

ICHTHYOLOGICAL OBSERVATIONS MADE DURING THE ANDAMAN
CRUISE OF THE "NAGASAKI-MARU", 1-14 NOVEMBER 1981

*Thosaporn Wongratana**

ABSTRACT

The fishes recorded in this paper were collected off the Andaman coast of Thailand in the range of water depth of 31 to 420 m during 1-14 November, 1981, during an expedition conducted jointly by various governmental departments of Thailand, and Nagasaki University of Japan. The experimental fishing was done by means of otterboard trawl nets and deep sea shrimp traps operated by the vessel "Nagasaki-Maru". The systematic list comprises 256 species of 91 families.

INTRODUCTION

During 1-14 November, 1981, the Department of Fisheries and Department of Geology of Thailand, Nagasaki University, Japan, and Chulalongkorn University (represented by me) collaborated in a brief exploration of the shallow, mid and deep sea fish fauna of the Andaman Sea aboard the 587-tonne vessel "Nagasaki-Maru". In this report I present a preliminary list of 256 species of 91 families which were collected, together with important references, with a view to facilitating further work on the collection and identification of the interesting fish fauna of the Andaman Sea.

The relatively unexploited deep water fauna is of potentially great importance to the economy of the country as a partial replacement of the over-harvested inshore fauna. It is therefore hoped that fisheries authorities will undertake a well planned, comprehensive survey of the fauna in the near future.

Fishes of the Andaman Sea have been collected and studied ever since the time of Dr. T. CANTOR (1850). His work the "*Catalogue of Malayan Fishes*" which comprised 292 species, was based on collections at Penang, supplemented by those from Malacca, Singapore and islands on the west coast of Peninsular Malaysia. F. DAY (1870) also produced a report on 255 species in his "*On the fishes of the Andaman Islands*", 18 of which were newly described by him.

* Department of Biology, Faculty of Science, Chulalongkorn University, Bangkok 10500, Thailand.

In 1904, G. DUNCKER published "*Die Fische der malayischen Halbinsel*", based on collections made at Kuala Lumpur and elsewhere in Selangor and in Malacca, Jahore and Singapore. He collected 300 species, about a hundred of which were freshwater fishes, and listed 480 known species. Numerous other works of various size have since then produced by scholars mostly from Europe and America, e.g. M. PARK, P. BLEEKER A. GÜNTHER, A. ALCOCK, F. STEINDACHNER, R.E. LLOYD, C.T. REGAN, H.W. FOWLER, A.W.C.T. HERRE, G.S. MYERS, C.N. MAXWELL, M.W.F. TWEEDIE, S.L. HORA, J.S. SCOTT, E.R. ALFRED, etc.

Within the Thai territorial waters, extensive collections were made in the Andaman Sea by the Fifth Thai-Danish Expedition, January to March, 1966, but no ichthyological results have yet been published. To my knowledge the only related publication from the expedition is that of PIYAKARNCHANA & RATANAVICHIEEN (1973). Several other Thai biologists have at different times collected fishes in that area in recent years, notably officials of the Phuket Marine Biological Center, Phuket Marine Fisheries Station, Faculty of Fisheries at Kasetsart University and the participants of the FAO/DANIDA Workshop organised at the Phuket Marine Biological Center during the preparation of the "*FAO Identification Sheets for Statistical Purposes*" in late 1972. A collection of Andaman fishes was also made by the Exploratory Division of the Department of Fisheries in early 1975 and a provisional list of deep sea fishes was published by MANPRASIT (1976).

Added to the above collection, the Marine Fisheries Laboratory of the Department of Fisheries, Bangkok, holds a good depository of fishes of the Andaman Sea as well as of other localities. They were chiefly collected by myself while an official at the laboratory (1965-1980). Unfortunately, most of these collections, except those at the Phuket Marine Biological Center, Marine Fisheries Laboratory, and the Kasetsart University Museum of Fisheries, are fragmentary and have been poorly maintained.

