



Seventh group. PRISTIPOMATINA.

15. Genus **PRISTIPOMA**, Cuv.

Syn. *Gemytremus*, *Gemytremus*, *Anisotremus*, and *Pristocantharus*, Gill; *Hæmulopsis*, Steind.; *Pomadasya*, Bleeker.

Branchiostegals seven; pseudobranchiæ. Body oblong, compressed. Eyes moderate. Cleft of mouth horizontal; gape not very wide; jaws of nearly equal length; a central longitudinal and deep groove below the symphysis of the lower jaw, and two small open pores under the chin; no barbels. Preopercle serrated; opercle with indistinct points. Teeth in the jaws villiform, without canines; palate edentulous. Dorsal with from eleven to fourteen spines; anal with three. Scales ctenoid and of moderate or small size, present on the head, including the preorbital and lower jaw. Air-bladder simple, destitute of any constriction. Pyloric appendages few.

Geographical Distribution. All tropical seas and the Mediterranean. The young of the Indian species are often taken in backwaters.

Uses. Fair as food, but not much esteemed: the air-bladder in some places collected as isinglass.

Synopsis of Indian Species.

- A. Second anal spine not longer, or scarcely longer, than 3rd.
- A. 3/9. Longitudinal bands on side 1. *P. stridens*, p. 508.
- A. 3/12. No blotches nor longitudinal bands on side 2. *P. olivaceum*, p. 500.
- A. 3/7. Black blotches on side 3. *P. maculatum*, p. 510.
- B. Second anal spine much longer than 3rd.
- L. tr. 7/18. Six horizontal dark bands on each side 4. *P. furcatum*, p. 510.
- L. tr. 7/10. Four or 5 interrupted lines along sides 5. *P. hasta*, p. 510.
- L. tr. 5/13. Sinuous lines of black spots on sides 6. *P. argenteum*, p. 511.
- L. tr. 6½/15. Two golden lateral bands 7. *P. dussumieri*, p. 511.
- L. tr. 6/12. No lateral bands in adult nor spots 8. *P. guoraca*, p. 512.
- L. tr. 9/19. Upper half of side with numerous black spots 9. *P. operculare*, p. 512.

673. (1.) **Pristipoma stridens**.

Sciæna stridens, Forsk. *Descr. Anim.* p. 50, no. 58.

Pristipoma stridens, Day, *Fish. India*, p. 72, pl. xviii, fig. 8 (marked *P. nageb*) (see synon.).

D.12/13-16. A.3/9. L.r.95-100/80-85. L.tr.8-9/18. Cæc.pyl.5-6.

Length of head 4, height of body 4 in the total length. Eyes—diameter 3½ to 4 in length of head, 1 to 1¼ from end of snout, and 1 apart. Upper profile of head somewhat rounded. Vertical

margin of preopercle serrated in its whole extent, its lowest serrations the strongest; horizontal limb entire, as are also the sub- and interopercles. Shoulder-bone serrated. *Fins*—dorsal spines slender, the fifth highest. Pectoral as long as the head without the snout. Second anal spine stronger than but not quite so long as the third; caudal forked. *Colour*—purplish above, becoming dirty white below, three golden bands on upper part of each side, the lowest from eye to middle of caudal fin; a dark mark on upper third of opercle; dorsal interspinous membrane covered with fine black spots, outer edge and also that of the caudal and anal stained grey; many fine dots over the head and body.

Hab. Red Sea, along the Mekran coast, and very common at Karachi in Sind; attaining at least 6 inches in length.

674. (2.) *Pristipoma olivaceum*. (Fig. 154.)

Pristipoma olivaceum, Day, *Fish. India*, p. 73, pl. xix, fig. 1.

D. 12/15. P. 17. A. 3/12. C. 17. L. 1.55. L. tr. 9/15. Cœc. pyl. 6.

Length of head $3\frac{3}{4}$ to 4, height of body 3 to $3\frac{1}{2}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ to 4 in length of head, 1 from end of snout, and $1\frac{1}{4}$ apart. *Fins*—fourth dorsal spine the highest. Pectoral

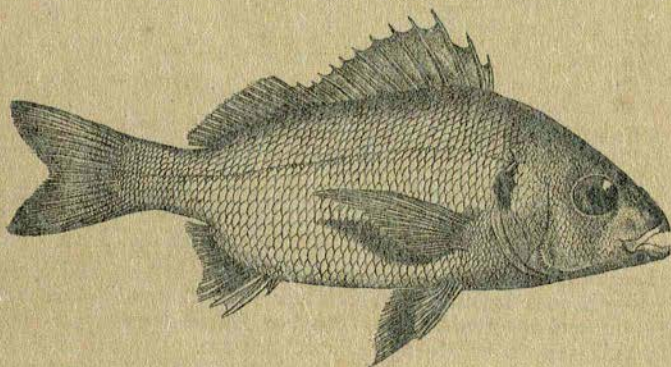


Fig. 154.—*Pristipoma olivaceum*.

pointed and nearly as long as the head; second anal spine strongest, and nearly as long as the third. Caudal emarginate. *Scales*—in oblique rows above and horizontal below the lateral line. *Colour*—olive-grey, the head glossed with purple, a large black blotch bordered in front with yellow at the upper angle of the opercle; pectoral yellow, as is also the basal half of the ventral, the distal half is black with a white edge; the other fins stained with blackish and having fine deep brown dots. *Eyes* golden.

Hab. Coasts of Baluchistan and Sind; attaining at least a foot in length.

675. (3.) *Pristipoma maculatum*.*Anthias maculatus*, Bloch, *Ich.* t. 326, fig. 2.*Pristipoma maculatum*, Day, *Fish. India*, p. 74, pl. xix, fig. 5 (see synon.).*Caripe*, Tel.; *Erruttum corah*, Mal.; *Currutehe*, Tam.; *Karkutla*, Maráthi.

D. 12/(11)–14. P. 17. A. 3/7. C. 17. L. 1. 52–56. L. tr. 8/12. Cæc. pyl. 6.

Length of head $3\frac{1}{2}$, height of body 3 to nearly $3\frac{1}{4}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ to 4 in length of head, $1\frac{1}{4}$ from end of snout and also apart. *Fins*—fourth dorsal spine the highest; pectoral as long as the head; second anal spine a little longer and much stronger than the third; caudal emarginate. *Scales*—in oblique rows above the lateral line and horizontal below. *Colour*—greyish, white beneath, and with a purplish tinge about the head; a blackish band over the snout; a second from the occiput over the opercles. A black band over the nape terminating about three scales below the lateral line; posterior to this are about six black blotches, three or four above, and two or three below the lateral line. Spinous dorsal with a large black mark; soft dorsal with a dark band along its centre; both dorsals and the caudal with their edges stained black.

These fish breed during April and May.

Hab. Red Sea, east coast of Africa, the seas of India, the Malay Archipelago, and New Guinea; attaining at least 16 inches in length.676. (4.) *Pristipoma furcatum*.*Grammistes furcatus*, Bl. *Schn. Syst. Ich.* p. 187, t. 43.*Pristipoma furcatum*, Day, *Fish. India*, p. 73, pl. xix, fig. 2 (see synon.).*Paakeeli*, Tel.; *Kullu-korake*, Tam.; *Náyada*, Marát.; *Baruma*, Arabi.

D. 12–13/15. P. 17. A. 3/8–9. C. 17. L. 1. 55–60. L. tr. 7/18.

Length of head from 4 to $4\frac{1}{2}$, height of body 3 in the total length. *Eyes*—diameter from $3\frac{1}{2}$ to $4\frac{1}{2}$ in length of head, 1 to $1\frac{1}{2}$ from end of snout and also apart. *Fins*—third or fourth dorsal spine the highest, every alternate spine being broader. Pectoral a little longer than the head. Second anal spine much the strongest and longest, being higher than the fourth of the dorsal fin; caudal notched. *Colour*—silvery, with six horizontal brownish-black bands, three of which are above the lateral line; spinous portion of dorsal fin with three rows of brown spots and a dark edge; upper half of soft dorsal dark; a dark band along the anal.

Hab. Seas of India to the Malay Archipelago. A stuffed specimen from Madras in the Indian Museum is 15 inches in length.677. (5.) *Pristipoma hasta*.*Lutjanus hasta*, Bloch, *Ich.* t. 246, fig. 1.*Pristipoma hasta*, Day, *Fish. India*, p. 73, pl. xix, figs. 3 & 4 (young) (see synon.).



Coroua and Corake, Tam.; Coompoo, Bel.; Nakma, Arabi; Nya Kroo, Arracan.

D. 12/13-14. P. 17. A. 3/7-8. C. 17. L. 1.46-50. L. tr. 7/10. C. pyl. 6-7.

Length of head 3 to $3\frac{1}{2}$, height of body 3 to $3\frac{1}{2}$ in the total length. *Eyes*—diameter from 3 to 5 in length of head, $\frac{2}{3}$ to $1\frac{1}{2}$ from end of snout and also apart. Preopercle serrated in its whole extent, very coarsely so at the angle. *Fins*—dorsal spines strong, third or fourth longest. Pectoral nearly as long as head. Second anal spine longest, strongest, and longitudinally fluted. Caudal emarginate. *Colour*—four or five interrupted lines of grey along the sides, three or four above the lateral line; sometimes they coalesce and form bands. Two or three rows of spots along the dorsal, and in the adult a single row of dull blotches at the base of the fin.

Hab. Red Sea, east coast of Africa, seas of India, Malay Archipelago to North Australia; attaining $1\frac{1}{2}$ feet or more in length.

678. (6.) *Pristipoma argenteum*.

Sciæna argentea, *Forsk. Descr. Anim.* p. 51, no. 60.

Pristipoma argenteum, *Day, Fish. India*, p. 74, pl. viii, fig. 3 (marked as *P. commersonii*) (see synonym.).

D. 12/14. P. 15. A. 3/7. C. 17. L. 1. 50. L. tr. 5/13.

Length of head $3\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $3\frac{1}{3}$ in length of head, 1 from end of snout, and $\frac{2}{3}$ apart. *Fins*—each alternate dorsal spine thicker on one side, third highest, the fourth nearly as high. Pectoral as long as the head. The second anal spine strong, having a raised keel along its anterior surface; third much weaker and shorter. *Colour*—silvery, covered with black spots in the upper two thirds of the body, forming sinuous lines which diminish in number with age; a dark spot on the opercle. A row of basal spots along the dorsal fin, two more rows above in the spinous portion, and a dark line along the soft fin.

This species has a less deeply cleft dorsal fin than *P. hastata* (except in the very young).

Hab. Red Sea and seas of India.

679. (7.) *Pristipoma dussumieri*.

Pristipoma dussumieri, *Cuv. & Val. H. N. Poiss.* v, p. 259; *Day, Fish. India*, p. 75, pl. xix, fig. 6 (see synonym.).

Cut-tah-lee, Tam.

D. 12/14. P. 15. A. 3/7. C. 19. L. 1. 50. L. r. 54/52. L. tr. $6\frac{1}{2}$ /15.

Length of head 4, height of body rather more than 3 in the total length. *Eyes*—diameter 3 in length of head, nearly 1 from end of snout, and $\frac{3}{4}$ apart. *Fins*—dorsal spines strong, every alternate one broader, the fourth the longest; pectoral as long as head; first ventral ray with a filamentous prolongation; second anal spine



strong, one fourth longer than the third; caudal emarginate, deeply lunate. *Colour*—greyish, becoming white on the abdomen; a brilliant golden band passes from the eye to the base of the caudal fin, a second above it runs along a few rows of scales. Fins silvery, dashed with gold, a dark band along the base of the dorsal and its spinous portion with a black margin; upper portions of soft dorsal and the last half of spinous dorsal dark grey.

