

ON A COLLECTION OF FISHES FROM THE ESTUARY AND THE  
LOWER AND MIDDLE COURSE OF THE RIVER KAPUAS  
(W. BORNEO).

By

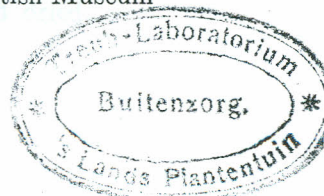
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*Preface.* The large and extensive collection of fishes dealt with in this paper has been collected for the greater part by Mr. L. COOMANS DE RUITER, formerly at Pontianak, officer in the Civil Service of the Netherlands East Indies. Most specimens have been collected in the Fishmarket of the little town of Pontianak, and were caught in an affluent of the Kapuas, the so-called Kapuas Ketjil and on the coast near the mouth of that affluent. Others were collected in several places in the neighbourhood near the villages of Kubu Terentang and of Gunung Ambawang and in the Padang Tikar Bay. All these localities are connected by numerous watercourses with the river Kapuas and therefore have a fishfauna quite similar to that of the main-river. Some fishes have come from the small Penitiriver, which is no affluent of the Kapuas, but which in times not so very long ago, perhaps younger than the iceage belonged to the river-basin of the Kapuas also. The fish-fauna will show no differences therefore. An other collection, consisting of about 50 species, has been collected by Mr. Ir. G. A. DE MOL, agricultural expert, at Pontianak. These fishes, which were in an excellent condition too, were collected farther up the river in the middle course near Smitau. Some of them were caught in the great lakes situated near the river.

Many interesting species, thus far unknown to Borneo or to the Kapuas were found and this collection adds many new facts to the fauna of Borneo. It is very surprising to learn that so many species were not recorded in literature for these regions, though several collections have already been made by competent naturalists. For the marine and coastal species new finding-places are as a matter of fact not so very important and they will teach us only something new as to the range of distribution in some cases. New localities of freshwater specimens have much more importance from a zoögeographical standpoint. Though of course this collection from one river-basin only is not sufficient to suggest new conclusions about the interesting zoögeography of the Sunda-Islands, the new facts will give new data for future workers on this subject.

I followed the names given in WEBER and DE BEAUFORT, "Fishes of the Indo-Australian Archipelago" and other handbooks. Some flatfishes have been determined by J. R. NORMAN, the well-known ichthyologist of the British Museum



and the Gobiids by Dr. F. P. KOUmans of the Leyden Museum and in these cases I quoted the names give by them. Furthermore some other species have been named by Prof. Dr. L. F. DE BEAUFORT.

#### LIST OF FISHES.

##### Fam. Notopteridae.

##### 1. *Notopterus chitala* (H.B.).

1 spec., 25 cm. July 1930, Fishmarket Pontianak. Leg. C. DE R.; 3 spec., 16 - 30 cm. October 1932. Middle course Kapuas. Leg. DE MOL.

Finformulae and measurements according to those given in literature, only the length of the maxillary is not quite similar. In my specimens it reaches not beyond the scaleless portion of the head behind the eye. In BLEEKERS drawings of *N. lopis* and *hypselonotus* (which are mere synonyms for *N. chitala*) as well as in the drawing given by WEBER and DE BEAUFORT of *N. chitala*, the maxillary is much longer and reaches beyond the scaleless part. Thus in this respect my specimens agree more with *N. borneensis* BLKR., but the number of scalerows on the praeoperculum (20 - 24) shows quite clearly the affinity with *N. chitala*.

Native name: Belidah. A very common and valuable foodfish, highly esteemed by the natives. Freshwater.

##### Fam. Osteoglossidae.

##### 2. *Scleropages formosus* (MÜLL. and SCHL.).

1 spec., 24 cm. Aug. 1930 Sungei Terentang. Leg. C. DE R.; 1 spec., 39 m. July 1932 Middle course of Kapuas. Leg. DE MOL.

Native name: Silok. Eaten by the natives. The specimen from Sungei Terentang has no ventral fins. According to the natives these fishes should be able to "shoot" their food in the same way as *Toxotes*.

##### Fam. Chirocentridae.

##### 3. *Chirocentrus hypselosoma* BLKR.

1 spec., 26 cm. July 1930 Padang Tikarbar. Leg. C. DE R.

Easily distinguishable from *Ch. dorab* by the maxillary which reaches to over the praeoperculum. (See Treubia Vol. XII 1930).

Native name: Parang Parang. A rather common fish in the estuaries of Borneo and Sumatra. Big specimens esteemed as food especially by the Chinese.

##### Fam. Dussumieriidae.

##### 4. *Dussumieria* spec.

1 spec., 11 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

I can not yet give the speciesname of this specimen. WEBER and DE BEAUFORT mention two species, *D. acuta* and *D. hasseltii* as occurring in the Indo-Australian Archipelago. Yet, whenever I got some *Dussumieria* specimens, I always found that they belonged neither to *D. acuta* nor to *hasseltii*, though they always bore more resemblance to *D. hasseltii* than to *acuta*. Great variety between



different specimens exists. In this respect it is a remarkable fact that more recent the newer authors never mention *D. acuta* and *hasseltii* together in one publication and often they feel not quite sure to which species their fishes belong. It may be possible therefore that *D. acuta* and *hasseltii* belong to one, variable species or that these two species have to be split up into several others. I hope that within not too long a time after this publication I shall be able to settle this.

*Dussumieria* occurs everywhere along the coast in small quantities.

Fam. Dorosomatidae.

5. *Dorosoma chacunda* (H.B.).

1 spec., 12 cm. June 1930. Padang Tikarbay; 2 spec., 9 cm. Sept. 1930. Telok Pekadai; 2 spec., 12 cm. Aug. 1930 Sungei Terentang; 1 spec., 13 cm. Nov. 1930. Sungei Kakap. Leg. C. DE R.

Native name: Sĕlanget. Rather common in shallow waters along the coast. A detritus (mud) eater.

Fam. Stolephoridae.

6. *Setipinna melanochir* (BLKR.).

1 spec., 10 cm. 18-5-'30. Padang Tikarbay (Batu ampar); 2 spec., 9 and 11 cm. Sept. 1930. Telok Pekadai; 1 spec., 14 cm. June 1930. Fishmarket Pontianak; 3 spec., 14 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Specimens from the Kapuas do not quite agree with the description given by BLEEKER. The anal is not so long and the pectoral is shorter too, though the number of the rays is the same. There are 33 - 35 abdominal scutes instead of 30 and 9 - 11 of them are postventral instead of 7. Most specimens have black pectorals (hence the name), but there are a few that have the pectorals pale and hyaline, a fact already mentioned by BLEEKER. These specimens are pale and not yellow over the whole body. Whether these specimens are anything like albinos or have retained their youth colours I can not decide here as yet. See also *S. breviceps*. A common food fish in the lower course of the rivers. Highly esteemed by the natives.

7. *Setipinna breviceps* (CANTOR).

2 spec., 13 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Within this species we see the same phenomenon as in *S. melanochir*. One of the two specimens was pale and had a whitish colour, while the pigment on back and fins was very slight and the other specimen had the normal yellow colour with a normal development of the black pigment. I did find the two varieties in front of other rivers too i.e. the Rokan and the Siak in Sumatra. Especially the nose of the yellow specimens is black, while the nose of pale ones has none or very little pigment. Differences in measurements or in the number of finrays and linea lateralis do not exist.

Native name: Biang Biang. Common in the sea in front of rivers likes to run up into brackish water. Highly esteemed food fish, which is carefully selected out of the catches and is eaten either fresh or salted and dried.

