

ON A COLLECTION OF LITTORAL AND FRESHWATER FISHES FROM THE ANDAMAN ISLANDS.

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Scientific knowledge of the fishes of the Andaman Islands is very far from being comprehensive or exhaustive. The first papers, two in number, were by Blyth¹; Day² wrote a paper based on the collection he made in 1869, and of course had many references to the Andamans in his *Fishes of India*. In recent time Annandale and Hora³ contributed a valuable paper, and the late D. D. Mukerji⁴ published an excellent paper still more recently. While writing this article the latest paper, by Rao and Hora,⁵ was received; it constitutes a very satisfactory study of Andaman representatives of the genus *Andamia*.

The present paper is based on a collection sent me by the Zoological Survey of India, and adds considerably to our knowledge of the Andaman fish fauna. Nevertheless, even with the additions made here, the list of known Andaman fishes is but fragmentary. Although the collection here considered fills many gaps in the fish fauna of the Andamans, the fishes not represented in it are more surprising than those it contains. That is probably due to the manner of collecting, and not to any lack of fishes. Many of the specimens are small to very small, and were probably obtained in plankton hauls and in collecting small invertebrates. This would account for the restricted number of species represented in the collection, and for the remarkable gaps in it. Special attention was evidently paid to the fauna of the few Andaman freshwater streams. This is evinced by the nice series of such species as *Doryichthys insularis*, *Sicyopterus garra*, and *Vaimosa koumansii*.

In a number of instances the locality given was merely a station number. The following list of stations locates them more definitely; all were near Port Blair, South Andaman.

- Station 1.—Shore collecting opposite Hope Town Jetty—Haddo shore.
- „ 2.—Round about Phoenix Bay.
- „ 3.—Around Ross Island.
- „ 4.—Around Chatham Island.
- „ 5.—Round about South Point.
- „ 6.—About South Corbyn's Cove.
- „ 7.—Round about Viper Island and Mitakhari.
- „ 8.—About Hope Town Jetty at low tide.
- „ 9.—Bamboo Flat (Jetty).
- „ 10.—Dandas Point—*via* Louisabad and Mitakhari.
- „ 11.—Shore collection round about Haddo jetty.

¹ Blyth, E., *Journ. Asiat. Soc. Bengal* XXVII, pp. 270-272 (1858); *Journ. Asiat. Soc. Bengal* XXIX, pp. 145-147 (1860).

² Day, F., *Proc. Zool. Soc. London*, pp. 677-705 (1870).

³ Annandale, N. and Hora, S. L., *Rec. Ind. Mus.* XXVII, pp. 33-41, pl. ii (1925).

⁴ Mukerji, D. D., *Rec. Ind. Mus.* XXXVII, pp. 259-277, pl. vi (1935).

⁵ Rao, H. S. and Hora, S. L., *Rec. Ind. Mus.* XL, pp. 377-401, pls. vii-x (1938).

The great majority of specimens were obtained around Port Blair, South Andaman ; the words South Andaman have therefore been dropped after Port Blair, to avoid unnecessary repetition.

Day and Mukerji both emphasize the extensive coral reefs and great clarity of the water surrounding the Andmans. We may be certain, in view of such ecological conditions, that the number of species now recorded from the Andamans is much less than half of those inhabiting the reefs about those islands.

The length given is always the standard length, unless otherwise specified.

I desire to convey my sincere thanks to Dr. Bains Prashad, Director of the Zoological Survey of India, and Dr. S. L. Hora, Assistant Superintendent, for sending me this very interesting collection to study, and for their unfailing courtesy and helpfulness at all times.

LIST OF SPECIES.

Family CLUPEIDAE.

1. *Harengula punctata* (Rüppell).

Family ENGRAULIDAE.

2. *Stolephorus heterolobus* Rüppell.

Family ANGUILLIDAE.

3. *Anguilla bicolor* McClell.

Family MURAENIDAE.

4. *Gymnothorax hepatica* (Rüppell).
5. *Uropterygius marmoratus* (Lac.).

Family CYPRINIDAE.

6. *Rasbora daniconius* (Ham.).

Family CYPRINODONTIDAE.

7. *Aplocheilichthys panchax* (Ham.).
8. *Oryzias melastigma* (McClell.).

Family BELONIDAE.

9. *Tylosurus strongylurus* (v. Hasselt).

Family HEMIRAMPHIDAE.

10. *Hemiramphus dussumieri* C. and V.
11. *Zenarchopterus brevirostris* (Günther).

Family EXOCOETIDAE.

12. *Cypselurus* sp.

Family BOTHIDAE.

13. *Bothus pantherinus* (Rüppell).

Family SYNGNATHIDAE.

14. *Doryichthys insularis* Hora.
15. *Syngnathus djarong* Bleeker.
16. *Syngnathus spicifer* Rüppell.

Family FISTULARIIDAE.

17. *Fistularia villosa* Klunzinger.

Family OPHICEPHALIDAE.

18. *Ophicephalus gachua* Ham.

Family ATHERINIDAE.

19. *Atherina duodecimalis* C. and V.
20. *Atherina endrachtensis* Q. and G.
21. *Atherina temmincki* Bleeker.

Family MUGILIDAE.

22. *Mugil crenilabis* Forskål.
23. *Liza amarula* (C. and V.).
24. *Liza melinoptera* (C. and V.).
25. *Liza seheli* (Forskål).
26. *Liza troscheli* (Bleeker).
27. *Liza vaigiensis* (Q. and G.).

Family CARANGIDAE.

28. *Selar boops* (C. and V.).
29. *Scomberoides tala* (C. and V.).
30. *Scomberoides tolo-parah* (Rüppell).

Family LEIOGNATHIDAE.

31. *Leiognathus equulus* (Forskål).

Family GERRIDAE.

32. *Gerres abbreviatus* Bleeker.
33. *Gerres kapas* Bleeker.
34. *Gerres oblongus* C. and V.
35. *Gerres oyena* (Forskål).

Family APOGONIDAE.

36. *Apogon endekataenia* Bleeker.
37. *Apogon novemfasciatus* C. and V.
38. *Apogon sangiensis* Bleeker.
39. *Apogon* sp.
40. *Apogonichthys auritus* C. and V.

Family AMBASSIDAE.

41. *Ambassis buruensis* Bleeker.
42. *Ambassis commersoni* C. and V.
43. *Ambassis interrupta* Bleeker.
44. *Ambassis urotaenia* Bleeker.

Family KUHLIIDAE.

45. *Kuhlia marginata* (C. and V.).
46. *Kuhlia taeniura* (C. and V.).

Family PLESIOPIDAE.

47. *Plesiops melas* Bleeker.
48. *Plesiops nigricans* (Rüppell).

Family LUTIANIDAE.

49. *Lutianus lutjanus* Bleeker.
50. *Lutianus russelli* (Bleeker).

Family SILLAGINIDAE.

51. *Sillago maculata* Q. and G.

Family SCATOPHAGIDAE.

52. *Scatophagus argus* (L.).

Family CHAETODONTIDAE.

53. *Holacanthus semicirculatus* C. and V.

Family TEUTHIDIDAE.

54. *Teuthis oramin* (Bl. and Schn.).

Family SCORPAENIDAE.

55. *Parascorpaena bleekeri* (Day).

Family PLATYCEPHALIDAE.

56. *Cocius crocodilus* (Tilesius).
57. *Platycephalus indicus* (L.).

Family POMACENTRIDAE.

58. *Abudefduf biocellatus* (Q. and G.).
59. *Abudefduf bonang* (Bleeker).
60. *Abudefduf leucogaster* (Bleeker).
61. *Abudefduf modestus* (Schlegel).
62. *Abudefduf saxatilis* (L.).
63. *Abudefduf sordidus* (Forskål).
64. *Pomacentrus tripunctatus* C. and V.

Family LABRIDAE.

65. *Halichoeres hyrtl* (Bleeker).
66. *Halichoeres leparensis* (Bleeker).
67. *Halichoeres notopsis* (K. and v. H.)
(C. and V.).
68. *Labroides dimidiatus* (C. and V.).
69. *Lepidaplois* sp.

Family ELEOTRIDAE.

70. *Eleotris fusca* (Bl. and Schn.).
71. *Eleotris andamensis*, sp. nov.
72. *Ophiocara aporos* Bleeker.
73. *Ophiocara porocephala* (C. and V.).
74. *Ptereleotris andamensis*, sp. nov.
75. *Amblyeleotris (Andameleotris) raoi*,
sp. nov.

Family GOBIIDAE.

76. *Bathygobius fuscus* (Rüppell).
77. *Chonophorus ocellaris* (Brouss.).
78. *Glossogobius biocellatus* (C. and V.).
79. *Glossogobius celebius* (C. and V.).
80. *Gobiodon quinquestrigatus* (C. and V.).
81. *Sicyopterus garra* Hora.
82. *Vaimosa hoeveni* Bleeker.
83. *Vaimosa koumans* Mukerji.

Family PERIOPHTHALMIDAE.

84. *Periophthalmus barbarus* (L.).
85. *Periophthalmodon schlosseri* (Pallas).

Family GOBIOIDIDAE.

86. *Taeniodies caeculus* (Bl. and Schn.).

Family ECHENEIDAE.

87. *Echeneis naucrates* L.

Family CLINIDAE.

88. *Tripterygion fasciatum* M. Weber.

Family BLENNIIDAE.

89. *Blennius semifasciatus* Rüppell.
90. *Petroscirtes bankanensis* Bleeker.
91. *Petroscirtes filamentosus* (C. and V.).
92. *Petroscirtes mitratus* Rüppell.
93. *Enchelyurus flavipes* Peters.
94. *Salarias fuscus* Rüppell.
95. *Salarias saliens* (Forster).
96. *Salarias fasciatus* (Bloch.).
97. *Salarias kirki* Günther.
98. *Salarias andersoni* Day.
99. *Salarias periophthalmus* C. and V.
100. *Salarias lineatus* C. and V.
101. *Salarias raoi*, nom. nov.
102. *Salarias dussumieri* C. and V.
103. *Salarias edentulus* (Bl. and Schn.).
104. *Salarias frenatus* C. and V.
105. *Salarias marmoratus* Bennet.
106. *Salarias guttatus* C. and V.
107. *Salarias interruptus* Bleeker.

Family CARAPIDAE.

108. *Carapus homei* (Richardson).

Family TETRAODONTIDAE.

109. *Chelonodon patoca* (Ham.).
110. *Tetraodon immaculatus* Bl. and
Schn.
111. *Tetraodon reticularis* Bl. and Schn.

Family ANTENNARIIDAE.

112. *Antennarius commersoni* (Shaw).

Family CLUPEIDAE.

***Harengula punctata* (Rüppell).**

1835. *Clupea punctata*, Rüppell, *Neue Wirbelt., Fische*, p. 78, plate xxi, fig. 2.

Eighteen specimens, 66 to 95 mm. in length, were taken from Phoenix Bay, and five from 84 to 88 mm. in length at the Lime Kiln Jetty, Mount Harriot, Port Blair, South Andaman,

Family ENGRAULIDAE.

Stolephorus heterolobus Rüppell.

1835. *Stolephorus heterolobus*, Rüppell, *Neue Wirbelt., Fische*, p. 79.

One specimen, 68 mm. long, from South Point, Port Blair.

Family ANGUILLIDAE.

Anguilla bicolor McClelland.

1845. *Anguilla bicolor*, McClelland, *Cal. Journ. Nat. Hist.* V, p. 178, pl. vi, fig. 1.

This eel is common in the Andamans. Twelve examples, 90 to 315 mm. in length, were taken from pools in the bed of a dried-up stream near the Fisheries Laboratory, Port Blair, and another of 66 mm. was taken from Dhanikhari stream, South Andaman. I place here also 6 juvenile specimens from 45 to 50 mm. in length from Phoenix Bay, Port Blair. They are badly shrivelled, having been placed in very strong preservative.

Family MURAENIDAE.

Gymnothorax hepatica (Rüppell).

1828. *Muraena hepatica*, Rüppell, *Atlas, Fische Rothen Meers*, p. 120.

One specimen, 160 mm. long, from a creek at South Corbyn's Cove, Port Blair.

Uropterygius marmoratus (Lacépède).

1803. *Gymnomuraena marmorata*, Lacépède, *Hist. Nat. Poiss.* V, pp. 648, 650.

A specimen, 232 mm. long, was caught on Blair Reef, Phoenix Bay, and one of 195 mm. near South Corbyn's Cove, Port Blair.

Family CYPRINIDAE.

Rasbora daniconius (Ham.).

1822. *Cyprinus daniconius*, Hamilton, *Fishes Ganges*, p. 327, pl. xv, fig. 89.

1935. *Rasbora daniconius*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 259.

This handsome little Cyprinid is evidently abundant in places. The collection contains 29 examples, 28 to 54 mm. in length, from a stream near Base Camp, North Andaman. This species occurs throughout India, Burma, and Ceylon. In the Malay Peninsula and Malay Archipelago it is replaced by *Rasbora einthoveni* (Bleeker) with which it has been much confused.

Family CYPRINODONTIDAE.

For status of the oriental fish genera *Aplocheilus* and *Panchax* see Smith, H. M., *Proc. Biol. Soc. Washington* LI, pp. 165, 166 (1938).

The genera *Aplocheilus* and *Panchax* have long been confused, as Smith has shown in the paper cited above. Under the rules of zoological nomenclature *Panchax* becomes a synonym of *Aplocheilus*,

Aplocheilus panchax (Ham.).

1822. *Esox panchax*, Hamilton, *Fishes Ganges*, p. 211, pl. iii, fig. 69.
 1870. *Haplocheilus panchax*, Day, *Proc. Zool. Soc. London*, p. 700.
 1877. *Haplocheilus panchax*, Day, *Fishes India*, p. 523, pl. cxxi, fig. 3.
 1922. *Panchax panchax*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* IV, p. 374, figs. 96, 97.
 1925. *Panchax panchax*, Annandale and Hora, *Rec. Ind. Mus.* XXVII, pp. 34, 37.
 1935. *Panchax panchax*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 259.

Annandale and Hora state that "this species is common in the quieter parts of jungle-streams in South Andaman", but it evidently occurs plentifully throughout the Andamans. Specimens were examined as follows:—

1 of 30 mm. from a ditch in the jungle near Port Bonington, North Andaman; 50 from 23 to 47 mm. in length, from a fresh-water stream, Rangat Camp, Middle Andaman; 10 from 30 to 65 mm. near Port Blair; 1 of 21 mm. from a stream south of a creek near South Corbyn's Cove, Port Blair, South Andaman; 8 from 18 to 31 mm. from a stream near Manglutan, South Andaman.

In 1870 Day stated: "This fish grows to a magnificent size in the Andamans, compared with what it attains in India" I do not know what its size is in India, but the largest of 97 specimens I collected in the Malay Peninsula from Singapore to Pinang was 42 mm. The largest Andaman examples are gigantic compared to those seen from Malaya and Ceylon.

Oryzias melastigma (McClelland).

1839. *Aplocheilus melastigma*, McClelland, *Indian Cyprinidae, Asiatic Researches*, XIX, p. 301.
 1877. *Haplocheilus melastigma*, Day, *Fishes India*, p. 522, pl. cxxi, fig. 4.
 1935. *Aplocheilus melastigma*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 259.

This is evidently a common and widespread denizen of Andaman freshwater streams. It is of course possible that it has been accidentally introduced, along with the fry of various carps imported from India to stock Andaman waters. At the same time, it may be native just as is *Aplocheilus panchax*.

Five examples from a shallow stream near Base Camp, North Andaman, are 26 to 28 mm. long.

The following are from South Andaman:—26 specimens, 11 to 22 mm. in length, from Tytler's Ghat; 16 specimens, 20 to 34 mm., from a creek north of Corbyn's Cove, Port Blair; and 26 specimens from 22 to 29 mm. in length taken at Austinabad Nālā, Port Blair; these last were subject to tidal influence.

Family BELONIDÆ.

Tylosurus strongylurus (v. Hasselt).

1823. *Belone strongylura*, van Hasselt, *Alg. Konst.-en Letterbode*, Deel I, p. 130.
 1870. *Belone caudimaculata*, Day, *Proc. Zool. Soc. London*, p. 699.
 1877. *Belone strongylurus*, Day, *Fishes India*, p. 512, pl. cxviii, fig. 6.
 1922. *Tylosurus strongylurus*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* IV, p. 121.

Five specimens of this very easily recognized Gar, 105 to 125 mm. in length, were taken about Haddo Jetty, Port Blair.

Family HEMIRAMPHIDAE.

Hemiramphus dussumieri Cuv. and Val.

1846. *Hemiramphus dussumieri*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XIX, p. 33.
 1877. *Hemiramphus reynaldi*, Day, *Fishes India*, p. 515.
 1922. *Hemiramphus dussumieri*, Weber and de Beaufort, *Fishes Indo-Austr.* Arch. IV, p. 155.

This is evidently a common Half-beak in Andaman waters. 12 very young examples, only 18 to 28 mm. in length, were taken around Viper Island, Port Blair.

Zenarchopterus brevirostris (Günther).