The marine fish fauna of the Andaman coast of Thailand is made up of three distinct elements, one consisting of tropical estuarine and brackish water fishes of the Indo-West Pacific. The second is the shallow water fishes that have extended their ranges from the above areas outward to near the edge of the narrow continental shelf. This species group consists mainly of the marketed trawl fishes, but also includes species from the coral reef areas. Third are the deep water fishes (at depths of over 150 m) which are of interest for the future fisheries productivity of the country as well as to students of marine science, ecology and zoogeography. Many species of the deep waters possess special organs adapted to life there, such as photophores, telescopic eyes

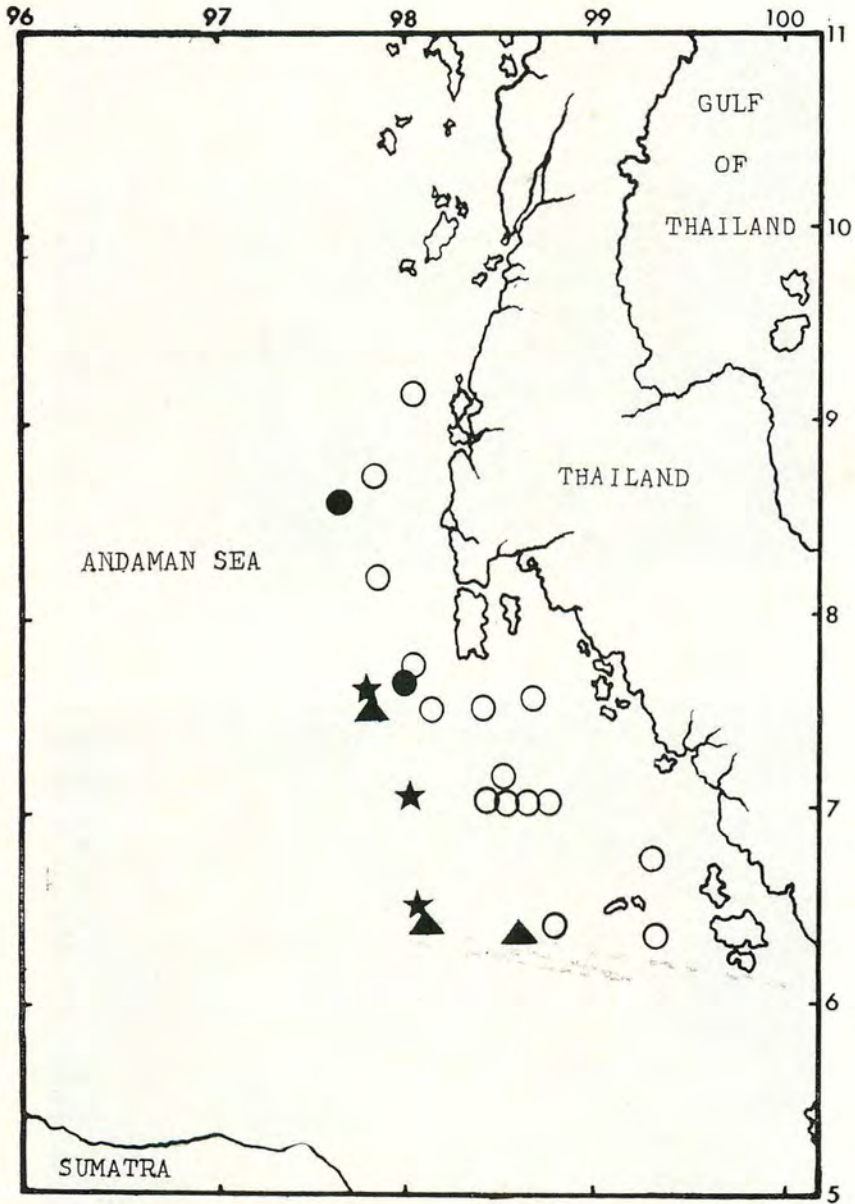


Figure 1. Sketch-map of the Andaman coast of Thailand showing collecting stations of the "Nagasaki-Maru", 1-14 November, 1981. Open circles = shallow bottom trawls; closed circle = mid-water trawls; stars = deep water trawls, and triangles = deep sea shrimp traps.