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

1 spec., 9 cm 14 Sept. 1930. Peniti-river; 1 spec., 13 cm 14 Sept. 1930. Sungei Kakap; 4 spec., 14 - 15 cm. Nov. Dec. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Bulu ayam (Hen's feather). This species is not so much esteemed as a food fish. It is mostly salted and dried together with the whole catch. Very common in estuaries and ascending the river as far as the brackish water reaches. The lowest salinity in which it thrives is about 10 - 15<sup>0</sup>/<sub>00</sub>.

9. *Lycotrhissa crocodilus* (BLKR.).

4 spec., 23 - 26 cm. June-July 1930. Middle course of Kapuas. Leg. DE MOL.

Native name: Silawari. It is not eaten by the natives and only used as bait for hooks. Common in the river, sometimes descending into slightly brackish water (5 - 10<sup>0</sup>/<sub>00</sub>).

10. *Thryssa kammalensis* (BLKR.).

1 spec., 9 cm. July 1930. Fishmarket Pontianak; 5 spec., 8 - 10 cm. 14 Sept. 1930. Peniti-river. Leg. C. DE R.

Native name: Bulu ayam. Lives in sea before rivermouths. Enters into a salinity of 15 à 20<sup>0</sup>/<sub>00</sub>. Young specimens go much farther.

11. *Stolephorus commersonii* LAC.

1 spec., 11 cm 18-5-'30. Batu Ampar; 1 spec., 7 cm. Sept. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Bilis.

12. *Stolephorus tri* (BLKR.).

4 spec., 9 - 11 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Bilis.

13. *Coilia macrognathus* BLKR.

2 spec., 20 - 23 cm. Febr. 1930. Pontianak fishmarket; 1 spec., 24 cm. Nov. Dec. Padang Tikarbay Leg. C. DE R.

Native name: Ikan Gundjing. My specimens have more abdominal scutes, 52 - 55 instead of  $\pm$  40 as given by BLEEKER. Furthermore the anal has more finrays 80 - 85, instead of 62 - 73. Yet the low number by BLEEKER may be accidental, as according to my experience many specimens of *Coilia* have the end of the tail bitten of by other fishes. A new caudal fin arises from the wound, but the number of rays in the anal has consequently been reduced very much. Thus I possess a specimen with only 50 rays in the anal fin. I described in detail a specimen quite alike to the specimens mentioned above from the Kumai river in my paper "New or rare fishes of the Indo-Australian Archipelago II". Treubia Vol. XIV 1933.

14. *Coilia dussumierii* C.V.

1 spec., 13 cm. 14 Sept. 1930. Sungei Terentang. Leg. C. DE R.

Native name: Bulu ayam. Common in front of rivermouths.

15. *Coilia coomansi* HARDENBERG.

B.8; D.1 3-(14)15; A.  $\pm$  90; P.18; V.6-7; Ll.  $\pm$  60; L.tr.10.

Elongate and compressed. Abdominal profile rounded. Dorsal profile straight



from snout to dorsal and straight from dorsal to caudal, the two lines forming a very blunt angle below dorsal. Head about 5, height about 5 in length without caudal. Snout prominent, somewhat shorter than eye. Maxillary pointed, reaching to end of praeoperculum. Distance tip of snout — origin of dorsal twice in length of anal. Ventrals inserted just before origin of dorsal, somewhat shorter than postocular part of head. Pectorals with 10 free rays, reaching beyond origin of anal. Length of the remaining, unfree, rays about as long as eye and snout. 22 - 24 keeled, abdominal scutes, 9 - 10 of which are postventral.  $\pm$  33 gill-rakers, more than twice as long as branchial filaments. Yellowish with a golden hue. Back pigmented. Dorsal somewhat blackish, other fins hyaline.

8 spec., 13 cm. 14 Sept. 1930. Peniti-river; 1 spec., 12 cm. March 1930. Fish-market Pontianak; 1 spec., 13 cm. July 1930. Fishmarket Pontianak; 3 spec., 13 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

This *Coilia* has, thus far, been overlooked by other naturalists. I named this species in honour of Mr. COOMANS DE RUITER. It is living in fresh and brackish water. Native name: Ikan gondjeng. Described by me for the first time in Treubia XIV 1934.

16. *Coilia borneensis* BLKR.

2 spec., 12 - 13 cm. April 1930. Padang Tikarbay; 4 spec., 11 - 14 cm 24-10-'30. Peniti-river. Leg. C. DE R.

Thus far not known in W. Borneo.

Fam. Clupeidae.

17. *Corica bleekeri* nov. spec.

Many spec. 18 - 35 mm. July 1932. Middle course of Kapuas. Leg. DE MOL. B. 6; D. 13 - 14; A. 14 - 16 + 2; P. 12; V. 8; L.l. 35 - 36; L.tr. 9.

Elongate, compressed. Ventral profile more convex than dorsal, which is almost straight. Height 4 in length without caudal, head 4 in length, about 5 with caudal. Eye about 3 in head, equal to snout and to postorbital part. A hardly conspicuous ridge on each side of vertex. Maxillary reaches somewhat beyond frontmargin of eye, somewhat more than twice in head. Origin of dorsal about midway between frontmargin of eye and origin of caudal, somewhat more than twice in head. Origin of dorsal about midway between root of caudal and snout.

First anal about  $\frac{2}{3}$  of head, second anal remote from first. Pectorals about  $\frac{3}{4}$  of head. Origin of ventrals below third or fourth ray of dorsal, somewhat shorter than snout and eye. 14 - 15 abdominal scutes, 5 of them being postventral. 35 - 36 (37) vertebrae. Silvery, fins hyaline. A black spot on occiput. Two very faint dotted lines on back behind dorsal. The specimens of 35 mm were quite mature!

Native name in the middle course of the river: Bilis majang. These small fishes are eaten in big quantities either dried or salted.

18. *Corica pseudopterus* BLKR.

3 spec., 40 - 45 mm. July 1930. Padang Tikarbay. Leg. C. DE R.

As a matter of fact in the original description of BLEEKER the number of dorsal rays is given as 12 - 13 and the same number is given by GÜNTHER in the Catalogue of the British Museum. In his Atlas Ichthyologique BLEEKER gives as the number of dorsal rays 3/12 - 3/13, which means that the number is 15 - 16 in total, a number found by all later authors (VAILLANT excepted) as well as by myself. BLEEKER had only two specimens of this species at his disposal from Pamangkat not so far away from Pontianak. The British Museum is in the possession of one of the type specimens and this has 15 or possibly 16 dorsal rays as Mr. NORMAN was so kind as to inform me. Evidently GÜNTHER was wrong when describing this species in the Catalogue. Only VAILLANT seems to have had specimens with 13 - 14 dorsal rays, which do belong perhaps to my species *bleekeri*.

The chief distinguishing characters between *C. pseudopterus* and *C. bleekeri* are given here below.

	<i>C. bleekeri</i>	<i>C. pseudopterus</i>
Vertebrae	35—36(37)	(37)38—39
D. rays	13—14	15—16
Abdominal scutes	14—15	17—18
Linea lateralis	35—36	37—39

Dorsal:	somewhat before ventrals.	somewhat behind ventrals.
Maturity at:	± 35 mm.	± 45 mm.

A detailed description of *C. pseudopterus* has been given by me in Treubia Vol. XIII 1931.

19. *Corica goniognathus* (BLKR.).

2 spec., 6 - 7 cm. July 1932. Middle course of Kapuas; 1 spec., 8½ cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

One specimen has only 14 dorsal rays, instead of 15 - 16 as given in literature.

Native name: Bilis tamban. The fishes are eaten in a dried or salted condition. The native population assumes that the Bilis majang are the young of the Bilis tamban.

20. *Clupeoides lile* (C.V.).

1 spec., 85 cm. Fishmarket Pontianak July 1930; 2 spec., 8 - 8.5 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Bilis.

21. *Clupeoides borneensis* BLKR.

2 spec., 5.5 cm 18-5-1930. Padang Tikarbay (Batu Ampar); 1 spec., 9 cm 29-10-30. Peniti-river. Leg. C. DE R.