Hab. Seas of India; more common on the East than on the West coast, but nowhere numerous.

680. (8.) *Pristipoma guoraca*.

Pristipoma guoraca, Cuv. & Val. *H. N. Poiss.* v, p. 256; *Day, Fish. India*, p. 75, pl. xx, fig. 1 (see synonym.).

D. 12-13/12-14. P. 16. A. 3/7-8. L. l. 45-47. L. tr. 6/12. Cæc. pyl. 5.

Length of head $3\frac{1}{2}$, height of body nearly 3 in the total length. *Eyes*—diameter $3\frac{1}{2}$ to $3\frac{3}{4}$ in length of head, 1 to $1\frac{1}{2}$ from end of snout and also apart. Vertical border of preopercle coarsely serrated, also its produced and rounded angle, where the serrations are wide apart, along the horizontal limb they are much blunter. *Fins*—third and fourth dorsal spines the longest. Pectoral equals the length of the head; second anal spine the longest, and striated in grooves along its front edge; caudal cut square or slightly emarginate. *Colour*—silvery, darkest along the back, and in the young with an indistinct darkish band along the middle of the body; a dark spot, having steel-blue reflexions, on the opercle; snout dark; a dark streak along the dorsal fin, most distinct in the immature.

Hab. Seas of India to the Malay Archipelago, and said to have been captured in fresh water.

681. (9.) *Pristipoma operculare*.

Pristipoma operculare, *Playfair, Fish. Zanz.* p. 24, pl. 4, fig. 1; *Day, Fish. India*, p. 76, pl. xx, fig. 2.

D. 11/14. P. 19. A. 3/9. C. 17. L. l. 57. L. tr. 9/19. Cæc. pyl. 5.

Length of head $3\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter 5 to $5\frac{1}{2}$ in length of head, $1\frac{3}{4}$ from end of snout, and $1\frac{1}{2}$ apart. Snout pointed. *Fins*—the fourth dorsal spine the highest. Pectoral as long as the head; the second anal spine the strongest and longest, equal to the third dorsal spine; caudal emarginate. *Cæcal appendages*—very long. *Colour*—silvery, with a black blotch at the upper posterior corner of the opercle; upper half of body with numerous black spots, sometimes forming undulating bands; a black spot at the base of each dorsal spine and ray; dorsal and caudal dark-edged; anal blackish in its front half.

Hab. East coast of Africa to Sind, where it is common; attaining at least 15 inches in length.

16. Genus **HAPALOGENYS**, Richards.

Syn. *Pogonias*, sp., Temm. & Schleg.

Branchiostegals six or seven; pseudobranchiæ. Body compressed. Cleft of mouth horizontal; the anterior and under surfaces of the lower jaw and the lips covered with fine barbel-like papillæ. Preopercle serrated; opercle with short spines. Villiform teeth in the jaws, vomer, and palatines; an outer row of conical but somewhat obtuse teeth in each jaw, but no canines; tongue smooth. Dorsal fin with eleven spines; anal with three; caudal convex or slightly notched. Scales ctenoid, of moderate or small size, and extended over the fins. Air-bladder simple. Pyloric appendages few.

Geographical Distribution. Seas of Sind to China and Japan.

682. (1.) **Hapalogenys petersi**. (Fig. 155.)

Hapalogenys petersi, Day, *Fish. India*, p. 77, pl. xx, fig. 3.

D. 11/19. P. 19. A. 3/13. C. 17. L. l. ca. 100.

Length of head $3\frac{1}{2}$, height of body $3\frac{1}{4}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ in length of head, rather above 1 from end of snout, and $\frac{2}{3}$ apart. *Fins*—dorsal spines of moderate strength, very low

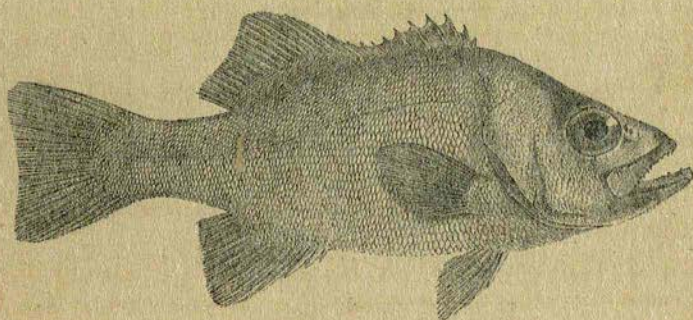


Fig. 155.—*Hapalogenys petersi*.

in proportion to the rays, third highest; soft portion of the fin highest anteriorly; third anal spine much longer and stronger than the second, soft portion of the fin similar to that of the soft dorsal; caudal emarginate. *Colour*—blackish grey, with the fins darker.

Hab. Sind and Mekran coast, being termed *Dah-ri* at Gwádar. The species was not uncommon and the specimens were large, the smallest being 18 inches in length.

17. Genus **DIAGRAMMA**, Cuv.

Syn. *Plectorhynchus*, pt., Lacép.

Branchiostegals six or seven; pseudobranchiæ. Body oblong, compressed, with the upper profile of the head very convex. Eyes moderate. Mouth small, slightly protractile; lips thick and folded back. Preopercle serrated; suborbitals entire. Four or six open pores on the under surface of the lower jaw, but no median groove. Teeth in jaws villiform, without canines; palate edentulous. One dorsal fin more or less receivable into a groove along its base, having from nine to fourteen spines; anal with three. Scales ctenoid, usually small. Air-bladder simple, destitute of any constriction. Pyloric appendages few.

Geographical Distribution. From the Red Sea and east coast of Africa, through the seas of India to the Pacific. These fishes are much more abundant off Sind and Bombay than they are on the Malabar or Coromandel coasts of India.

Uses. Generally not in much esteem as food, but some are good eating.

The species forming this genus are subject to considerable variations in the number of dorsal rays, whilst a spine more or less may exist. The colour, too, varies almost as widely as amongst the *Serrani*. The form of the caudal fin often varies considerably in the same species, and this does not appear to be simply due to age.

Synopsis of Indian Species.

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|--|-------------------------------------|
| Dorsal with 14 spines | 1. <i>D. crassispinum</i> , p. 514. |
| D. 12-13/18-20, L. tr. 13/24. Longitudinally banded | 2. <i>D. lineatum</i> , p. 515. |
| D. 12-13/17-19, L. tr. 11/30. Longitudinally banded | 3. <i>D. cuvieri</i> , p. 516. |
| D. 13/17-18, L. tr. 13/25. Longitudinal bands, or rows of spots, or upper half dark with large white spots | 4. <i>D. orientale</i> , p. 516. |
| D. 12/16-17, L. tr. 14-20. Upper parts and vertical fins spotted | 5. <i>D. cinctum</i> , p. 517. |
| D. 11-12/18-21, L. tr. 13/26. Uniform grey, fins blackish | 6. <i>D. griseum</i> , p. 517. |
| D. 9-10/22-23. Longitudinally banded, caudal rounded | 7. <i>D. pictum</i> , p. 518. |
| D. 9-10/22-25. Yellow spots throughout, caudal emarginate | 8. <i>D. punctatum</i> , p. 518. |
| D. 12/19, L. tr. 16-17/31-32. Black above, with 4 large light blotches | 9. <i>D. picoides</i> , p. 519. |

683. (1.) **Diagramma crassispinum**.

Diagramma crassispinum, Rüppell, *N. W., Fische*, p. 125, t. 30, fig. 4;
Day, Fish. India, p. 78, pl. xx, fig. 4 (see synon.).

Tawooloo pinnel, Tamil.

B.vii. D.14/15-16. P.17. A.3/7. L.1.59-60. L.tr. 10/17. Cæc.pyl.6.



Length of head $3\frac{1}{2}$, height of body in adult 3 in the total length. *Eyes*—diameter in the adult $4\frac{1}{2}$ in length of head, $1\frac{1}{2}$ from end of snout, and more than 1 apart. Ventral margin of preopercle finely serrated in adult, more coarsely in young, angle rounded, posterior half of horizontal margin serrated. *Fins*—dorsal spines strong, alternately thicker on each side, the fourth the highest. Second anal spine much stronger than the third, and equal to the highest of the dorsal fin. *Colour*—greyish, or slaty grey, with a violet tinge on the head and a brassy one on the body; fins nearly black. A few irregular coppery spots on the body; fins, except the spinous dorsal, of a violet slate-colour, lightest along their centres. In the *young* the caudal is yellowish white.

This fish appears to alter considerably with age. The height of the body is at first equal to nearly half of the total length.

Hab. Red Sea, seas of India, the Malay Archipelago and beyond. This fish attains two feet or more in length and is good eating.

684. (2.) *Diagramma lineatum*.

Perca lineata, *Gmel. Syst. Nat.* p. 1319.

Diagramma lineatum, *Day, Fish. India*, p. 78, pl. xx, fig. 5 (see synon.).

B.vi. D.12–13/18–20. P.19. A.3/7. L.l.59. L.r.86/66. L.tr.13/24.

Length of head about 4, height of body from $3\frac{1}{4}$ to $3\frac{1}{2}$ in the total length. *Eyes*—diameter 3 to $3\frac{1}{2}$ in length of head, 1 from end of snout, and nearly 1 apart. Vertical limb of preopercle very slightly emarginate, its angle rounded, and the whole finely and evenly serrated. *Fins*—dorsal spines strong, every alternate one broadest on one side, they increase in height to the fourth, the last about one fifth shorter; soft portion of the fin gradually increasing in height, its middle third higher than the spinous; second anal spine stronger and slightly longer than the third; caudal rounded or cut rather square. *Colour*—yellowish white above, becoming white on the sides and abdomen; about six horizontal chestnut-coloured bands, the upper wider than the ground-colour, extend from the head along the body; fins yellow, with sometimes one or more dark blotches; dorsal with a dark edge; three oblique bands occasionally broken up into blotches across either caudal lobe; a band along the middle of the anal fin.

Variety (*D. albobittatum*). Silvery white above, yellowish white below; a dark chestnut median band from the occiput to the dorsal fin, continued along base of spines until it joins the second band, which passes above the eye, and gradually increasing in width, arrives at the soft dorsal, and terminates on the fin in a wedge-shaped form; the third band extends from the snout through the eye, becomes the widest, and arriving at the centre of the base of the tail is continued in a wedge-shape to the termination of the fin.

In some specimens a wide chestnut band covers the abdomen, leaving only a very narrow whitish interspace between it and the



band above; in such specimens the colour of the body is chestnut, with three narrow white or light longitudinal bands.

Hab. Red Sea, seas of India, the Malay Archipelago, and beyond.

685. (3.) *Diagramma cuvieri*.

Bodian cuvieri, *Bennett, Fish. Ceylon*, p. 13, pl. xiii.

Diagramma cuvieri, *Day, Fish. India, Suppl.* 1888, p. 785 (see synon.).

