

**ADDITIONAL NOTES TO MY PAPER  
„THE FISHFAUNA OF THE ROKAN MOUTH”.**

By

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**Fisheries.**

In my paper, "The fishfauna of the Rokan mouth", which appeared in *Treubia* Vol. XIII, 1931, I have laid down the results of two visits in 1929 to Bagan si Api Api, the well known Chinese fishingtown at the estuary of the Rokanriver in Sumatra. In November 1933 I got the occasion to pay a third visit to this interesting region and found the situation much altered.

The fisheries with the so called jeremal (described in detail by me in 1931) so characteristic for the Rokan estuary has decreased very much. On the one side this decrease has been caused by the general trade slump, so that many jeremal owners could not get any profit and could not keep in repair these costly fish-traps any longer, as as a matter of fact it will cost about 30000 guilders to build a big seajeremal and several thousand guilders are required every year for repairs. On the other side the currents in the estuary have altered their direction somewhat and as a consequence of this the catches of many jeremals have decreased.

The reader of my first article will remember, that a jeremal is a V shaped fish-trap. The axis of the V is placed in the direction of the ebcurent that drives the fish into the net which is fastened onto a rectangular wooden paling. And as it is impossible to remove a jeremal from one place to another, it is obvious that a decrease of the strength of the current or an alteration in the direction of it may have catastrophal results on the catches so that many jeremals have been abandoned.

In the place of the jeremal another fishing gear is used now. This is the so called si stji, already mentioned in my paper of 1931. I think it best to quote here, what I said of it at that time. "A si stji net is a bag-shaped net with two fine mazed wings in the shape of a V. The medial axis is placed in the direction of the current, just as is the case with a jeremal. In fact we have here a net, which catches in precisely the same manner as the jeremal, but with wings not consisting of a row of palmstems. The advantage of this over the jeremal is, that it is transportable, although when in use, it is, of course, fixed to the bottom by stakes.

Several of these nets are placed in a row side by side and each net has a length of 16 m (or 18 - 19 m) between the ends of the wings. Together they catch

In the Central Area the so called Central Bank has become much higher and falls quite dry for great ranges at ebb-time. This was not the case in 1929, some small spots excepted perhaps. Not only that the bank has become higher, but it has been much enlarged also. Between Pulu Halang Besar and Pulu Perdamaran a new island, of several hectares covered with young *Avicennia*-trees has arisen! As a consequence of this the main current of the ebb-tide flows now more in a north-western direction between Pulu Halang Besar and the main-coast. The young fry of many species, which formerly were so abundant on or near the Central Bank, can now be found in the caostal waters from Pulu Halang Besar to Panipahan. These parts of the sea belonged in 1929 to the Eastern and Western Border Area respectively.\*The biocoenose of the Eastern Border Area does not reach to the coast any longer now.

From the north point of Pulu Halang Besar we can draw a line in a north-western direction parallel to the coast. This is the new border line between the Eastern Border Area and the new area, which has arisen along the coast where the catches contain much young fry. How far the above mentioned line will have to be drawn I do not now, at any rate much more to the north-west than the little village of Panipahan.

This means that the old biocoenose of the Western Border Area has changed much farther in a north-western direction than was the case in 1929. Or it may be that the biocoenose of the Western Border Area does not exist as such any longer. I found some facts which seemed to support this supposition. So for instance specimens of *Stromateus cinereus*, one of the characteristic species of the Western Border Area is found now more to the east among catches consisting chiefly of species characteristic for the species of the Eastern Border Area. I had no time to investigate this interesting question.

When recapitulating the above-mentioned facts we may say:

1: The biocoenose of my old Central Area has shifted its place from the regions on and around the Central Bank to the coastal waters between Pulu Halang Besar and Panipahan and perhaps much farther.

2: The biocoenose of my Eastern Border Area does not reach any longer to the coast between Panipahan and Pulu Halang Besar as it did in 1929. In this part of the sea it is bordered now by a line which we can draw from the north-point of Pulu Halang Besar in a north-western direction parallel to the coast.

3: The biocoenose of my old Western Border Area has shifted much to the north-west along the coast. I do not know how far, but at any rate much farther than Panipahan. It may be, however, that the old biotope of the Western Border Area does not exist any longer and that it has mixed more or less with the biocoenose of the Eastern Border Area, which has remained more or less intact.