My specimens differ in some points from the description made by BLEEKER from specimens from the Barito in South East Borneo. The dorsal fin is situated more to the forward and the maxillary reaches to the middle of the pupil



instead to below the frontmargin of the eye. In these respects my specimens agree with specimens from Sumatra, which however have less than 37 scales in the lateral line. (The specimens from Sumatra have been described by me in *Treubia* XIV, 1933).

Native name: Bilis. A riverspecies descending into brackish water.

22. *Clupea toli* C.V.

1 spec., 27 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Tërubuk. The roe of this species, and of *Clupea macrura* also, is highly esteemed by the natives. It forms an important article of trade. A common fish in front of rivermouths. The fry ascends into brackish water. *Clupea macrura* is not represented in the collection; but will be found probably in these regions too.

23. *Clupea perforata* (CANT.).

1 spec., 15 cm. July 1930. Padang Tikarbay; 2 spec., 10 and 14 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Tembang. Not common in front of estuaries. This species does not ascend into brackish water.

24. *Pellona kampeni* WEBER and DE BEAUFORT.

3 spec., 12 - 14 cm. 18-5-'30. Padang Tikarbay (Batu Ampar); 1 spec., 10 cm. July 1930. Sungei Terentang; 8 spec., 9 - 17 cm. Aug. 1930. Sungei Terentang; 1 spec., 11 cm. Sept. 1930. Telok Pekadai; 1 spec., 16 cm. Nov. 1930. Telok Pekadai; 1 spec., 10.5 cm. Nov. 1930. Telok Pekadai; 1 spec., 17 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Puput. I have described some specimens from the Kumairiver (South Borneo) in detail in *Treubia*. One specimen from the Padang Tikarbay, Nov. 1930, had 39 dorsal rays instead of 43. It is a curious fact, that this species, which is so common in front of Borneo-rivers, is so seldom caught in front of Sumatra rivers. I possess only one single specimen from Sumatra (mouth of the Panei)! The reason of this we can only guess at the moment.

25. *Pellona amblyuropterus* BLKR.

1 spec., 8.5 cm. Sept. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Puput. Common in front of rivermouths, sometimes ascending into brackish water.

26. *Pellona dussumieri* C.V.

1 spec., 21 cm. June 1930. Padang Tikarbay; 1 spec., 9.5 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

Native name: Puput. Rather common in front of rivermouths, sometimes ascending into brackish water. The largest specimen has the normal total number of abdominal scutes, but only 7 of them are postventral instead of 10.

27. *Pellona xanthoptera* BLKR.

1 spec., 8.5 cm. Sept. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Puput. Rare.

28. *Opisthopterus tartoor* (C.V.).

1 spec., 16 cm 14 Sept. 1930. Telok Pekadai. Leg. C. DE R.

## Fam. Harpadontidae.

29. *Harpadon nehereus* (HAM. BUCH.).  
1 spec., 20 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

## Fam. Clariidae.

30. *Clarias melanoderma* BLKR.  
1 spec., 28 cm. Sept. 1930. Fishmarket Pontianak. Leg. C. DE R.; 2 spec.,  
30 and 36 cm. July 1930. Middle course of Kapuas. Leg. DE MOL.  
Native name: Këli. A foodfish highly esteemed especially by the Chinese.  
According to Mr. DE MOL this species is not very common.

## Fam. Siluridae.

31. *Belodontichthys dinema* (BLKR.).  
3 spec., 36, 40 and 42 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Lais tabirin. Common, eaten by the natives.
32. *Silurodes hypophthalmus* (BLKR.).  
3 spec., 23, 26 and 28 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Lais pendek mulut (pendek mulut = short snout). A very  
common and highly appreciated food fish.
33. *Silurodes eugeniatus* (VAILL.).  
4 spec., 14 - 17 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Lais nipah. A common fish. Often consumed in dried con-  
dition.

34. **Callichrous weberi** nov. spec.

B. 13; D. 4; A. 47; P. 1.9; V. 6.

Height 4.6, head 5.0 in length without caudal. Eye covered by skin, 4 in head. Pupil situated in the horizontal line through corner of mouth. Eye about 1.3 in snout. Jaws equal. Upper profile slightly rounded with a slight concavity at the nape. Highest point of back somewhat behind dorsal. Maxillary barbels reaching to 22th ray of anal. Mandibulatory barbels very short, situated before eyes. Height of dorsal shorter than diameter of eye, situated just before origin of anal, its distance from the snout about  $2\frac{1}{2}$  in its distance from the caudal. Anal connected with caudal, its greatest height somewhat shorter than eye and snout. Caudal with rounded lobes. Ventrals a little before dorsal. Pectorals rounded with a smooth spine, somewhat shorter than head. Vomerine patches of teeth small, situated quite near together. Bands of fine teeth in jaws. 10 gillrakers. Colour of formaline-specimen brownish, lighter below. A blackish spot behind gillopening.

One specimen 79 mm. Padang Tikarbay, 18-5-1930. Leg. C. DE R. Named after Prof. Dr. MAX WEBER, the well known ichthyologist.

35. *Hemisilurus moolenburghi* WEBER and DE BEAUFORT.

1 spec., 30 cm. Dec. 1930. Fishmarket Pontianak. Leg. C. DE R.

My specimen differs in some minor points from the original description given by WEBER and DE BEAUFORT. The eyes are much smaller, going 10 times



in head, 5 times in interorbital space and 3 - 4 times in snout. Thus far unknown from Borneo. This specimen is described in detail in *Treubia* 15 1935.

36. *Cryptopterus lais* (BLKR.).

1 spec., 6 cm. March 1930. Fishmarket Pontianak; 1 spec., 13 cm. July 1930. Fishmarket Pontianak; 1 spec., 7 cm. July 1930. Padang Tikarbay; 1 spec., 10 cm. July 1930. Sungei Terentang. Leg. C. DE R.

Native name: Lais. It is only with some hesitation that I have given these specimen the name of *Cr. lais*. When we compare BLEEKER's descriptions of *Cr. bicirrhis* and *Cr. lais* we see that the first has the shorter barbels of the two, that the concavity of the neck and the convexity of the back are much less and that *Cr. bicirrhis* has a black blotch behind the operculum, which is lacking in *Cr. lais*. Furthermore *Cr. lais* has an incision in the band of maxillary teeth at the symphysis, which is not the case with *Cr. bicirrhis*. All my specimens have the dorsal profile of *Cr. bicirrhis* and they also have the black blotch. In these respects therefore they resemble this species. Yet they have the long barbels of *Cr. lais* and also the incision in the band of maxillary teeth. My specimens are therefore intermediate between the two species, which gives strength to the supposition of WEBER and DE BEAUFORT, that *Cr. bicirrhis* and *lais* have to be combined.

37. *Cryptopterus cryptopterus* (BLKR.).

1 spec., 10 cm. 18-5-1930. Padang Tikarbay; 1 spec., 15 cm. June 1930. Fishmarket Pontianak; 1 spec., 13 cm. 29-10-1930. Penitiriver. Leg. C. DE R.

38. *Cryptopterus limpok* (BLKR.).

1 spec., 22 cm. Dec. 1930. Fishmarket Pontianak; 3 spec., 22 - 25. July 1932. Middle course of Kapuas. Leg. C. DE R.

Native name: Lais k rak.

39. *Cryptopterus micronema* (BLKR.).

1 spec., 15 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.; 2 spec., 27 - 29 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Lais djoengang. Seems to descend into brackish water.

40. *Cryptopterus hexapterus* (BLKR.).

1 spec., 8 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.

This species is fairly common in brackish water.

Fam. Plotosidae.

41. *Paraplotosus albilabris* (C.V.).

1 spec., 12 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Sembilang. Not found in Borneo before.