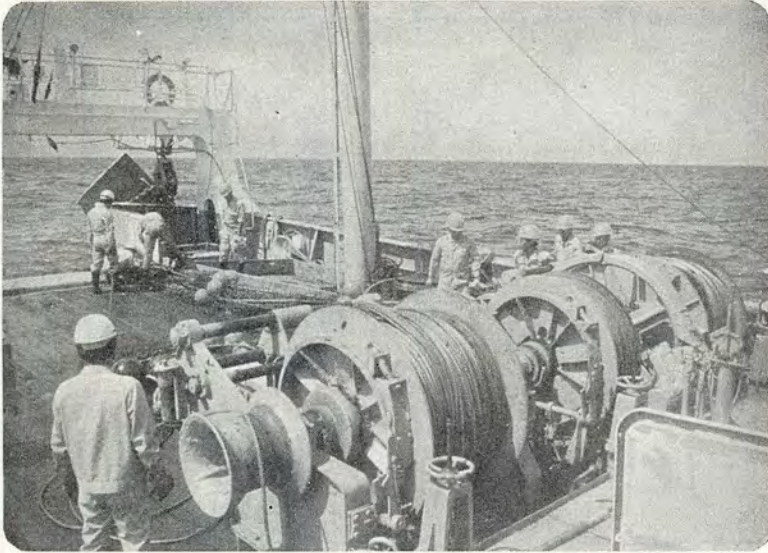


Figure 2. Hauling of the otterbroad trawl catch.



Figure 3. Catch from the second deep sea bottom trawl at 267-286 m; 7° 04.5' N, 98° 04.8' E; 9 November, 1981 at 1210 h. Temperature at the greatest depth 11.85°C; salinity 35.17 ppt.

and fins with elongated appendages. This group is not found in the shallow water of the continental shelf and is defined as autochthonous deep sea fishes by A.R. ANDRIYASHER (1935, 1953) and RASS (1959) (*Fide* RASS, 1966). Others include the secondary deep sea fishes (RASS, 1966) which belong to families distributed mainly in the waters of the continental shelf. They do not have the special organs characteristic of the first group, but they descend to great depths in oceanic trenches.

METHODS

Fish specimens were chiefly obtained by bottom trawl nets and by shrimp traps at depths between 31 and 420 m. The stations were scattered from offshore Ranong in the north to Satun in the south (see map). No operations were done in Phang-nga bay. The bait-fish used in the traps were 10-13 cm SL (= standard length, measured from tip of snout to base of tail fin) sardines, *Sardinella gibbosa*. After brief examination for general taxonomic detail and colour notes, the representatives of selected species were preserved directly in 8% formalin. Right after the return of the expedition the collections were studied at the Department of Biology, Faculty of Science, Chulalongkorn University, and a comprehensive report of the catches is in preparation. Because of unavoidable delay in producing the general report, it seems advisable to publish a part of the results in the present form.

Many of the commoner species were not preserved for lack of room but their identities were thoroughly confirmed on board ship. All collected specimens were transferred to alcohol and deposited in the collection of the Department of Biology, Faculty of Science, Chulalongkorn University. More than 50 species are herein reported in Thailand for the first time. Another collection was made on board the ship by Dr. S. Sontirat, and is kept at the Kasetsart University Museum of Fisheries, Bangkok. It includes many species not present in my collections, but their names are included in this report.

RESULTS

The best represented family of fishes secured in the survey was the Carangidae. It included 24 species which made up 9.4 percent of the total number of species. The next largest family was Lutianidae represented by 18 species, and constituting 7.0 percent of all species. Nemipteridae, Serranidae and Tetraodontidae occupied the third, fourth and fifth places, and included 15, 11 and 9 species, constituting 5.9, 4.3 and 3.5 percent of all recorded species, respectively. No fishes of these families appeared

in the deep catches (267-420 m). The operation of two mid-water trawls failed to yield any catches, and only the second trawl yielded about 1.5 kg of *Rhabdamia gracilis*, a small species of apogonid fish not greater than 5 cm SL.

In terms of numbers of individuals, the most common species in the catches (estimated by eye) from 15 shallow water (31-92 m) bottom trawlings were: *Leiognathus bindus*, *Priacanthus tayenus*, *Atule mate*, *Caranx armatus*, *Saurida undosquamis*, *Nemipterus japonicus*, *N. delagoae*, *N. nematophorus*, *N. tolu*, *Priacanthus macracanthus*, *Secutor insidiator*, *Carangoides malabaricus*, *Lutianus lineolatus*, *Leiognathus smithursti*, *Upeneus bensasi*, *U. heptacanthus*, *Siganus canaliculatus*, *Lethrinus choerorhynchus*, *Cylichthys orbicularis*, *Nemipterus metopias*, *Arioma indica*, *Selar boops*, *S. crumenophthalmus*, *Alepes melanopterus*, *Pentaprion longimanus*, *Leiognathus leuciscus* and *Gymnocranius griseus*.