B. vii. D. 12-13/17-19. P. 18. A. 3/7. C. 15. L. 1. 70. L. tr. 11/30.

Length of head $3\frac{1}{2}$ to 4, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ to $3\frac{1}{2}$ in length of head, $1\frac{1}{2}$ from end of snout, and 1 apart. Vertical limb of preopercle serrated. *Fins*—dorsal spines slightly higher than the rays, the second to the fourth being about equal and longest; second anal spine the longest and strongest. *Colour*—silvery, with horizontal greyish or brownish bands, the upper of which are wider than the ground-colour; the bands unite anteriorly over the nape and snout, and the upper terminate behind on the base of the dorsal fin. Fins yellowish; caudal and anal with some dark spots and dark outer edges.

Hab. From the east coast of Africa to Ceylon and the Malay Archipelago.

686. (4.) *Diagramma orientale*.

Anthias orientalis, *Bloch, Ich. t.* 326, fig. 3.

Diagramma orientale, *Day, Fish. India*, p. 80, pl. xx, fig. 6 (see synon.).

B. vi. D. 13/17-18. P. 17. A. 3/7. L. r. 100/85. L. tr. 13/25.

Length of head from $4\frac{1}{3}$ to $4\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter from 3 to $3\frac{1}{2}$ in length of head, 1 from end of snout. Vertical border of preopercle serrated. *Fins*—dorsal spines moderate, every alternate one broader on one side, 2nd nearly as high as 3rd, which is the longest, the last one third to one half shorter; soft portion of fin gradually increasing in height, its middle third being higher than the spinous; second anal stronger and longer than third; caudal rounded or cut rather square. *Colour*—yellowish above, white on the sides and beneath, the body with several chestnut bands nearly or quite as wide as the ground-colour; sometimes upper half of fish dark with large whitish spots, but more often there are 4 or 5 complete or interrupted horizontal bands along the snout and head, which form 3 or 4 on the body. Spinous dorsal with a narrow dark upper edge; a dark angular band along the base; a similar wedge-shaped band on the soft dorsal. Pectoral yellowish, a dark blotch covering all but the margin; a black band along the middle of the anal and an oblique one across each lobe of the caudal, the lower sometimes divided into two, or having a light spot in its centre.

Hab. Red Sea, seas of India, the Malay Archipelago, and beyond.

687. (5.) *Diagramma cinctum*.

Diagramma cinctum, Temm. & Schleg. Faun. Japon., Poiss. p. 61, pl. xxvi, fig. 1; Day, Fish. India, p. 81, pl. xxi, fig. 1 (see synon.).

B. vii. D. 12/16-17. P. 17. A. 3/7. L. 1. 56. L. tr. 14/20.

Length of head $3\frac{2}{3}$, height of body 3 in the total length. Eyes—diameter $4\frac{1}{4}$ in length of head, $1\frac{1}{4}$ from end of snout, and 1 apart. Vertical margin of preopercle and shoulder-bone serrated. Fins—dorsal spines strong, increasing in length to the fourth and fifth, then decreasing; soft portions of dorsal and anal rounded. Pectoral does not reach so far as the ventral; second anal spine much stronger and longer than the third; caudal cut square. Colour—slaty grey, upper half of anterior and whole posterior portion of body, with the vertical fins, covered with large black blotches. Dorsal, caudal, and anal with black margins; ventral nearly black; pectoral yellow.

Hab. Sind, where it is not uncommon, attaining to two feet in length; also China and Japan.

688. (6.) *Diagramma griseum*. (Fig. 156.)

Diagramma griseum, Cuv. & Val. H. N. Poiss. v, p. 306; Day, Fish. India, p. 81, pl. xxi, fig. 2, Suppl. p. 785 (see synon.).

B. vii. D. 11-12/18-21. P. 17. A. 3/7-9. L. 1. 63. L. tr. 13/26. C. pyl. 9.

Length of head $3\frac{2}{3}$ to 4, height of body 3 in the total length. Eyes—diameter from $3\frac{1}{2}$ in the young to 4 in length of head, $1\frac{1}{2}$ from end of snout, and 1 apart. Vertical border of preopercle rather strongly and evenly serrated, angle rounded and also serrated.

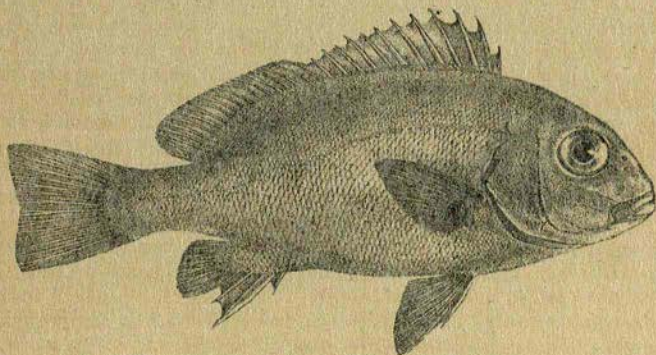


Fig. 156.—*Diagramma griseum*.

Shoulder-bone serrated. Fins—dorsal spines moderate, the third or fourth highest. Pectoral about equal to ventral; second anal spine strongest and longest; caudal slightly emarginate. Colour—uniform grey or olive-grey, with the fins nearly or quite black. In



the young the general colour is olive, with some sinuous and narrow light blue lines, which usually fade shortly after death.

Hab. East coast of Africa, Baluchistan coast, and seas of India, attaining at least 18 inches in length; very common in Sind and Bombay.

639. (7.) *Diagramma pictum*.

Perca picta, *Thunb. K. Vet.-Akad. Nya Handl. Stockholm*, xiii, 1792, p. 142, pl. v, fig. 1.

Diagramma pictum, *Day, Fish. India*, p. 81, pl. xxi, fig. 3 (see synon.).

B.vi. D. 9-10/22-23. P. 17. A. 3/7. L.r. 120/100. L.tr. 15/26.

Length of head $4\frac{1}{2}$, height of body $3\frac{3}{4}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ (in the young) to $4\frac{1}{2}$ in length of head, $1\frac{1}{4}$ to 2 from end of snout, and nearly 1 apart. *Fins*—dorsal spines moderate, 3rd usually highest, 2nd and 4th spines are nearly the same; last spine less than one half length of third, the rays are a little higher than the spine; second and third anal spines about the same length; caudal cut nearly square, or with rounded angles. *Colour*—this species has been divided into several on account of variations in colour. Ground-colour orange-yellow or white, with chestnut-brown or black straight longitudinal bands, varying in number and breadth, sometimes bifurcating. The bands usually are from 4 to 7 in number and are occasionally broken up into spots. Dorsal fin with a narrow black margin, and a broad dark band from the upper two thirds of the second spine backwards and downwards to the base of the fin; this band is sometimes interrupted, if continuous it coalesces with the upper body-band, and is continued in a wedge-shaped form to the extremity of the soft dorsal fin. Caudal with a central wedge-shaped dark band, and cross bands over its upper and lower angles; lower half of anal and end of ventral black.

Hab. Red Sea, east coast of Africa, seas of India, the Malay Archipelago, and beyond.

690. (8.) *Diagramma punctatum*.

Diagramma punctatum (*Ehrenberg*), *Cuv. & Val. H. N. Poiss.* v, p. 302; *Day, Fish. India*, p. 83, pl. xxi, fig. 2 (see synon.).

Hotya, Maráthi.

B.vii. D. 9-10/22-25. P. 17. A. 3/7. L.r. 105-109/90-95. L.tr. 15/20.

Length of head from $4\frac{1}{4}$ to $4\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter from 4 to $4\frac{1}{2}$ in length of head, $1\frac{1}{2}$ to 2 from end of snout, and about 1 apart. Vertical border and rounded angle of preopercle serrated. *Fins*—dorsal spines moderate, the second and third the longest; second anal spine slightly the strongest, but the third a little the longest; caudal lunate. *Colour*—greyish, several rows of large brilliant golden spots along the upper half of the body; bluish bands on sides of head continued



on to the body between the rows of spots; dorsal, caudal, anal, and ventral spotted, the latter greyish externally; pectoral golden.
Hab. Red Sea, seas of India to the Malay Archipelago.

691. (9.) *Diagramma picoides*.

Diagramma picoides, Peters, *Monatsb. Akad. Wiss. Berl.* 1866, p. 94;
Day, Fish. India, p. 83.

B. vii. D. 12/19. P. 17. A. 3/7. L. 1.100. L. tr. 16-17/31-32.

Length of head $4\frac{1}{2}$, height of body $4\frac{1}{2}$ in the total length. *Eyes*—diameter $4\frac{1}{2}$ in length of head, $1\frac{1}{2}$ from end of snout, and $1\frac{1}{2}$ apart. *Fins*—dorsal spines moderate, 3rd a little more than one third height of body; second anal spine slightly longer and much stronger than the third, and one third longer than the highest in the dorsal fin. *Colour*—upper half of body black, with four large light blotches, one over the snout, a second across the nape, a third under the commencement of the dorsal rays, and the last over the free portion of the tail. Line of division between white abdomen and black of back zigzag or wavy. Tail with a row of black spots. Dorsal fin with a black base and upper edge, and a white median longitudinal band. Anal and caudal with irregular black spots.

Hab. Most probably the East Indies, but possibly the Mauritius, or the Cape of Good Hope.

18. Genus *LOBOTES*, Cuv.

Branchiostegals six; pseudobranchiae. Body and fins somewhat elevated. Eyes rather small. Mouth moderately protractile, its cleft oblique, lower jaw the longer. Opercle with obtuse points; preopercle serrated. Villiform teeth in the jaws with an external enlarged row; no canines; palate edentulous. One dorsal fin with twelve stout spines; anal with three; caudal rounded. Scales ctenoid, of moderate size, extended over the head. Air-bladder simple, without constriction.

Geographical Distribution. Seas of India, China, and Atlantic coasts of America.

692. (1.) *Lobotes surinamensis*. (Fig. 157.)

Holocentrus surinamensis, Bloch, *Ich.* t. 243.

Lobotes surinamensis, Day, *Fish. India*, p. 84, pl. xxi, fig. 5 (see synonym.).

Parrandee, Mal.; *Musalli*, Tam.; *Chota bekkut*, Ooriah.

D. 12/15-16. A. 3/11-13. L. tr. 9-11/22. Cae. pyl. 4. Vert. 13/11.

Length of head from $3\frac{1}{2}$ to $3\frac{2}{3}$, height of body $2\frac{1}{2}$ to 3 in the total length. *Eyes*—diameter 6 to 7 in the length of head, 1 from end of snout, and $1\frac{1}{2}$ to 2 apart. *Fins*—dorsal spines strong, 4th to 7th subequal and longest; soft portion of fin higher than spinous; third anal spine longer than second; caudal rounded.



Colour.—brassy brown blotched darker, the extremity of caudal and pectoral dirty yellowish white; the other fins slate-coloured.

This fish varies considerably with age.

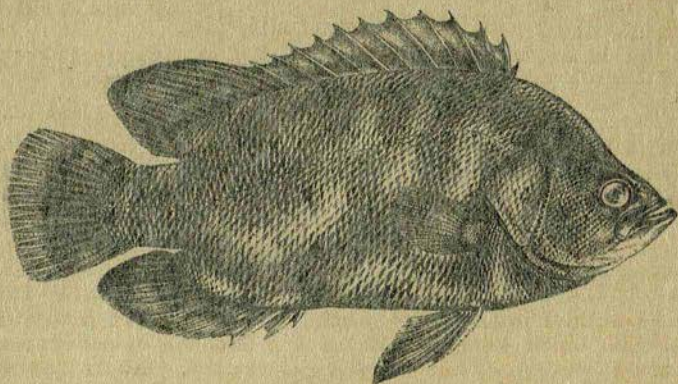


Fig. 157.—*Lobotes surinamensis*.