The above mentioned transformations have been caused chiefly by the changed configuration of the Central Bank and the birth of a new island between

Pulu Halang Besar and Pulu Perdamaran. These alterations of the sea-bottom have caused the currents to take another way. Most of the riverwater flows out now in north-western direction along Pulu Halang Besar and the coast, while in 1929 the water flowed out in a more regularly fanlike way, which is now the case only at the beginning of the ebb-tide when the Central Bank is yet submerged.

At the beginning of the ebb-tide water with a rather high salinity flows out, while at the end of it water with a low salinity or pure water comes out of the Rokan. Thus the mixing of this river-water with the sea-water of Strait Malacca occurs only at the end of the ebb-tide. This mixing takes place now in the vicinity of Pulu Halang Besar and beyond, while in 1929 the mixing occurred for the greater part in the region of the Central Bank and beyond. It is obvious that the biological conditions have been changed too, hence the shifting to other places of the several biotopes, when compared with the situation in 1929.

The reader may compare the chart (fig. 4) in this article with the chart in my former paper.

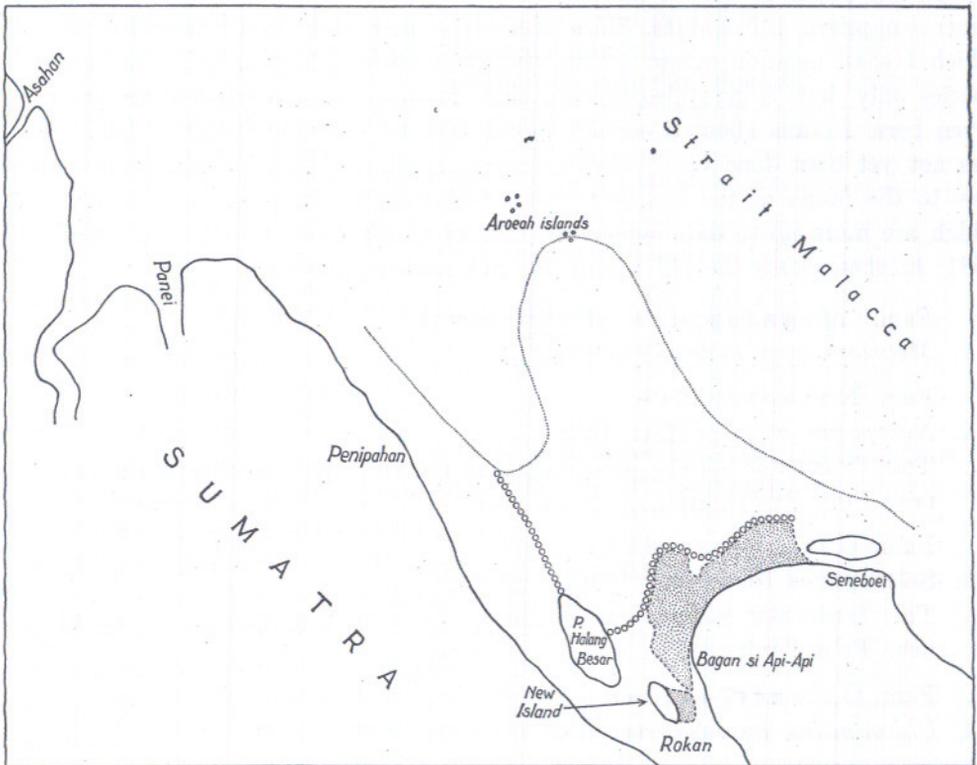


Fig. 4. — Chart of the Rokan mouth. .... seaward boundary of the fished area. ----- boundary of the bank which falls dry at low tide. oooooo borderline between the biocenoses of the Central Area and the Eastern Border Area.

### Extension of the fished area.

The extension of the fisheries in 1929 the reader can see on the chart of my former paper on this subject. The border line shows a marked bight in a north-western direction on the submarine continuation of the Central Bank. Nowadays the fished area has much increased again in the north western direction nearly to the small islands of the Aroa-archipelago, in the midst of Strait Malacca. This extension is caused by the si stji's only, as the sea is too deep here for jeremals. The catches of these si stji's consist of the same mixture of species as occurs in the Eastern Border Area. One would expect perhaps that so far towards the middle of Strait Malacca an other composition of species would appear, but I found this not to be the case. All si stji's, also those of the most north-western parts of the fished area, will catch for the greater part the same species as the jeremals. Only *Carangids* have become more numerous, partly in species which do not occur in the region where the jeremals are fishing. The same can be said of *Leiognathus*-species.