1866. *Hemiramphus brevirostris*, Günther, *Cat. Fishes* VI, p. 274.
 1922. *Zenarchopterus brevirostris*, Weber and de Beaufort, *Fishes Indo-Austr.* Arch. IV, p. 168.
 1922. *Zenarchopterus dispar*, Weber and de Beaufort, *Fishes Indo-Austr.* Arch. IV, p. 169, fig. 58.
 1926. *Zenarchopterus brevirostris*, Mohr, *Zool. Jahrb.* LII, p. 250.

Four juvenile specimens, 40 to 54 mm. in length, were caught at Haddo Jetty, Port Blair.

Family EXOCOETIDAE.

Three juvenile specimens of a *Cypselurus*, 8 to 12 mm. in length, were taken off Viper Island, Port Blair.

Family BOTHIDAE.

Bothus pantherinus (Rüppell).

1828. *Rhombus pantherinus*, Rüppell, *Atlas Fische Rothen Meers*, p. 121, pl. xxxi, fig. 1.
 1877. *Platophrys pantherinus*, Day, *Fishes India*, p. 425, pl. xcii, figs. 3, 4.
 1934. *Bothus pantherinus*, Norman, *Monograph Flatfishes*, I, p. 233, fig. 177.

One specimen, 63 mm. long, from Ross Is., Port Blair.

Family SYNGNATHIDAE.

Doryichthys insularis Hora.

1925. *Doryichthys insularis*, Hora, *Rec. Ind. Mus.* XXVII, p. 38, pl. ii, fig. 1.

Fifteen examples of this interesting Pipe-fish, 67 to 89 mm. long, were taken from a stream near the wireless station, Port Blair, and a specimen, 133 mm. long, was caught in a stream west of Sipi Ghat, South Andaman. Hora had but 6 examples, the largest 97 mm. long.

Syngnathus djarong Bleeker.

1853. *Syngnathus djarong*, Bleeker, *Verh. Bat. Genoots.* XXV, p. 22.
 1922. *Syngnathus djarong*, Weber and de Beaufort, *Fishes Indo-Austr.* Arch. IV, p. 79.

A specimen, 92 mm. long, from Chatham, Port Blair, and one of 89 mm. from off Viper Is., South Andaman.

Syngnathus spicifer Rüppell.

1835. *Syngnathus spicifer*, Rüppell, *Neue Wirbelt., Fische*, p. 143.

1878. *Syngnathus spicifer*, Day, *Fishes India*, p. 678, pl. clxxiv, fig. 1.

An example, 101 mm. long, from Viper Island, South Andaman.

Family FISTULARIIDAE.

Fistularia villosa Klunzinger.

1871. *Fistularia villosa*, Klunzinger, *Abh. Zool.-bot. Gesells. Wien XXI*, p. 516.

1922. *Fistularia villosa*, Weber and de Beaufort., *Fishes Indo-Austr. Arch. IV*, p. 12, fig. 5.

A specimen, 113 mm. long, from Port Blair, and one of 130 mm. taken north-west of Ross Island, Port Blair.

The *Fistularis serrata* of Day is probably *F. petimba* Lacépède. He reported it from the Andamans in 1870 and 1876. His statement "This fish appears to delight in living in the mud" is not true of *F. villosa*, at least within my experience.

Family OPHICEPHALIDAE.

Ophicephalus gachua Hamilton.

1822. *Ophicephalus gachua*, Hamilton, *Fishes Ganges*, p. 68.

1870. *Ophicephalus gachua*, Day, *Proc. Zool. Soc. London*, p. 694.

1876. *Ophicephalus gachua*, Day, *Fishes India*, p. 367.

1935. *Ophicephalus gachua*, Mukerji, *Rec. Ind. Mus. XXXVII*, p. 259.

Four specimens, 57 to 120 mm. in length, were taken from stagnant pools in the bed of a stream, North Andaman, and one of 69 mm. was from Dhanikhari stream, South Andaman

Family ATHERINIDAE.

Atherina duodecimalis Cuv. and Val.

1835. *Atherina duodecimalis*, Cuvier and Valenciennes, *Hist. Nat. Poiss. X*, p. 458.

1922. *Atherina duodecimalis*, Weber and de Beaufort, *Fishes Indo-Austr. Arch. IV*, p. 275.

18 specimens, 31 to 44 mm. in length, taken between Viper Island and Mitakhari, Port Blair, and one of 61 mm. from Station 1.

Atherina endrachtensis Quoy and Gaimard.

1824. *Atherina endrachtensis*, Quoy and Gaimard, *Voy. Uranie et Physicienne, Zoologie*, p. 334.

1922. *Atherina endrachtensis*, Weber and de Beaufort, *Fishes Indo-Austr. Arch. IV*, p. 270.

10 examples, 43 to 55 mm. long, from South Point, Port Blair, and one of 29 mm. long from Henry Lawrence Island, Ritchie Archipelago, Andamans.

Atherina temmincki Bleeker.

1853. *Atherina temmincki*, Bleeker, *Nat. Tijds. Ned. Ind.* V, p. 506.
 1922. *Atherina temmincki*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* IV, p. 269.

A specimen, 37 mm. long, from Henry Lawrence Island, Ritchie Archipelago, Andaman Islands, seems to belong here.

Family MUGILIDÆ.

Mugil crenilabis Forskål.

1775. *Mugil crenilabis*, Forskål, *Descrip. Anim.*, p. 73.
 1870. *Mugil macrochilus*, Day, *Proc. Zool. Soc. London*, p. 685; (*pro parte*).
 1876. *Mugil crenilabris*, Day, *Fishes India*, p. 355.
 1922. *Mugil crenilabis*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* IV, p. 256.

5 specimens, 34 to 75 mm. in length, were taken in Murdakhari Bay, Port Blair, and one of 59 mm. from a rock pool near South Corbyn's Cove, Port Blair.

Liza amarula (Cuv. and Val.).

1836. *Mugil amarulus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 128.
 1876. *Mugil amarulus*, Day, *Fishes India*, p. 356.
 1922. *Liza amarula*, Whitehouse, *Madras Fish Bull.* XV, p. 91.

5 specimens, 25 to 37 mm. in length, were taken from freshwater pools near South Corbyn's Cove, Port Blair.

Liza melinoptera (Cuv. and Val.).

1836. *Mugil melinopterus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 146.
 1861. *Mugil melinopterus*, Günther, *Cat. Fishes* III, p. 452.
 1922. *Mugil melinopterus*, Weber and de Beaufort, *loc. cit.* IV, p. 246.

3 examples, 18 to 34 mm. in length, from South Corbyn's Cove, Port Blair, and one of 37 mm. from a stream west of Sipi Ghat, South Andaman.

Liza seheli (Forskål).

1775. *Mugil seheli*, Forskål, *Descrip. Anim.*, p. 73.
 1876. *Mugil seheli*, Day, *loc. cit.*, p. 355.
 1922. *Mugil seheli*, Weber and de Beaufort, *loc. cit.*, p. 252.

8 specimens, 54 to 102 mm. from Station 1, and two, 58 and 88 mm. long, from a creek north of South Corbyn's Cove, Port Blair.

Liza troscheli (Bleeker).

- 1858-9. *Mugil troschelii*, Bleeker, *Nat. Tijds. Ned. Ind.* XVI, p. 277.
 1876. *Mugil troschelii*, Day, *loc. cit.*, p. 358.
 1922. *Mugil troscheli*, Weber and de Beaufort, *loc. cit.*, p. 248.

4 examples, 29 to 45 mm. in length, from Tytler's Ghat, South Andaman, and two of 46 and 60 mm. from the Andamans.

Liza vaigiensis (Quoy and Gaimard).

1824. *Mugil vaigiensis*, Quoy and Gaimard, *Voy l'Uranie et l'Physicienne*, Zool., p. 357.
1870. *Mugil waigiensis*, Day, *Proc. Zool. Soc. London*, p. 685.
1876. *Mugil waigiensis*, Day, *Fishes India*, p. 359, pl. lxxiii, fig. 4.
1922. *Mugil vaigiensis*, Weber and de Beaufort, *loc. cit.*, p. 244.

5 specimens, 12 to 38 mm. in length, from Tytler's Ghat, South Andaman, and one of 23 mm. from the west side of Long Island, Middle Andaman.

Anal III 8 ; scales 26 ; pectorals black or blackish. A wide ranging Mullet of easy recognition. It occurs from the Red Sea through the tropical Indian and Pacific oceans.

Family CARANGIDAE.

Selar boops (Cuv. and Val.).

1833. *Caranx boops*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* IX, p. 46.
1876. *Caranx boops*, Day, *Fishes India*, p. 218, pl. xlix, fig. 2.
1931. *Caranx (Selar) boops*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* VI, p. 209, fig. 43.

4 examples, 58 to 79 mm. in length, from Ross Island, and 2 of 72 and 74 mm. from Atlanta Point, Port Blair.

Scomberoides tala (Cuv. and Val.).

1831. *Chorinemus tala*, Cuvier and Valenciennes, *op. cit.* VIII, p. 377.
1870. *Chorinemus tala*, Day, *Proc. Zool. Soc. London*, p. 689.
1876. *Chorinemus tala*, Day, *Fishes India*, p. 231.
1876. *Chorinemus tala*, Day, *loc. cit.*, p. 232, pl. li A, fig. 3.
1931. *Chorinemus tala*, Weber and de Beaufort, *op. cit.* VI, p. 281.

A specimen, 48 mm. long, from South Point, Port Blair.

Scomberoides toloo-parah (Rüppell).

1828. *Lichia toloo parah*, Rüppell, *Atlas, Fischer Rothen Meers*, p. 91.
1876. *Chorinemus Sancti-Petri*, Day, *loc. cit.*, p. 230.
1931. *Chorinemus tolooparah*, Weber and de Beaufort, *op. cit.* VI, p. 278, figs. 54, 56a.

3 specimens, 60 to 71 mm. in length, were taken around Viper Island, Port Blair.

Family LEIOGNATHIDAE.

Leiognathus equulus (Forskål).

1775. *Scomber equula*, Forskål, *Descr. Anim.*, p. 75.
1876. *Equula edentula*, Day, *loc. cit.*, p. 238, pl. lii, fig. 1.
1931. *Leiognathus equulus*, Weber and de Beaufort, *op. cit.* VI, p. 322.

3 specimens, 30 to 35 mm. in length, were taken on the sea shore on the west side of Long Island near the coconut plantation, Middle Andaman. One of 53 mm. was obtained on the south coast of Rutland Island, Andamans.

Family GERRIDAE.

Gerres abbreviatus Bleeker.

1850. *Gerres abbreviatus*, Bleeker, *Verh. Batav. Gen.* XXIII, p. 11.
 1870. *Gerres abbreviatus*, Day, *Proc. Zool. Soc. London*, p. 698.
 1875. *Gerres abbreviatus*, Day, *Fishes India*, p. 99, pl. xxv, fig. 6.
 1931. *Gerres abbreviatus*, Weber and de Beaufort, *op. cit.* VI, p. 344.

A specimen, 28 mm. long, was taken on the west coast of Long Island, Middle Andaman.

Gerres kapas Bleeker.

1851. *Gerres kapas*, Bleeker, *Nat. Tijds. Ned. Ind.* II, p. 482.
 1876-77. *Diapterus kapas*, Bleeker, *Atlas Ichth.* VIII, p. 127, pl.
 1931. *Gerres kapas*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* VI, p. 348.

A juvenile specimen, 21 mm. long, was taken from a freshwater pool near South Corbyn's Cove, Port Blair.

Gerres oblongus Cuv. and Val.

1830. *Gerres oblongus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* VI, p. 479.
 1875. *Gerres oblongus*, Day, *Fishes India*, p. 98, pl. xxv, fig. 2.
 1931. *Gerres oblongus*, Weber and de Beaufort, *op. cit.* VI, p. 352.

A specimen, 34 mm. long, was caught in a creek north of South Corbyn's Cove, Port Blair.

Gerres oyena (Forskål).

1775. *Labrus oyena*, Forskål, *Descr. Anim.*, p. 35.
 1875. *Gerres oyena*, Day, *op. cit.*, p. 99, pl. xxv, fig. 4.
 1931. *Gerres oyena*, Weber and de Beaufort, *op. cit.* VI, p. 345.

A young example, 18 mm. long, was taken on the west coast of Long Island, Middle Andaman, and one of 30 mm. at Tytler's Ghat, South Andaman.

Family APOGONIDAE.

Apogon endekataenia Bleeker.

1852. *Apogon endekataenia*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 449.
 1873. *Amia endekataenia* Bleeker, *Atlas Ichth.* VII, p. 85, pl. cccx, fig. 2.
 1929. *Apogon endekataenia*, Weber and de Beaufort, *op. cit.* V, p. 306.

A specimen of 58 mm. was secured on the south coast of Long Island, Middle Andaman; a young specimen, 20 mm. long, is merely labelled "Andamans".

Apogon novemfasciatus Cuv. and Val.

1828. *Apogon novemfasciatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* II, p. 154.
 1875. *Apogon endekataenia*, Day, *Fishes India*, p. 59, pl. xvi, fig. 7.
 1889. *Apogon fasciatus*, Day, *Fauna Brit. Ind.*, Fishes I, p. 494.
 1929. *Apogon novemfasciatus*, Weber and de Beaufort, *op. cit.* V, p. 302.

4 specimens, 15 to 21 mm. in length, were captured on Blair Reef, Phoenix Bay, Port Blair.

Apogon sangiensis Bleeker.

1857. *Apogon sangiensis*, Bleeker, *Nat. Tijds. Ned. Ind.* XIII, p. 375.
1875. *Apogon sangiensis*, Day, *Fishes India*, p. 64, pl. xvii, fig. 3 (not fig. 4 as in text).
1873-76. *Amia sangiensis*, Bleeker, *Atlas Ich.* VIII, p. 85, pl. cccxix, fig. 4.
1929. *Apogon sangiensis*, Weber and de Beaufort, *loc. cit.* V, p. 343.
1930. *Amia sangiensis*, Fowler and Bean, *Bull. 100 U. S. Nat. Mus.* VIII, p. 104.

A faded and non-typical specimen, 49 mm. long, was taken at South Point, Port Blair.

Apogon sp.

11 very young specimens too small to determine, 7 to 9 mm. in length, were taken at Long Island, Middle Andaman.

Apogonichthys auritus Cuv. and Val.

1831. *Apogon auritus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* VII, p. 443.
1870. *Apogonichthys auritus*, Day, *Proc. Zool. Soc. London*, p. 682.
1875. *Apogon auritus*, Day, *Fishes India*, p. 63, pl. xvii, fig. 2.
1930. *Apogonichthys auritus*, Fowler and Bean, *loc. cit.*, p. 6.

A specimen, 35 mm. long, was taken at Viper Island, Port Blair.

Family **AMBASSIDAE.**

Ambassis buruensis Bleeker.

1856. *Ambassis buruensis*, Bleeker, *Nat. Tijds. Ned. Ind.* XI, p. 396.
1929. *Ambassis buruensis*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* V, p. 417.

10 specimens, 49 to 73 mm. in length, from Viper Island, Port Blair.

Ambassis commersoni Cuv. and Val.

1828. *Ambassis commersoni*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* II, p. 176, pl. xxv.
1875. *Ambassis commersoni*, Day, *Fishes India*, p. 52, pl. xv, fig. 3.
1929. *Ambassis commersoni*, Weber and de Beaufort, *loc. cit.*, p. 406.

A specimen, 31 mm. long, is from a creek north of South Corbyn's Cove, Port Blair.

Ambassis interrupta Bleeker.

1852. *Ambassis interrupta*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 696.
1870. *Ambassis macracanthus*, Day, *Proc. Zool. Soc. London*, p. 583.
1875. *Ambassis interrupta*, Day, *Fishes India*, p. 53, pl. xv, fig. 5.
1929. *Ambassis interrupta*, Weber and de Beaufort, *loc. cit.*, p. 415.

An example, 40 mm. long, was captured at South Point, Port Blair.

Ambassis urotaenia Bleeker.

1852. *Ambassis urotaenia*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 257.
1870. *Ambassis urotaenia*, Day, *Proc. Zool. Soc. London*, p. 681.
1875. *Ambassis urotaenia*, Day, *Fishes India*, p. 55, pl. xv, fig. 8.
1929. *Ambassis urotaenia*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* V, p. 404.

One specimen, 42 mm. long, was caught off Viper Island.

Family KUHLIIDAE.

Kuhlia marginata (Cuv. and Val.).

1829. *Dules marginatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* III, p. 116, pl. lii.
 1875. *Dules marginatus*, Day, *loc. cit.*, p. 67, pl. xviii, fig. 1.
 1927. *Kuhlia marginata*, Herre and Montalban, *Phil. Journ. Sci.* XXXIII, p. 203, pl. i, fig. 3.
 1929. *Kuhlia marginata*, Weber and de Beaufort, *loc. cit.* V, p. 271, fig. 72.

A specimen, 31 mm. long, was caught in a freshwater stream south of South Corbyn's Cove, Port Blair.

Kuhlia taeniura (Cuv. and Val.).