Fam. Pangasidae.

42. *Pseudeutropius brachyopterus* (BLKR.).

2 spec., 11 cm. July 1932. Middle course of Kapuas; 1 spec., 12 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Nuajang. My specimens have 32 instead of 28 anal rays. The anal fin is consequently somewhat longer and goes only 3 in body. Two

peculiar conical organs project into the mouth cavity from the dorsal wall of the pharynx. Their surface is finely striated. May be they are some auxiliary organs for respiration.

43. *Pangasius nasutus* (BLKR.).

1 spec., 28 cm. July 1932. Fishmarket Pontianak. Leg. C. DE R.  
Native name: Patin. Sometimes found in brackish water.

44. *Pangasius polyuranodon* BLKR.

1 spec., 15 cm. July 1930. Sungei Kakap. Leg. C. DE R.  
Native name: Patin. Sometimes descending into brackish water.

Fam. Ariidae.

45. *Arius maculatus* (THUNB.).

1 spec., 13 cm. July 1930. Sungei Kakap. Leg. C. DE R.  
A common species in estuaries.

Fam. Bagridae.

46. *Macrones baramensis* REG.

1 spec., 9.5 cm. 18-5-1930. Padang Tikarbay (Batu Ampar). Leg. C. DE R.  
This species seems to be very rare. In literature it is only mentioned for the Baram river. I possess also a specimen from the estuary of the Rokan (Sumatra). My specimens show some very slight differences with the description given by REGAN. The height goes  $4\frac{1}{2}$  in length, the head  $3\frac{1}{2}$  times, REGAN's figures being  $4\frac{2}{3}$  and  $3\frac{2}{3}$  respectively. The breadth of the head goes  $1\frac{2}{3}$  in its length instead of  $1\frac{1}{3}$ . Otherwise my specimen agrees quite well with the original. The differences are so small, that they are probably due to individual variation.

47. *Macrones wolfii* (BLKR.).

2 spec., 15 - 16 cm. August 1930. Sungei Terentang. Leg. C. DE R.  
Descends into brackish water.

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

4 spec., 25 - 30 cm. July 1930. Middle course of Kapuas. Leg. DE MOL.  
Native name: Patik. The head shields of my specimens are not rugose, but smooth.

49. *Macrones gulio* (HAM. BUCH.).

1 spec., 10 cm. July 1930. Fishmarket Pontianak. Leg. C. DE R.

49a. *Macrones nigriceps* (C.V.).

2 spec., 18 - 22 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Landin.

50. *Bagroides melapterus* BLKR.

1 spec., 21 cm. Dec. 1930. Fishmarket Pontianak. Leg. C. DE R.

Fam. Cobitidae.

51. *Botia hymenophysa* (BLKR.).

3 spec., 13 - 14 cm. Nov. 1930. Middle course of Kapuas. Leg. DE MOL.  
Native name: Ulang uli. Seems to be rather rare.



## Fam. Cyprinidae.

52. *Chela oxygastroides* (BLKR.).

3 spec., 17-19 cm. Nov. 1930. Middle course of Kapuas. Leg. DE MOL.  
Native name: Kelampok. A common species, used as bait for hooks.

53. *Macrochirichthys macrochirus* (C.V.).

1 spec., 12 cm. 18-5-1930. Padang Tikarbay (Batu Ampar); 1 spec., 20 cm. July 1930. Padang Tikarbay; 1 spec., 10 cm. Nov.-Dec. 1930. Padang Tikarbay. Leg. C. DE R.; 3 spec., 35-36 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Belantan or Parang Parang ulu. A common species, which seems to descend into brackish water. The figures given in handbooks are not quite correct, as they are drawn after dead specimens. When alive the head is just in the length of the body, when dead the head is bent backwards.

54. *Rasborichthys helfrichi* (BLKR.).

3 spec., 12 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Seluang buluh. A common species.

55. *Rasbora argyrotaenia* (BLKR.).

6 spec., 8-13 cm. 18-5-1930. Padang Tikarbay; 2 spec., 12 cm. July 1930. Sungei Terentang. Leg. C. DE R.; 3 spec., 8-9 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Seluang budjur. Common. Used as bait. Seems to descend into brackish water.

56. *Rasbora kalochroma* (BLKR.).

4 spec., 6-7 cm. 18-5-1930. Pungur Besar; 3 spec., 7-8 cm. Sept. 1930. Gunung Ambawang; 3 spec., 6-7 cm. Nov. 1930. Gunung Ambawang. Leg. C. DE R.

57. *Rasbora einthoveni* (BLKR.).

6 spec., 5-6 cm. March 1930. Fishmarket Pontianak; 3 spec., 3-4 cm. March 1930. Gunung Ambawang; 10 spec., 4-7 cm. Sept. 1930. Gunung Ambawang. Leg. C. DE R.

58. *Rasbora cephalotaenia* (BLKR.).

2 spec., 8 and 11 cm. Sept. 1930. Gunung Ambawang. Leg. C. DE R.

59. *Luciosoma trinema* (BLKR.).

1 spec., 10 cm. 18-5-1930. Padang Tikarbay; 1 spec., 12 cm. July 1930. Padang Tikarbay. Leg. C. DE R.; 3 spec., 15-17 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Kenjuar. Seems to descend into brackish water.

Not common!

60. *Leptobarbus hoevenii* (BLKR.).

2 spec., 9 and 12 cm. March 1930. Fishmarket Pontianak; 3 spec., 8-11 cm. August 1930. Sungei Terentang. Leg. C. DE R.; 1 spec., 19 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Bundung. A common species.

61. *Leptobarbus melanopterus* WEBER and DE BEAUFORT.  
3 spec., 27 - 32 and 28 cm. July 1932. Middle course of Kapuas; 2 spec., 21 - 25 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Bundung or Piam. This specimen has  $5\frac{1}{2}$  scales above the lateral line before the dorsal fin. According to the description they should have 15 scales around the caudal peduncle, yet they have only 14, as is the case in *L. hoevenii*.  
The coloration of the fins is the same as given by WEBER and DE BEAUFORT. Not very common.
62. *Roteichthys microlepis* (BLKR.).  
4 spec., 18 - 22 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Kapas. A common species.
63. *Amblyrhynchichthys truncatus* (BLKR.).  
1 spec., 8 cm. 18-5-1930. Padang Tikarbay; 3 spec., 8, 9 and 14 cm. July 1930. Sungei Terentang; 3 spec., 7 - 10 cm. Sept. 1930. Sungei Terentang; 1 spec., 11 cm 5-11-1930. Penitiriver. Leg. C. DE R.  
Seems to descend into slightly brackish water.
64. *Dangila ocellata* (HECK).  
3 spec., 6 - 7 cm. March 1930. Fishmarket Pontianak; 1 spec., 11 cm. July 1930. Sungei Kakap. Leg. C. DE R.; 3 spec., 11 - 12 cm. July and Nov. 1930. Middle course of Kapuas. Leg. DE MOL.  
Native name: Ban Tadung. Some specimens have the foremost black blotch partly above the lateral line.
65. *Dangila fasciata* BLKR.  
1 spec., 7 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.  
My specimen has a black blotch, not mentioned in literature, just below the lateral line, above the pectorals. This may be due to the youth of the individual. WEBER and DE BEAUFORT state that the anal fin commences below the 25th scales of the lateral line. This is probably a misprint for 35. Seems to descend into brackish water.
66. *Dangila kühli* C.V.  
2 spec., 8 - 10 cm. June 1930. Padang Tikarbay; 3 spec., 10 cm. July 1930. Sungei Terentang; 1 spec., 10 cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.  
Seems to descend into brackish water. Until now only known from Sumatra.
67. *Dangila festiva* (HECK).  
1 spec., 7 cm. March 1930. Fishmarket Pontianak. Leg. C. DE R.; 3 spec., 14 - 23 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Kudjan. Common.
68. *Barynotus microlepis* (BLKR.).  
1 spec., 9 cm. March 1930. Fishmarket Pontianak; 1 spec., 8 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.; 3 spec., 19 - 21 cm. July 1932. Middle course of Kapuas; 1 spec., 30 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Paku. Seems to descend into brackish water.