### List of the fishes occurring in the fished area in front of the Rokan mouth.

In my paper of 1931 I have dealt with all species in detail. My list of fishes comprised 149 species. Since then some new ones were found by me, which I shall mention below. I think it better however not to quote the new species only, but to give also the old ones, so that the whole list of fishes is given here. Details about a certain species will be mentioned only when this has not yet been done in my former paper. Species printed in bold type are new to the fauna of the Rokan mouth. Sometimes I have used other names, which are more up to date synonyms, instead of the ones given in my list of 1931. In these cases the old names are put between brackets.

Fam. *Megalopidae* (*Elopsidae*).

1. *Megalops cyprinoides* (BROUSSONET).

Fam. *Notopteridae*.

2. *Notopterus chitala* (HAM. BUCH.).

This freshwater species was caught in the river proper near the mouth near Pulu Perdamaran.

Fam. *Osteoglossidae*.

3. ***Scleropages formosus*** (MÜLL. and SCHL.).

This freshwater species was caught in the river proper near the mouth near Pulu Perdamaran.

Fam. *Chirocentridae*.

4. *Chirocentrus hypselosoma* BLKR.

Fam. *Dussumieriidae*.

5. *Dussumieria hasseltii* BLKR.

I am not sure yet whether *D. hasseltii* BLKR. and *D. acuta* C.V. can be

maintained as separate species. In that case the name of this species should be *D. acuta*, as this name is older than *D. hasseltii*. I shall deal with this question in a future paper.

Fam. Dorosomidae.

6. *Dorosoma chacunda* (HAM. BUCH.).

Fam. Engraulidae.

7. *Septipinna melanochir* (BLKR.).

This species is mentioned by WEBER and DE BEAUFORT in their *Fishes of the Indo-Australian Archipelago*", Vol. II, p. 28. I did not see it myself.

8. *Setipinna breviceps* (CANTOR).

9. *Setipinna taty* (C.V.).

10. *Thryssa kammalensis* (BLKR.) (*Engraulis kammalensis* BLKR.).

It is remarkable, that *Thryssa kammalensis*, which was so common in 1929, has become very rare now, for no apparent reason. In this respect I want to draw attention to the fact that WEBER and DE BEAUFORT, who had the disposal of a collection of fishes from the Rokan-mouth, do not mention this species either in their book on the Indo-Australian Fishes. It seems therefore that it is irregular in its appearance.

11. *Thryssa grayi* (BLKR.) (*Engraulis grayi* (BLKR.)).  
 12. *Thryssa mystax* (BL. SCHN.) (*Engraulis mystax* (BL. SCHN.)).  
 13. *Thryssa dussumieri* C.V. (*Engraulis dussumieri* (C.V.)).  
 14. *Stolephorus tri* (BLKR.).  
 15. *Stolephorus baganensis* HARDENBERG.  
 16. *Coilia dussumierii* (C.V.).

Fam. Clupeidae.

17. *Clupeoides lile* (C.V.).  
 18. *Clupea toli* (C.V.).  
 19. *Clupea macrura* (BLKR.).  
 20. *Clupea kanagurta* BLKR.

I did not see this species myself. It was found by Prof. DELSMAN in a jeremalcatch near Panipahan (Collection DE WAART 1922).

21. *Clupea brachysoma* (BLKR.).  
 22. *Clupea fimbriata* (C.V.).  
 23. *Pellona amblyropterus* (BLKR.).  
 24. *Pellona ditchoa* (C.V.).  
 25. *Pellona pristigastroides* (BLKR.).  
 26. *Pellona dussumieri* (C.V.).  
 27. *Opisthopterus tartoor* (C.V.).  
 28. *Raconda russelliana* GRAY.

Fam. Synodontidae.

29. *Saurida tumbil* (BL.).

## Fam. Harpadontidae (Scopelidae).

30. *Harpadon nehereus* (HAM. BUCH.) (*Harpodon nehereus* (HAM. BUCH.)).

## Fam. Siluridae.

31. *Silurichthys phaiosoma* (BLKR.).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT in their "Fishes of the Indo-Australian Archipelago", Vol. II p. 197.

32. *Hemisilurus heterorhynchus* (BLKR.).

This freshwater species was caught in the river proper near the mouth off Pulu Perdamaran.

33. *Hemisilurus scleronema* BLKR.

This freshwater species was caught in the river proper near the mouth off Pulu Perdamaran.

34. *Cryptopterus hexapterus* (BLKR.).