1929. *Dules taeniurus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* III, p. 114.
 1870. *Dules taeniurus*, Day, *Proc. Zool. Soc. London*, p. 682.
 1875. *Dules taeniurus*, Day, *Fishes India*, p. 67, pl. xviii, fig. 2.
 1927. *Kuhlia taeniura*, Herre and Montalban, *loc. cit.*, p. 200, pl. i, fig. 1.
 1929. *Kuhlia taeniura*, Weber and de Beaufort, *loc. cit.*, p. 273.

A very young example, 16 mm. long, from the same locality as the preceding species.

Family PLESIOPIDAE.

Plesiops melas Bleeker.

1849. *Plesiops melas*, Bleeker, *Verh. Bat. Gen.* XXII, p. 9.
 1929. *Plesiops melas*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* V, p. 378, fig. 91.

A specimen, 30 mm. long, was taken on the south coast of Long Island, Middle Andaman.

Plesiops nigricans (Rüppell).

1828. *Pharopteryx nigricans*, Rüppell, *Atlas, Fische Rothen Meers*, p. 15, pl. iv, fig. 2.
 1870. *Plesiops corallicola*, Day, *Proc. Zool. Soc. London*, p. 685.
 1875. *Plesiops nigricans*, Day, *Fishes India*, p. 128, pl. xxxi, fig. 5.
 1929. *Plesiops nigricans*, Weber and de Beaufort, *loc. cit.*, p. 375.

An example, 64 mm. long, was obtained at Murdakhari Bay, Port Blair.

Family LUTIANIDAE.

Lutianus lutjanus Bleeker.

1790. *Lutianus lutjanus*, Bloch, *Naturg. Ausland. Fische* IV, p. 107.
 1873. *Lutianus lutjanus*, Bleeker, *Atlas Ichth.* VII, pl. cccxiv, fig. 3; 1876-77, *loc. cit.* VII, p. 52.
 1875. *Lutianus madras*, Day, *Fishes India*, p. 47, pl. xiv, fig. 3.
 1931. *Lutjanus lutjanus*, Fowler, *Bull. 100, U. S. Nat. Mus.* XI, p. 147.
 1936. *Lutjanus lutjanus*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* VII, p. 251.

A specimen, 74 mm. long, was caught off Ross Island, Port Blair.

Lutianus russelli (Bleeker).

1849. *Mesoprion Russellii*, Bleeker, *Verh. Bat. Gen.* XXII, Perc. p. 41.
1870. *Mesoprion russellii*, Day, *Proc. Zool. Soc. London*, p. 680.
1873. *Lutjanus russellii*, Bleeker, *loc. cit.* VII, pl. ccc, fig. 2; 1876-77, *loc. cit.* VIII, p. 71.
1875. *Lutjanus fulviflamma*, Day, *Fishes India*, p. 41 (*partim*), pl. xii, fig. 5.
1936. *Lutjanus russelli*, Weber and de Beaufort, *loc. cit.* VII, p. 272.

2 specimens, 107 and 116 mm. in length, from the east coast of Ross Island, Port Blair.

Family SILLAGINIDAE.

Sillago maculata Quoy and Gaimard.

1824. *Sillago maculata*, Quoy and Gaimard, *Voy. l'Uranie et l'Physicienne, Zoologie*, p. 261, pl. liii, fig. 2.
1829. *Sillago maculata*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* II, p. 411.
1876. *Sillago maculata*, Day, *Fishes India*, p. 265, pl. lviii, fig. 4.
1877. *Sillago maculata*, Bleeker, *Atlas Ichth.* IX, pl. ccclxxxix, fig. 5.
1931. *Sillago maculata*, Weber and de Beaufort, *loc. cit.* VI, p. 174.
1933. *Sillago maculata*, Fowler, *Bull. 100, U. S. Nat. Mus.* XII, p. 423.

A specimen, 29 mm. long, from the west coast of Long Island, Middle Andaman.

Family SCATOPHAGIDAE.

Scatophagus argus (Linn.).

1766. *Chaetodon argus*, Linnaeus, *Syst. Nat.*, ed. 12, I, p. 464.
1788. *Chaetodon argus*, Bloch, *Ichtyologie* VI, p. 63, pl. cciv, fig. 1.
1870. *Scatophagus argus*, Day, *Proc. Zool. Soc. London*, p. 687.
1875. *Scatophagus argus*, Day, *Fishes India*, p. 114, pl. xxix, fig. 3.
1927. *Scatophagus argus*, Herre and Montalban, *Phil. Journ. Sci.* XXXIV, p. 8, pl. ii, fig. 2; pl. xii, fig. 2.
1929. *Scatophagus argus*, Fowler and Bean, *Bull. 100, U. S. Nat. Mus.* VIII, p. 35, fig. 1.
1936. *Scatophagus argus*, Weber and de Beaufort, *loc. cit.* VII, p. 6, figs. 3, 5.

A fine example, 108 mm. long, from North Bay, Port Blair; one of 21 mm. from a stream at Flat Bay, South Andaman, and 2 very young specimens, 8 and 9 mm. long, from Viper Island, Port Blair.

Family CHAETODONTIDAE.

Holacanthus semicirculatus Cuv. and Val.

1831. *Holacanthus semicirculatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* VII, p. 191.
1831. *Holacanthus semicirculatus*, Lesson, *Voy. Coquille, Poiss.* II, p. 173, pl. xxx, fig. 3.
1875. *Holacanthus nicobariensis* var. *semicirculatus*, Day, *Fishes India*, p. 112, pl. xxviii, fig. 6.
1927. *Holacanthus semicirculatus*, Herre and Montalban, *Phil. Journ. Sci.* XXXIV, p. 100, pl. xix, fig. 1.
1929. *Holacanthus semicirculatus*, Fowler and Bean, *U. S. Nat. Mus.* VIII, *Bull. 100*, p. 185, fig. 9.
1933. *Pomacanthus semicirculatus*, Brunner, *Proc. Zool. Soc. London*, p. 563, fig. 10.
1936. *Pomacanthus semicirculatus*, Weber and de Beaufort, *Fishes Indo-Austr. Arch.* VII, p. 141, fig. 36.

A specimen, 45 mm. long, was netted on the south coast of Long Island, Middle Andaman,

Brunner has placed *Pomacanthus lepidolepis* Bleeker under *Pomacanthus semicirculatus* C. and V., calling the former the adult form of the latter. In this he has been followed by Weber and de Beaufort. This is probably perfectly correct, but I do not like to accept it until a more complete series has been studied. I have observed specimens of typically marked *lepidolepis* that were much smaller than specimens of *H. lepidolepis* but 123 mm. in length, and examples of *H. semicirculatus* of 134, 138 and 165 mm. Large examples of *H. semicirculatus* seen by me, up to about 150 mm., showed no signs of colour transition to *H. lepidolepis*.

Family TEUTHIDIDAE.

Teuthis oramin (Bl. & Schn.).

1801. *Amphacanthus guttatus* var. *oramin*, Bloch and Schneider, *Syst. Ichth.*, p. 207, pl. xlviii.
 1875. *Teuthis oramin*, Day, *Fishes India*, p. 168, pl. xl, fig. 6.
 1928. *Teuthis oramin*, Herre and Montalban, *Phil. Journ. Sci.* XXXV, p. 165, pl. v, fig. 1.

A specimen, 92 mm. long, from South Corbyn's Cove, Port Blair.

Family SCORPAENIDAE.

Parascorpaena bleekeri (Day).

1875. *Scorpaena haplodactylus*, Day, *Fishes India*, p. 149, pl. xxxvi, fig. 2.
 1878. *Scorpaena bleekeri*, Day, *Fishes India, Addenda and Corrigenda*, p. 747.

A specimen, 135 mm. long, from North Bay, Port Blair, and one of 38 mm. taken south of Long Island, Middle Andaman. Dorsal IX, I/9; anal III/5; scales in longitudinal series above lateral line 44; in transverse series to 6 above and 22 below the lateral line. The larger specimen has the pectoral I-5-XI; the smaller specimen has the pectoral III-3-IX on one side, and II-4-IX on the other.

Family PLATYCEPHALIDAE.

Cocius crocodilus (Tilesius).

1812. *Platycephalus crocodilus*, Tilesius, *Krusenstern's Reise*, pl. lix, fig. 2.
 1876. *Platycephalus punctatus*, Day, *Fishes India*, p. 277, pl. lx, fig. 3.
 1891. *Platycephalus punctatus*, Sauvage, *Poiss. Madagascar*, p. 307, pl. xxxvi, figs. 5, 5a.
 1908. *Thysanophrys crocodilus*, Jordan and Richardson, *Proc. U. S. Nat. Mus.* XXXIII, p. 638, fig. 4.
 1925. *Cocius crocodilus*, Jordan and Hubbs, *Memoirs Carnegie Mus.* X, p. 286.

2 specimens, 82 and 87 mm. in length, from Viper Island, Port Blair.

Platycephalus indicus (L.).

1758. *Callionymus indicus*, Linnaeus, *Syst. Nat.* ed. 10, p. 250.
 1829. *Platycephalus insidiator*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* IV, p. 227.
 1843. *Platycephalus insidiator*, Schlegel, *Fauna Japonica, Pisces*, p. 39, pl. xv, fig. 1.
 1876. *Platycephalus insidiator*, Day, *Fishes India*, p. 276.
 1908. *Platycephalus indicus*, Jordan and Richardson, *Proc. U. S. Nat. Mus.* XXXIII, p. 641.

Dorsal I-VI, I/12; anal I/12. Two examples from near Viper Island, Port Blair, their lengths 93 and 104 mm.

Family POMACENTRIDAE.

Abudefduf biocellatus (Q. and G.).

1825. *Glyphisodon biocellatus*, Quoy and Gaimard, *Voy. Uranie., Zool.*, p. 389.
 1828. *Chaetodon brownriggi*, Bennett, *Fishes Ceylon*, p. 8, pl. viii.
 1870. *Glyphidodon antjerius*, Day, *Proc. Zool. Soc. London*, p. 696.
 1877. *Glyphidodon antjerius*, Day, *Fishes India*, p. 387, pl. lxxxii, figs. 4, 5.
 1927. *Chrysiptera brownriggi*, Montalban, *Pomacentridae Phil. Is.*, p. 105.
 1928. *Abudefduf biocellatus*, Fowler and Bean, *U. S. Nat. Mus. VII, Bull. 100*, p. 166.

The following were taken at Port Blair :—1 of 13 mm. at Blair Reef, Phoenix Bay ; 2, 20 and 25 mm. long, from a rock pool above high tide, south of Corbyn's Cove ; 4 from 12 to 22 mm., from Murdakhari Bay. A specimen 31 mm. long was taken at East Sound Island, north Andaman. An example 38 mm. long was collected north west of Ross Island, Andamans, and one of 30 mm. from "the Andamans."

Abudefduf bonang (Bleeker).

1853. *Glyphisodon bonang*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 522.
 1877. *Paraglyphidodon bonang*, Bleeker, *Atlas Ichth.* IX, pl. cccciii, fig. 1.
 1928. *Abudefduf bonang*, Fowler and Bean, *Bull. 100, U. S. Nat. Mus. VII*, p. 154.

A juvenile, but distinctively marked specimen 10 mm. long, from a freshwater stream, Middle Andaman.

Abudefduf leucogaster (Bleeker).

1845. *Glyphisodon leucogaster*, Bleeker, *Nat. Geneesk. Arch. Ned. Ind.* II, p. 523.
 1877. *Glyphidodon leucogaster*, Day, *Fishes India*, p. 388, pl. lxxxii, fig. 3.
 1927. *Abudefduf leucogaster*, Montalban, *Pomacentr. Phil. Is.*, p. 88.
 1928. *Abudefduf leucogaster*, Fowler and Bean, *Bull. 100, U. S. Nat. Mus. VII*, p. 170.

A specimen, 28 mm. long, was taken at East Ross Island, South Andaman.

Abudefduf modestus (Schlegel).

- 1839-44. *Glyphidodon modestus*, Schlegel and Müller, *Nat. Ges. Nederl. Zool.* II, p. 23, pl. vi, fig. 2.
 1870. *Glyphidodon modestus*, Day, *Proc. Zool. Soc. London*, p. 696.
 1877. *Glyphidodon modestus*, Day, *Fishes India*, p. 388, pl. lxxii, fig. 6.

2 specimens, 28 and 74 mm. long, from a bay south of South Corbyn's Cove ; 3 from 15 to 72 mm. in length from Murdakhari Bay, and one of 59 mm. from the east coast of Ross Island, all in Port Blair. Two examples, 62 and 66 mm. in length, are from the South Coast of Long Island, Middle Andaman.

Abudefduf saxatilis (Linn.).

1758. *Chaetodon saxatilis*, Linnaeus, *Syst. Nat.* ed. 10, p. 276.
 1877. *Glyphidodon coelestinus*, Day, *Fishes India*, p. 386, pl. lxxxiii, fig. 2.
 1927. *Abudefduf saxatilis*, Montalban, *Pomacentr. Phil. Is.*, p. 81, pl. xvii, fig. 2.
 1928. *Abudefduf saxatilis*, Fowler and Bean, *Bull. 100, U. S. Nat. Mus. VII*, p. 124.

2 examples, 13 and 23 mm. long, of this Common Rock Pilot were taken on Blair Reef, Phoenix Bay, Port Blair.

Abudefduf sordidus (Forskål).

1775. *Chaetodon sordidus*, Forskål, *Descrip. Anim.*, p. 62.
 1870. *Glyphidodon sordidus*, Day, *Proc. Zool. Soc. London*, p. 696.
 1877. *Glyphidodon sordidus*, Day, *Fishes India*, p. 385, pl. lxxxiii, fig. 1.
 1927. *Abudefduf sordidus*, Montalban, *Pomacentr. Phil. Is.*, p. 77, pl. xv, fig. 2.

At Port Blair 3 specimens, 10 to 20 mm. long, were taken at Viper Island and one of 36 mm. near Murdakhari Bay.

Pomacentrus tripunctatus Cuv. and Val.

1830. *Pomacentrus tripunctatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* V, p. 315.
 1877. *Pomacentrus trilineatus*, Day, *Fishes India*, p. 382.

A specimen, 60 mm. long, from the east coast of Ross Island, and one of 58 mm. from Blair Reef, Phoenix Bay, Port Blair. From North Andaman one of 50 mm. was caught on the south coast of Long Island, and 3 from 15 to 16 mm. at Sound Island.

LABRIDAE.

Halichoeres hyrtlí (Bleeker).

1856. *Julis (Halichoeres) hyrtlí*, Bleeker, *Act. Soc. Sci. Ind. Neerl.* I, p. 60.
 1862. *Halichoeres hyrtlí*, Bleeker, *Atlas Ichth.* I, p. 120, pl. xxxix, fig. 2.
 1877. *PlatyGLOSSUS hyrtlí*, Day, *Fishes India*, p. 398, pl. lxxxviii, fig. 1.
 1928. *Halichoeres hyrtlí*, Fowler and Bean, *Bull. 100, U. S. Nat. Mus.* VII, p. 285.

A juvenile example, 16 mm. long, from Sound Island, Middle Andaman.

Halichoeres leparensis (Bleeker).

1852. *Julis (Halichoeres) leparensis*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 730.
 1865. *Halichoeres leparensis*, Bleeker, *Atlas Ichth.* I, p. 119, pl. xlii, fig. 5.
 1870. *PlatyGLOSSUS leparensis*, Day, *Proc. Zool. Soc. London*, p. 697.
 1877. *PlatyGLOSSUS leparensis*, Day, *Fishes India*, p. 399, pl. lxxxiv, fig. 3.
 1928. *Halichoeres leparensis*, Fowler and Bean, *loc. cit.*, p. 283.

2 specimens, 39 and 54 mm. in length, from the south coast of Long Island, Middle Andaman.

Halichoeres notopsis (Kuhl and van Hass.) (Cuv. and Val.).

1839. *Julis notopsis*, (Kuhl and van Hasselt) Cuvier and Valenciennes, *Hist. Nat. Poiss.* XIII, p. 485.
 1870. *PlatyGLOSSUS notopsis*, Day, *Proc. Zool. Soc. London*, p. 697.
 1877. *PlatyGLOSSUS notopsis*, Day, *Fishes India*, p. 398, pl. lxxxiv, fig. 4.
 1928. *Halichoeres notopsis*, Fowler and Bean, *loc. cit.*, p. 267.

The following were obtained at Port Blair :—8 specimens, 9 to 24 mm. in length, from Murdakhari Bay ; 7 from 8 to 12 mm. from Ross Island ; 2 of 21 and 22 mm. from Blair Reef, Phoenix Bay. Five more, each about 10 mm. in length, from Brookesabad, South Andaman, and probably belong here.

Labroides dimidiatus (Cuv. and Val.).

1839. *Cossyphus dimidiatus*, Cuvier and Valenciennes, *loc. cit.*, p. 136.
 1877. *Labroides dimidiatus*, Day, *Fishes India*, p. 393, pl. lxxxvi, fig. 1.
 1928. *Labroides dimidiatus*, Fowler and Bean, *loc. cit.*, p. 222.