Hab. East coast of Africa, seas of India, the Malay Archipelago, and beyond; likewise in the Mediterranean; attaining at least $2\frac{1}{2}$ feet in length. Excellent as food.

19. Genus **SCOLOPSIS**, Cuv. & Val.

Syn. *Scolopsides*, Cuv.

Branchiostegals five; pseudobranchiæ. Body oblong. Eyes moderate or large. Mouth moderately protractile; jaws of nearly equal length; cleft of mouth horizontal. Infraorbital arch with a spine directed backwards; preopercle as a rule serrated, and often the suborbital ring; opercle with a weak spine. A single dorsal fin with ten spines; anal with three; caudal emarginate or forked. Scales ctenoid. Air-bladder without any constriction, simple. Pyloric appendages few.

Geographical Distribution. Indo-Pacific Ocean. On the coasts of Sind and Bombay, the Andamans and Nicobars several species occur abundantly.

Synopsis of Indian Species.

- | | |
|--|------------------------------------|
| One or two black blotches on the lateral line. | 1. <i>S. bimaculatus</i> , p. 521. |
| A bent blue band from the upper jaw through the eye to the axilla | 2. <i>S. phæops</i> , p. 521. |
| A curving wide yellow, black-edged band from the mouth to the soft dorsal | 3. <i>S. bilineatus</i> , p. 522. |
| Four light bands on head and side; a black spot in the axilla; scales below lateral line with black spots..... | 4. <i>S. ghanam</i> , p. 522. |



- A deep black band from the eye to above the base of the caudal fin..... 5. *S. monogramma*, p. 522.
Longitudinal white streaks on sides. Several irregular and wide dark vertical body-bands 6. *S. cancellatus*, p. 523.
A light band over the opercles, and a longitudinal light line along the body..... 7. *S. vosmeri*, p. 524.
A dark-edged light band from eye to tail .. 8. *S. leucotænia*, p. 524.
A silvery line between lateral line and dorsal, no other light bands 9. *S. ciliatus*, p. 525.

693. (1.) *Scolopsis bimaculatus*.

Scolopsis bimaculatus, Rüppell, *Atl. Fische*, p. 8, t. ii, fig. 2; Day, *Fish. India*, p. 85, pl. xxi, fig. 1 (see synon.).

D. 10/9. P. 18. A. 3/7. C. 17. L. 1. 48. L. tr. $4\frac{1}{2}/14$.

Length of head about 4, height of body $3\frac{1}{4}$ to $3\frac{1}{2}$ in the total length. Eyes—diameter 3 in length of head, 1 from end of snout, and $\frac{3}{4}$ apart. Fins—dorsal spines strong, the fourth the highest; second anal spine stronger but shorter than the third; caudal lunate. Colours—greyish, becoming dull white on the abdomen; a broad light opercular band. Branchiostegal membranes blood-red. A brownish band over the snout, and one or two blotches on the lateral line, the first large, or the two may be joined. Fins orange, becoming reddish externally. Eyes silvery.

Hab. Red Sea, seas of India and China.

694. (2.) *Scolopsis phæops*.

Scolopsides phæops, Bennett, *P. Z. S.* 1831, i, p. 165.

Scolopsis phæops, Day, *Fish. India*, p. 85, pl. xxii, fig. 2 (see synon.).

D. 10/9. P. 16. V. 1/5. A. 3/7. C. 17. L. 1. 46–48. L. tr. 5/16.

Length of head 4 to $4\frac{1}{2}$, height of body $3\frac{3}{4}$ to $3\frac{1}{2}$ in the total length. Eyes—diameter $4\frac{1}{2}$ in length of head, $1\frac{1}{2}$ from end of snout, and $1\frac{1}{2}$ apart. Fins—dorsal spines moderate, increasing in length to the fourth, which equals one third of the height of the body; third anal spine longer than the second but not quite so strong, and equalling two sevenths of the height of the body; caudal forked, upper lobe somewhat the longer. Colour—greenish olive above the lateral line, becoming yellowish white below; a narrow light band along the back close to the base of the dorsal fin. A wide bright blue band from the eye to the upper jaw, and from the posterior edge of the eye to the axilla, where it ends in a blue spot. Fins reddish.

Hab. East coast of Africa, seas of India; not uncommon off Sind. Specimens were taken $9\frac{1}{2}$ inches in length.

695. (3.) *Scolopsis bilineatus*.*Anthias bilineatus*, Bloch, *Ich.* t. 325, fig. 1.*Scolopsis bilineatus*, Day, *Fish. India*, p. 85, pl. xxii, fig. 3 (see synon.).

D. 10/9. P. 16. A. 3/7. C. 17. L. 1. 46. L. tr. 4/14. Cæc. pyl. 5.

Length of head 4 or a little less, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ to $2\frac{3}{4}$ in length of head, $\frac{2}{3}$ from end of snout, and 1 apart. *Fins*—dorsal spines not strong, increasing in height to the fourth, which equals three sevenths of the height of the body. Pectoral extends nearly to above anal spines, the second of which is very strong, longer than the third, and equal to rather more than half of the height of the body; soft dorsal and anal angularly rounded; caudal forked. *Colour*—a white band from snout to origin of dorsal; a second, parallel, from above orbit to below last dorsal spine; a third from upper edge of eye to lateral line. A wide, yellow, black-margined band curves upwards from the mouth to the commencement of the soft dorsal. A large yellow blotch below last half of soft dorsal, which fin is edged with black; anal black in its front half and white behind.

Hab. Andamans and Malay Archipelago.696. (4.) *Scolopsis ghanam*.*Sciæna ghanam*, Forsk. *Descr. Anim.* p. 50, no. 56.*Scolopsis ghanam*, Day, *Fish. India*, p. 86, pl. xxii, fig. 4 (see synon.).

D. 10/9. P. 17. A. 3/7. L. 1. 46. L. tr. 4/14. Cæc. pyl. 6 (4).

Length of head 4 to $4\frac{1}{2}$; height of body $3\frac{1}{2}$ to $3\frac{3}{4}$ in the total length. *Eyes*—diameter 3 in length of head, $\frac{2}{3}$ from end of snout, and 1 apart. Scaleless portion of the head covered with numerous small pores. *Fins*—the dorsal spines, which are rather weak, increase in length to the fifth; second and third anal spines equal; caudal deeply forked. *Colour*—back olive; three yellowish-white bands, parallel with the lateral line, on the upper part of each side, a fourth shorter band from below the eye to the base of the pectoral fin, which has a black spot in its axil. Most of the scales below the lateral line in the anterior two thirds of the body have each a black spot at its base. A violet mark is present at the base of either lobe of the caudal fin.

Hab. Red Sea and Andaman Islands, where it is very common.697. (5.) *Scolopsis monogramma*.*Scolopsides monogramma* (Kuhl & v. Hass.), Cuv. & Val. *H. N. Poiss.* v, p. 338.*Scolopsis monogramma*, Day, *Fish. India*, p. 86, pl. xxii, fig. 5 (see synon.).

D. 10/9. P. 17. A. 3/7. C. 17. L. 1. 44. L. tr. 5/14.

Length of head 4, height of body $3\frac{1}{2}$ in the total length. *Eyes*—



diameter 3 in length of head, nearly 1 from end of snout and also apart. *Fins*—dorsal spines slender, increasing in length to the fourth, which equals three sevenths of the height of the body. Second anal spine stronger but shorter than the third, which equals three tenths of the height of the body; caudal forked. *Colour*—olive, with a deep black band, one scale wide, from the snout through the eye to above the base of the caudal fin. Fins immaculate.

Hab. Andamans to the Malay Archipelago. At least 5 inches long.

698. (6.) *Scolopsis cancellatus*. (Fig. 158.)

Scolopsides cancellatus, *Cuv. & Val. H. N. Poiss.* v, p. 351.

Scolopsis cancellatus, *Day, Fish. India*, p. 86, pl. xxii, fig. 6 (see *synon.*).

D. 10/9. P. 15. A. 3/7. C. 17. L. 1. 44. L. tr. $3\frac{1}{2}/14$.

Length of head 4, height of body 4 in the total length. *Eyes*—diameter $2\frac{1}{2}$ in length of head, $\frac{1}{2}$ from end of snout, and $\frac{3}{4}$ apart. Scaleless portion of the head studded with fine open pores. Pre-orbital spine moderate, fluted. *Fins*—dorsal spines weak, increasing in length to the fifth; second anal spine stronger but a little shorter than the third. *Colour*—greyish above and whitish below the lateral line; a white streak from snout to base of first dorsal

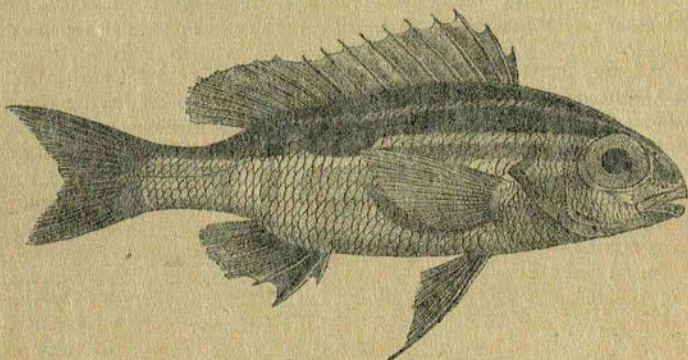


Fig. 158.—*Scolopsis cancellatus*.

spine; a second from over orbit to posterior end of dorsal; a third from the eye to opposite the end of pectoral; a fourth from middle of eye to upper third of caudal. Several wide but irregular dark vertical bands from the back to the middle of the body. A black spot between the first and third dorsal spines in their lower half. The longitudinal bands are more distinct and regular in the young than in the adult, and the black spot on the spinous dorsal usually disappears with age.

Hab. Andamans, the Malay Archipelago, and beyond.

699. (7.) *Scolopsis vosmeri*.

Anthias vosmeri, Bloch, *Ich.* t. 321; *Bl. Schn. Syst. Ich.* p. 304.

Scolopsis vosmeri, Day, *Fish. India*, p. 87, pl. xxiii, fig. 1 (young), fig. 2 (semi-adult), fig. 3 (adult) (see synon.).

Kundul, Tam.

D. 10/9. A. 3/7. L. 1. 42-44. L. tr. $3\frac{1}{2}$ -4/13-14. (Cæc. pyl. 3, Kner.)

Length of head 4 to $4\frac{1}{2}$, height of body $2\frac{1}{2}$ to 3 in the total length. *Eyes*—diameter $2\frac{1}{2}$ to 3 (in the adult) in length of head, $\frac{2}{3}$ from end of snout, and $\frac{3}{4}$ to 1 apart. Preorbital armed superiorly with one strong fluted spine projecting backwards; above this spine is another directed both forwards and backwards: in some specimens these are very small, especially the anterior one. *Fins*—dorsal spines strong, each alternate one broader; they increase in length to the fourth or fifth, from these they continue about equal; the rays are of about the same height. Anal spines strong, the third nearly equal to the highest in the dorsal fin, but shorter than the second; caudal forked. *Colour*—adult a pale dull red, usually with a whitish band round the opercles, from the upper edge of which a longitudinal wide white line passes backwards below the lateral line, being lost beneath the end of the base of the dorsal fin. Every scale on the body has generally a dark basal mark. In the medium-sized fish (*S. japonicus*) the ground-colour is often the same as in the adult, but in others it is an ashy grey; the opercular band is generally distinct and of a cream-yellow colour. There is a deep arterial blood-red spot behind the opercular spine, and the fins are pale yellow. In the young (*S. torquatus*) the band on the opercles is very distinct and of a light lemon-yellow colour, whilst the blood-red spot behind the opercular spine is very well marked; the inside of the mouth is likewise red.