69. *Thynnichthys thynnoides* (BLKR.).  
3 spec., 24 - 28 cm. July-Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Mentukan. Common.
70. *Thynnichthys polylepis* BLKR.  
1 spec., 6 cm. March 1930. Fishmarket Pontianak. Leg. C. DE R.; 3 spec.,  
21 - 23 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Bau Ketup. Rather common.
71. *Osteochilus melanopleura* (BLKR.).  
2 spec., 12 cm. July 1930. Sungei Terentang. Leg. C. DE R.; 3 spec., 19 - 23  
cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
Two specimens called by the natives Kelabau had a melanistic appearance.  
The third called, Kelabau padi, had a normal colour.
72. *Osteochilus schlegeli* (BLKR.).  
1 spec., 6 cm. March 1930. Fishmarket Pontianak; 1 spec., 6 cm. 18-5-1930.  
Padang Tikarbay; 1 spec., 8 cm. July 1930. Padang Tikarbay; 1 spec., 8 cm.  
July 1930. Sungei Terentang. Leg. C. DE R.; 3 spec., 25 cm. July 1932. Middle  
course of Kapuas. Leg. DE MOL.  
Native name: Kenali. Seems to descend into brackish water.
73. *Osteochilus vittatus* (C.V.) (BLKR.).  
1 spec., 5 cm. March 1930. Fishmarket Pontianak; 1 spec., 4 cm 18-5-1930.  
Padang Tikarbay; 1 spec., 15 cm. July 1930. Fishmarket Pontianak. Leg. C.  
DE R.; 1 spec., 13 cm. July 1932. Middle course of Kapuas; 2 spec., 11 - 12  
cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Bantak. Seems to descend into brackish water. Common.
74. *Osteochilus triporus* (BLKR.).  
3 spec., 16 - 17 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
L.tr.  $5\frac{1}{2}$ -1- $5\frac{1}{2}$ .  $3\frac{1}{2}$  series of scales between lateral line and dorsal. A  
black spot anteriorly on the base of dorsal. The black longitudinal band, which  
may be absent in *O. vittatus* also, is missing. There are dark spots on the  
scales. These specimens seem to be really different from the species of *O.*  
*vittatus* mentioned above. See also WEBER and DE BEAUFORT Part III, page 133.  
Native name: Menjadin. A common species, frequently eaten by the  
natives.
- 74a. *Osteochilus intermedius* WEBER and DE BEAUFORT.  
1 spec., 11 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.  
L.tr.  $4\frac{1}{2}$ -1- $6\frac{1}{2}$ . A black spot anteriorly on the base of dorsal. No longitu-  
dinal band, but rows of black spots along the rows of scales. The bands on  
the outer upper and lower margin of the caudal are entirely absent in my  
specimens. Is *O. intermedius* only a variety of *O. triporus* and not a real species  
as is suggested by WEBER and DE BEAUFORT on page 132 Part III? One would  
be inclined to say so. The l.tr. is now  $4\frac{1}{2}$ -1- $6\frac{1}{2}$  and not  $5\frac{1}{2}$ -1- $5\frac{1}{2}$  as in *O.*  
*triporus*. The linea lateralis has shifted one scale upwards! The difference  
between *O. triporus* and *intermedius* is becoming very small, now that it is

known that the black bands on the caudal, which were the only other features for distinguishing the two species, may be absent also.

Native name; Palau? A rare species.

75. *Osteochilus brevicauda* WEBER and DE BEAUFORT.

2 spec., 19 - 22 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Palau. Probably the name Palau given by DE MOL for *O. intermedius* is a mistake. The habitus of *O. intermedius* and *O. brevicauda* is quite different, but the habitus of *O. intermedius* is quite the same as that of *O. triporus* which is called menjadin. It is not probable that the natives will distinguish these two species from each other.

76. *Hampala macrolepidota* (C.V.).

1 spec., 38 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Langkung. Rare. A predatory fish.

77. *Cyclocheilichthys apogon* C.V.

3 spec., 6 - 7 cm. March 1930. Fishmarket Pontianak. Leg. C. DE R. 5 spec., 13 - 16 cm. July 1933. Middle course of Kapuas. Leg. DE MOL.

Native name: Buin or Kempèras.

78. *Cyclocheilichthys repasson* (BLKR.).

2 spec., 14 - 17 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

My specimens have for the linea transversalis 7-1-6½ and 7-1-5½ instead of 7-1-7. The caudal peduncle is surrounded by 16 scales instead of 20. In these respects the animals agree with the description of *C. lineatus*. Yet I do not hesitate to call them *C. repasson* as in all other features, especially in coloration they agree so closely with the description of this species.

79. *Puntius schwanefeldi* (BLKR.).

1 spec., 9 cm. March 1930. Fishmarket Pontianak; 1 spec., 5 cm. 18-5-1930. Padang Tikarbay; 1 spec., 14 cm. July 1930. Sungei Terentang. Leg. C. DE R.; 3 spec., 20 - 24 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Suain or Djélawat. My specimens have 18 - 20 scales around the caudal peduncle instead of 16, as given in literature.

80. *Puntius lateristriga* (C.V.).

3 spec., 9 - 10 cm. April 1930. Gunung Ambawang rivulets; 3 spec., 7 - 11 cm. Sept. 1930. Gunung Ambawang rivulets; 6 spec., 7 - 14 cm. Nov. 1930. Gunung Ambawang rivulets. Leg. C. DE R.

Furthermore I got specimens from the Karimata Islands in the South Chinese Sea. (18-3-1930).

81. *Puntius everetti* (BLGR.).

3 spec., 7 - 9 cm. March 1930. Fishmarket Pontianak; 10 spec., 2 - 8 cm. 13-3-1930. Rivulets of the Gunung Ambawang. Leg. C. DE R.

82. *Puntius hexazona* WEBER and DE BEAUFORT.

1 spec., 3 cm. 13-3-1930. Rivulets of the Gunung Ambawang; 1 spec., 47 cm. Sept. 1930. Rivulets of the Gunung Ambawang; 1 spec., 3 cm. Date? Sungei Terentang. Leg. C. DE R.



D. 4.8; A. 3.5; P. 1.13; V. 1.8; L. 1.24; L.tr. 5½-1-4½.

Oblong. Dorsal profile strongly arched with a slight concavity above the nape. Height 2.7 in length, 3.5 in length with caudal. Head 3.2, 4.2 in length with caudal. Eye 3.7 in head, somewhat longer than snout. Barbels longer than eye. Origin of dorsal opposite to 8th scale of lateral line, somewhat behind origin of ventrals separated by 9 scales from occiput. Fourth osseous spine of dorsal rather strong, serrated somewhat longer than head without snout. Anal somewhat shorter than head without snout. Ventrals and pectorals subequal. Caudal deeply emarginated, the lobes somewhat pointed. Caudal peduncle surrounded by 12 scales. Colour (in formol) dark red, lighter below.

Six transverse light margined bands. The first through the eyes, bent backwards and uniting on the nape. The second behind the operculum and the pectorals. The third from the dorsal spine to behind the ventrals. The fourth behind the dorsal to the beginning of the anal. The fifth on caudal peduncle and the sixth at the base of the caudal.

The above description, which fits in fairly well with the original description of the species by WEBER and DE BEAUFORT, is made after the specimen of 47 mm (total length) from the rivulets of the Gunung Ambawang. Sept. 1930. This species was hitherto only known in Sumatra.

83. *Puntius fasciatus* (BLKR.).