A specimen, 31 mm. long, taken north west of Ross Island, Andamans. In life it was deep blue, becoming paler on the under side, with a long pale blue band on either side, just below the dorsal fin, from the head to the caudal. The caudal fin had a pale blue triangular margin above and below.

Lepidaplois sp.

2 specimens, 10 and 12 mm. in length, from Murdakhari Bay, Port Blair.

Family ELEOTRIDAE.

Genus **Eleotris** (Gronow) Bloch and Schneider.

1763. *Eleotris*, Gronow, *Zooph.*, p. 83.
 1801. *Eleotris*, Bloch and Schneider, *Syst. Ichthy.*, p. 65.
 1856. *Culius*, Bleeker, *Bijdr. Ichth. Fauna Boero, Nat. Tijds. Ned. Ind.* XI, p. 411.
 1927. *Eleotris*, Herre, *Gobies of the Philippines and China Sea*, p. 29.

This genus is readily distinguished by the downward curved spine at the lower angle of the preopercle, which, however, may be more or less concealed in large specimens. The body is thick, robust, little elevated, more or less cylindrical forward and compressed posteriorly, the head flattened above. The body is covered with ctenoid scales, 42 to 73 in a longitudinal series ; there are from 23 to 50 cycloid predorsal scales, which may not reach the eyes, or may extend to the snout ; the sides of the head may be naked or more or less scaled. The very small teeth are in several rows in each jaw, those of the outer row a trifle larger than the rest ; no canines. Dorsal VI, I/8 or 9 ; anal I/8 or 9. The isthmus is broad ; branchiostegals 6.

The species are usually small, some attaining a length of 225 mm. or more. They spend most of their life in freshwater streams, descending to the sea to spawn. In the Philippines the swarms of ascending fry are taken in great quantity in shallow bays and at river mouths, and are of considerable economic importance. The genus is widely distributed in Indo-Pacific waters, from the east coast of Africa to the Riu Kiu, Hawaiian and Society Islands.

Key to Andaman species of Eleotris.

- A. Lateral scales 58 to 65.
 B. Lateral scales 58 to 65 ; transverse series 16 to 19 ; predorsal 48 to 50 ; interorbital and snout with scales *Eleotris fusca*.
 BB. Lateral scales 58-60 ; transverse series 19-20 ; predorsal 38-40 ; interorbital and snout scaleless .. *Eleotris andamensis*.
 AA. Lateral scales 48-52.
 B. Predorsal scales 37-42 ; transverse series 14 to 15 .. *Eleotris melanosoma*.
 BB. Predorsal scales 23 ; transverse series 12 ; posterior half with vertical bands *Eleotris luteus*.

Eleotris fusca (Bloch and Schneider).

1801. *Poecilia fusca*, Bloch and Schneider, *Syst. Ichth.*, p. 453.
 1860. *Eleotris cavifrons*, Blyth, *Journ. Asiat. Soc. Bengal*, p. 145.
 1861. *Eleotris fusca*, Günther, *Cat. Fishes III*, p. 125.
 1876. *Eleotris fusca*, Day, *Fishes India*, p. 313, pl. lxxv, fig. 7.
 1876. *Eleotris cavifrons*, Day, *Fishes India*, p. 313, pl. lxxv, fig. 6.
 1927. *Eleotris fusca*, Herre, *Gobies of Philippines*, p. 30, pl. ii, fig. 1.

Eleotris fusca is the commonest and most widely distributed member of the genus, ranging from Madagascar and the rivers of east Africa to the Philippines, Guam and the Marquesas.

6 specimens, 45 to 46 mm. in length, from Aberdeen, Port Blair, South Andaman, and 2 specimens, 21 and 23 mm. in length, from a freshwater stream at Beadonabad, Port Blair. From a freshwater pond on Sound Island, North Andaman were taken 3 examples, 73 to 84 mm. in length.

Eleotris andamensis, sp. nov.

Dorsal VI, I/8 ; anal I/8 ; scales in longitudinal series 58 to 60, in transverse series, between the origins of the second dorsal and anal, 19 or 20 ; predorsal scales 38 to 40. The predorsal scales extend forward to the interorbital space and there are a few scales on the upper part of the opercle ; the rest of the head is naked.

The body is thick, robust, with nearly horizontal dorsal profile, the ventral profile slightly curved, the form wedge-shaped when viewed from above. The depth is 4.9 to 5.2 times in the length, the large broad head 2.8 to 2.9 times ; the broadly rounded caudal 3.85 to 4. The eyes are rather small, dorsolateral in position, 5.3 to 5.4 times in the head, and about 1.3 in the interorbital which is 4 to 4.25 times in the head ; the short wide snout is about 4.35 times in the head. The mouth is strongly oblique, with projecting chin ; the maxillary extends beneath the front of the eye, its length 2.8 to 3 times in the head ; the teeth are typical of the genus. The vertical fins are low, the first dorsal not reaching the second when depressed ; the height of the first dorsal is 2.5 to 3, that of the second dorsal and anal 2.2 to 2.4 times in the length of the head ; the pectoral length is 4 to 4.5 times in the standard length, the small ventrals 5.4 to 5.5 times. The least depth of the caudal peduncle is 1.75 to 2 times in its own length, or 2.6 to 2.8 times in the head. The characteristic opercular spine of *Eleotris* is well developed.

The colour in alcohol is brown, the scales on the sides with darker centres which form short longitudinal streaks or bars, and more or less mottled with paler spots or blotches ; at the upper angle of the gill opening is a blackish spot ; 3 black stripes extend back from the eye, the upper one along the supraopercular groove, the other two diagonally on the preopercle. The first dorsal is cross barred by 2 or 3 rows of brown spots, the second dorsal and anal by 3 or 4 rows ; the caudal is barred by 5 or 6 rows of dark brown spots, and the pectoral is faintly barred by 5 to 8 cross rows of spots.

Here described from the type, 50 mm. long, and 2 paratypes, 43 and 49 mm. long. They were taken from a stream near Machligaon, Port Blair. 7 paratypes, 25 to 43 mm. long, were caught in a freshwater

stream north of the wireless station, Port Blair. Three juvenile specimens, 26 to 30 mm. in length, agree with the above in scale counts; they were taken at Station 2, Andamans.

This *Eleotris* is close to both *E. fusca* and *E. melanosoma*, having the longitudinal scales of one and the predorsal scales of the other.

Ophiocara aporos Bleeker.

1854. *Eleotris aporos*, Bleeker, *Nat. Tijds. Ned. Ind.* VI, p. 59.
 1870. *Eleotris ophiocephalus*, Day, *Proc. Zool. Soc. London*, p. 694.
 1876. *Eleotris ophiocephalus*, Day, *Fishes India*, p. 312, pl. lxxvii, fig. 2.
 1927. *Ophiocara aporos*, Herre, *Gobies Philipp.*, p. 65, pl. v, fig. 2, and pl. xxviii, fig. 3.

Common in the Andamans. From Port Blair are 6 specimens, 41 to 60 mm. in length, taken from a freshwater stream near Machchi Line, and 2 of 28 and 34 mm., caught near the bridge over a freshwater stream at Beadonabad. One of 46 mm. is from Station 2, Andamans; 2 of 45 and 50 mm. are from Middle Andaman, and one of 100 mm. is from a freshwater pond on Sound Island, North Andaman.

Ophiocara porocephala (Cuv. and Val.).

1837. *Eleotris porocephala*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XII, p. 237.
 1837. *Eleotris ophiocephalus*, (Kuhl & v. Hass.) Cuvier and Valenciennes, *loc. cit.*, p. 239.
 1876. *Eleotris porocephalus*, Day, *Fishes India*, p. 312, pl. lxxvii, fig. 1.
 1927. *Ophiocara porocephala*, Herre, *loc. cit.*, p. 69, pl. v, fig. 3.

4 specimens from 44 to 67 mm. in length were obtained from freshwater pools near South Corbyn's Cove, Port Blair. The description of *Eleotris ophiocephalus* by Cuvier and Valenciennes, (not *E. ophiocephalus* as later authors stated it) does not differ from that of *E. porocephala* in any important respect. They distinctly state that *E. ophiocephalus* has the same shape, fin count, scales, and head as *E. porocephala*. Therefore I cannot accept *O. ophiocephalus* as the name of the second species of *Ophiocara* in the Andamans.

Ptereleotris andamensis, sp. nov.

Dorsal I/25; anal I/22-23; scales in longitudinal series more than 150 and apparently more than 180.

The body is elongate, low, rounded anteriorly, its posterior half compressed; the dorsal profile is very gently convex, the ventral profile nearly horizontal. The depth is 6 times, the head 3.7, the caudal 4, the pectoral 5.4 times in the length. The large eye is high up, its upper edge flush with the dorsal profile, 3.85 times in the head and 1.2 times in the nearly flat interorbital, which is nearly 3.2 times in the head. The snout is short, blunt, 4.3 times in the head; the least depth of the caudal peduncle is 2.7 times in the head.

The mouth is strongly oblique, the angle of the maxillary under the front part of the eye or the anterior margin of the pupil; the teeth are minute, the specimens too young to have canines developed properly.

The first dorsal is low and well separated from the second dorsal, its height about half that of the second dorsal and approximately 3.5

times in the head. The second dorsal and anal are nearly opposite, the origin of the anal under the fourth ray of the second dorsal; both are highest anteriorly and of approximately equal height, or the anal is a little higher; the longest rays 1.8 or 2 times in the head. The length of the narrow ventral equals the anal height. The caudal is forked.

The body is covered with minute cycloid scales, embedded and difficult to make out and extending forward almost to the eyes.

The colour in alcohol is pale yellowish gray, without markings or spots on body or fins.

Described from the type, 27 mm. long; 3 paratypes are 19 to 24 mm. in length. All were taken on sandy bottom between corals, at Curlew Island, Stewart Sound, North Andaman.

This species is closest to *P. dispersus* Herre, but differs in the shape of dorsals, anal, and caudal, the relative position of the first and second dorsals, and other details.

Andameleotris, subgen. nov.

Dorsal VI, I/15-17; anal I/15-18; ventrals 1/3; branchiostegals 6. There are 75 to 80 minute embedded cycloid scales in a longitudinal series, and 20 or 22 in a transverse series between the origins of the second dorsal and anal. The head and predorsal region are naked.

The body is slender, compressed, elongate, the head short, with a large eye and nearly vertical mouth, the chin prominent; there is a pair of canines on each side of the lower jaw, some distance back of the symphysis. The teeth are apparently in two rows. The vertical fins are low, the second dorsal and anal of similar shape; the caudal varies from truncate to more or less forked, and is probably forked in adults.

The new sub-genus *Andameleotris* is placed in *Amblyeleotris* Bleeker, from which it differs in its larger number of fin rays, and apparently also in dentition. From *Ptereleotris* and related genera it differs in its much smaller number of scales and in the much smaller number of dorsal and anal rays.

Amblyeleotris (Andameleotris) raoi, sp. nov.

Dorsal VI, I/15-17; anal I/15-18; there are about 80 minute scales in a lateral series, apparently all cycloid, and 20 or 22 in a transverse series; there is a low predorsal fold or ridge extending forward to the nape.

The depth is 6.5 to 6.4, the head 4.33, the caudal 4 to 3.25, the pectoral 5.6 to 6, the ventral 5.6 to 7 times in the length. The circular eye is high up, its upper margin flush with the dorsal profile, 3 to 2.9 times in the head; the nearly flat interorbital is a little more than half the eye; the short blunt snout is twice or a little more than twice in the eye; the nearly vertical mouth does not extend beneath the eye and the length of the maxillary is a little less than that of the eye. The least depth of the caudal peduncle equals its length, 2.6 times in the head. The vertical fins are all low, the first dorsal not reaching the second when depressed, the second dorsal and anal highest in their anterior third, the last ray of each reaching the caudal base when depressed; the first dorsal height

is about two and a third times, the longest second dorsal ray 1.6 to 1.5, the longest anal ray 1.4 times in the head.

The colour in alcohol is uniform tan or very pale brown, with a darker band from the pectoral axil along the lower half of the body to the caudal base, on which is a conspicuous circular reddish black spot; on each side of the dorsal base is a narrow dark stripe; on the basal part of the hind half of the first dorsal is an elongate reddish black spot; the second dorsal and anal are more or less darkened by reddish brown dots; the caudal has a reddish band along its upper portion, widest at the rear, and a similar stripe extends from the basal black spot to the tip of the fin.

Described from the type, 17 mm. long, and 60 paratypes 8 to 15 mm. in length. They were taken on the west coast of Guitar Island, Middle Andaman, by Dr. H. S. Rao, after whom the species is named. The specimens are all very young. A field note by Dr. Rao states "adults in deeper waters."

Family GOBIIDAE.

Bathygobius fuscus (Rüppell).

1828. *Gobius fuscus*, Rüppell, *Atlas Reise, Fische*, p. 137.
 1870. *Gobius albo-punctatus*, Day, *Proc. Zool. Soc. London*, p. 691.
 1876. *Gobius albo-punctatus*, Day, *Fishes India*, p. 294, pl. lxxiii, fig. 7.
 1927. *Bathygobius fuscus*, Herre, *Gobies Philip.*, p. 113, pl. viii, fig. 2.
 1935. *Bathygobius fuscus*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 266.

At Port Blair the following were obtained:—3 specimens 21 to 40 mm. at South Corbyn's Cove, 1 of 27 mm. at Murdakhari Bay, and 5 from 14 to 41 mm. in length at East Ross Island. One of 38 mm. was taken south of Sound Island, North Andaman.

Chonophorus ocellaris (Broussonet).

1782. *Gobius ocellaris*, Broussonet, *Encyclop. Meth., Dec. Ichth.*, fig. 142.
 1876. *Gobius ocellaris*, Günther, *Fische der Südsee II*, p. 177, pl. cviii, fig. C.
 1927. *Chonophorus ocellaris*, Herre, *loc. cit.*, p. 218, pl. xvii, fig. 2.

An example, 30 mm. long, was taken from Dhanikhari stream, South Andaman.

Glossogobius biocellatus (Cuv. and Val.).

1837. *Gobius biocellatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XII, p. 55.
 1876. *Gobius biocellatus*, Day, *Fishes India*, p. 289, pl. lxxiii, fig. 8.
 1927. *Glossogobius biocellatus*, Herre, *loc. cit.*, p. 156, pl. xii, fig. 3.

One of 41 mm. from a creek north of South Corbyn's Cove, and one of 53 mm. from South Point, Port Blair. The last example is a melanistic form, quite unlike typical specimens.

Glossogobius celebius (Cuv. and Val.).

1837. *Gobius celebius*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XII, p. 56.
 1913. *Gobius (Glossogobius) celebius*, M. Weber, *Siboga Exped., Fische*, p. 468, fig. 94.
 1927. *Glossogobius celebius*, Herre, *loc. cit.*, p. 158, pl. xxii, fig. 4.

2 specimens, 45 and 67 mm. long, were taken from a small stream, North Andaman.

Gobiodon quinquestrigatus (Cuv. and Val.).

1837. *Gobius quinquestrigatus*, Cuvier and Valenciennes, *loc. cit.*, p. 101.

1876. *Gobiodon quinque-strigatus*, Day, *loc. cit.*, p. 297.

1927. *Gobiodon quinquestrigatus*, Herre, *loc. cit.*, p. 294.

A specimen, 31 mm. long, was taken at Henry Lawrence Island, Ritchie Archipelago, Andamans.

Sicyopterus garra Hora.

1925. *Sicyopterus garra*, Hora, *Rec. Ind. Mus.* XXVII, p. 35, pl. ii, figs. 2-5.

This little fish is evidently abundant in Andaman streams. The members of this group live in stony or gravelly brooks and rivers, often in swift hill streams, going down to the sea to spawn. The following were collected at various times about Port Blair :—9 from 15 to 40 mm. near the wireless station ; 40 from 17 to 35 mm. from a freshwater stream south of South Corbyn's Cove ; 11 from 19 to 21 mm. from Dhanikhari stream and two 32 and 39 mm. long from a creek near Dhoby Line, Aberdeen. One of 52 mm. was taken at the foot of Mount Tytler, South Andaman.

Dorsal VII or VIII, I/9 or 10 ; scales in a longitudinal series 63 to 65. The first, second, and third dorsal spines may have filiform, elongated tips, the longest of them in one specimen being one and a half times the head and nearly twice the greatest depth. Hora gives the head 4 times in the length, but I find it 5 times in the length of the larger specimens. Hora's type specimen was 24 mm. long, which is about half the adult size. However, his excellent description leaves little to be added.

Vaimosa hoeveni Bleeker.

1851. *Gobius hoeveni*, Bleeker, *Nat. Tijds. Ned. Ind.* II, p. 426.

A specimen, 26 mm. long, was taken from a creek near coconut plantation on Long Island, Middle Andaman.

Dorsal VI, I/7 ; anal I/7 ; there are 30 scales in a longitudinal and 10 in a transverse series ; there are 13 predorsal scales and 12 or 14 opercular scales.

Vaimosa koumansii Mukerji.