Hab. Red Sea, east coast of Africa, seas of India, the Malay Archipelago, and beyond; attaining at least 12 inches in length.

700. (8.) *Scolopsis leucotania*.

Scolopsides leucotania, Bleeker, *Batavia Nat. Tijdsch.* iii, p. 451.

Scolopsis leucotania, Day, *Fish. India*, p. 88, pl. xxiii, fig. 4 (see synon.).

D. 10/9. P. 17. A. 3/7. L. 1. 39. L. tr. $3\frac{1}{2}$ /13.

Length of head equals one fourth less than height of body. *Eyes*—diameter $2\frac{1}{2}$ in length of head, $\frac{1}{2}$ from end of snout, and 1 apart. *Fins*—dorsal spines strong, increasing in length to the fourth; second anal spine much the strongest and considerably the longest. *Colour*—a broad yellowish-white streak from eye to tail, margined above and below with a dark purple stripe; above it the body is reddish brown, below yellowish; a dark purplish vertical band extends down the opercle. Fins reddish, the dorsal with a fine black upper edge and a dark band along the centre of its spinous portion.

Hab. Bombay to the Malay Archipelago.

701. (9.) *Scolopsis ciliatus*.

Holocentrus ciliatus, *Lacép. H. N. Poiss.* iv. pp. 333, 371.

Scolopsis ciliatus, *Day, Fish. India*, p. 89, pl. xxiii, fig. 5 (see synon.).

D. 10/9. A. 3/7. L. 1. 44. L. tr. $3\frac{1}{2}$ -4/15. Cæc. pyl. 5. Vert. 10/14.

Length of head 4 to $4\frac{1}{2}$, height of body $3\frac{1}{2}$ to $3\frac{1}{2}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ to $2\frac{3}{4}$ in length of head, $\frac{3}{4}$ from end of snout, and 1 apart. A prominent ridge having a serrated edge on the maxilla. *Fins*—dorsal spines slender, increasing in length to the fifth; anal spines not strong, the third weaker but longer than the second, and nearly equalling the longest in the dorsal fin; caudal forked. *Colour*—greenish olive above, becoming lighter on abdomen; a longitudinal silvery-white band between the lateral line and back, from near head to opposite commencement of soft dorsal; the position of this white line, Bleeker observes, is liable to change with age. The scales below the lateral line have a golden spot. Fins reddish.

Hab. Andamans, Malay Archipelago, &c.

20. Genus **DENTEX**, Cuv.

Syn. *Gymnocranius*, pt., Klunz; *Paradentex*, pt., Blkr.; *Synagris*, (Klein), Bleeker.

Branchiostegals six or seven; pseudobranchiæ. Body oblong, rather elongate, and a little elevated. Mouth moderately protracile, its cleft more or less horizontal; jaws of about equal length. The distance between the eye and the angle of the mouth considerable. Generally strong canines in both jaws; a conical outer lateral row in either jaw; vomer, palate, and tongue edentulous. One scaleless dorsal fin having from ten to thirteen spines, anal with three; the spines generally weak, and more or less provided with a scaly groove. Caudal forked. Scales ctenoid, of moderate size, more than three rows between the eye and the angle of the preopercle, none on the front of the snout, jaws, or preorbital. Air-bladder not constricted, but notched posteriorly. Pyloric appendages few.

This genus has been subdivided from *Synagris*, mostly because of the existence of more than three rows of scales across the preopercle.

Geographical Distribution. The fishes of this genus are found in the Mediterranean, Atlantic, Red Sea, Indian and Pacific Oceans.

702. (1.) *Dentex rivulatus*.

Dentex rivulatus, *Rüpp. N. W., Fische*, p. 116, pl. xxix, fig. 2; *Day, Fish. India*, p. 90 (see synon.).

D. 10/10. P. 15. A. 3/10. C. 17. L. 1. 48. L. tr. 7/20.

Length of head $4\frac{1}{4}$, height of body $3\frac{1}{2}$ in the total length.



Eyes—diameter $3\frac{2}{3}$ in the length of the head, $1\frac{2}{3}$ from end of snout, and $1\frac{1}{4}$ apart. Hind limb of preopercle almost vertical and entire; a few serrations along its rounded angle. *Teeth*—an outer row of strong canines in the upper jaw; lower jaw with six canines. *Fins*—dorsal spines rather strong, increasing in length to the fourth, from which they decrease to the last; height of the fourth equals distance from eye to end of preorbital bone; the last dorsal spine is slightly longer than the ninth; second anal spine two thirds as long as the third; caudal deeply forked. *Scales*—five rows on the cheeks. *Colour*—greenish, glossed with golden on the sides; wavy blue lines along the snout and over the preorbital.

Hab. Red Sea and Ceylon.

21. Genus **SYNAGRIS** (Klein), Günther.

Syn. Dentex, pt., Cuv. & Val.; *Nemipterus*, Swains.; *Spondylisoma*, sp., Cantor; *Heterognathon*, pt., Steind.; *Dentex* (Cuv. & Val.), Bleeker. *Koondul*, Tamil.

Branchiostegals five or six; pseudobranchiæ. Body oblong. Mouth moderately protractile; jaws of about equal length. Preopercle entire or feebly serrated; opercle without any or with a not very prominent spine; the distance between the eye and the angle of the mouth considerable. Moderately-sized curved canines in the upper and generally feeble ones in front of the lower jaw; an inner villiform band in either jaw and usually an outer conical row; vomer, palate, and tongue edentulous. Dorsal 10/9; anal 3/7, both scaleless; all the spines weak; caudal forked. Scales ctenoid, three rows on the preopercle, none along its outer border, on the snout, preorbital, or jaws. Air-bladder not constricted, but notched posteriorly. Pyloric appendages few.

Geographical Distribution. Red Sea, east coast of Africa, seas of India to the Malay Archipelago, and beyond.

Synopsis of Indian Species.

Upper caudal ray with filamentous prolongation.

First two dorsal spines with soft prolongation. 1. *S. striatus*, p. 526.

Dorsal spines not prolonged 2. *S. japonicus*, p. 527.

No prolongation to caudal.

Dorsal spines longer than rays 3. *S. tolu*, p. 528.

Dorsal spines shorter than rays.

A blue spot on opercle 4. *S. bleekeri*, p. 528.

No spot on opercle 5. *S. tenuipterus*, p. 529.

703. (1.) **Synagris striatus.**

Dentex striatus (? Cuv. & Val. *H. N. Poiss.* vi, p. 252); *Jerdon*, *Mad. Jour. L. & Sc.* xvii, 1851, p. 134.



Synagris striatus, Day, *Fish. India*, p. 90, pl. viii, fig. 5 (marked *Synagris luteus*) (see synonym.).

Kandal min, Tam.

B. vi. P. 17. V. $1\frac{1}{5}$. C. 17. L. l. 48. L. tr. $3\frac{1}{2}/10$.

Length of head $4\frac{1}{3}$, height of body 4 in the total length (excluding the prolonged caudal ray). *Eyes*—diameter $3\frac{1}{4}$ in length of head, 1 from end of snout, and $\frac{3}{4}$ apart. Vertical margin of preopercle finely and evenly serrated in its middle third, the angle rounded and entire. Opercle without any distinct spine. *Teeth*—4 canine-like in front of each premaxillary, the inner in the mandible villiform above the symphysis, laterally in two rows, of which the inner is slightly the larger. *Fins*—first two dorsal spines elongate, the second reaching to the base of the caudal fin; interspinous membrane very slightly notched, the height of the last eight spines gradually increasing; the last not so high as the rays. Ventral reaches anal. Caudal forked, upper lobe with a filamentous prolongation. *Scales*—extend forwards to between the eyes. *Colour*—silvery, with pinkish longitudinal bands. Fins pinkish stained with yellow.

Hab. Coromandel coast of India.

704. (2.) *Synagris japonicus*.

Sparus japonicus, Bloch, *Ich.* t. 277, fig. 1.

Synagris japonicus, Day, *Fish. India*, p. 92, pl. xxiv, fig. 2, *Suppl.* p. 786 (see synonym.).

B. vi. L. l. 48. L. tr. $3\frac{1}{2}/10$.

Length of head 4, height of body 4 in the total length excluding the filamentous prolongation of the upper caudal lobe. *Eyes*—diameter $3\frac{1}{4}$ to $3\frac{1}{2}$ in length of head, $1\frac{1}{4}$ to $1\frac{1}{2}$ from end of snout, and nearly 1 apart. Vertical limb of preopercle finely and evenly serrated in lower half; angle rounded and entire. Opercle without distinct spine. *Teeth*—four to six small curved canines in front of either premaxillary; in the mandible the last six or eight teeth only are conical. *Fins*—dorsal interspinous membrane scarcely notched; height of spines increases to the last; rays rather longer. Pectoral reaches to above anal spines. Ventral with first ray prolonged, reaches anal. Third anal spine slightly weaker than second, but longer. Caudal deeply forked, having a filamentous prolongation to the upper ray. (This may be peculiar to males, but I have reason to believe it is present in the females.) *Colour*—yellowish red; longitudinal reddish lines along each row of scales. Dorsal and anal fins with a yellow streak along their centres, a grey base, and pinkish edge.

Hab. Red Sea, east coast of Africa, seas of India, and the Malay Archipelago.

705. (3.) *Synagris tolu*. (Fig. 159.)

Dentex tolu, *Cuv. & Val. H. N. Poiss.* vi, p. 248.

Synagris tolu, *Day, Fish. India*, p. 91, pl. xxiii, fig. 6 (see synon.).

Kadakela, Maráthi; *Cundil*, Tam.

B. vi. L. l. 48. L. tr. 3/10. Cæc. pyl. 10-11.

Length of head $4\frac{1}{2}$, height of body 4 to $4\frac{1}{2}$ in the total length. *Eyes*—transversely oval, diameter 3 in length of head, 1 from end of snout, and $\frac{2}{3}$ apart. Preopercle entire. *Teeth*—4 to 6 canine-like anteriorly in either premaxillary, outer lateral row composed of about 16 closely-set and pointed; several rows opposite the mandibular symphysis, the outer rather larger than the others, but not so large as the single lateral row, the teeth in which equal those in upper jaw. *Fins*—dorsal interspinous membrane deeply notched; sixth, seventh, and eighth spines longest, last spine of same length as last ray; ventral with its outer ray elongate, scarcely reaching to

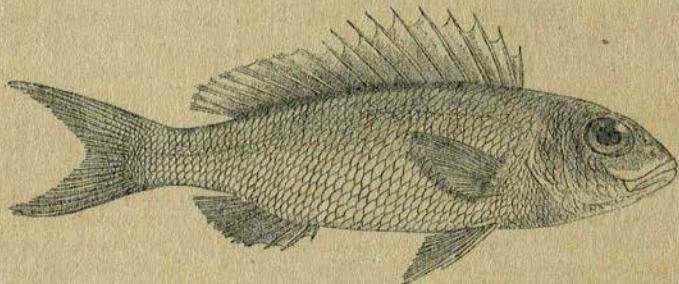


Fig. 159.—*Synagris tolu*.

anus; second anal spine as strong but not so long as third, which equals one third height of body; caudal deeply forked, the upper lobe the longer. Pectoral a little longer in males, extending to the anus. *Colour*—rosy, with four or five yellowish longitudinal bands between the rows of scales from immediately above the base of the pectoral fin. Fins pinkish; tips of dorsal spines orange.