## Fam. Plotosidae.

35. *Plotosus canius* HAM. BUCH.

## Fam. Pangasidae.

36. *Pangasius nasutus* (BLKR.).

37. *Pangasius polyuranodon* (BLKR.).

## Fam. Ariidae.

38. *Arius argyroleuron* C.V.

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. II p. 279).

39. *Arius maculatus* (THUNB.).

40. *Arius sagor* (HAM. BUCH.).

41. *Arius macronotacanthus* BLKR.

42. *Arius caelatus* C.V.

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. II p. 310).

43. *Arius doriae* VINC.

44. *Ketengus typus* BLKR.

45. *Hemipimelodus macrocephalus* BLKR.

46. *Osteogeneiosus militaris* (L.).

## Fam. Bagridae.

47. *Macrones wolffi* (BLKR.).

48. *Macrones nemurus* (C.V.).

49. *Macrones micracanthus* (BLKR.).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. II p. 339).

## Fam. Cyprinidae.

50. *Rasbora argyrotaenia* (BLKR.).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. III p. 60).

51. *Leptobarbus hoeveni* (BLKR.).
52. *Osteochilus melanopleura* (BLKR.).
53. *Osteochilus spilurus* (BLKR.).
54. *Puntius hexazona* (WEBER and DE BEAUFORT).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. III p. 181).

55. ***Balantiocheilus melanopterus*** (BLKR.).  
This species was caught in the river proper near the mouth off Pulu Perdamaran.

Fam. Muraenesocidae (Congridae).

56. *Muraenesox cinereus* (FORSK.).
57. *Muraenesox talabon* (CANTOR).

Fam. Neenchelidae.

58. *Neenchelys buitendijki* WEBER and DE BEAUFORT.

Fam. Ophichthyidae.

59. *Ophichthys macrochir* (BLKR.).

Fam. Belonidae.

60. *Tylosurus strongylurus* (v. HASS.).
61. *Tylosurus annulatus* (C.V.).

Fam. Hemirhamphidae.

62. *Hemirhamphus georgii* C.V.
63. *Hemirhamphus gaimardii* C.V.
64. *Hemirhamphus marginatus* (FORSK.).
65. *Dermogenys sumatranus* (BLKR.).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. IV p. 139).

66. *Zenarchopterus ectunctio* (HAM. BUCH.).
67. *Zenarchopterus buffoni* (C.V.).

Fam. Polynemidae.

68. *Eleutheronema tetradactylum* (SHAW).
69. *Polynemus indicus* SHAW.
70. *Polynemus dubius* BLKR.
71. ***Polynemus sextarius*** BL. SCHN. A few specimens in si stji catches near the Aroa-islands.

Fam. Sphyraenidae.

72. *Sphyraena* spec.  
Only dried specimens seen. It was impossible to give a species name.

## Fam. Mugilidae.

73. *Mugil dussumieri* C.V.74. *Mugil cunnesius* C.V.75. *Mugil seheli* FORSK.76. *Mugil oligolepis* BLKR.

From a si stjicatch near Panipahan.

## Fam. Atherinidae.

77. *Atherina* spec.

Only dried specimens seen, for which it was impossible to give a species name.

## Fam. Ophiocephalidae.

78. *Ophiocephalus striatus* BL.

This species was caught in the river proper near the mouth off Pulu Perdamaran.

## Fam. Anabantidae.

79. *Helostoma temmincki* C.V.

This species was caught in the river proper near the mouth off Pulu Perdamaran.

80. *Sphaerichthys osphromenoides* CANESTRINI.

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. IV p. 249).

81. *Betta anabatooides* BLKR.

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. IV p. 357).

## Fam. Gadidae.

82. *Bregmaceros maclellandi* THOMPS.

## Fam. Soleidae.

83. *Synaptura commersoniana* (LAC.) CANT.

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. V p. 168).

84. *Typhlachirus caecus* (HUBBS) HARDENBERG.In my former paper on the fishfauna of the Rokan mouth I have called this species *Cryptops caeca*, but Prof. C. L. HUBBS informed me that the name *Cryptops* was preoccupied. Hence in my paper "Some new or rare fishes of the Indo Australian Archipelago" in Treubia Vol. XIII, I have called this species *Typhlachirus caecus* as suggested by HUBBS.85. *Cynoglossus monopus* (BLKR.).86. *Cynoglossus polytaenia* (BLKR.).87. *Cynoglossus lingua* HAM. BUCH.88. *Cynoglossus oligolepis* (BLKR.).