1935. *Vaimosa koumansii*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 268, pl. v, figs. 3, 4.

Dorsal VI, I/6, rarely 7 ; anal I/6, rarely 5. Scales in a longitudinal series 25, in transverse 8 or 7 ; there are 6 predorsal scales ; opercular scales 5 or 6.

The excellent description prepared by Mr. Mukerji was made from his sole specimen and type, a male 29 mm. long. I have been able to examine the following : 93 examples, 8 to 25 mm. in length, from a creek north of South Corbyn's Cove, Port Blair, South Andaman ; 86 specimens 12 to 27 mm. in length from Dhanikhari stream near the junction of the Maymyo and Manglutan roads, South Andaman ; 6 specimens from the same locality, 14 to 20 mm. in length ; and 7 specimens 17 to

21 mm. in length from a fresh water stream near Weli village, Base Camp, Middle Andaman. The study of so many specimens has made it possible to make some additions and corrections to the description already published.

Young specimens are slender, with proportions quite different from those given by Mukerji. His description applies very well to all examples 18 mm. or more in length, so that an extended discussion of the measurements and form is unnecessary. There is naturally some variation in the depth, length of fins, size of eye, etc. In specimens of 18 mm. or more I find the head 2.9 to 3.1 times in the length; the caudal and pectoral are equal, 3.8 to 4.1 in the length; the eye and snout are nearly equal in length, or the snout may be a trifle greater, both about 4.5 times in the head.

It would appear that the extension of the maxillary nearly to the posterior angle of the preopercle is a male character; unfortunately only two males of the extensive series are large enough to have the maxillary fully developed, although many have it extending beneath the middle of the eye. The maxillary does not seem to lengthen until males are more than 20 mm. long, and apparently does not extend beyond the eye until they are 25 mm. or more in length. It is not likely that the maxillary ever reaches beyond the middle of the eye in females; some of the largest specimens have a small mouth with the maxillary scarcely extending beyond the front margin of the eye. The colour pattern of the head, with curved bands as shown in Mukerji's figures, is also a male character. None of the females have them. An elongate maxillary and curved bands on the sides of the head are male characters in several species of *Vaimosa*, but are found in both sexes in *V macrognathos* Herre, a Philippine species. In *V koumansii* the curved cheek bands are on adult males, but indications of them may be seen on specimens of 16 mm. and over.

Females and young males usually have a broad dusky bar from the eye downward and backward behind the mouth, with a broad yellow or pale spot behind it on the preopercle; a short dark bar passes from the eye to the upper lip. Large specimens may have two dark bars or spots on the preopercle. The opercle has a large dark spot, and many dark dots over the rest of it; similar dots may be sprinkled over the preopercle, pectoral base, and under side of the head.

Seen from above specimens show 5 broad dark brown cross bands over the back; the first is before the dorsal, the second under the first dorsal, the next two under the second dorsal, and the fifth is over the middle of the caudal peduncle. Alternating with these is a row of 5 dark spots along the middle of the side, the first under the pectoral, the last at the caudal base and often much modified. Like eight or ten other species of *Vaimosa*, the present species has 2 black circular dots on the basal part of the caudal fin, but they are not very conspicuous and are often obscured by the last lateral spot, or fuse with it to form a ring, or are modified in some way so as to be obscured.

The first dorsal is clear, with 2 black crossbands, which are best developed posteriorly; they may be modified in various ways, or may coalesce posteriorly so that the posterior half is covered with a single

large black patch. The second dorsal has three dark brown or blackish cross bands, a basal, median, and terminal; sometimes the median one is expanded to form a broad reticulated band. The anal membranes are more or less dusky, the rays clear. The caudal is barred by about 4 irregular dark brown cross bars. The pectorals and ventrals are usually clear, but may be somewhat darkened by minute dusky dots.

Family PERIOPHTHALMIDAE.

Periophthalmus barbarus (Linn.).

1766. *Gobius barbarus*, Linnaeus, *Syst. Nat.* ed. 10, p. 450.
 1870. *Periophthalmus koelreuteri*, Day, *Proc. Zool. Soc. London*, p. 693.
 1876. *Periophthalmus koelreuteri*, Day, *Fishes India*, p. 203, pl. lxxiv, fig. 8.
 1927. *Periophthalmus barbarus*, Herre, *loc. cit.*, p. 316, pl. xxiv, fig. 3.

Very abundant on muddy shores and in mangrove swamps. From Murdakhari Bay, Viper Island, and near South Corbyn's Cove 15 specimens, 23 to 95 mm. in length, were obtained. Two examples, 35 and 49 mm. long, were taken west of Long Island, Middle Andaman. 3 from 35 to 50 mm. are from near Point Bonington, North Andaman. 9 specimens from 22 to 48 mm. in length were taken at Station 9, and 6 from 25 to 45 mm. at Station 10, Andamans.

Periophthalmodon schlosseri (Pallas).

1769. *Gobius schlosseri*, Pallas, *Spicilegia VIII*, p. 3, pl. i, figs. 1-4.
 1876. *Periophthalmus schlosseri*, Day, *loc. cit.*, p. 304, pl. lxxvi, fig. 4.
 1927. *Periophthalmus schlosseri*, Herre, *loc. cit.*, p. 320.

One example, 36 mm. long, from Tytler's Ghat and 5 from 38 to 43 mm. from Station 10; one of 48 mm. is from Port Bonington, North Andaman.

Family GOBIOIDIDAE.

Taenioides caeculus (Bl. and Schn.).

1801. *Caepola caecula*, Bloch and Schneider, *Syst. Ichth.*, p. 241, pl. liv.
 1876. *Gobioides caeculus*, Day, *loc. cit.*, p. 318, pl. lxxviii, fig. 1.
 1927. *Taenioides caeculus*, Herre, *loc. cit.*, p. 331.

2 examples, 40 and 50 mm. in length, from a muddy creek near South Corbyn's Cove, Port Blair.

Family ECHENEIDAE.

Echeneis naucrates Linn.

1758. *Echeneis [neucrates* (Misprint for *naucrates*), Linnaeus, *Syst. Nat.* ed. 10, p. 261.
 1876. *Echeneis neucrates*, Day, *loc. cit.*, p. 257, pl. lvii, fig. 1.
 1898. *Echeneis naucrates*, Jordan and Evermann, *Fishes North and Middle America III*, p. 2269, pl. cccxxix, fig. 796.
 1928. *Leptecheneis naucrates*, Fowler, *Fishes Oceania II, Memoirs Bishop Mus. X*, p. 420, fig. 66.

One example, 152 mm. long, was caught at Viper Island, Port Blair.

Series BLENNIIFORMES.

Although Blennies are abundant on most rocky or coral shores and reefs in the Indo-Pacific tropics, they are not often collected. Accordingly most species are but little known. As they are small, and do not occur in schools on sandy shores, in open waters, or on smooth bottoms, they are not taken by commercial fishermen. Neither are they sought by sea-side dwellers looking for food. Most of them are tide pool dwellers, but certain species live in deeper water on the bottom; some very small kinds live in the crannies of coral heads.

The ventral fins are of one spine and 1 to 3 rays; they are always jugular when present, and are never absent in Andaman species.

Two families are known from the Andamans, the Clinidae, and the Blenniidae. Unquestionably *Xiphasia setifer*, family Xiphasiidae, also occurs there.

Family CLINIDAE.

Small tropical Blennies, nearly always having the body scaled. The spinous part of the dorsal fin is longer than the part composed of soft rays, or all the rays may be turned to spines. In some the dorsal has 2 spinous portions, and a short rayed part; the anal has one or two spines. They occur on coral reefs, especially on or within coral heads. Only one genus is known from the Andamans.

Tripterygion Risso.

1826. *Tripterygion*, Risso, *Hist. Nat.* III, p. 241.

1835. *Ennespterygius*, Rüppell, *Neue Wirbelt., Fische*, p. 2.

The short body is covered with small or moderate scales. There are 3 dorsal fins, the first of 3 or 4, the second of 10 to 24 soft spines, the last one of 7 to 14 rays. The anal has one or two soft spines and 14 to 22 rays. The ventrals are of 2 soft rays.

Tripterygion fasciatum M. Weber.

1913. *Tripterygium fasciatum*, M. Weber, *Siboga Expeditie, Fische*, p. 548, fig. 118.

1935. *Tripterygion (Enneaptrygius) fasciatum*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 272.

Dorsal IV, XII/7; anal I/15; there are 16 tubulated scales in the lateral line, and 15 more along the median line to the caudal base; the 7 lower pectoral rays are undivided, the 8 upper ones divided.

The depth is 4.6, the head 3.5, the caudal 4.4, and the pectoral 3.66 times in the length. The eye is 3 times, the snout 4.5 times in the head. The form is rather stout, the breadth of the head 1.25 times in its own length; the eyes are large and close together, the snout short and bluntly rounded. The dorsal and anal fins are low, the longest rays of the second and third dorsals twice in the head. There is a very small tentacle on the upper part of the left eye, but none on the right eye.

The colour in alcohol is gray, with 4 broad double dark brown cross bands over the back below the dorsals and extending well down the sides, and a dark brown band around the caudal peduncle at the caudal base; on the sides of the head, snout, and chin are irregular spots and

bands composed of red-brown dots. On the pectoral are 3 cross bars of dusky dots, and on the caudal are traces of dark cross bands; the first dorsal is largely blackish, the rays of the second and third dorsal dusky, with clear membranes; the anal has a series of dark spots along its base, and a submarginal row of reddish brown dots. The iris is more or less dark golden.

Here described from a specimen, 22 mm. long, taken by D. D. Mukerji at Station 9, Andaman Islands. From typical *T. fasciatum* this specimen differs markedly in having 4 spines in the first part of the dorsal, and only 7 rays in the last division of the dorsal; there are likewise only 8 divided pectoral rays, instead of 9. There are also differences in the colouration of the anal, pectoral, and caudal. At first I believed it to be a new species, but further study leads me to believe it to be but a variant of Weber's species.

Family BLENNIIDAE.

As treated here, this family includes all those elongate naked Blennies which have the soft spinous and soft rayed portions of the dorsal more or less subequal, and the tail never 4 to 6 times as long as the head and trunk together. The teeth are in a single, close-set, comb-like series, and may be either fixed or movable. The ventrals are jugular, with a spine and 2 to 4 rays. Pseudobranchiae are present.

This family includes a large number of fishes living in shallow coastal waters of tropical and temperate regions, nearly all of them small. A few live at considerable depths, and there are a very few freshwater species. The great majority are egg-laying. Most of them are carnivorous, but certain genera feed on algae. Some kinds are exceedingly active, and go about with lizard-like agility on exposed rocks at low tide, in search of food.

Key to the Genera of Blenniidae probably occurring in the Andamans.

- A. Spinous and soft dorsal rays about equal in extent, always less than 50; teeth never with arrow-like tips; depth never more than 9 in length.
 - B. Teeth fixed, in one row in each jaw.
 - C. Gill opening wide, free from isthmus and extending forward below; a posterior canine in lower jaw, or may be present above also *Blennius* (p. 353).
 - CC. Gill opening restricted; a pair of canines, usually very large, in lower jaw and a pair of smaller ones above.
 - D. Dorsal and anal never both confluent with caudal; gill opening a little slit above upper angle of pectoral base *Petroscirtes* (p. 354).
 - DD. Dorsal and anal attached to caudal and, more or less confluent; gill opening runs down along pectoral base *Enchelyurus* (p. 356).
 - BB. Teeth small, very many, movable, set on the gums.
 - C. An adhesive disk under lower jaw, behind mouth *Andamia* (p. 357).
 - CC. No adhesive disk behind mouth.
 - D. A fringe of small tentacles across nape .. *Cirripectes* (p. 353).
 - DD. No fringe of tentacles across nape .. *Salarias* (p. 357).

The genus *Cirripectes* includes those with a transverse row of tentacles across the nape. Day records a species of this genus from the coast of Ceylon, and others are known from the East Indies. There is little doubt that it dwells in Andamanese waters. The other genera listed are all represented in the Zoological Survey's Andaman collections.

Blennius Linn.

1758. *Blennius*, Linnaeus, *Syst. Nat.*, ed. 10, p. 256.

The deep oblong compressed body is naked, the head large, with the anterior profile nearly vertical or very steep. The mouth has a single row of slender, curved, close-set fixed teeth in each jaw, with a stout canine on each side below, and usually a pair of smaller canines in the upper jaw. The gill openings are wide, extending forward below, and free from the isthmus or forming a broad fold across it. The dorsal fin is entire, or may be somewhat emarginate, with slender flexible spines. The lateral line is only developed anteriorly. A genus with numerous species in warm temperate seas, some occurring in the lakes of northern Italy. Only a few species occur in East Indian and adjacent seas. They are all small and dull coloured. Only one kind is known to occur in Andaman waters.

Blennius semifasciatus Rüppell.

1835. *Blennius semifasciatus*, Rüppell, *Neue Wirbelt., Fische*, p. 134.

1935. *Blennius semifasciatus*, Mukerji, *Rec. Ind. Mus.* XXXVII, p. 273, pl. vi, fig. 5.

Dorsal XII/14 ; anal II/16.

The depth is 3.5, the head 3.08, the caudal 4.6 times in the length ; the prominent eye is 4.28, the snout 3.42 times in the head. The large head is broader and deeper than the trunk, with a nearly vertical snout ; the angle of the maxillary extends beyond a vertical from the hind margin of the eye. There is a broad fimbriate orbital tentacle ; the nasal tentacle is very slender, small, simple on one nostril, the other one bifid ; there are no tentacles or cirri on the nape or behind the eye. There is a stout curved posterior canine on each side of the lower jaw, and a smaller one on each side of the upper jaw.

The dorsal fin is of moderate height, beginning above the hind margin of the preopercle, its anterior portion lower than the rear half, which ends before the caudal. The longest rays of the first dorsal are twice in the head and 6.16 times in the length ; the longest second dorsal rays are 1.7 times in the head and 5.28 times in the length. The anal is quite low, its height 3 times in the length of the head. The anal spines have enlarged bulbous tips.

The colour in alcohol is gray to brownish gray, with 7 broad blackish brown cross bands over the back ; along the middle of the side they expand and coalesce to form a longitudinal band, which has almost disappeared on the caudal peduncle. The head is dull brown, with darker bands radiating downward from the eye and over the chin. The dorsal is reddish brown anteriorly, mottled with blackish, and with a large dusky spot above between the first and second spines. The

posterior part of the dorsal is pale reddish brown; the anal is dusky, the tips of the rays white; the other fins are unmarked.

A good specimen, 37 mm. long, and three very young ones, 11 to 13 mm. in length, were obtained at Station 9, Andaman Islands.

Petroscirtes Rüppell.

1837. *Petroscirtes*, Rüppell, *Atlas, Fische*, p. 110.

The naked body is more or less elongate, with a small or medium-sized head, which often has tentacles on the eye, and may also have them on the nape and nostrils; more rarely there are tentacles on the opercular and preopercular margins, on the chin, and on the throat. The snout is short, or of moderate length, and may be convex or elongate and conical. The mouth is often rather small, but may be rather large and extending to the hind margin of the eye. The teeth are fixed, in one row, with a very large (rarely medium-sized) curved posterior canine on each side of the lower jaw; the upper jaw has a pair of similar but much smaller canines. The gill opening is reduced to a small slit, or nearly circular aperture, above the upper angle of the pectoral base. The dorsal fin is continuous and undivided, but a few anterior rays may be elongated, filamentous, and semi-detached. The dorsal usually ends on the caudal peduncle before the caudal fin, but in a few kinds extends to the base of the caudal. The ventrals are jugular, composed of 2 or 3 rays. Unlike most Blennies, the fishes of this genus have an air bladder.

This is a group containing numerous species in the tropical portions of the Indian and Pacific Oceans, where they replace the genus *Blennius* of temperate regions. The species of *Petroscirtes* are common on coral reefs throughout, but as a rule they live in deeper water than do the Blennies of the genus *Salarias*. However, some kinds do not move off with the receding tide, but remain in shallow rocky pools or stay on exposed rocks until the incoming tide covers them again.

Unlike *Salarias*, they are carnivorous and certain species leap about on the rocks with great agility in pursuit of their prey. The name *Petroscirtes* or rock-springer is a very appropriate one. In life they use their fangs very freely, sinking them into one's fingers if handled. The three kinds listed here are probably a third of the Andaman species.

Key to the species of Petroscirtes known from the Andamans.

- A. Dorsal with less than 30 rays.
 - B. No tentacles; no cross bands or stripes; colour olive to yellowish, with small brown spots and blue dots; fins yellow, dorsal and anal spotted and striped *P. bankanensis* (p. 355).
 - BB. 2 flap-like tentacles under chin and a pair on eyes; tentacles on margins of opercle and preopercle; caudal lunate with age *P. mitratus* (p. 355).
- AA. Dorsal with 36-38 rays, anterior ones elongated and most with elongate tips; dark brown band from snout to caudal tip, sometimes with a blue or silvery stripe below it; a blue or silvery stripe below dorsal *P. filamentosus* (p. 355).