Hab. Seas of India to the Malay Archipelago.

706. (4.) *Synagris bleekeri*.

Synagris bleekeri, *Day, Fish. India*, p. 92, pl. xxiv, fig. 1.

B. vi. L. l. 48. L. tr. $3\frac{1}{2}$ /11.

Length of head 4 to $4\frac{1}{2}$, height of body $4\frac{1}{3}$ in the total length. *Eyes*—transversely oval, diameter $3\frac{3}{4}$ in length of head, $1\frac{1}{4}$ from end of snout, and 1 apart. Preopercle entire or finely serrated. A small flat spine on the opercle. *Teeth*—four small canines in front of each premaxillary, no enlarged lateral row; canine-like teeth in



front of the lower jaw, and a single conical row in last two-thirds of mandible. *Fins*—dorsal interspinous membrane scarcely notched, spines increase in length to last, which equals two-fifths of height of body, the rays slightly longer; outer ventral ray elongated, nearly reaching anal; anal spines of equal strength, the second not so long as the third; caudal deeply forked, the upper lobe the longer, but no filamentous prolongation was observed in Madras specimens. *Colour*—reddish above, becoming silvery with yellow bands along the sides and beneath; a bluish spot on the opercle; fins reddish, dorsal edged with orange and having a golden band along its base.

Hab. Seas of India; growing to at least 8 inches in length.

707. (5.) *Synagris taniotus*.

Dentex taniotus, Cuv. & Val. H. N. Poiss. vi, p. 246.

Dentex (*Synagris*) *notatus*, Day, P. Z. S. 1870, p. 684.

Synagris notatus, Day, Fish. India, p. 93, pl. xxiv, fig. 3, Suppl. p. 786 (see synon.).

B. vi. P. 15. L. 1. 47. L. tr. $3\frac{1}{2}/10$.

Length of head $3\frac{3}{4}$ to 4, height of body 4 in the total length. *Eyes*—diameter $3\frac{1}{2}$ to 4 in length of head, $1\frac{1}{2}$ from end of snout, and nearly 1 apart. Preopercle entire. Opercle with a small flat spine. *Teeth*—4 large curved canines in either premaxillary, and a small lateral outer conical row; 6 well-developed canine-like teeth in front third of lower jaw, laterally a conical row, becoming small in last fourth of jaw. *Fins*—dorsal interspinous membrane very slightly emarginate, spines increase in length to fifth, then continue of about the same height to the last, which is a little longer; rays longer than spines. Pectoral not extending to above anal. Caudal forked, upper lobe the longer. *Colour*—rosy, with a brilliant spot on the first five scales below the lateral line, the upper half red, the lower yellow. Five or six longitudinal yellow bands, and three silvery-white bands below the lateral line; fins pinkish, with a yellow band along the base of the dorsal and anal.

Hab. Seas of India.

22. Genus **PENTAPUS**, Cuv.

Syn. *Leiopsis*, Bennett; *Gnathodentex*, pt., Bleeker.

Branchiostegals six; pseudobranchiæ. Body oblong. Eyes of medium size. Cleft of mouth more or less horizontal and not deep; jaws of about equal length. Preopercle entire; opercle without any or with a very feeble spine; preorbital narrow, entire; the distance between the eye and the mouth small. Villiform teeth in the jaws with canines; palate edentulous. One scaleless dorsal fin receivable into a groove at its base, having ten spines; anal with three spines; caudal forked. Scales ctenoid, of moderate or



small size, with three or more rows on the preopercle. Air-bladder simple. Pyloric appendages few.

Geographical Distribution. Seas of India to Australia.

708. (1.) *Pentapus aurolineatus*.

Sparus aurolineatus, *Lacép. H. N. Poiss.* iv, p. 182.

Pentapus aurolineatus, *Day, Fish. India*, p. 93.

D. 10/10. P. 16. A. 3/9-10. C. 17. L. 1.74-78. L. tr. 6/20.

Length of head 4 to $4\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ in length of head, $\frac{3}{4}$ from end of snout, and 1 apart. A serrated ridge outside middle portion of upper two thirds of maxilla. *Teeth*—about six canines in front of each jaw, the outer pair enlarged. *Fins*—dorsal spines rather weak, increasing in length to the fourth, which is two fifths the height of the body, the hinder ones are a little shorter, the rays are rather higher than the spines, interspinous membrane slightly notched; pectoral nearly as long as the head; ventral nearly reaches the anal. Anal spines not strong, third the longest but not quite equal to fourth dorsal; caudal deeply forked. *Colour*—silvery, with four or five horizontal golden bands along the sides, and a silvery mark on the back behind last dorsal ray; fins rosy, the dorsal, caudal, and anal being margined with red.

Hab. Mauritius, Ceylon to the Malay Archipelago, and beyond.

23. Genus *APHAREUS*, Cuv. & Val.

Branchiostegals seven; pseudobranchiæ. Body oblong. Cleft of mouth wide and oblique, the lower jaw the longer. Preopercle and preorbital entire. Canines absent, palate edentulous. A single dorsal fin, with the front portion the highest, spines (10-12) feeble; caudal forked. Scales small. Air-bladder simple. A respiratory cavity behind the branchiæ. Pyloric appendages few.

709. (1.) *Aphareus rutilans*.

Aphareus rutilans, *Cuv. & Val. H. N. Poiss.* vi, p. 490; *Day, Fish. India, Suppl.* 1888, p. 782 (see synon.).

D. 10-12/9-11. P. 16. A. 3/8. C. 17. L. 1.65-70. Cæc. pyl. 5.

Length of head 4, height of body $4\frac{3}{4}$ to 5 in the total length. *Eyes*—diameter 4 in length of head, $1\frac{1}{2}$ from end of snout, and 1 apart. *Fins*—fourth and fifth dorsal spines the highest in the fin, last dorsal and anal rays prolonged to twice the length of the penultimate; caudal deeply forked. *Colour*—rosy, deepest along the back, with a yellow blotch between each two rays of the dorsal fin near their bases. Caudal lobes with dark tips.

Hab. Red Sea to the Malay Archipelago; obtained in Ceylon by Mr. Haly.

24. Genus **SMARIS**, Cuv.

Branchiostegals six; pseudobranchiæ. Mouth very protractile. Preopercle entire. Teeth in the jaws, none on the vomer. A single, sometimes deeply notched scaleless dorsal fin, with from nine to fifteen feeble spines; anal with three. Caudal forked. Scales ctenoid, rather small. Air-bladder not constricted, but generally forked posteriorly. Pyloric appendages few.

Geographical Distribution. Mediterranean and Atlantic Ocean; one species from Ceylon.

710. (1.) *Smaris balteatus*.

Smaris balteatus, Cuv. & Val. *H. N. Poiss.* vi, p. 424; *Day, Fish. India*, p. 94 (see synon.).

D. 15/10. P. 17. V. 1/5. A. 3/10.

Length of head $4\frac{1}{4}$, height of body 4 in the total length. *Eyes*—diameter $2\frac{3}{8}$ in length of head, $\frac{2}{3}$ of a diameter from end of snout. Body cylindrical and somewhat elongate; the maxilla reaches to below front edge of orbit. *Fins*—division between spinous and soft portions of dorsal well marked. *Colour*—reddish brown along back, dotted with small brilliant silvery spots; the coloured part of the back streaked with brilliant silver, below this coloured portion a wide silvery longitudinal band passes from the superciliary region across the opercle to the tail. Fins pale-coloured.

Hab. Ceylon; growing to 4 inches in length.

25. Genus **CÆSIO**, Lacépède.

Syn. *Cæcio*, sp., Cuv. & Val.; *Paracæcio*, Bleeker; *Odontonectes*, Günther.

Branchiostegals six or seven; pseudobranchiæ. Body oblong, occasionally somewhat elevated. Mouth moderately protractile, its cleft oblique. Preopercle entire or minutely serrated. Fine teeth in the jaws, sometimes deciduous ones on the vomer or palate. A single dorsal fin, with from 9 to 13 feeble spines; anal with 3. Scales very finely ctenoid, of moderate or small size, and as a rule extended over the bases of the vertical fins. Air-bladder not constricted.

Geographical Distribution. From the Red Sea, through the seas of India to the Malay Archipelago.

Synopsis of Indian Species.

- | | |
|--|-----------------------------------|
| D. 11/14, L. tr. 9/18..... | 1. <i>C. pinjalo</i> , p. 532. |
| D. 10/15, L. tr. 7/13. Bluish green above, rosy below..... | 2. <i>C. cuning</i> , p. 532. |
| D. 10/15, L. tr. 8/16. A golden longitudinal band..... | 3. <i>C. chrysozona</i> , p. 533. |

711. (1.) *Cæcio pinjalo*. (Fig. 160.)

Cæcio pinjalo, Bleeker, *Batavia Nat. Tijdsch.* i, p. 10; *Day, Fish. India*, p. 94, pl. xxiv, fig. 4 (see synon.).

Polei-oolavai, *Mette mirrei*, Tamil.

B. vii. D. 11/14. A. 3/10. C. 17. L. l. 50-55. L. tr. 9/18.

Length of head $4\frac{1}{2}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ to 4 in length of head, $\frac{3}{4}$ to 1 from end of snout, and also apart. Body oval and compressed. Lower jaw the longer. Vertical limb of preopercle serrated, most coarsely so at the angle, which is considerably produced. Opercle with a weak, flat spine. *Teeth*—villiform, with one or two, sometimes three, small conical ones on either side of middle of upper jaw, in a narrow band in a Λ -form on vomer, and also on palatines, occasionally absent from both the latter. *Fins*—dorsal spines weak, fourth and fifth the highest, from these they slightly decrease to the last, which

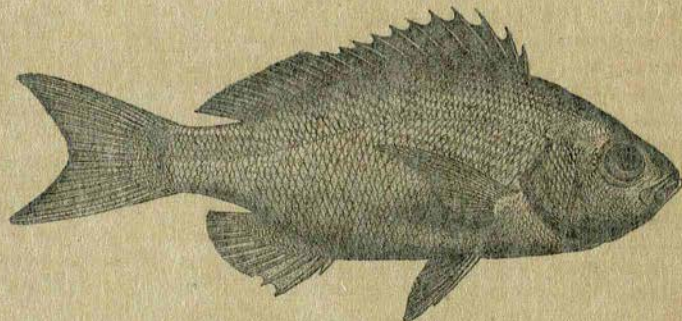


Fig. 160.—*Cæcio pinjalo*.

nearly equals the first ray, rays shorter than longest spine; pectoral pointed. Second anal spine about equal in length to third; caudal lunate. *Colour*—yellowish red on back, rosy below lateral line; stripes along rows of scales above lateral line dark olivaceous, yellow below it; pectoral, ventral, and anal orange; dorsal and caudal yellowish edged with black.