I did not see this species myself. It is mentioned for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. V p. 206).

## Fam. Centropomidae.

- 89.
- Lates calcarifer*
- (BLOCH).

## Fam. Serranidae.

- 90.
- Serranus fuscoguttatus*
- (FORSK.).

## Fam. Theraponidae.

- 91.
- Therapon theraps*
- C.V.

This species seems to be rather common in the si stji area near the Aroa islands in the middle of Strait Malacca.

## Fam. Pristipomatidae.

- 92.
- Pristipoma maculatum*
- (BLOCH).

- 93.
- Pristipoma guoraca*
- (RUSSELL).

## Fam. Chaetodontidae.

- 94.
- Scatophagus argus*
- (L.).

## Fam. Mullidae.

- 95.
- Upeneus sulfureus*
- C.V.

A few specimens in the catches of the outer jeremals.

- 96.
- Upeneus sundaicus*
- (BLKR.). (
- Upenoides sundaicus*
- BLKR.).

## Fam. Sparidae.

- 97.
- Crenidens*
- spec.

- 98.
- Proteracanthus sarissophorus*
- CANTOR.

## Fam. Scorpaenidae.

- 99.
- Leptosynanceia asteroblepa*
- BLKR.

- 100.
- Leptosynanceia*
- spec.

## Fam. Kurtidae.

- 101.
- Kurtus indicus*
- BLOCH.

## Fam. Sciaenidae.

- 102.
- Johnius sina*
- (CUVIER) (
- Sciaena vogleri*
- (BLKR.)).

- 103.
- Johnius coiber*
- (HAM. BUCH.) (
- Sciaena albida*
- (C.V.)).

- 104.
- Johnius belengerii*
- (CUVIER) (
- Sciaena belangeri*
- (C.V.)).

- 105.
- Johnius dussumieri*
- (CUVIER) (
- Sciaena glauca*
- DAY).

- 106.
- Johnius carutta*
- BLOCH (
- Sciaena carutta*
- (BLOCH)).

- 107.
- Johnius aneus*
- BLOCH.

A few specimens in the catches of the outermost jeremals.

- 108.
- Pama pama*
- (HAM. BUCH.) (
- Sciaenoides pama*
- (HAM. BUCH.)).

- 109.
- Otolithoides biauritus*
- (CANTOR) (
- Sciaenoides biauritus*
- (CANTOR)).

- 110.
- Otolithoides microdon*
- (BLKR.). (
- Sciaenoides microdon*
- (BLKR.)).

- 111.
- Otolithoides brunneus*
- (DAY) (
- Sciaenoides brunneus*
- (DAY)).

- 112.
- Otolithes maculatus*
- (CUVIER).

## Fam. Trichiuridae.

- 113.
- Trichiurus glossodon*
- BLKR.

- 114.
- Trichiurus savala*
- (C.V.).

## Fam. Carangidae.

115. *Megalaspis cordyla* (L.).  
Mentioned also for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. VI p. 192).
116. *Atropus atropus* (BL. SCHN.).  
Mentioned also for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. VI p. 202).
117. **Caranx (Selar) malam** BLKR.  
In si stji catches near the Aroa islands. Sometimes in big numbers. Mentioned also for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. VI p. 213). Mostly young specimens.
118. **Caranx (Selar) kalla** (C.V.)  
In si stji catches near the Aroa islands. Sometimes in big numbers. Mentioned also for Bagan si Api Api by WEBER and DE BEAUFORT (Vol. VI p. 216). Mostly young specimens.
119. **Caranx (Carangoides) malabaricus** (BL. SCHN.).  
In si stji catches near the Aroa islands. Rare. Young specimens only.
120. *Caranx (Atule) miyakamii* WAKIYA.
121. *Alectis indica* (RÜPP.). (*Alectis major* (C.V.)).
122. *Chorinemus lysan* (FORSK.) (*Scomberoides lysan* (FORSK.)).
123. **Chorinemus tala** (C.V.).  
A few young specimens in the si stji catches near the Aroa islands. It is mentioned also by WEBER and DE BEAUFORT for Bagan si Api Api (Vol. VI p. 281).
124. *Platax* spec.
125. *Leiognathus insidiator* (BL.) (*Equula insidiatrix* (BL.)).
126. *Leiognathus ruconius* (H.B.).  
Sometimes in big numbers in the si-stji catches near the Aroa islands. Mature specimens. This species is mentioned also by WEBER and DE BEAUFORT for Bagan si Api Api (Vol. VI p. 317).
127. **Leiognathus splendens** (Cuv.).  
A few scattered specimens in almost every si-stji catch near the Aroa-islands. Young individuals.
128. **Leiognathus bindus** (C.V.).  
Occasional specimens in the si stji catch near the Aroa-islands. Young individuals.
129. **Leiognathus berbis** (C.V.).  
A few specimens in the si stji catches near the Aroa-islands and in the catches of the outermost jeremals. Young individuals.
130. **Lactarius delicatulus** (BL. SCHN.).  
A few specimens in the si stji-catches near the Aroa-islands. Young.
- Fam. Stromateidae.
131. *Stromateus niger* BLOCH.
132. *Stromateus cinereus* BLOCH.