***Petroscirtes bankanensis* Bleeker.**

1852. *Petroscirtes bankanensis*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 727.
1861. *Petroscirtes bankanensis*, Günther, *Cat. Fishes* III, p. 237.
1913. *Petroscirtes bankanensis*, Weber, *Siboga Exp. Fische*, p. 540.

A juvenile specimen, 21 mm. long, was taken at Station 7, Andamans. Dorsal 28 ; anal 19. A Philippine specimen of 25 mm. had the depth 5, the head 3·8, the caudal 4·1 times in the standard length. The Andaman and Philippine specimens had a pair of strong canines in the lower jaw, but none in the upper jaw, and no tentacles. Large examples have small canines above and a small tentacle behind the upper margin of the eye. The dorsal origin is above the rear edge of the preopercle.

The colour is olive above, yellowish below, with small brown spots and sprinkled with blue dots, which usually fade in alcohol. The yellow dorsal and anal are spotted and variegated with dusky. The caudal is not marked. This species, only known from the East Indies, Singapore, and the Philippines, reaches a length of 120 mm.

***Petroscirtes filamentosus* (Cuv. and Val.).**

1836. *Blennechis filamentosus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 280, pl. cccxxvi.
1861. *Petroscirtes filamentosus*, Günther, *Cat. Fishes* III, p. 231.
1876. *Petroscirtes filamentosus*, Günther, *Fische der Südsee* II, p. 196, pl. cxiv, fig.

A young specimen, 39 mm. long, was taken between Blair Reef and Chatham causeway, Port Blair. Dorsal 38 ; anal II/25. The anterior dorsal rays were not elevated. Snout conical, projecting well beyond the mouth. Lower canines of medium size, strongly hooked in a much flattened curve ; upper canines very small. A dark brown band runs from the tip of the snout over the eye and above the pectoral base to the caudal tip, the part on the caudal badly faded ; below this band is a pearl white stripe from the eye to the caudal base.

Typical and larger examples have the first 3 or 4 dorsal rays elongated, the first and second much the longest, and all the tips of the dorsal rays are more or less elongate and thread-like. The body is slender, elongate, laterally compressed, the depth 5·4 to 5·5, the head 3·7 the caudal 5·85 times in the length. There is a blue or silver stripe on the back just below the dorsal base.

This Blenny has been recorded from Celebes to the Tuamotu Archipelago.

***Petroscirtes mitratus* Rüppell.**

1828. *Petroscirtes mitratus*, Rüppell, *Atlas, Fische*, pt. 111, pl. xxviii, fig. 1.
1855. *Petroscirtes barbatus*, Peters, *Wiegmann's Archiv*, p. 248.
1876. *Petroscirtes mitratus*, Günther *Fische der Südsee* II, p. 198.
1891. *Petroscirtes barbatus*, Sauvage, *Fauna Madagascar, Poiss.*, p. 383, pl. xxxviii, fig. 6.
1934. *Petroscirtes barbatus*, Herre, *Fishes 1931 Phil. Exped.*, p. 98.

Dorsal 25-27 ; anal 16-18.

The depth is 3·66 to 4, the head 3·4 to 3·66, the caudal 4·3 times in the length ; the eye equals the snout, 3·1 to 3·2 times in the head. The lower canines are of moderate size, the upper ones very small. The

first 3 dorsal spines are slightly elongated, the fourth one shorter than those preceding and following, the latter of uniform height except the 3 last, which are much shorter.

Under the chin is a pair of broad brownish flaps or barbels; on top of the eye is a similar one, which may be fringed; over the front rim of the eye is a small simple tentacle; just behind the eye is a very small tentacle; opposite the base of the first dorsal spine is a minute flap, and another is on the upper opercular margin; on the lower margin of the preopercle is a row of very small flaps. Any of these numerous cheek and opercular flaps may be absent.

In small specimens the caudal is broadly rounded, but with age it changes and becomes lunate by the extension of the upper and lower margins.

The colour in alcohol is light brown, with 5 wide dark brown cross bands; in the top of each, except the first, is a very pale ocellated spot, and on the sides are traces of similar spots. The dorsal and anal thickly spotted with reddish brown; the caudal is clear.

A specimen, 37 mm. long, was taken at Station 8, and 16 from 16 to 32 mm. at Station 9.

This Blenny is very wide spread, occurring from the Red Sea Mozambique, and Madagascar to the Philippines, Caroline Islands, and Samoa. It reaches a length of 75 mm.

Enchelyurus Peters.

1868. *Enchelyurus*, Peters, *Monatsber. Akad. Wiss. Berlin*, p. 268.

This genus is closely related to *Petroscirtes*, but differs as follows:—

- (1) the dorsal and anal are both united to and more or less confluent with the caudal;
- (2) the gill opening is wider, extending downward as far, or nearly as far, as the lower end of the pectoral base.

This is a small genus, containing four or five inconspicuous species found in the East Indies and tropical Pacific. Only one kind is known from the Andamans. It is possible that the discovery of additional species, or the study of a very large series of known species may show the genus to be a synonym of *Petroscirtes*. The differences which separate *Enchelyurus* and *Petroscirtes* are not profound and the examination of very large numbers of various species of both groups may show transitional stages, thus eliminating *Enchelyurus*.

Enchelyurus flavipes Peters.

1868. *Enchelyurus flavipes*, Peters, *Monatsber. Akad. Wiss. Berlin*, p. 268.

1913. *Enchelyurus flavipes* var. *nigerrima*, M. Weber, *Siboga Exped. Fische*, p. 545.

1934. *Enchelyurus flavipes* var. *nigerrima*, Herre, *Fishes 1931 Phil. Exped.*, p. 98.

1937. *Enchelyurus flavipes*, Herre, *Bull. Raffles Mus.* No. 13, p. 47.

A juvenile specimen, 31 mm. long, belonging to the variety *nigerrima*, was taken on the south coast of Long Island, Middle Andaman.

Dorsal 31-33 ; anal II/20 ; pectoral 16 ; ventral 2. The colour of the variety is uniformly blackish brown or black, including all fins. In the typical form the ventrals and pectorals are yellow, and an elongate yellow spot covers most of the caudal fin.

Andamia Blyth.

1859. *Andamia*, Blyth, *Journ. Asiat. Soc. Bengal*, p. 270.

This genus, set apart from other Blennies by the sucker or adhesive disk behind the mouth, was not represented in the collection. The specimens obtained were studied and reported upon by Rao and Hora¹, in a very valuable paper recently published, so that any remarks here are superfluous.

Salarias Cuvier.

1817. *Salarias*, Cuvier, *Règne Animal*, II, p. 251.

The slender, elongate body is naked. The movable teeth are very numerous and set on the gums ; many species have a pair of curved canines on the back part of the lower jaw. Tentacles may be present on the eyes, nape, and nostrils. A median longitudinal crest is present on males of many species and on both sexes in a very few species, while it is altogether lacking on a number of species. The dorsal fin is usually comparatively high, especially the anterior part ; it may be entire but most species have it more or less deeply notched between the spinous and rayed portions. It may be free from the caudal, or more or less completely attached to it. The gill opening is wide, forming a free fold across the isthmus. The ventrals comprise a spine and 2 or 3 rays.

The members of this genus are very agile and are rightly called rock skippers and lizard skippers. They are herbivorous fishes, grazing on the algae growing on rocks in pools. At low tide they stay in rock pools, or remain on exposed rocks, where some kinds jump about with the agility of lizards. Many of them are very handsomely coloured in life, with rich quiet harmonious markings and shades of brown, violet, blue, gray, green, reddish, white, and black.

If one quietly approaches a deep rocky pool he may find numerous species of *Salarias* living there ; some may be swimming, some clinging to the walls, some feeding, and almost always some will be seen "walking" or jumping around out of the water. If alarmed, they will give an astonishing exhibition of the agility and leaping powers of fish ; some flee with incredible bounding leaps toward deep water ; others may jump up a nearly vertical rock wall, skipping from one tiny roughness to another to a height of a meter and a half or more, in a most astonishing and unfishlike athletic exhibition till they reach the top and with a hop, skip, and a jump are gone.

The determination of preserved rock skippers is usually very difficult. The characteristic colour markings undergo great change or disappear altogether after death, so that very diverse species may come to look alike after being in alcohol some time. A large series of both fresh and

¹ Rao H. S. and Hora, S. L., *Rec. Ind. Mus.*, XL, pp. 377-401, pl. viii-x (1938).

preserved material, of both sexes, is often needed for correct identification. The number and character of dorsal and anal spines and rays, the shape and extent of the dorsal, and the development of the tentacles and crest will usually enable one to name specimens if a goodly number are available for study. Fortunately a few strongly characterized species never lose their identification marks.

The collection contained 13 species of *Salarias*, and in the appended key I have included 4 more listed by Day from the Andamans. The 17 species here given most assuredly are not all that occur in Andamanese waters; I have no doubt that 20 or more species will ultimately be found there.

Key to Andaman species of Salarias.

(Based on preserved specimens.)

- A. Dorsal entire or only slightly indented.
1. Entire and free from caudal.
 - B. Uniformly dark brown or black, or the caudal yellow; last rays of dorsal and anal often elongate, reaching last half of caudal; dorsal XII/17-19; anal 19 or II/18-19 *S. fuscus* (p. 361).
 - BB. Slate colour with 8-10 dim blackish cross bands alternating with 8-10 pairs of pale blue lines; head, nape, and pectoral base with black dots; males crested; dorsal XIII-XIV/20-22; anal II/24 *S. saliens* (p. 361).
 2. With a slight indentation and attached to caudal; 6-8 wide dark brown cross bands; black dots and dashed above pectoral, becoming lengthwise lines along sides; large circular white or pale spots below and on pectoral base; broad fringed tentacles on eye, nape, and nostril *S. fasciatus* (p. 362).
- AA. Dorsal notched.
3. Dorsal XIV-XVII.
 - C. Dorsal XVII/20-23; anal II/26-27 *S. kirki* (p. 362).
 - CC. Dorsal XIV-XV (by rare exception XIII)/19-21; anal II/24-26, rarely I/26; bluish dusky with 12 pairs of silvery cross-bands, margined by blackish lines, head and front half of body with many black dots; bands may disappear leaving black lines, or all markings may disappear; no canines; males crested *S. andersoni* (p. 363).
 4. Dorsal XII-XIII.
 - D. 2 rows of short blue or pearly or gray bars, often black margined, along sides; a circular blue or black spot on opercle; a blue or black bar below and blue or black spot behind eye; orbital tentacle simple, none on nape; a small canine below; males crested; dorsal XII/20-21; anal I or II/20-21 *S. periophthalmus* (p. 363).
- DD. Without 2 rows of bars on sides as above.
- E. A longitudinal crest on head.
 - F. Head, body, and fins reticulated with brown lines, enclosing circular or irregular spaces; canines in lower jaw; dorsal continuous with caudal; a long fringed orbital, a small fringed nasal tentacle, and a simple occipital one; dorsal XII-XIII/15; anal II/16-17 *S. vermiculatus* (p. 364).

- FE. Surface not reticulated with lines.
- G. With 4 to 10 longitudinal black lines on sides ; no tentacle at nape.
- H. No canines ; dorsal attached to caudal, XII/22-24 ; anal II/23-24 ; 6-10 black lines along sides, becoming 4 or 5 posteriorly, where they may break into short spots and dots .. *S. lineatus* ♂ (p. 365).
- HH. Canines present ; dorsal free from caudal.
- I. 5-6 black lines along sides, breaking up into spots near caudal ; ocular tentacle simple ; blue spot below eye ; dorsal XII/20-21 ; anal II/18-19 .. *S. striolatus* ♂ (p. 365).
- II. 10 dusky lines along sides ; orbital tentacle simple, longer than eye ; blue transverse stripes below and behind eye ; large blue spot on opercle ; dorsal XII/20-21 anal II/20-21 .. *S. bilitonensis* (p. 366).
- GG. No black or dusky lengthwise parallel lines on sides.
- J. Canines in lower jaw ; dorsal free from caudal, XII-XIII/17-18 ; anal I-II/17-19 ; fringed cirrus on eye, nasal one very small, simple ; none on nape *S. raoi* (p. 366).
- JJ. Canines none ; dorsal attached to caudal.
- K. No yellow, orange, or pale longitudinal stripes.
- L. Orbital tentacle fringed, nasal cirrus simple ; none at nape ; upper half of caudal cross-barred with rows of spots, lower half clear ; dorsal XII-XIII/20-21 ; anal I/21-23 *S. dussumieri* (p. 367).
- LL. Tentacles on eye and nape small, simple ; nasal tentacle very small, usually 4 filaments ; colour brown, usually with darker cross bars ; anal with 2 rows bluish spots, or uniform ; a diagonal dark bar behind eye, often vanishing ; dorsal XIII/19-21, anal I/20-22 *S. edentulus* ♂ (p. 368).
- KK. Upper part of side with 4-5 yellow, orange, or pale diffuse longitudinal stripes ; short fringed tentacles at eye and nostril, none at nape ; dorsal XII-XIII/23 ; anal I/23-24 .. *S. hasselti* ♂ (p. 368).
- EE. No crest on head.
- M. Upper lip crenulate or denticulate ; dorsal free from caudal ; strong canines in the lower jaw ; orbital tentacle large, fringed.
- N. Dark lines from eye over snout, sides of head, and throat ; nasal tentacle minute, simple ; none at nape. Dorsal XIII/15-17 ; anal I/17-19 or II/16-17 .. *S. frenatus* (p. 369).
- NN. Sides mottled brown, with row of white spots below lateral median line ; a black spot above pectoral base and dark streak behind eye ; short fringed tentacle at nape and nostril ; dorsal XII-XIII/14-16 ; anal I or II/16-17 *S. marmoratus* (p. 370).

MM. Upper lip entire.

O. A purplish or brown spot or ring on each side of the throat; body pale brown, with pale cross bands, forked below; a row of 15-20 black dots below dorsal, or irregular rows of black dots on upper half of body; 1 or 2 large circular white or pale blue spots on pectoral base; dorsal XI or XII/17-18; anal I/18-19 .. *S. guttatus* (p. 370).

OO. No purple or brown spot on each side of throat.

P. Sides with 2 rows of short blue or pearl bars; a circular blue-black spot at upper angle of opercle; a blue or black bar below and spot behind eye; a small canine in lower jaw; dorsal XII/20-21; anal I or II/20-21 .. *S. periophthalmus* ♀ (p. 363).

PP. Without blue or pearl bars along sides.

Q. Reddish brown with conspicuous rows of short blackish-brown bars and spots on sides; a simple tentacle on eye and small divided nasal one; none on nape; a minute canine in lower jaw; dorsal XIII/19-20; anal I/19-20 .. *S. interruptus* (p. 371).

QQ. Body uniformly dotted with red or brown, or with longitudinal lines and bands on trunk.

R. Many reddish or dark brown dots or small spots all over body, dorsal, caudal and pectorals, on brown trunk with faint dark cross-bands; small simple tentacles on eye and nape; a very small one on nostril, usually of 4 filaments; dorsal XIII/19-21; anal I/20-22 .. *S. edentulus* ♀ (p. 368).

RR. Body not dotted, but longitudinally banded or lined.

S. Upper part of side with 4 or 5 yellow or pale diffuse longitudinal stripes; short fringed tentacles on eye and nostril, none on nape; dorsal XII-XIII/23; anal I/23-24 .. *S. hasselti* ♀ (p. 368).

SS. Sides with longitudinal black lines; no tentacles at nape.

T. No canines; dorsal attached to caudal; 6 to 10 black lines along sides, becoming 4-5 posteriorly, often breaking into short spots and dots at rear; orbital tentacle small, fringed; dorsal XII/22-24; anal II/23-24 .. *S. lineatus* ♀ (p. 365).

TT. Canines present; dorsal free from caudal; 5-6 black lines along sides, breaking into short spots near caudal; ocular tentacle simple; blue spot below eye; dorsal XII/20-21; anal II/18-19 .. *S. striolatus* ♀ (p. 365).

Salarias fuscus Rüppell.

1835. *Salarias fuscus*, Rüppell, *Neue Wirbelt., Fische*, p. 135, pl. xxxii, fig. 2.
 1872. *Salarias holomelas*, Günther, *Ann. Mag. Nat. Hist.* (4) X, p. 399.
 1876. *Salarias fuscus*, Day, *Fishes India*, p. 330, pl. lxx, fig. 2.
 1876. *Salarias fuscus*, Günther, *Fische der Südsee* II, p. 202, pl. cxvi, fig. C.

Dorsal 29-31 ; anal 19 or II/18-19.

The much compressed body is deep and often pot-bellied, the upper profile slanting rapidly downward from the dorsal origin to the caudal peduncle ; the anterior profile is vertical or nearly so.

The depth is 2·7 to 2·8, the head 3·75 to 4 times in the length. The caudal fin is slender and elongate in small or medium-sized specimens, 2·5 to 2·7 in the length. The conspicuous eye is 3·75 to 4·25 times, the snout 2·5 to 2·7 in the head. The margin of the upper lip is fimbriate ; canine teeth none. Small simple tentacles on the eye and nape, often hard to find ; nasal tentacles very small either simple or divided. The dorsal is not notched, and is but slightly or not at all attached to the caudal. The last dorsal and anal rays are often much elongated, when they may extend nearly to the caudal tip.