Hab. Coromandel coast of India, Malay Archipelago; attaining at least 16 inches in length.

712. (2.) *Cæcio cuning*.

Sparus cuning, Bloch, *Ich.* t. 263, fig. 1.

Cæcio cuning, *Day, Fish. India*, p. 95 (see synon.).

Cul kilchi, Tamil.

B. vi. D. 10/15. A. 3/11. L. l. 53. L. tr. 7/13. Vert. 10/14. C. pyl. 5.

Length of head $4\frac{3}{4}$ to 5, height of body $3\frac{1}{2}$ to $3\frac{3}{4}$ in the total length. *Eyes*—diameter 4 in length of head, $\frac{3}{4}$ to 1 from end of snout, and $1\frac{1}{2}$ apart. Preopercular angle rounded and finely



serrated. *Teeth*—small on vomer, and deciduous on palatine bones. *Fins*—4th dorsal spine longest; 2nd and 3rd anal spines nearly equal; caudal deeply forked. *Colour*—bluish green above, rosy along abdomen.

Hab. Seas of India to the Malay Archipelago and beyond.

713. (3.) *Cæzio chrysozona*.

Cæzio chrysozona (Kuhl & v. Hass.), *Env. & Val. H. N. Poiss.* vi, p. 440; *Day, Fish. India*, p. 95, pl. xxiv, fig. 5 (var. *aurolineatus*) (see synon.).

Perom kalché and *Woongooni*, Tam.

B. vi. D. 10/14-15. A. 3/11-15. C. 15. L. 1. 65-72. L. tr. 8/16.

Length of head $4\frac{1}{4}$, height of body $4\frac{1}{4}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ in the young to $3\frac{1}{4}$ in adult in length of head, $\frac{1}{2}$ to 1 from end of snout, $\frac{2}{3}$ apart. Body rather elongate and compressed. Lower jaw the longer. Preopercle striated and irregularly serrated on both edges; in the adult the angle is rather produced. Opercle with a moderate spine. *Fins*—3rd and 4th dorsal spines longest, equal to half height of body; rays of about equal length. Pectoral reaching to opposite anus. Second anal spine slightly shorter than third, which equals second dorsal. Caudal deeply lobed, the lower lobe largest and longest. *Scales*—a few rows along bases of dorsal and anal. *Colour*—bluish, with a golden band along the lateral line and a black tip to each lobe of caudal; a black spot in axilla. In the var. *C. aurolineatus*, above the lateral line is light lake-colour; from eye to base of caudal below lateral line there is a shining golden band, 3 scales deep in front, decreasing to one behind; below this band pinkish white.

Hab. Red Sea, seas of India.

26. Genus *APRION*, Cuv. & Val.

Branchiostegals seven; pseudobranchiæ. Body oblong, rather elongate, and compressed. Preorbital of moderate height, entire. Preopercle entire or finely serrated. Opercle with two spines. Villiform teeth on the vomer and palate and in both jaws, canines in front, and an outer enlarged row laterally; none on the tongue. Dorsal fin single, with ten or eleven spines; anal with three; pectorals pointed; caudal rather deeply forked. Scales of moderate size. Pyloric appendages few.

Geographical Distribution. Red Sea, seas of India and Malaysia, also Seychelles and Madagascar.

714. (1.) *Aprion pristipoma*. (Fig. 161.)

Dentex pristipoma, *Bleeker, Batavia Nat. Tijdsch.* vii, p. 240.

Anthias multidentis, *Day, Fish. India*, p. 27, pl. vii, fig. 4, *Suppl.* p. 782 (see synon.).

D. 10/11. P. 16. A. 3/8-9. C. 16. L. 1.52. L. tr. 7/17. Cæc. pyl. 5.

Length of head $3\frac{3}{4}$, height of body 4 in the total length. *Eyes*—diameter $3\frac{1}{4}$ in length of head, $1\frac{1}{4}$ from end of snout, and 1 apart. Seven rows of scales between eye and angle of the preopercle. *Fins*—dorsal spines slender, 5th longest; last dorsal and anal ray nearly twice as long as the preceding; second anal spine

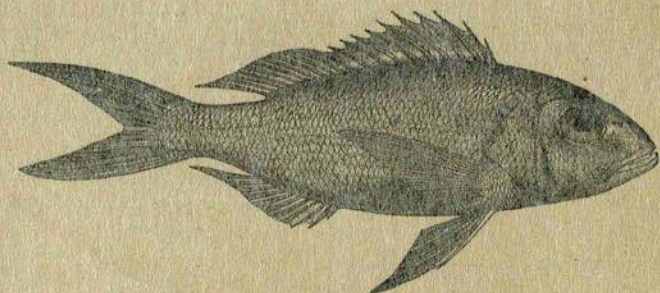


Fig. 161.—*Aprion pristipoma*.

strongest, third longest. *Colour*—rosy, with about six longitudinal yellow bands along the body, a golden one from inferior angle of eye to snout, and another across the forehead.

Hab. Red Sea to Malay Archipelago and New Guinea; attaining a large size. Common at the Andamans.

Eighth group. GERRINA.

27. Genus **DATNIOIDES**, Bleeker.

Branchiostegals six; pseudobranchiae. Body elevated. Premaxillaries very protractile. Preopercle serrated. Villiform teeth in the jaws without canines; vomer, palate, and tongue edentulous. A single dorsal fin having 12 stout spines; anal with 3. Scales ctenoid. Air-bladder simple. Pyloric appendages few.

Geographical Distribution. Mouths of large rivers from India to the Malay Archipelago. Rarely found beyond tidal reach.

715. (1) *Datnioides quadrifasciatus*. (Fig. 162.)

Chatodon quadrifasciatus, *Sevastian*, *Mém. Acad. Peters.* 1800, i. p. 448, t. 18.

Datnioides polota, *Bleeker*, *Batavia Nat. Tijdsch.* v, p. 441; *Day*, *Fish. India*, p. 96, pl. xxiv, fig. 6, *Suppl.* p. 786 (see synonym.).

Nya-kyu and *Nya-wet-ma*, Burm.; *Nya-pree-gryn* and *Nya-thak-how*, Arrac.; *Beydha*, Chittagong.



D. 12/13-14. A. 3/8-9. L. l. 48. L. r. 72/60. L. tr. 12/25. C. pyl. 5.

Length of head 3 to $3\frac{1}{2}$, height of body $2\frac{1}{2}$ to 3 in the total length. *Eyes*—diameter 5 in length of head, $1\frac{1}{2}$ from end of snout, and 1 apart. *Fins*—every alternate dorsal spine thickened on one side, 5th and 6th the longest; second anal spine longest, equalling highest in dorsal; caudal rounded. *Colour*—brownish, glossed

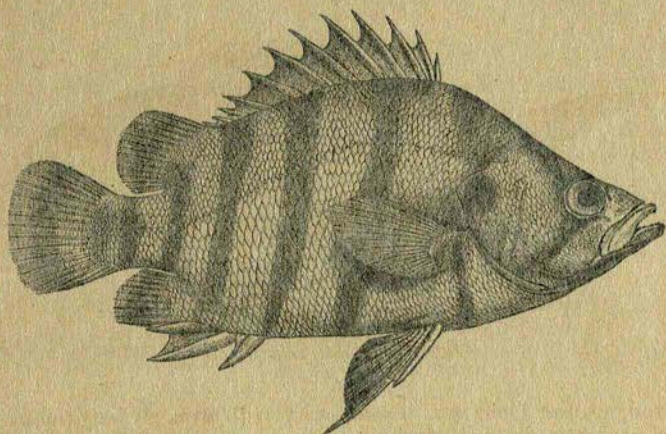


Fig. 162.—*Datnioides quadrifasciatus*.

with copper; six or seven narrow vertical brown bands on body and others radiating from orbit.

Hab. Estuaries of the Ganges, rivers of Burma and the Malay Archipelago; attaining at least 1 foot in length. Though not esteemed as food it is eaten by the poorest classes.

28. Genus **GERRES**, Cuvier.

Syn. *Diapterus*, Ranz; *Chanda*, sp., Ham. Buch.; *Catochænum*, Cantor; *Synistius*, Gill; *Eucinostomus*, Baird, Gir.

Branchiostegals six; pseudobranchiæ. Body elevated or oblong and compressed. Mouth very protractile and descending when produced. Preopercle as a rule entire, rarely serrated. Eyes comparatively large. Villiform teeth in the jaws; no canines. Inferior pharyngeal bones firmly united by a suture in some species but not so in others*. Bases of the spinous and soft portions of the dorsal fin nearly equally long, the whole fin having a scaly sheath into which it can be wholly or partially received; pectorals long, pointed, generally reaching to above the anal. D. 9-10/10-11. A. 3/7. Caudal forked. Scales of moderate size. Air-bladder simple. Pyloric appendages few.

* Peters, MB. Ak. Wiss. Berlin, 1868, p. 257.



Geographical Distribution. All tropical seas, entering estuaries. Some species apparently are mostly confined to the latter, and ascend into brackish or fresh water as high as tidal influence extends.

Uses. These fishes are eaten by the indigent classes, being little esteemed whilst fresh. As they salt and dry well, large numbers are prepared in this manner for use.

Synopsis of Indian Species.

- A. Dorsal with 10 spines 1. *G. setifer*, p. 536.
B. Dorsal with 9 spines.
 a. Height of body $2\frac{1}{2}$ in total length 2. *G. oblongus*, p. 536.
 b. Height of body $2\frac{1}{2}$ to $3\frac{1}{2}$ in total length.
 a'. Longest dorsal spine prolonged, exceeding height of body 3. *G. filamentosus*, p. 537.
 b'. Longest dorsal spine moderate, less than height of body, but much exceeding longest anal.
 L. tr. 5/10. Longest dorsal spine as long as head without snout 4. *G. oyena*, p. 538.
 L. tr. 6/11. Longest dorsal spine almost as long as head 5. *G. abbreviatus*, p. 533.
 L. tr. 6/11. Longest dorsal spine as long as head without snout 6. *G. poeti*, p. 538.
 c'. Longest dorsal spine scarcely, or not longer than longest anal.
 L. tr. 5/10. Indistinct vertical bands 7. *G. lucidus*, p. 539.
 L. tr. 4/10. No bands 8. *G. limbatus*, p. 539.

716. (1.) *Gerres setifer*.

Chanda (P) setifer, *Ham. Buch. Fish. Ganges*, pp. 105, 370.

Gerres setifer, *Day, Fish. India*, p. 97, pl. xxv. fig. 1, *Suppl.* p. 786 (see synon.)

D. 10/10. P. 17. A. 3/7. C. 19. L. 1.38. L. tr. 5/10.

Length of head 4 to $4\frac{1}{2}$, height of body $2\frac{1}{2}$ to 3 in the total length. *Eyes*—diameter 3 in length of head, nearly 1 from end of snout, and 1 apart. Lower margin of preopercle serrated in its last half. *Fins*—dorsal spines moderate, third and fourth longest and two fifths height of body; last dorsal spine rather longer than the preceding, and one third shorter than the third or fourth. Anal spines of about equal length, or the second slightly the longer; caudal deeply forked. *Colour*—silvery, with a narrow dark edge to the dorsal interspinous membrane, and a brown spot on each dorsal ray just above the sheath.