The common species in the two deep water (267-303 m) bottom trawlings were: *Diaphus thiolliorei*, *Neoscopelus macrolepidotus*, *Coelorhynchus radcliffei*, *Malacocephalus laevis*, *Neoepinnula orientalis*, *Promethichthys prometheus*, *Psenopsis anomala*, *Cubiceps squamiceps*, *Synagrops philippinensis*, *S. malayanus*, *Bembrops caudimaculata* and *Haplopleuron caninum*.

The big fishes caught during the surveys appeared to be cartilaginous fishes of the following species: *Stegostoma fasciatum* (127-142 cm TL = total length), *Dasyatis melanospila* (90-150 cm across disc) and *Squatina japonica* (115 cm TL). Only *Uroconger lepturus*, *Saurida tumbil*, *S. undosquamis*, *Trichiurus lepturus*, *Priacanthus hamrur*, *P. macracanthus* and *P. tayenus* were obtainable from both shallow and deep water trawls.

From the deep sea shrimp traps set at 89-93 m depth off Tarutao Island were taken *Uroconger lepturus*, *Saurida undosquamis*, *Lutianus lineolatus*, *Nemipterus delagoae* and *Abalistes stellaris*; and from 115-128 m depth farther from Tarutao Island, *Saurida undosquamis*, *Hapalogenis mucronatus*, *Scolopsis inermis*, *Scorpaena neglecta*, and *Scorpaenopsis gibbosa*; and at 267-420 m off southwest Phuket Island, *Eptatretus* sp., *Cephaloscyllium fasciatum* *C. umbratile*, *Squalus fernandinus*, *Uroconger lepturus*, *Gymnothorax fimbriatus*, *Therapon theraps* (possibly trapped in near surface) and *Watasea fasciatus*. The peculiar occurrence of an eight-gilled hagfish of the genus *Eptatretus* in this catch represents the first valuable finding of the cyclostome in the tropical Indian Ocean, and certainly the first scientific report of the agnathous fish for Thailand.

Fishes caught by hand-angling from the ship during our spare time included : *Chiloscyllium punctatum*, *Gymnothorax boschi*, *Katsuwonus pelamis*, *Carangoides malabaricus*, *Lutianus lineolatus*, *Nemipterus delagoae*, *N. hexodon*, *N. peronii*, *N. tamburoides*, *Siganus canaliculatus* and *Abalistes stellaris*.

Because of the lack of some pertinent literature nine types could not be identified to species and are listed by genus or with a question mark. They will be reported later in a separate paper.

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Appendix. Systematic list of species collected off the Andaman coast of Thailand during 1-14 November, 1981.

Superclass Agnatha

Family Myxinidae

1. *Eptatretus* sp. (will be described as a new species by the author).

Superclass Pisces

Family Scylliorhinidae

2. *Cephaloscyllium fasciatum* Chan, 1966
3. *C. umbratile* Jordan et Fowler, 1903
4. *Chiloscyllium punctatum* Müller et Henle, 1841

Family Orectolobidae

5. *Stegostoma fasciatum* (Hermann, 1783)

Family Lamnidae (Carchariidae)

6. *Mustellus manazo* Bleeker, 1857

Family Sphyrnidae

7. *Sphyrna lewini* (Griffith, 1834)

Family Squalidae

8. *Squalus fernandinus* Molina, 1782

Family Squatinidae

9. *Squatina japonica* Bleeker, 1857

Family Rhinobatidae

10. *Rhinobatos schlegelii* Müller et Henle, 1838
11. *Rhynchobatus djiddensis* (Forsskal, 1775)

Family Rajidae

12. *Raja ocellifera* Regan, 1906

Family Dasyatidae

13. *Dasyatis imbricatus* (Bloch et Schneider, 1801)
14. *D. kuhlii* (Müller et Henle, 1841)
15. *D. melanospila* Bleeker, 1853 (= *D. brocki* (Schultz, 1953))
16. *Urolophus javanicus* (Martens, 1864)

Family Torpedinidae

17. *Nacine timlei* (Bloch et Schneider, 1801)

Family Albulidae

18. *Albula vulpes* (Linnaeus, 1758)

Family Chirocentridae

19. *Chirocentrus dorab* (Forsskal, 1775)