2 spec., 8 - 11 cm. Sept. 1930. Rivulets of the Gunung Ambawang. Leg. C. DE R.; 1 spec., 9 cm. Nov. 1933. Middle course of Kapuas. Leg. DE MOL.

Native name: Mengharit. My specimens have only 1 à 2 longitudinal bands above the lateral line. Other differences from the original description were not found.

84. *Puntius anchisporus* (VAILL.).

3 spec., 6 - 7 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Berbadju. Common, used as bait for hooks.

85. *Puntius waandersi* (BLKR.).

1 spec., 19 - 20 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Umpan Umpan. Common.

86. *Puntius bulu* (BLKR.).

1 spec., 9 cm. July 1930. Sungei Terentang; 1 spec., 6 cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.

87. *Balantiocheilus melanopterus* (BLKR.).

2 spec., 9 - 10 cm. July 1930. Sungei Terentang; 1 spec., 11 cm. July 1930. Fishmarket Pontianak; 2 spec., 7 - 8 cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.; 4 spec., 19 - 24 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Tutung. Very common.

88. *Barbichthys laevis* (C.V.).

1 spec., 6 cm. March 1930. Fishmarket Pontianak. Leg. C. DE R.

89. *Paracrossochilus vittatus* (BLKR.).

8 spec., 3 - 5½ cm. Dec. 1930. Singkawang. Leg. C. DE R.

90. *Epalzeorhynchus kallopterus* (BLKR.).  
2 spec., 12 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Seluang batu or Ikan batu. Very rare.

Fam. Synbranchidae.

91. *Synbranchus bengalensis* (MC. CLELL.).  
1 spec., 20 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Belut. Not common. Rarely eaten by the natives.

Fam. Syngathidae.

92. *Microphis boaja* (BLKR.).  
1 spec., 276 mm. July 1930. Padang Tikarbay. Leg. C. DE R.

Fam. Belonidae.

93. *Tylosurus strongylurus* (v. HASS.).  
1 spec., 37 cm. July 1930. Padang Tikarbay. Leg. C. DE R.  
This *Tylosurus* species is characteristic for rivermouths.

94. *Xenentodon canceloides* (BLKR.).  
1 spec., 13 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.  
Native name: Kanjulung. Not common. The position of the dorsal fin seems to be variable. BLEEKER said in his first description (Nat. Tijdschr. Ned. Indië V 1853, p. 64) that the origin of the dorsal is opposite to the third or fourth ray of the anal. Later on he corrected this and stated that the origin of the dorsal was opposite to the origin of the anal. WEBER and DE BEAUFORT in their fishes of the Indo-Australian Archipelago Vol. IV p. 133, confirm this fact. Yet my specimen has the origin of the dorsal opposite to the third anal ray.

Fam. Hemirhamphidae.

95. *Dermogenys orientalis* (M. WEB.).  
2 spec., 4½ cm. March 1930. Fishmarket Pontianak; 1 spec., 4½ cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.

My specimens have a larger head than given in the original description of WEBER. WEBER and DE BEAUFORT already mention this fact (Fishes of the Indo-Australian Archipelago Vol. IV p. 137).

96. *Hemirhamphus unifasciatus* RANZ.  
1 spec., 15 cm. 18-5-1930. Padang Tikarbay (Batu Ampar); 1 spec., 10-11 cm. July 1930. Fishmarket Pontianak; 1 spec., 13 cm. 14-9-1930. Sungei Kakap; 1 spec., 17 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.  
Native name: Djulung Djulung.

97. *Hemirhamphus marginatus* (FORSK.).  
1 spec., 29 cm. July 1930. Fishmarket Pontianak. Leg. C. DE R.

98. *Zenarchopterus buffoni* C.V.  
1 spec., Telok Pekadai. Nov. 1930. Leg. C. DE R.  
Native name: Sedjulung or Djulung Djulung.



99. *Zenarchopterus pappenheimi* E. MOHR.

2 spec., 18 cm. Telok Pekadai. Nov. 1930. Leg. C. DE R.

D.12; A.11; P.10; V.6; L.l.  $\pm$  42.

Height 7 in length from tip of upper jaw to base of caudal. Head from tip of upper jaw to branchial opening 3.6 in length. Lower jaw (reckoned from tip of upper jaw to the end) about 1 in head. Upper jaw about as long as broad. Origin of dorsal somewhat in advance of anal papil. Origin of anal below fourth or fifth dorsal ray. Dorsal rays not altered. The first five rays of the anal are more or less normal in shape. The sixth is very broad and abnormal. The 7th and 8th are as long as the 6th. They have the same shape though they are not so broad. The 9th and 10th anal ray are placed within a callosity of the skin. Colours not obvious in my preserved specimens.

Fräulein E. MOHR from the Zoölogical Museum at Hamburg was so kind as to specify these animals for me. As far as I know from literature, found for the first time in the Indo-Australian Archipelago.

Fam. Polynemidae.

100. *Eleutheronema tridactylum* (BLKR.).

1 spec., 20 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

I have described individuals of this species from South Borneo and Sumatra elsewhere in detail (Treubia XIII). The specimen from the Telok Pekadai shows no differences from that description.

101. *Eleutheronema tetradactylum* (SHAW.).

1 spec., 14 cm. July 1930. Fishmarket Pontianak; 3 spec., 14 - 16 cm. Aug. 1930. Sungei Terentang; 3 spec., 12 - 14 cm. 14-9-1930. Peniti-river; 2 spec., 17 - 19 cm. Sept. 1930. Telok Pekadai; 1 spec., 19 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Senangin or Kuro. Young specimens like those mentioned above are characteristic for the fauna of rivermouths.

102. *Polynemus indicus* SHAW.

1 spec., 20 cm. July 1930. Padang Tikarbay; 1 spec., 23 cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.

My specimens have most pectoral rays simple instead of divided as given by WEBER and DE BEAUFORT (See their Fishes of the Indo Australian Archipelago Vol. IV page 206) and by other authors.

103. *Polynemus sextarius* BL. SCHN.

1 spec., 10 cm. 14-9-1930. Sungei Kakap. Leg. C. DE R.

I described this specimen in detail in Treubia Vol. XIII 1931 p. 414.

104. *Polynemus heptadactylus* C.V.

9 spec., 13 - 15 cm. 27-5-1930. Padang Tikarbay; 1 spec., 12 cm. July 1930. Fishmarket Pontianak; 2 spec., 12 - 13 cm. Sept. 1930. Sungei Kakap; 3 spec., 12 - 14 cm. Oct. 1930. Pontianak. Leg. C. DE R.

Native name: Kuro or Senangin. Common.

105. *Polynemus borneensis* BLKR.

1 spec., 19 cm. July 1930. Fishmarket Pontianak; 1 spec., 20 cm. Aug. 1930. Sungei Terentang; 3 spec., 9 - 13 cm. Peniti-river; 1 spec., 18 cm. 14-9-1930. Sungei Kakap; 4 spec., 11 - 16 cm. Nov. 1930. Telok Pekadai; 1 spec., 9 cm. 29-10-1930. Mouth Peniti-river. Leg. C. DE R.

Native name: Kuro or Senangin. The linea lateralis counts about 75 instead of about 65 as given in literature.

106. *Polynemus macrophthalmus* BLKR.

1 spec., 52 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Kuro or Senangin. Common. Esteemed as food fish.

107. *Polynemus multifilis* SCHN.

1 spec., 23 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Kuro or Senangin.

Fam. Sphyraenidae.

108. *Sphyraena jello* C.V.

1 spec., 17 cm. Nov. 1930. Sungei Kakap. Leg. C. DE R.

Fam. Mugilidae.

109. *Mugil dussumieri* C.V.

1 spec., 10 cm. 18-5-1930. Padang Tikarbay; 1 spec., 15 cm. July 1930. Sungei Kakap; 2 spec., 21 cm. Dec. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Bëlanak.