The colour varies from dark brown to nearly black. The caudal fin varies from pure yellow to partly yellow, brown, and entirely black. The pectoral is usually yellow, with a circular black spot on the upper part of its base, but it also varies so that some individuals have dark brown pectorals.

I have seen no Andaman examples. It occurs however from the Red Sea to the Philippines, and unquestionably occurs in the Andamans ; Day had it from the Nicobar Islands.

Salarias saliens (Forster).

1788. *Blennius saliens*, Forster, *Itin.* II, p. 343.
 1801. *Blennius tridactylus*, Bloch and Schneider, *Syst. Ichth.*, p. 176.
 1836. *Salarias alticus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 249.
 1876. *Salarias tridactylus*, Day, *Fishes India*, p. 330, pl. lxx, fig. 3.
 1876. *Salarias tridactylus*, Günther, *Fische der Südsee* II, p. 200, pl. cxvii, figs. C. and D.
 1906. *Alticus saliens*, Jordan and Seale, *Bull. Bur. Fisheries* XXV, p. 421, fig. 111 (on p. 439).

Dorsal XIII-XIV/21-22 ; anal II/24 or 23. The depth is 6·5 to 7·6, the head 5·5 to 5·75, the caudal 4·2 to 5 times in the length. The eye is 3·85 to 4, the snout 1·85 times in the head. The body is slender, elongate, and compressed, with small head and nearly vertical anterior profile. The eyes are very far forward, high up and close together. The wide mouth has crenulate lips. Males have a small median crest on top of the head and a small trifid tentacle on the upper margin of the eye ; both are lacking in females. There is a very slight notch or slight depression between the anterior and posterior dorsals, the latter not reaching the caudal.

The colour is bluish gray, slaty blue, or darker, with 8 or 10 blackish cross bands, and as many pairs of bluish transverse lines on the sides ; a bluish silvery band from behind the eye to the upper lip and another from top of the head to the lower side of the opercle ; the entire head, pectoral base, and basal half of the pectoral sprinkled with black dots. The dorsal spines and rays are black, the membrane clear, with a submarginal

black band and a clear margin. The anal varies from dusky to clear, with a submarginal black band or row of black spots.

Not recorded from the Andamans, unless *S. andersoni* is a form of this wide-spread species. It ranges throughout the greater part of the tropical Indian and Pacific oceans.

Salarias fasciatus (Bloch).

1786. *Blennius fasciatus*, Bloch, *Ichthyologie* II, p. 110, pl. clxii, fig. 1.
 1828. *Salarias quadripinnis*, Rüppell, *Atlas, Fische*, p. 112, pl. xxviii, fig. 2.
 1870. *Salarias fasciatus*, Day, *Proc. Zool. Soc. London*, p. 694.
 1876. *Salarias fasciatus*, Day, *Fishes India*, p. 330.
 1876. *Salarias fasciatus*, Günther, *Fische der Südsee* II, p. 201, pl. cxv, fig. H.

Dorsal XII/19-20; anal I/19-20. The depth is 3.6 to 4, the head 4 to 4.3 times in the length. The eye is 3 to 3.4, the snout 2.75 to 3 times in the head. The orbital tentacle is bifid or trifid, the small nasal tentacle bifid; on each side of the nape is a characteristic broad fringed tentacle. Canines none. The entire dorsal is attached to the caudal fin; the anterior anal rays are more or less detached, with elongate tips.

In life the colour is more or less violet brown to bluish, with 6 to 8 broad brown cross-bands on the dorsal and trunk; between them, especially lower down and on the pectoral base, are sky blue circular spots; above on the forward half of the body are many blue-black dots which pass into lengthwise lines farther back. The dorsal has 2 or 3 rows of bluish or very pale spots.

In alcohol the colour is brown to bluish brown, with 6 to 8 broad darker cross-bands, which run upward on to the dorsal fin. The blue-black dots and lines are as in life. On the pectoral base, and lower part of head and body, are large yellowish or whitish circular spots, often with a dark central dot. The dorsal is as in life; the pale pectoral and caudal are barred by rows of dark brown or blackish spots; the anal is pale to dark brown, with 2 rows of dark brown dots, the ray tips usually white.

No examples were in the collection forwarded, but Day had it from the Andamans and no doubt it is common there. This large, heavy-bodied rock-skipper is one of the easiest to recognize of tropical Blennies, as it is entirely unlike any other. It is common in tide pools on rocky coasts, but when disturbed is one of the first fishes to leave. It climbs rocks with great agility and leaps over obstacles with great speed. The very large ones nearly always depart at the first hint of danger, and are thus rarely taken.

Females reach a length of 125 mm. or more, but males never get much over 75 mm. This species occurs from the Red Sea eastward through Polynesia. It is abundant about Singapore and in the East Indies, including the Philippines.

Salarias kirki Günther.

1868. *Salarias kirki*, Günther, *Ann. Mag. Nat. Hist.*, p. 458.
 1876. *Salarias Kirkii*, Day, *Fishes India*, p. 331, pl. lxix, fig. 6.

Dorsal XVI-XVII/20-23; anal II/25-27.

The head is 6.5, the depth 7.5, the caudal 6 times in the total length. The fringed orbital tentacle is of moderate length and there is a median

crest on the head. The dorsal is slightly notched, and is entirely free from the caudal. The colour in alcohol is leaden to blackish, with traces of 6 or 8 paler bands; the dorsal is marked by diagonal dark lines running upward and backward; the anal margin is whitish.

A specimen, 71 mm. long, from East Ross Island, Port Blair, seems to belong here. Dorsal XVI/20; anal II/25.

Known previously from Zanzibar and the Sind coast of India.

***Salarias andersoni* Day.**

1876. *Salarias Andersonii*, Day, *Fishes India*, p. 331.

Dorsal XIII-XV/19-21, and XVI/19; anal II/24-26 and I/26.

The depth is 7 to 7.5 or more, the head 5 to 6 times in the length. The body is elongate and slender, the fish evidently very agile in life. Males have a rather high rounded crest on the head; even the largest females have no crest, or only a thickened fold of skin along the median line. The notch between the dorsals is variable in depth, but is always well developed. The dorsal height is very variable; the anterior dorsal may be quite low but is often very high, nearly twice the height of the body, the longest rays 4.75 times in the length of the fish.

Well preserved specimens are dark plum colour, with 12 pairs of silvery or pearly cross bands, each band bordered by a blackish line on each side; the head and anterior half of the trunk are thickly sprinkled with black or very dark dots. The fins are all plum coloured or darker; the anal may have a pale margin, or be entirely whitish.

Some specimens are blue-black to brownish black, the cross band and lines having disappeared; the black dorsal is unmarked; the anal has a broad black margin, or the outer three-fourths is black. Other specimens have faded to reddish brown, with a pale-edged anal. Still others have kept the original ground colour but the silvery cross bands have disappeared, leaving their margins as 25 to 30 vertical bluish-black or lead coloured lines.

34 specimens, 31 to 54 mm. in length, from about Ross Island, 13 from Brookesabad, their lengths 45 to 65 mm., and one of 54 mm. from Perserverance Point, North Bay, Port Blair. Two examples, 45 and 46 mm. long, are from North Bay, Andamans.

This species is very close to *Salarias saliens*, but has a decidedly notched dorsal and a different number of fin rays, besides other differences which may be merely varietal and not actually specific.

***Salarias periophthalmus* Cuv. and Val.**

1836. *Salarias periophthalmus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 311, pl. cccxxviii.

1869. *Salarias andamanensis*, Day, *Proc. Zool. Soc. London*, p. 611.

1876. *Salarias periophthalmus* Day, *Fishes India*, p. 333, pl. lxxix, fig. 5.

1876. *Salarias andamanensis*, Day, *Fishes India*, p. 332.

1876. *Salarias periophthalmus*, Günther, *Fische der Südsee* II, p. 207, pl. cxiv, figs. D and E.

Dorsal XII/20-22; anal I-II/20-21.

This very handsome rock-skipper is elongate, slender, and strongly compressed. The depth is 5 to 5.5, the head 4.4 to 4.6, the caudal 4.25 to 4.8, the pectoral 6 times in the length. The eye is 3.5 to 4, the snout

3 to 3.3 times in the head. Both sexes have a small curved posterior canine on each side of the lower jaw. Females have a small simple orbital tentacle; males have a longer one, equal to or longer than the eye, and a low median crest on the head; both sexes have a small simple nasal tentacle. The lips are entire.

In life the colour is roseate, with 5 to 7 broad violet or violet-brown cross bars, which divide and become red on the lower part of the body; along the sides are two rows of widely spaced short pearly blue bars, which are a highly characteristic feature of this easily recognized species. Males have a pearly blue circular spot on the opercle, and sometimes one or two blue spots behind the eye. Females have one or two pearly blue spots behind the eye and a pearly blue bar below it.

In alcohol the colour becomes leaden to brown or blackish brown, the cross bands dim or vanishing. The pearly blue bars and spots may remain, but more often blacken or may be dull dim whitish; they nearly always have black margins, which sometimes are the only remaining vestige of the blue bars. The dorsal is brown with a white margin, and several darker lines or rows of spots running upward and backward; the brown anal has a dusky marginal band; the brown caudal has a white upper margin, and cross rows of white spots on its basal portion.

2 specimens from Port Blair; one of 42 mm. is from South Point, and one of 52 mm. from Murdakhari Bay. A specimen of 32 mm. is from the east coast of Long Island, Middle Andaman. A field note on the South Point specimen says: "pink streaks on head; a dark blue spot one-half inch in front of caudal fin. Swims tail first when scared into holes in coral, and shelters there."

Females reach a length of 150 mm. This is one of the most agile of rock-skippers, as well as one of the handsomest and easiest to recognize. It occurs from the Andamans eastward throughout Polynesia, and is very abundant in the Philippines and East Indies.

***Salarias vermiculatus* Cuv. and Val.**

1836. *Salarias vermiculatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 301.

1876. *Salarias vermiculatus*, Day, *Fishes India*, p. 335.

Dorsal XII-XIII/15; anal II/16-17; pectoral 14. The head equals the depth, 5 to 5.5 in the length, the caudal 6 times. The eyes are 4 times in the head. There is no crest on the head; the orbital tentacle is moderately long and fringed; there is an occipital tentacle, and a small fringed nasal one. There is a pair of large posterior canines in the lower jaw. The deeply notched dorsal is united to the caudal base; the upper five pectoral rays are very short, the lower 6 or 8 long with free extremities; the anterior 13 anal rays are deeply notched between, with free extremities.

The colour in alcohol is more or less brownish or grayish brown, with 8 or 9 more or less evident darker cross bars; the head, trunk, dorsal and anal vermiculate or reticulate with brown lines.

Obtained by Day in the Andamans. Said to attain "at least 8 inches in length." Occurring from the Andamans to the east coast of Africa. Description compiled. The caudal fin is undoubtedly included in the length as given by Day.

Salarias lineatus Cuv. and Val.1836. *Salarias lineatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 314.1870. *Salarias lineatus*, Day, *Proc. Zool. Soc. London*, p. 695.1876. *Salarias lineatus*, Day, *Fishes India*, p. 332, pl. lxx, fig. 8.

Dorsal XII/21-24 ; anal I/23-24. The depth is 5 to 5.3, the head 4.5 to 4.9, the caudal 5.65 to 5.5 times in the length. The eye is 3.8, the snout 2.9 times in the head. The body is slender, moderately elongate, compressed. The head is broadly convex, its anterior profile nearly vertical. The small orbital tentacle is finely fringed ; there is a similar but smaller nasal one ; no tentacles on the nape. Males have a low median crest on the head, which is wanting in females. No canines. The dorsal fin is deeply notched, and is attached to the caudal fin.

The colour in alcohol is leaden and darker, with 6 to 8 more or less evident darker vertical bands which often disappear entirely, and 6 to 10 black lines running lengthwise along the sides ; the lines usually decrease to 4 or 5 toward the rear, and may break up into spots or dots posteriorly ; there may be narrow black vertical and sinuous lines below the eyes and on the preopercle. The pale brown dorsal has 4 to 6 oblique dark brown lines, running upward and backward, with rows of spots on the rays ; the pale caudal has 4 dark brown cross bars ; the pale brown anal has a dark margin.

The Lined Rock-skipper is a common Andaman Blenny. From Port Blair the following were taken, their lengths 24 to 70 mm. :—5 from Murdakhari Bay ; 6 from East Ross Island and 1 from Ross Island ; 3 from a bay near South Corbyn's Cove. One example 75 mm. long was caught south of Sound Island, North Andaman, and 8 specimens, 36 to 72 mm. in length are from the " Andamans "

Salarias striolatus Day.1876. *Salarias striolatus*, Day, *Fishes India*, p. 333.

Dorsal XII/20-21 ; anal II/18-19. The depth is 5.5, the head 5.25 times in the length. The simple ocular tentacle is an eye diameter in length, the simple nasal cirrus short ; none at the nape. Males have a very low occipital crest. There is a pair of small posterior canines in the lower jaw. The deeply notched dorsal fin is free from the caudal.

The colour is grayish, with indistinct vertical cross bands, and a blue spot below the eye ; 5 or 6 horizontal black lines begin at the tip of the pectoral and break up into spots as they near the caudal fin. The dorsal has 2 rows of spots, most distinct on the rear half ; the anal has a basal row of blue spots and a gray margin ; the caudal is irregularly cross-banded by 5 or 6 rows of spots. An Andaman species, according to Day, from whom the above is taken.

This fish is very close to *S. lineatus*, but is apparently distinct in the absence of a large series for comparison. It has a smaller number of fin rays, the dorsal is free from the caudal, has canines, lacks tentacles on the nape, and the orbital and nasal tentacles are different.

Salarias bilitonensis Bleeker.

1858. *Salarias bilitonensis*, Bleeker, *Nat. Tijds. Ned. Ind.* XV, p. 231.

1861. *Salarias bilitonensis*, Günther, *Cat. Fishes* III, p. 257.

1876. *Salarias bilitonensis* Day, *Fishes India*, p. 334, pl. lxxi, fig. 1.

Dorsal XII/20-21 ; anal II/20-21.

The depth is 6 to 7, the head and caudal each 5 to 5.5 times in the length, omitting the caudal, which was evidently included in the descriptions cited. There is a rather large crest on the head ; the simple orbital tentacle is as long as the eye, and the nasal cirrus is fringed ; none at the nape. The lower jaw has a pair of small posterior canines. The dorsal fin is deeply notched, and is not attached to the caudal fin according to Bleeker, who says " non cum pinna caudali unita " ; Günther and Day give it as continued " on to the base of the caudal fin " The lower pectoral rays are longer than the upper ones.

The colour is greenish rose above, pearly below, with a bluish transverse streak below and one behind the eye ; 8 or 9 pairs of brownish cross-bars on the body, and about 10 longitudinal dusky violet or blackish lines or streaks on each side, converging posteriorly and ending before the caudal fin. The first half of the dorsal has brown spots with blue edges, the lower part of the second half with diagonal brown lines running up and back, the upper part with violet and blue lines and dots ; the anal is clear with a violet or dusky margin ; the upper part of the caudal is densely spotted with blue, forming vertical bars.

Day had this fish from the Andamans. It is close to *S. lineatus*, from which it may not be distinct. It has a smaller number of dorsal and anal rays than *S. lineatus*, possesses canines, the orbital tentacle differs, and differs in other minor particulars.

Salarias raoi, nom. nov.

1876. *Salarias alboguttatus*, Day, *Fishes India*, p. 334 ; (name preoccupied ; not *S. alboguttatus* Kner).

Dorsal XII-XIII/17-18 ; anal I-II/17-18, also I/19, and 19-21.

The depth varies with age and sex, from about 4.9 to 6.1 times in the length, the head 4.5 to 5. The eye is 4 to 4.4, the snout 2.75 to 3.25 times in the head. There is a low or medium-sized crest on the head ; the fringed orbital tentacle is less than or equal to the eye ; the simple nasal tentacle is very small ; none at the nape. There is a pair of small posterior canines in the lower jaw ; the upper lip is entire.

The colour in alcohol varies from pale tan or whitish, with 6 or 8 vertical brown double cross bands extending above on the dorsal, to those with bluish or greenish ground colour and nearly black cross bands. Along the sides of the lower half of the body are 2 to 5 rows of white spots ; usually but 2 rows are well developed and readily visible, one nearly median and becoming double or irregular posteriorly, and a lower one of larger and more elongate spots farther apart ; on the sides of the head, pectoral base, and beneath the pectoral are many small white spots. On the underside of the head are numerous conspicuous and very characteristic white spots that seldom disappear in preservative.