Hab. River Hooghly at Calcutta, where this fish is common, attaining to $4\frac{1}{2}$ inches in length; also Madras.

717. (2.) *Gerres oblongus*.

Gerres oblongus, *Cuv. & Val. H. N. Poiss.* vi, p. 479; *Day, Fish. India*, p. 98, pl. xxv, fig. 2 (see synon.).



D. 9/10. P. 17. A. 3/7. C. 17. L. 1. 48-50. L. tr. $5\frac{1}{2}$ —.

Length of head $4\frac{1}{2}$, height of body nearly 4 in the total length. *Eyes*—diameter 3 in length of head, $\frac{3}{4}$ (in the young 1) from end of snout, and 1 apart. Preopercle entire. *Fins*—dorsal spines not very strong, compressed, the second curved and much the highest, being almost as long as the head; anal spines weak, the third rather the longest; caudal deeply forked, with some fine scales upon it. *Colours*—silvery, eye golden.

Hab. Apparently throughout the seas of India to the Malay Archipelago and beyond. The young are sometimes captured at Madras; I have also taken this fish at the Andaman Islands, up to a little over 9 inches in length.

718. (3.) *Gerres filamentosus*. (Fig. 163.)

Gerres filamentosus, Cuv. & Val. *H. N. Poiss.* vi, p. 482; *Day, Fish. India*, p. 98, pl. xxv, fig. 3 (see synonym.).

Jaggari, Tel. (Ganjam); *Oodan*, Tam.; *Nga zeeng byoo*, Arrac.

D. 9/10. P. 15. A. 3/7. L. 1. 45-48. L. tr. 6/14. Cæc. pyl. 3.

Length of head 4 to $4\frac{1}{2}$, height of body rather above 3 in the total length. *Eyes*—diameter 3 in length of head, $\frac{1}{2}$ to 1 from end of snout and also apart. Preopercle entire. *Fins*—2nd dorsal spine prolonged, sometimes, especially in the adult, extending to the caudal fin; second anal spine stronger but shorter than third; caudal deeply forked. *Colour*—silvery in the adult, with rows of

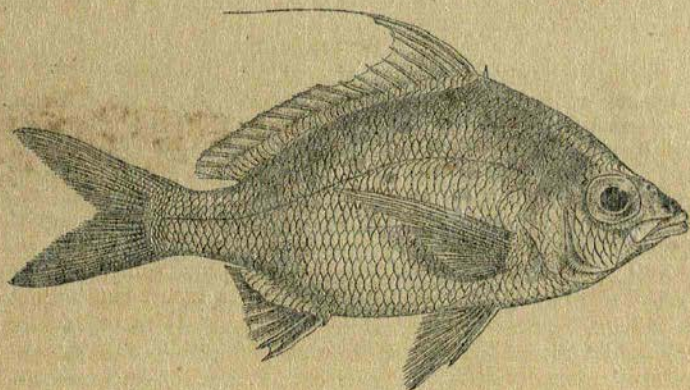


Fig. 163.—*Gerres filamentosus*.

short oblong horizontal bluish spots along the upper half of the body, on the scales being rubbed off the spots are found to be continuous, forming lines; snout black; a blackish spot anteriorly on the base of each dorsal spine and ray just above the scaly sheath, and usually a dark edge to the soft dorsal; caudal greyish externally; the other fins yellow, with numerous fine dots on the fin-



membrane. The young have vertical bands, the alternate ones being the shortest.

Hab. Seas of India to the Malay Archipelago and beyond; attaining 8 inches or more in length.

719. (4.) *Gerres oyena*.

Labrus oyena, *Forsk. Descr. Anim.* p. 35.

Gerres oyena, *Day, Fish. India*, p. 99, pl. xxv, fig. 4 (see synon.).

D. 9/10. P. 15. A. 3/7. C. 19. L. 1.38-40. L. tr. 5/10. C. pyl. 3.

Length of head 4, height of body $2\frac{3}{4}$ in the total length. *Eyes*—diameter $3\frac{1}{2}$ in length of head, 1 from end of snout and also apart. Preopercle roughened along its vertical limb but not serrated. *Fins*—dorsal spines pretty strong, the anterior somewhat compressed, the second longest and equal to nearly the length of the head without the snout. Second anal spine strongest, but shorter than the third, which equals half the length of the head; caudal forked. *Scales*—fine ones covering the caudal fin. *Colour*—silvery; dorsal fin black-edged, and a dark spot on each spine and ray at about half their height; sometimes a darkish mark over the free portion of the tail; a narrow black posterior edge to the middle of the caudal; the fins yellow.

Hab. Red Sea, east coast of Africa, seas of India to the Malay Archipelago and beyond.

720. (5.) *Gerres abbreviatus*.

Gerres abbreviatus, *Bleeker, Batavia Nat. Tijdsch.* i, p. 103; *Day, Fish. India*, p. 99, pl. xxv, fig. 6 (see synon.).

D. 9/10. P. 15. A. 3/7. C. 17. L. 1.37-40. L. tr. 6/11.

Length of head 4, height of body $2\frac{1}{2}$ to $2\frac{3}{4}$ in the total length. *Eyes*—diameter $2\frac{1}{2}$ to 3 in length of head, $\frac{2}{3}$ to $\frac{3}{4}$ from end of snout, and 1 apart. Snout somewhat spatulate. Preopercle entire or finely serrated on its vertical limb. No median suture between the inferior pharyngeal bones. *Fins*—second dorsal spine longer than the third, and almost equal to the length of the head, both rather curved. Second anal spine the strongest, the third slightly the longest, as long as the distance from the posterior edge of the orbit to the end of the snout; caudal deeply forked, upper lobe slightly the longer. *Colour*—silvery white, darkest along the back, each scale with a rather indistinct spot, forming longitudinal bands; fins yellowish, dorsal with a blackish edge and a spot on each spine and ray just above the sheath.

Hab. Seas of India to the Malay Archipelago; growing to $7\frac{1}{2}$ inches in length.

721. (6.) *Gerres poeti*.

Gerres poeti, *Cuv. & Val. H. N. Poiss.* vi, p. 468; *Day, Fish. India*, p. 100, pl. xxv, fig. 1 (see synon.).

Mungav, Maráthi.



D. 9/10. P. 15. A. 3/7. C. 17. L. 1. 40. L. tr. 6/11.

Length of head $4\frac{1}{2}$, height of body 3 in the total length. *Eyes*—diameter $2\frac{1}{2}$ in length of head, $\frac{2}{3}$ from end of snout, and 1 apart. *Fins*—the second and third dorsal spines compressed and somewhat arched, the second slightly the longer, and equal to the length of the head excluding the snout. Second anal spine the strongest, and differing but little in length from the third, which is three fourths of the height of the second dorsal; caudal forked. *Colour*—silvery, with a dark edge to the dorsal fin, and the outer edge of the caudal greyish; spots along the base of each dorsal spine and ray, and more or less distinct lines along the rows of scales on the body.

Hab. Red Sea, east coast of Africa, seas of India, Malay Archipelago, and beyond; growing to at least 7 inches in length.

722. (7.) *Gerres lucidus*.

Gerres lucidus, Cuv. & Val. *H. N. Poiss.* vi, p. 477; *Day, Fish. India*, p. 99, pl. xxv, fig. 5 (see synonym.).

D. 9-10. P. 15. A. 3/7. C. 17. L. 1. 40. L. tr. 5/10. Cæc. pyl. 3.

Length of head $4\frac{1}{2}$, height of body 3 in the total length. *Eyes*—diameter $2\frac{1}{2}$ in length of head, $\frac{1}{3}$ to $\frac{2}{3}$ from end of snout, and 1 apart. Preopercle entire. *Fins*—dorsal spines of moderate strength, the third slightly the longest, equal to length of head behind middle of orbit; second anal spine stronger, but generally rather shorter than third, which is a little longer than the third dorsal; caudal forked. *Scales*—dorsal sheath rather more developed than anal; a few scales over the caudal. *Colour*—silvery, an indistinct vertical dark band over the nape, and three more below the dorsal fin; snout black; fins canary-yellow, dorsal dark-edged with a black margin; a row of dark spots along the dorsal spines and rays at half their height; caudal grey-edged, the inferior caudal lobe with a very narrow white lower edge and a white tip.

As this fish increases in length the height of the body diminishes proportionately.

Hab. Seas of India to the Malay Archipelago and China. This is the most common Indian species, visiting the coasts in enormous numbers.

723. (8.) *Gerres limbatus*.

Gerres limbatus, Cuv. & Val. *H. N. Poiss.* vi, p. 476; *Day, Fish. India*, p. 100 (see synonym.).

Nga-wet-sat, Arracan.

D. 9/10. P. 15. A. 3/7. C. 17. L. 1. 35. L. tr. 4/10.

Length of head 4, height of body $3\frac{1}{4}$ in the total length. *Eyes*—diameter 3 in length of head, $\frac{2}{3}$ from end of snout, and 1 apart. *Fins*—dorsal spines not very strong, the third slightly the longest,

and equal to length of head behind middle of orbit, the last spine nearly equal to half the height of the rays; second anal spine much the strongest, but slightly shorter than third, which nearly equals second dorsal; caudal deeply forked. *Scales*—numerous fine scales over caudal fin. *Colour*—silvery, with a dark margin to the dorsal and anal fins, and a spot on each spine and ray of the dorsal fin about its middle.

Hab. Seas of India; 5 inches in length.

29. Genus **PENTAPRION**, Bleeker.

• Syn. *Clara*, Gill.

This genus has the inferior pharyngeal bones separate, and differs from *Gerris* in possessing 14 or 15 rays in the dorsal fin; 5 anal spines, and 13 or 14 rays.

724. (1.) *Pentaprion longimanus*. (Fig. 164.)

Equula longimanus, Cantor, *Catal.* p. 152 (*J. A. S. B.* xviii, p. 1134).
Pentaprion longimanus, Day, *Fish. India*, p. 101, pl. lii, fig. 6 (see synon.).

B. vi. D. 9-10 (11)/(14) 15-16. P. 15. A. 5/13. C. 17. L. 1. 40.

Length of head $4\frac{1}{3}$, height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $2\frac{1}{3}$ in length of head, $\frac{2}{3}$ from end of snout, and 1 apart.

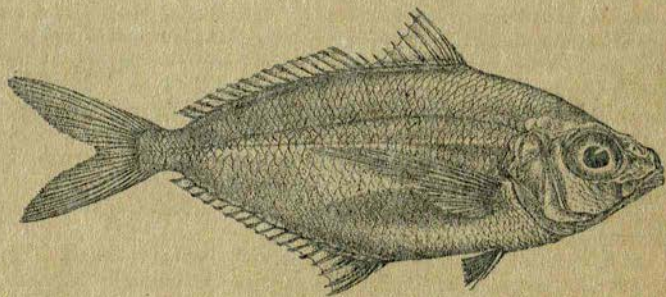


Fig. 164.—*Pentaprion longimanus*.

Lower preopercular edge serrated. *Teeth*—villiform in the jaws; vomer and palate edentulous. *Fins*—dorsal spines weak, the first very short, the second one-third the height of the third; second anal spine the longest; upper caudal lobe the longer. *Colour*—silvery, with a silvery stripe from the eye to the base of the caudal fin.

Hab. Madras to the Malay Archipelago.



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