bands are more or less geminate: the first across the snout, the second behind the eyes, the third across the gill-opening, the last separated by a white band from the caudal. Caudal blackish-brown, with a pair of black ocellated spots, edged with white, on its posterior half.

Sydney, Brisbane, and Swan River (Castelnau).

797. *SYNAPTURA SCLEROLEPIS*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. II., p. 363 pl. 10, fig. 4.

Port Darwin.

798. *SYNAPTURA NIGRA*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. V., p. 49.

Botany Bay.

Genus *PLAGUSIA*, Cuv.

Eyes on the left side; pectorals none; vertical fins confluent. Scales small, etenoid; lateral line on the left side double or treble. Upper part of the snout produced backwards into a long hook, covering the mandible; mouth unsymmetrical, rather narrow; lips of the coloured side with tentacles; teeth minute, on the right side only. One nostril on the left side, before the angle of the lower orbit; none between the eyes. Gill-opening very narrow.

Indian and Australian Seas.

799. *PLAGUSIA GUTTATA*, Macl.

Proc. Linn. Soc. N.S. Wales, Vol. II., p. 362, pl. 10, fig. 3.

Port Darwin, Endeavour River.

800. *PLAGUSIA ACUMINATA*, Casteln.

Researches on the Fishes of Australia, p. 44.

D. 90. A. 90. C. 10. V. 4.

The greatest height of the body is contained four times and one-third in the total length, the length of the head five and a-half times; the highest part is about the first third of its length, from thence it tapers to the tail, which is very acute; only one lateral line on the left side; the lip tentacles of the coloured side are short but thick; the height of the head at the opercle is equal to its length, rostral hook long, extending behind the lower eye; scales strongly ciliated. Colour of an uniform light creamy pink, the fin rays marbled with brown.

West Australia.

801. *PLAGUSIA UNICOLOR*, *n. sp.*

“*The Lemon Sole*” of the Fishermen.”

D. 120. A. 90. V. 4. L. lat. 100 on the body.

Height of body about three and a-half times in the total length; the body tapering to a pointed tail. Rostral hook long; eyes small, more than their diameter apart, the upper sensibly in advance of the lower, a fleshy tubercle in front of the lower eye on the coloured side; a similar tubercle over the mouth on the blind side, marking the position of one of the nostrils. Mouth small, much twisted, on the coloured side with the lips covered with tentacles. Scales small, etenoid, two lateral lines on the left side running almost parallel and extending from the front of the head to the tail; the upper keeping near the dorsal fin, the other near the middle of the body. The vertical fins are low, the rays simple. Colour light yellowish-brown, (the fins a little redder), indistinctly mottled with ashy-grey.

Port Jackson. Length six inches.