Another strongly fixed character is a dark brown or blackish spot on the lower part of the pectoral base; this spot, which is blue in life, is present on all specimens, no matter what other changes occur. Day says "two rather large brown ones", but I find but one. There is also a rounded or oval blue or blackish spot behind the eye. The first dorsal is more or less dusky, thickly strewn with small white dots and spots, and has a black spot above, between the first and second spines. The second dorsal is clear, with many brown lines running diagonally upward and backward. There is a brown or black spot at the base of the brown caudal, which is cross barred with 5 to 8 rows of small and more or less circular white spots, the outer rows becoming irregular. The anal is pale or colourless with a dark brown or blackish submarginal band, the tips of the rays often white. Rarely the pectoral is barred by rows of white dots.

24 specimens, 31 to 46 mm. in length, are from the "Andamans." The following are from Port Blair, their lengths 20 to 55 mm.:—55 from Ross Island, and 7 from East Ross Island; 50 from Murdakhari Bay; 1 from Corbyn's Cove, and 2 without specific locality other than Port Blair.

Salarias alboguttatus, described by Kner in 1867, is recognized at sight by the large violet or violet-brown spot on each side of the throat.

The handsome Blenny described above is evidently one of the commonest kinds in the Andamans. It is close to *Salarias nitidus* Günther, which has an undivided dorsal, and differs in several other respects.

***Salarias dussumieri* Cuv. and Val.**

1836. *Salarias dussumieri*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 229.

1870. *Salarias dussumieri*, Day, *Proc. Zool. Soc. London*, p. 695.

1876. *Salarias dussumieri*, Day, *Fishes India*, p. 333, pl. lxx, fig. 7.

Dorsal XII-XIII/21; anal I/21-23.

A specimen, 109 mm. long, has the head 5, the depth 6, the caudal 5.45 times in the length. The eye is 5.375, the snout 3 times in the head. There is a moderate crest on the head; the fimbriate orbital tentacle has the outer half of several thread-like divisions. The lips are entire, the mouth without canines. The deeply notched dorsal is continuous with the caudal fin. The tips of the anal rays are elongate and free.

The colour of preserved specimens is dull dark to bluish brown, with more or less evident vertical blackish band or lines, or these broken into spots, but largely disappearing after long immersion in alcohol. The first dorsal is horizontally striped or spotted, the second dorsal diagonally marked; the upper half of the caudal is barred with cross rows of spots, the lower half clear. The anal is dark gray to dusky, and may be marginally darker, or the tips of the rays may be pale.

A specimen 53 mm. long is labelled "Andamans," and one of 42 mm. is from the east coast of Long Island, Middle Andaman. From Port Blair come the following:—two of 79 and 109 mm., from Blair Reef; 3 from 32 to 52 mm. from Murdakhari Bay, and 3 from East Ross Island.

Salarias edentulus (Bl. and Schn.).

1801. *Blennioides edentulus*, Bloch and Schneider, *Syst. Ichth.*, p. 172.
 1876. *Salarias quadricornis*, Day, *Fishes India*, p. 331, pl. lxx, fig. 4.
 1876. *Salarias edentulus*, Günther, *Fische der Südsee* II, p. 206, pl. cxvii, fig. A ;
 (figure shows female).
 1876. *Salarias quadricornis*, Günther, *Fische der Südsee* II, p. 209, pl. cxvii,
 fig. B ; (figure shows male).
 1936. *Salarias edentulus*, Herre, *Publ. Field Mus. Zool.* XXI, p. 407.

Dorsal XIII, rarely XIV/19-21 ; anal I, rarely II/20-22 rays, or very rarely 23 or 24.

Depth 3.1 to 4, the head 4 times in the length in females ; in mature males the depth equals the head, 4.3 to 4.7 in the length. The eye is about 4 times, the snout about 2.66 in the head in females. Males have a slightly larger eye, 3.8 to almost 4, the snout 2.3 times in the head. Both sexes have a small simple orbital tentacle and a pair of small simple tentacles at the nape. The nasal tentacle is very small and usually divided into 4 filaments. Canines none. The high dorsal fin is deeply notched and broadly united with the caudal fin. The anterior anal rays have more or less elongate and swollen tips.

The sexes are much unlike in this species, and have been described under different names. *Salarias edentulus* of many authors is the female, while the male has been called *S. quadricornis*. A male character is the presence of a high median occipital crest, but at Makatea, one of the Tuamotu Archipelago in Polynesia, I caught females with a moderately high crest.

Day's figure shows the male. Preserved specimens vary greatly in colour ; typically males are brown with darker cross bars, but they may be uniform dark brown, or with a few darker spots left as the cross bars disappear ; others are black, with pale or whitish cross bars or narrow whitish cross lines. The forward half of the dorsal has longitudinal, the rear half diagonal rows of pale yellowish or whitish spots and lines, which usually disappear in alcohol. The anal has 2 rows or lines of bluish spots, which likewise usually disappear in preserved specimens : the rays are white tipped.

Typical females are like Günther's figure of *S. edentulus* cited above. In alcohol the colour is brown, faintly cross-banded by darker bands and thickly strewn with many reddish to dark brown spots. The dorsal, caudal, and pectorals are covered with similar but smaller spots. The anal has 2 or 3 rows of dark brown spots, the rays white tipped.

A specimen, 67 mm. long, is from the south-east coast of Long Island Middle Andaman ; 3 others, 31 to 72 mm. in length, are labelled "Andamans"

Salarias hasselti Bleeker.

1850. *Salarias hasselti*, Bleeker, *Nat. Tijds. Ned. Ind.* I, p. 257, fig. 14.
 1855. *Salarias Hasseltii*, Bleeker, *Nat. Tijds. Ned. Ind.* VIII, p. 174.
 1876. *Salarias Hasseltii*, Day, *Fishes India*, p. 332.

Dorsal XII-XIII/23 ; anal I/23-24.

This Blenny is near *Salarias edentulus*, but is much slenderer, the depth 6.5 or 7 times in the length. There are no tentacles on the nape,

while those on the eye and nostril are short and arborescent. Canines none. Males have an elevated semi-elliptical occipital crest, which is lacking on females.

The body is bluish to violet rose above in life, pearly rose below, the head violet; along the upper part of the side are 4 or 5 diffuse yellow or orange stripes, with more or less evident violet cross bands. The dorsals are spotted or obliquely striped with violet or dusky violet; the anal is yellow in females, dusky in males, with a very dark margin; the caudal is yellow in females, and dusky yellow in males, with bluish roseate stripes between the rays. In alcohol the colours largely disappear, the longitudinal stripes appearing as pale bands.

Day "obtained one specimen, 3 inches long, at the Andamans." I have seen no specimens, the description being compiled.

***Salarias frenatus* Cuv. and Val.**

1836. *Salarias frenatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 342.

1876. *Salarias frenatus*, Day, *Fishes India*, p. 335, pl. lxx, fig. 9.

1891. *Salarias frenatus*, Sauvage, *Poiss. Madagascar*, p. 388, pl. xli a, fig. 5.

Dorsal XII-XIII/15-18; anal I/17-19 or II/16-19.

The depth is 4.2 to 5.1 times, the head 4.4 to 4.6, the caudal 4.25 to 4.4 in the length. The eye is 3.9 to 4, the vertical snout 2.5 to 2.75 times in the head. The broad, pointed tentacle equals the eye, its margins fimbriate; a very small simple nasal tentacle, none at the nape. Very large specimens have a slight indication of a nuchal crest, but never develop a real crest. The upper lip is denticulated. The deeply notched dorsal is free from the caudal. The original description erred in saying that the dorsal is not divided.

In life there are more or less vertical pearly blue or white bands with dark margins on the snout, preopercle, opercle, and under side of the head. In alcohol the bands fade, leaving their margins as dark lines extending downward from the eye. The body colour of preserved specimens varies from slate blue, crossed by 8 or 10 darker blue bands, to bluish or brownish gray, with brown or bluish brown cross bands. Fading of the cross bands leaves them as spots along the sides. Some of the Andaman examples are so melanistic that the stripes on the head are almost entirely masked by the general dark brown colour, but the spots on the sides, shown in the figures of Day and Sauvage, can always be made out. The first dorsal is clear to dusky, often with a blackish spot above between the first and second spines; the second dorsal with diagonal dark brown bands. The caudal varies from clear to dusky, typically cross-banded with rows of brown spots. The anal is clear, usually with a submarginal row of brown spots on the membrane. The pectoral is clear above, its lower half brown.

This well-marked Blenny is evidently very abundant at Port Blair, where the following were obtained, ranging in length from 12 to 63 mm.:— 52 from Ross Island; 10 from East Ross Island; 6 from South Corbyn's Cove; 4 from Murdakhari Bay, and 2 labelled only Port Blair. One of 43 mm. is from Brookesabad, South Andaman. The collection also contains 71 specimens, 34 to 80 mm. in length, marked only "Andamans".

***Salarias marmoratus* Bennet.**

1828. *Salarias marmoratus*, Bennet, *Zool. Journ.* IV, p. 35.
 1855. *Salarias arenatus*, Bleeker, *Nat. Tijds. Ned. Ind.* VIII, p. 173.
 1876. *Salarias marmoratus*, Day, *Fishes India*, p. 335.
 1876. *Salarias marmoratus*, Günther, *Fische der Südsee* II, p. 204, pl. cxvi,
 fig. B.

Dorsal XII-XIII/14-16 ; anal I-II/16-17. The dorsal fin is deeply notched, not extending on the caudal. The depth is 4·8 to 5·2, the head 3·8 to 4·3 times in the length. The marginally fringed orbital tentacle equals or nearly equals the eye. There is no crest on the head. The upper lip is rather coarsely crenulate. There is a strong canine in the lower jaw, and sometimes a small one in the upper jaw.

A specimen, 31 mm. long, from Murdakhari Bay, Port Blair, and one of 16 mm. from Brookesabad, South Andaman. Another of 32 mm. is from the east coast of Long Island, Middle Andaman.

These young specimens agree with the description of *S. arenatus*, which according to Günther is a synonym of *S. marmoratus*. They are pale tan or gray, with 7 double brown dark brown cross bars, which break up into spots, especially on the posterior half. There is a dot behind the eye, which in more typical specimens becomes a dark vertical bar. The dorsal and caudal are colourless, heavily marked with cross rows of brown spots.

***Salarias guttatus* Cuv. and Val.**

1836. *Salarias guttatus*, Cuvier and Valenciennes, *Hist. Nat. Poiss.* XI, p. 28.
 1905. *Salarias undecimalis*, Jordan and Seale, *Proc. U. S. Nat. Mus.* XXVIII,
 p. 800, fig. 18.
 1936. *Salarias guttatus*, Herre, *Publ. Field Mus. Nat. Hist.* XXI, p. 409.

Dorsal XI-XII/17-18 ; anal I/18-19.

The body is slender, the posterior half laterally compressed, the front of the head vertical ; the depth is 4·4 to 4·8, the head 4 to 4·1, the caudal 4·1 to 4·5 times in the length. The eyes are very prominent, projecting upward and forward beyond the head contour ; the eye is 3 to 3·2, the snout 2·85 to 3 times in the head.

The low dorsal is deeply divided and free of the caudal fin. Small simple tentacles are present on the eyes, nape, and nostrils. There are no canines and no crest on the head.

The colour in alcohol is from pale brown to reddish brown, with 6 or 7 pale or white double cross bands on the sides, forked on the lower half ; often the upper part breaks up into white dots ; the body colour appears as darker bands between the pale bands. Many short vertical violet to violet black lines and dots are on the upper anterior half ; usually a row of 15 to 20 black dots is just below the dorsal fin and often a row of larger black dots runs from above the pectoral to the caudal base. A very important character is the presence of one or two large white or very pale brown circular spots on the lower pectoral base and right in front of it ; another equally important mark is a dark purplish or violet spot or ring on each side of the throat, which may turn to brown in alcohol. The dorsal and caudal are barred by rows of brown

spots on the rays ; the anal is more or less darkened marginally, with paler tips on the rays.

A specimen, 37 mm. long, was taken near Blair Reef, Port Blair. This distinctive rock-skipper has been known previously from Samoa to the Philippines and Singapore.

***Salarias interruptus* Bleeker.**

1857. *Salarias interruptus*, Bleeker, *Nat. Tijds. Ned. Ind.* III, p. 68.

1861. *Salarias interruptus*, Günther, *Cat. Fishes* III, p. 250 (compiled).

Dorsal XIII/19-20 ; anal I/19-20.

A single example, 41 mm. long, from the " Andaman Islands " This handsome and little known Blenny was described by Bleeker from Buru, and is common in the Philippines, where I collected 50 specimens.

The depth and caudal are about equal in adults, 5 to 5.6 times, the head 4.2 to 4.5 times in the length ; the young are much slenderer, the depth 6.5 or more in the length. There is a small simple tentacle on the eye and a small bifid or trifid nasal one ; no tentacle on the nape and no crest. The lower jaw has a very small posterior canine on each side. The deeply notched dorsal is not attached to the caudal.

The colour in alcohol is warm reddish brown, with several rows of conspicuous short blackish brown to black lengthwise bars and spots. There are 3 rows of black spots on the first part of the dorsal and 4 or 5 rows on the rear half ; the caudal has 5 or 6 cross bars of similar spots. The anal has a row of black spots between the rays, a submarginal dusky band, and a white margin. Large examples have a blue dot or bar behind the eye, and sometimes one below it. This rock-skipper gets to be 60 mm. long, although few seem to exceed 50 mm.

Family CARAPIDAE.

***Carapus homei* (Rich.).**

1844-48. *Oxybeles homei*, Richardson, *Voy. Erebus & Terror, Fishes*, p. 74, pl. lxiv, figs. 7-18.

1862. *Fierasfer homei*, Günther, *Cat. Fishes* IV, p. 382.

1928. *Carapus homei*, Fowler, *Mem. Bishop Mus.* X, p. 445.

A specimen, 80 mm. long, was taken from a large sea-urchin at Long Island, Middle Andaman. This strange little fish lives commonly in certain species of holothurians, but also takes up its residence in starfishes and other echinoderms, and in pearl oysters. In life it is colourless or very pale and translucent.

Family TETRAODONTIDAE.

The flesh of some species of Puffer is violently poisonous, and all are dangerous or of very doubtful value as food. Day gives a list of 5 species of *Tetraodon* obtained by him at the Andamans, and observe that they are all used as food by Andamanese.

Chelonodon patoca (Ham.).

1822. *Tetrodon patoca*, Hamilton, *Fishes Ganges*, p. 7, pl. xviii, fig. 2.
 1865. *Leiodon patoca*, Bleeker, *Atlas Ichth.* V, p. 76, pl. ccx, fig. 2.
 1878. *Tetrodon patoca*, Day, *Fishes India*, p. 703, pl. clxxxii, fig. 4.
 1924. *Chelonodon patoca*, Herre, *Phil. Journ. Science* XXV, p. 487.

7 very young specimens, 7 to 9 mm. in length, were taken at Viper Island, Port Blair, and one 16 mm. long at Tytler's Ghat, South Andaman.

Tetraodon immaculatus Bl. and Schn.

1801. *Tetraodon immaculatus*, Bloch and Schneider, *Syst. Ichth.* p. 507.
 1865. *Crayracion manillensis*, Bleeker, *Atlas Ichth.* V, p. 69, pl. ccviii, fig. 2.
 1865. *Crayracion immaculatus*, Bleeker, *Atlas Ichth.* V, p. 75, pl. ccxi, fig. 1.
 1870. *Tetraodon immaculatus*, Day, *Proc. Zool. Soc. London*, p. 703.
 1878. *Tetraodon immaculatus*, Day, *Fishes India*, p. 703, pl. clxxxiii, fig. 4.
 1924. *Tetraodon immaculatus*, Herre, *Phil. Journ. Sci.* XXV, p. 489.

2 young examples, 39 and 40 mm. long, were taken from a creek north of South Corbyn's Cove, Port Blair.

Tetraodon reticularis Bl. and Schn.

1801. *Tetraodon reticularis*, Bloch and Schneider, *Syst. Ichth.*, p. 506.
 1865. *Crayracion testudineus*, Bleeker, *Atlas Ichth.* V, p. 71, pl. ccxii, fig. 3.
 1870. *Tetraodon reticularis*, Day, *Proc. Zool. Soc. London*, p. 703.
 1878. *Tetraodon reticularis*, Day, *Fishes India*, p. 705, pl. clxxx, fig. 5.
 1924. *Tetraodon reticularis*, Herre, *loc. cit.* XXV, p. 491.

A juvenile specimen, 35 mm. long, from a creek north of South Corbyn's Cove, Port Blair.

Family ANTENNARIIDAE.

Antennarius commersoni (Shaw).

1798. *Lophie commersoni*, Lacépède, *Hist. Nat. Poiss.*, p. 327, pl. xiv, fig. 3.
 1804. *Lophius commersoni*, Shaw, *Gen. Zool.* V, p. 387.
 1817. *Chironectes commersonii*, Cuvier, *Mem. Mus.* III, p. 431, pl. xviii, fig. 1.
 1865. *Antennarius commersonii*, Bleeker, *Atlas Ichth.* V, p. 20, pl. cxcvii, fig. 3.
 1876. *Antennarius commersoni*, Günther, *Fische der Südsee* II, p. 163, pl. t, figs. B and C, and pl. cvi.

A young specimen, 23 mm. long, was taken from Murdakhari Bay, Port Blair.