20. *C. nudus* (Swainson, 1839)
- Family Muraenesocidae
21. *Muraenesox talabon* (Cantor, 1850)
- Family Congridae
22. *Uroconger lepturus* (Richardson, 1845)
- Family Nettastomidae
23. *Nettastoma* sp.; a single specimen in bad condition.
- Family Echelidae
24. *Muraenichthys* sp.
- Family Ophichthyidae
25. *Ophichthys multiserialis* Norman, 1939 (= ? *Xirias revulsus* Jordan et Snyder, 1901)
26. *Pisoodonophis cancrivorus* (Richardson, 1844)
- Family Muraenidae
27. *Gymnothorax boschi* (Bleeker, 1853); a single specimen was obtained by angling.
28. *G. fimbriatus* (Bennett, 1831)
- Family Ariidae
29. *Arius thalassinus* (Rüppell, 1837)
- Family Synodontidae
30. *Saurida micropectoralis* Shindo et Yamada, 1972
31. *S. tumbil* (Bloch, 1795)
32. *S. undosquamis* (Richardson, 1848)
33. *Synodus hoshinonis*, Tanaka, 1917; formerly described as *S. variegatus* or *S. similis* by the present author.
34. *Trachinocephalus myops* (Bloch et Schneider, 1801)
- Family Sudidae (= Paralepididae)
35. *Lestidium philippinum* Fowler, 1934
36. *Maculisudis longipinnis* Kotthaus, 1967
- Family Myctophidae
37. *Diaphus thiolliorei* Fowler, 1934
38. *Myctophum pterotum* (Alcock, 1890)
39. A myctophid, closest to but differs from *Notolychnus* Fraser-Brunner, 1949.
- Family Astronesthidae
40. *Astronesthes richardsoni* Poey, 1853
- Family Neoscopelidae

41. *Neoscopelus macrolepidotus* Johnson, 1863
- Family Macrouridae (= Coryphaenoididae)
42. *Coelorhynchus radcliffei* Gilbert et Hubbs 1920
43. *Malacocephalus laevis* (Lowe, 1843)
- Family Gadidae
44. *Physiculus roseus* Alcock, 1891
- Family Psettodidae
45. *Psettodes erumei* (Schneider, 1801)
- Family Bothidae
46. *Arnoglossus intermedius* (Bleeker, 1866)
47. *Chascanopsetta lugubris* Alcock, 1894
48. *Engyproson grandisquama* (Schlegel, 1846)
49. *E. macroptera* Amaoka, 1963
50. *Grammatobothus polyophthalmus* Bleeker, 1866
51. *Laeops kitaharae* (Smith et Pope, 1906)
52. *L. lanceolatus* Franz, 1910 (= *L. clarus* Fowler, 1934)
53. *Pseudorhombus dupliciocellatus* Regan, 1905
54. *P. elevatus* Ogilby, 1912.
55. *P. triocellatus* (Bloch, 1801)
56. *P. sp.*; a species with a jet black spot on each pelvic fin.
- Family Pleuronectidae
57. *Brachypleuron novaezeelandiae* Günther. 1862
58. *Samaris cristatus* Gray, 1831
- Family Cynoglossidae
59. *Symphurus septemstriatus* (Alcock, 1891)
- Family Zeidae
60. *Cyttopsis roseus* Lowe, 1843
61. *Zeus nebulosa* Schlegel, 1847
- Family Grammicolepidae
62. *Xenolepidichthys dalgleishi* Gilchrist, 1922
- Family Berycidae
63. *Beryx splendens* Lowe, 1833
- Family Holocentridae
64. *Holocentrum rubrum* (Forsskål, 1775) (= *Adioryx ruber*)
65. *Myripristis murdjan* (Forsskål, 1775)
- Family Syngnathidae

66. *Hippocampus kuda* Bleeker, 1852
Family Fistulariidae
67. *Fistularia villosa* Klunzinger, 1871
Family Sphyaenidae
68. *Sphyaena forsteri* Cuvier, 1829
69. *S. jello* Cuvier, 1829
70. *S. obtusata* Cuvier, 1829
Family Scombridae
71. *Katsuwonus pelamis* (Linnaeus, 1758) ; a single specimen was obtained by angling.
72. *Rastrelliger brachysoma* (Bleeker, 1851)
73. *R. kanagurta* (Cuvier, 1816)
74. *Scomberomorus commerson* (Lacepède, 1802)
75. *S. guttatus* (Bloch et Schneider, 1801)
Family Gempylidae
76. *Neopinnula orientalis* Gilchrist et von Bonde, 1924
77. *Promethichthys prometheus* Cuvier, 1831
Family Trichiuridae
78. *Tentoriceps cristatus* (Klunzinger, 1884)
79. *Trichiurus lepturus* Linnaeus, 1758 (= *T. haumela* (Forsskål, 1775))
Family Stromateidae
80. *Parastromateus niger* (Bloch, 1788)
Family Nomeidae
81. *Arioma indica* (Day, 1870)
82. *Cubiceps squamiceps* (Lloyd, 1909) (= *C. natalensis* Gilchrist et von Bonde, 1923)
83. *Psenopsis anomala* Schlegel, 1844
Family Carangidae
84. *Alectis indicus* (Rüppell, 1828)
85. *Alepes melanoptera* Swainson, 1839 (= *Atule malam* Bleeker, 1851)
86. *Atopus atopus* (Bloch et Schneider, 1801)
87. *Atule mate* (Cuvier, 1833)
88. *Carangoides chrysonhrys* Valenciennes, 1833
89. *C. ciliaris* (Rüppell, 1830)
90. *C. ferdau* (Forsskål, 1775)
91. *C. fulvoguttatus* (Forsskål, 1775)
92. *C. gymnostethoides* Bleeker, 1850.
93. *C. malabaricus* (Bloch et Schneider, 1801)