Fam. Scombridae.

133. *Scomber neglectus* v. KAMPEN.  
I did not see this species myself. It was found in a jeremalcatch near Panipahan by Prof. DELSMAN (Collection DE WAART, 1922).
134. *Scomberomorus kühli* (C.V.) (*Cybium kühli* C.V.).
135. *Scomberomorus guttatus* (BL. SCHN.) (*Cybium guttatum* (BL. SCHN.)).
136. *Scomberomorus lineolatus* (C.V.) (*Scomberomorus lineolatum* C.V.).

Fam. Echeeneidae.

137. *Echeneis naucrates* L. (*Echeneis naucrates* L.).

Fam. Cottidae.

138. *Platycephalus insidiator* (FORSK.).
139. **Platycephalus scaber** (L.).  
A single specimen in a si stji catch near the Aroa-islands.

Fam. Gobiidae.

140. *Gobius* spec.  
It was not able to find the speciesname of it.
141. *Apocryptes lanceolatus* (BL. SCHN.).
142. *Periophthalmus chrysospylos* BLKR.
143. *Eleotris* spec.  
I was not able to find its speciesname.
144. *Eleotris* spec.  
I was not able to find its speciesname.
145. *Gobioides anguillaris* L.
146. *Gobioides cirratus* (BLYTH).
147. *Gobioides rubicundus* (HAM. BUCH.).
148. *Gobioides tenuis* (C.V.).?  
I am not quite certain of this name.
149. *Trypauchen vagina* (BL. SCHN.).
150. *Trypauchen microcephalus* BLKR.
151. *Trypauchenichthys sumatrensis* HARDENBERG.
152. *Pseudotrypauchen multiradiatus* HARDENBERG.

Fam. Drepanichthidae.

153. **Drepanichthys punctatus** (L.).  
A few young specimens in the si stji catches near the Aroa-islands.

162. *Carcharinus temminckii* (MÜLL. and HENLE). (*Carcharias temminckii* MÜLL. and HENLE).
163. *Carcharinus limbatus* (MÜLL. and HENLE). (*Carcharias limbatus* MÜLL. and HENLE).
164. *Physodon mülleri* (MÜLL. and HENLE). (*Carcharias mülleri* MÜLL. and HENLE).

Fam. Oryctelobidae. (Scylliidae).

165. *Stegostoma varium* (SEBA) (*Stegostoma tigrinum* (GMELIN)).
166. *Chiloscyllium indicum* (GMELIN).

Fam. Pristidae.

167. *Pristis* spec.  
I saw only the saws of young animals.

Fam. Rhynchobatidae.

168. *Rhynchobatus djiddensis* (FORSK.). (*Rhynchobatus djeddensis* (FORSK.)).
169. *Rhinobatus halavi* (FORSK.). (*Rhinobatis halavi* (FORSK.)).

Fam. Narcacientidae.

170. *Narcine timlei* (SCHNEIDER).  
Two specimens, male and female, in one of the outermost jeremals.

Fam. Dasybatidae.

171. *Pteroplatea micrura* (BL. SCHN.).
172. *Dasybatus uarnak* (FORSK.) (*Trygon uarnak* (FORSK.)).
173. *Dasybatus imbricatus* (SCHNEIDER). (*Trygon walga* MÜLL. and HENLE).
174. *Dasybatus sephen* (FORSK.) (*Trygon sephen* (FORSK.)).

Fam. Myliobatidae.

175. *Aëtomylaeus maculatus* (GRAY and HARDW.). (*Myliobatis maculatus* GRAY and HARDW.).
176. *Aëtobatus narinari* (EUPH.).
-