110. *Mugil oligolepis* BLKR.

5 spec., 5 - 7 cm. 18-5-1930. Padang Tikarbay (Batu Ampar); Many spec., 7 - 12 cm. Aug. 1930. Sungei Terentang; 1 spec., 9 cm. 14 Sept. 1930. Peniti-river; 3 spec., 10 - 12 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Bëlanak. It is with some doubt that I give my specimens the name of *M. oligolepis* as the height of the body is longer than the head instead of shorter and the maxillary is not visible when the mouth is closed. I shall deal with this question in a future publication.

111. *Mugil troscheli* BLKR.

2 spec., 9 - 13 cm. Aug. 1930. Sungei Terentang. Leg. C. DE R.

Native name: Bëlanak. The origin of the dorsal is placed in the middle between end of snout and base of caudal.

112. *Mugil cephalus* L.

1 spec., 9 cm. July 1930. Sungei Kakap; 1 spec., 8 cm. 14-9-1930. Sungei Kakap. Leg. C. DE R.

Native name: Bëlanak. Besides the specimens mentioned above I got one specimen from the Karimata Islands (March 1931).

Fam. Ophiocephalidae.

113. *Ophiocephalus striatus* BL.

2 spec., 15 cm. July 1930. Padang Tikarbay; 8 spec., 3 - 4 cm. July 1930. Padang Tikarbay; 3 spec., 17 - 18 cm. Aug. 1930. Sungei Terentang. Leg. C.



DE R.; 1 spec., 50 cm. July 1930. Middle course of Kapuas; 1 spec., 37 cm. Nov. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ruan or gabus. In the middle course of the river this species seems to be rare. In the lower course it is much more common. Highly esteemed by the natives, they eat it fresh or salted and dried.

Furthermore I got one specimen from the Karimata islands.

114. *Ophiocephalus gachua* H.B.

3 spec., 10 - 13 cm. Rivulets of the Gunung Ambawang; 1 spec., 11 cm. Nov. 1930. Rivulets of the Gunung Ambawang. Leg. C. DE R.

115. *Ophiocephalus pleurophthalmus* BLKR.

5 spec., 29 - 33 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Kërandung. Common.

116. *Ophiocephalus lucius* (K. v. H.) C.V.

5 spec., 27 - 31 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Runtuk. Common.

117. *Ophiocephalus micropeltis* (K. v. H.) C.V.

3 spec., 22 cm. July 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ikan toman.

Fam. Anabantidae.

118. *Anabas testudineus* (BL.).

2 spec., 9 - 13 cm. April 1930. Padang Tikar; 1 spec., 10 cm. June 1930. Fishmarket Pontianak. Leg. C. DE R.

Native name: Ikan puju puju.

119. *Polyacanthus hasselti* C.V.

1 spec., 13 cm. June 1930. Fishmarket Pontianak; 1 spec., 8 cm. July 1930. Sungei Terentang; 9 spec., 6 - 12 cm. August 1930. Sungei Terentang; 2 spec., 8 cm. Sept. 1930. Sungei Terentang. Leg. C. DE R.

A very common species.

120. *Helostoma temmincki* C.V.

1 spec., 8 cm. 18-5-1930. Padang Tikar; 1 spec., 11 cm. June 1930. Padang Tikar. Leg. C. DE R.; 1 spec., 19 cm. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ikan Biawan. Common species. Eaten fresh and salted. The roe is salted separately.

121. *Osphronemus goramy* LAC.

A single juvenile specimen from Pontianak. Leg. C. DE R.

122. *Betta anabatoides* BLKR.

1 spec., 79 cm. Sept. 1930. Gunung Ambawang; 5 spec., 77 - 104 mm. Nov. 1930. Gunung Ambawang. Leg. C. DE R.

123. *Trichopodus trichopterus* (PALL.).

11 spec., 4 - 8 cm. 8-5-1930. Padang Tikar; 10 spec., 5 - 9 cm. August 1930. Sungei Terentang. Leg. C. DE R.

Native name: Ikan sèpat. Very common species. Salted in great quantities.

124. *Trichopodus leeri* (BLKR.).

2 spec., 8-9 cm. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ikan sèpat. In contrast with *Tr. trichopterus* this species is mostly not eaten. Not so common.

Fam. Luciocephalidae.

125. *Luciocephalus pulcher* (GRAY).

1 spec., 12 cm. Sept. 1930. Gunung Ambawang. Leg. C. DE R.

Fam. Bothidae.

126. *Pseudorhombus arsius* (H.B.).

1 spec., 14 cm. July 1930. Padang Tikarbay; 1 spec., 18 cm. October 1930. Fishmarket Pontianak; 4 spec., 11-12 cm. 29-10-1930. Mouth of Peniti-river. Leg. C. DE R.

Native name: Ikan seblah. The smaller specimens show the spots on the coloured side more conspicuous than the bigger ones.

Fam. Soleidae.

127. *Solea humilis* CANTOR (*Solea ovata* RICH).

1 spec., 7 cm. 14-4-1930. Sungei Kakap. Leg. C. DE R.

128. *Synaptura panoides* BLKR. (*Brachirus panoides* (BLKR.)).

1 spec., 17 cm. June 1930. Padang Tikarbay; 1 spec., 14 cm. October 1930. Fishmarket Pontianak. Leg. C. DE R.

129. *Achiroides melanorhynchus* (BLKR.).

1 spec., 6 cm. April 1930. Padang Tikarbay. Leg. C. DE R.

130. *Cynoglossus lingua* HAM. BUCH.

1 spec., 23 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

131. *Cynoglossus puncticeps* (RICH.).

2 spec., 7 cm. 14-9-1930. Peniti-river; 1 spec., 9 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

132. *Cynoglossus monopus* (BLKR.).

1 spec., 10 cm. 14-4-1930. Sungei Kakap. Leg. C. DE R.

133. *Cynoglossus oligolepis* (BLKR.).

1 spec., 12 cm. October 1930. Fishmarket Pontianak. Leg. C. DE R.

134. *Cynoglossus borneensis* (BLKR.).

1 spec., 19 cm. 19-10-1930. Peniti-river. Leg. C. DE R.

A detailed description of this rare species will follow below.

D. 110; A. 86; V. 4; L.I. 110.

Lanceolate. Height 5.0 in total length. Head rounded, 5.0 in total length. Eyes 10 in head, upper one slightly in advance of the lower. Anterior nostril tubular near upper lip, the posterior one between eyes. Interorbital space about twice in eyes. Nostrils on blind side with very short tubes. Hook of upper jaw far in front of eyes. Corner of mouth somewhat behind hindborder of posterior eye, about midway between tip of snout and branchial opening. Scales etenoid on coloured side. Two lateral lines on coloured side separated by 20 rows of



scales. One lateral line on blind side. Brownish above, whitish below. A large dark patch on opercular region. A broad darkish band along median lateral line. A darkish line at some distance below and above the median band. (The colouration is taken from the specimen in formaline).

Fam. Apogonidae.

135. *Apogon hyalosoma* BLKR.

1 spec., 11 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Fam. Centropomidae.

136. *Lates calcarifer* (BL.).

1 spec., 22 cm. July 1930. Fishmarket Pontianak. Leg. C. DE R.

Native name: Ikan Kakap. A highly esteemed foodfish. Very common in rivermouths.

137. *Ambassis gymnocephalus* (LAC.).

2 spec., 5 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.

Native name: Ikan sèrinding, which is the name for most *Ambassis* species.

Common.

138. *Ambassis buruensis* BLKR.

1 spec., 5 cm. 18-5-1930. Padang Tikarbay. Leg. C. DE R.

A much less common species than the former.

139. *Ambassis wolffi* BLKR.