94. *Caranx armatus* (Forsskål, 1775)
 95. *C. malampygus* Valenciennes, 1833
 96. *C. plumbeus* Jordan et Seale, 1906
 97. *Decapterus macrosoma* Bleeker, 1851 (= *D. layang* Bleeker, 1855)
 98. *D. maruadsi* (Temminck et Schlegel, 1842)
 99. *Gnathanodon speciosus* (Forsskål, 1775)
 100. *Selar boops* (Valenciennes, 1833)
 101. *S. crumenophthalmus* (Bloch, 1793)
 102. *Selaroides leptolepis* (Valenciennes, 1833)
 103. *Seriolina nigrofasciata* (Rüppell, 1828)
 104. *Ulua mentalis* Ehrenberg in Valenciennes, 1833 (= *Ulua mandibular* (Macleay, 1883))
 105. *Uraspis helvorus* (Forster in Schneider, 1801)
 106. *U. uraspis* (Günther, 1860)
- Family Menidae
107. *Mene maculata* (Bloch et Schneider, 1801)
- Family Rachycentridae
108. *Rachycentron canadus* (Linnaeus, 1766)
- Family Leiognathidae
109. *Gazza minuta* (Bloch, 1797)
 110. *Leiognathus bindus* (Valenciennes, 1835)
 111. *L. leuciscus* (Günther, 1860)
 112. *L. lineolatus* (Valenciennes, 1835)
 113. *L. smithursti* (Ramsay et Ogilby, 1886)
 114. *Secutor insidiator* (Bloch, 1787)
- Family Gerridae
115. *Gerres abbreviatus* Bleeker, 1850
 116. *G. filamentosus* (Cuvier, 1829)
 117. *G. oyena* (Forsskål, 1775)
- Family Apogonidae
118. *Apogonichthys ellioti* Day, 1878
 119. *Rhabdamia cypselurus* M. Weber, 1909
 120. *R. gracilis* (Bleeker, 1856)
 121. *Synagrops malayanus* (Bleeker, 1856) (= *S. adeni* Kotthaus, 1970)
 122. *S. philippinensis* (Günther, 1880)
- Family Serranidae
123. *Epinephelus amblycephalus* Bleeker, 1851
 124. *E. areolatus* (Forsskål 1775)
 125. *E. bleekeri* (Vaillant et Bocourt, 1877)

126. *E. corallicola* (Cuvier, 1828)
127. *E. fuscoguttatus* (Forsskål, 1775)
128. *E. glaucus* (Day, 1870) ; an undescribed species of *Epinephelus* on page 228 by Kyushin, Amsoka, Nakaya and Ida (1977) is possibly this fish.
129. *E. megachir* (Richardson, 1846)
130. *E. nebulosus* (Cuvier, 1828) (= *E. moara* (Schlegel, 1842))
131. *E. sexfasciatus* (Cuvier, 1828)
132. *E. tauvina* (Forsskål, 1775)
133. *Rhomboserranus* sp.

Family Priacanthidae

134. *Priacanthus hamrur* (Forsskål, 1775) (= *P. blochii* Bleeker, 1853)
135. *P. macracanthus* Cuvier, 1829
136. *P. tayenus* Richardson, 1846

Family Lutianidae

137. *Caesio crysozonus* Cuvier, 1830
138. *C. erythrogaster* Cuvier, 1830
139. *C. pisang* Bleeker, 1853
140. *Lutianus argentimaculatus* (Forsskål, 1775)
141. *L. johni* (Bloch, 1792)
142. *L. kasmiara* (Forsskål, 1775)
143. *L. lineolatus* (Rüppell, 1828)
144. *L. lutianus* Bloch, 1790
145. *L. malabaricus* (Bloch et Schneider, 1801)
146. *L. russellii* (Bleeker, 1849)
147. *L. sanguineus* (Cuvier, 1828)
148. *L. sebae* (Cuvier, 1828)
149. *L. vitta* (Quoy et Gaimard, 1824)
150. *L. sp.* (= ? *L. altifrontalis* Chan, 1970)
151. *Paracaesio xanthurus* Bleeker, 1864 (= *Aetiasis cantharoides* Barnard, 1937)
152. *Pinjalo pinjalo* Bleeker, 1850
153. *Pristipomoides multidentis* (Day, 1870)
154. *P. typus* Bleeker, 1852

Family Pomadasysidae

155. *Hapalogenys mucronatus* (Eydoux et Souleyet, 1841)
156. *Plectorhynchus nigrus* (Cuvier, 1830)
157. *P. pictus* (Thunberg, 1792)
158. *Pomadasys hasta* (Bloch, 1790)
159. *P. maculatus* (Bloch, 1797)

Family Nemipteridae

160. *Nemipterus bathybius* Snyder, 1911
161. *N. delagoae* J.L.B. Smith, 1941
162. *N. hexodon* (Quoy et Gaimard, 1824)
163. *N. japonicus* (Bloch, 1791)
164. *N. mesoprion* (Bleeker, 1853)
165. *N. metopias* (Bleeker, 1852)
166. *N. nematophorus* (Bleeker, 1853)
167. *N. peronii* (Valenciennes, 1830)
168. *N. tambuloides* (Bleeker, 1853)
169. *N. tolu* (Valenciennes, 1830)
170. *Scolopsis dubiosus* M. Weber, 1931.
171. *S. inermis* (Schlegel, 1842)
172. *S. personatus* (Valenciennes, 1830)
173. *S. taeniopterus* (Valenciennes, 1830)
174. *S. torquatus* Cuvier, 1830

Family Theraponidae

175. *Therapon theraps* (Cuvier, 1829)

Family Lethrinidae

176. *Lethrinus choerorhynchus* (Schneider, 1801.)
177. *L. lentjan* (Lacepède, 1802)
178. *L. miniatus* (Schneider, 1801)

Family Pentapodiidae

179. *Gymnocranius elongatus* Senta, 1973
180. *G. griseus* (Schlegel, 1843)
181. *G. robinsoni* (Gilchrist et Thompson, 1908)

Family Sparidae

182. *Argyrops spinifer* (Forsskal 1775)

Family Mullidae

183. *Upeneus bensasi* (Schlegel, 1842)
184. *U. heptacanthus* Lacepède, 1801 (= *U. cyclostomus* (Lacepède, 1801))
185. *U. moluccensis* (Bleeker, 1855)
186. *U. sulphureus* Cuvier, 1829
187. *U. tragula* Richardson, 1846

Family Caproidae

188. *Antigonia rubescens* (Günther, 1860)

Family Platacidae

189. *Platax orbicularis* (Forsskal, 1775)

Family Chaetodontidae

190. *Coradion chrysozonus* (Cuvier et Valenciennes, 1831)

191. *Heniochus acuminatus* (Linnaeus, 1758)

192. *Parachaetodon ocellatus* (Cuvier et Valenciennes, 1831)

Family Pomacanthidae

193. *Pomacanthodes annularis* (Bloch, 1787)

Family Siganidae

194. *Siganus canaliculatus* (Park, 1797) (= *S. oramin* (Bloch et Schneider, 1801))

Family Scorpaenidae

195. *Apistus carinatus* (Bloch et Schneider, 1801)

196. *Pontinus macrocephalus* (Sauvage, 1881)

197. *Pterois russelli* Bennett, 1831

198. *Scorpaena neglecta* Schlegel, 1842

199. *Scorpaenopsis gibbosa* (Bloch et Schneider, 1801)

200. *Setarches longiceps* (Günther, 1880) (= ? *S. guentheri* Johnson, 1862)

Family Synanceiidae

201. *Inimicus cuvieri* (Gray, 1835)

202. *Minous trachycephalus* Bleeker, 1854

Family Platycephalidae

203. *Elates ransonnetti* (Steindachner, 1876)

204. *Platycephalus crocodilus* Tilesius, 1812

205. *P. macracanthus* (Bleeker, 1869)

206. *P. pristiger* Cuvier, 1829

207. *P. sculptus* (Günther, 1880)

208. *P. tuberculatus* (Cuvier, 1829)

Family Bembridae

209. *Brachybembras* sp.

Family Hoplichthyidae

210. *Hoplichthys citrinus* Gilbert, 1903

Family Peristediidae

211. *Peristedion adeni* (Lloyd, 1907)

Family Triglilidae

212. *Lepidotrigla spiloptera* Günther, 1880 (= *L. stigmapteron* Fowler, 1934)

213. *Trigla* sp.

Family Dactylopteridae

214. *Dactyloptena orientalis* (Cuvier, 1829)

Family Pomacentridae

215. ? *Abudefduf anabatoides* (Bleeker, 1847)

216. *Dasyllus trimaculatus* (Rüppell, 1828)

Family Labridae

217. *Chaerodon robustus* Günther, 1862
 218. ? *Xiphocheilus typus* Bleeker, 1856
- Family Echneidae
 219. *Exheneis naucrates* Linnaeus, 1758
- Family Callionymidae
 220. *Callionymus japonicus* Houttuyn, 1882
 221. *Dactylopus dactylopus* Bennett in Valenciennes, 1837
- Family Parapercidae
 222. *Parapercis pulchella* (Schlegel, 1843)
- Family Chamsodontidae
 223. *Champsodon guentheri* Regan, 1908 (= *C. vorax* Günther, 1880)
- Family Bembropsidae
 224. *Bembrops caudimaculata* Steindachner, 1877
- Family Uranoscopidae
 225. *Uranoscopus bicinctus* Schlegel, 1842
 226. *U. oligolepis* Bleeker, 1878
- Family Brotulidae
 227. *Hypopleuron caninum* H.M. Smith et Radcliffe, 1913
 228. *Watasea fasciatus* (H.M. Smith et Radcliffe, 1913)
- Family Triacanthidae
 229. *Atrophacanthus danae* Frasser-Brunner, 1950
 230. *Halimochirugus alcocki* M. Weber, 1913
 231. *Pseudotriacanthus strigilifer* Cantor, 1850
- Family Balistidae
 232. *Abalistes stellaris* Bloch et Schneider, 1801
 233. *Odonus niger* (Lacepède, 1798)
- Family Monacanthidae
 234. *Alutera monoceros* (Osbeck, 1757)
 235. *Cantherhines multilineatus* (Tanaka, 1918)
 236. *Paramonacanthus curtiorhynchus* (Bleeker, 1855); this is possibly the male fish of the next species.
 237. *P. choirocephalus* (Bleeker, 1852)
- Family Ostraciidae
 238. *Rhinesomus concatenatus* (Bloch, 1785)
 239. *Rhynchostracion nasus* (Block, 1785)
 240. *Tetrosomus gibbosus* (Linnaeus, 1758)
- Family Tetraodontidae
 241. *Amblyrhynchotes honckenii* (Bloch, 1785)

- 242. *Arothron immaculatus* (Bloch et Schneider, 1801)
- 243. *A. stellatus* (Bloch, 1785)
- 244. *Chelonodon patoca* (Hamilton-Buchanan, 1822)
- 245. *Sphoeroides inermis* Schlegel, 1850
- 246. *S. lunaris* Bloch et Schneider, 1801
- 247. *S. scleratus* Gmelin, 1788
- 248. *S. spadiceus* Richardson, 1845
- 249. *S. vermicularae* (Temminck et Schlegel, 1842)

Family Diodontidae

- 250. ? *Chilomycterus pacomaculatus* von Bonde, 1923
- 251. *Cylichthys orbicularis* (Bloch, 1785)
- 252. *Diodon maculifer* Kaup, 1855

Family Lophiidae

- 253. *Lophiodes lugubris* Alcock, 1894

Family Ogcocephalidae

- 254. *Haliotea stellata* Vahl, 1798

Family Chaunacidae

- 255. *Chaunax pictus* Lowe, 1849

Family Pegasidae

- 256. *Pegasus draconis* Linnaeus, 1766

Addendum

While this paper was in press, two specimens of *Scolopsis aspinosa* Rao et Rao were found among my present collection of *S. inermis* by Dr. Berry C. Russell of the Museum and Art Galleries of the Northern Territory, Darwin, Australia, to whom I thank very much for correcting my error.