1 spec., 6 cm. April 1930. Padang Tikarbay; 1 spec., 12 cm. June 1930. Pontianak; 2 spec., 7-8 cm. June 1930. Padang Tikarbay; 2 spec., 7-8 cm. July 1930. Sungei Terentang; 1 spec., 7 cm. August 1930. Sungei Terentang. Leg. C. DE R.

140. *Ambassis apogonoides* BLKR.

1 spec., 6 cm. June 1930. Padang Tikarbay. Leg. C. DE R.

141. *Ambassis interrupta* BLKR.

2 spec., 6 cm. June 1930. Padang Tikarbay; 1 spec., 5 cm. July 1930. Sungei Terentang; 2 spec., 6 cm. Sept. 1930. Telok Pekadai; 1 spec., 9 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

142. *Ambassis macrolepis* (BLKR.).

3 spec., 4-9 cm. July 1930. Sungei Terentang. Leg. C. DE R.

Native name: Senara.

143. *Ambassis miops* GTHR.

1 spec., 8 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

Hitherto only known in the eastern part of the Indo Australian Archipelago, though, as a matter of fact, its occurrence in the western part might be expected as it is found as far West as Madras.

144. *Ambassis nalua* (HAM. BUCH.).

2 spec., 11 cm. 14 Sept. 1930. Peniti-river; 1 spec., 8 cm. 29 October 1930. Peniti-river. Leg. C. DE R.

A common species. ♂

145. *Ambassis commersonii* C.V.

2 spec., 9 - 10 cm. Nov. 1930. Telok Pakadai. Leg. C. DE R.

146. *Ambassis kopsii* BLKR.

1 spec., 7 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

## Fam. Serranidae.

147. *Epinephelus bontoides* (BLKR.).

1 spec., 19 cm. Dec. 1930. Fishmarket Pontianak. Leg. C. DE R.

A rare species. Hitherto not known on the coast of Borneo.

Native name: Kerapu, a name, which is given to all *Epinephelus*-species.

148. *Epinephelus nebulosus* (C.V.).

1 spec., 8 cm. 18 May 1930. Padang Tikarbay. Leg. C. DE R.

## Fam. Theraponidae.

149. *Therapon theraps* C.V.

1 spec., 12 cm. July 1930. Sungei Kakap. Leg. C. DE R.

Native name: Ikan Kerrong Kerrong. It is this species which produces the peculiar sounds in tidal rivers <sup>1)</sup>.

150. *Therapon jarbua* (FORSK.).

1 spec., 9 - 10 cm. Sept. 1930. Telok Pangpang. Leg. C. DE R.

Less common than *Therapon theraps*. Most probably *Therapon jarbua* is able to produce the same noise as the former species.

## Fam. Sillaginidae.

151. *Sillago sihama* (FORSK.).

1 spec., 19 cm. July 1930. Padang Tikarbay; 1 spec., 11 cm. August 1930. Sungei Terentang; 1 spec., 14 cm. October 1930. Fishmarket Pontianak; 6 spec., 10 - 13 cm. Nov. 1930. Telok Pekadai; 1 spec., 10 cm. 5 October 1930. Peniti-river. Leg. C. DE R.

## Fam. Carangidae.

152. *Megalaspis cordyla* (L.).

1 spec., 18 cm. July 1930. Padang Tikarbay; 2 spec., 13 cm. Sept. 1930. Telok Pekadai; 1 spec., 12 cm. Sept. 1930. Sungei Terentang; 1 spec., 12 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

153. *Caranx (Caranx) sexfaciatus* Q.G.

1 spec., 12 cm. August. 1930. Sungei Terentang; 2 spec., 11 - 12 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Selar. One of the few Carangids which enter tidal rivers.

154. *Caranx (Selar) kalla* C.V.

2 spec., 11 - 12 cm. Sept. 1930. Peniti-river; 2 spec., 6 cm. Sept. 1930. Telok Pekadai; 1 spec., 7 cm. Nov. Telok Pekadai. Leg. C. DE R.

The young of this common species may enter tidal rivers.

<sup>1)</sup> See HARDENBERG, Zool. Anzeiger 1934, Bnd 108, p. 224-227.



155. *Caranx (Carangoides) praeustus* BENN.

1 spec., 11 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

156. *Atropus atropus* (BL. SCHN.).

1 spec., 15 cm. July 1930. Sungei Kakap; 1 spec., 12 cm. Sept. 1930. Sungei Kakap; 2 spec., 11 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

Regularly found before and in tidal rivers.

157. *Alectis indica* (RÜPP.).

1 spec., 8 cm. July 1930. Sungei Kakap; 1 spec., 12 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

158. *Chorinemus lysan* (FORSK.).

1 spec., 18 cm. July 1930. Padang Tikarbay; 1 spec., 18 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

159. *Chorinemus tala* (C.V.). DAY.

1\* spec., 14 cm. Sept. 1930. Peniti-river; 2 spec., 13 - 15 cm. Sept. 1930. Telok Pekadai; 3 spec., 13 - 16 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

160. *Chorinemus tol* C.V.

1 spec., 14 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

## Fam. Lactariidae.

161. *Lactarius lactarius* (BL. SCHN.).

1 spec., 12 cm. June 1930. Padang Tikarbay; 2 spec., 11 cm. Sept. 1930. Telok Pakadai; 1 spec., 8 cm. Sept. 1930. Peniti-river. Leg. C. DE R.

## Fam. Leiognathidae.

162. *Leiognathus ruconius* (H.B.).

2 spec., 5 cm. May 1930. Padang Tikarbay; 1 spec., 11 cm. August 1930. Peniti-river; 3 spec., 4 - 6 cm. Nov. 1930. Telok Pekadai; 1 spec., 10 cm. Nov. 1930. Sungei Kakap. Leg. C. DE R.

163. *Leiognathus brevirostris* (C.V. (DAY)).

1 spec., 9.5 cm. June 1930. Padang Tikarbay; 1 spec., 10.5 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

D. VIII 15; A. III 14; L.l.  $\pm$  60.

Compressed. Dorsal profile about equally convex as ventral profile. The rostro-dorsal profile ascends in a more or less straight line with a slight concavity above the eyes and without a strong nuchal elevation. Head 3.1 (3.8), height 2.1 (2.6) in length. (The numbers between brackets relate to the total length, with the caudal included). Eyes 3.6 in length of head, about as long as snout and equal to interorbital space. Interorbital cavity about twice as long as broad. A pair of well developed spines at the anterior superior angle of eye. Supraorbital edge finely serrated. The interorbital cavity is bordered by the smooth supraorbital ridges, which are the continuation of the nuchal spine, which is much longer than eye. Lips thick. Gape of mouth opposite to lower border of eye. Maxillary reaches to just behind frontborder of eye. Lower jaw concave inferiorly. Lower border of praeoperculum rather strongly

denticulated. Fine teeth in a narrow band in upper and lower jaw. 16 Gillrakers on lower branch of first gill-arch which goes about 4 times in eye. Scales minute, wanting on head and breast and chest. Lateral line ending a little before caudal. Second dorsal spine longest, about 2.7 in length of body. Third dorsal spine serrated anteriorly, fourth one smooth. Second anal spine longest, about 3.4 in length of body. Third anal spine serrated anteriorly, fourth smooth. Pectoral 1.4 in head. Colour of formaline specimens grayish, with traces of irregular dark vertical bands. Axil of pectorals blackish. A faint blackish blotch on spinous dorsal. A black blotch on nuchal spine. A broad blackish streak on snout and a narrow one on shoulder-girdle just behind branchial opening.

It is only with some hesitation that I have given the above mentioned specimens the name of *Leiognathus brevirostris*, a species which, according to literature, is very rare. *L. brevirostris* should have the gape of the snout opposite to the lower third part of the eyes, and it is below the lower border in my specimens. The dorsal profile however, which is not steep, the positively naked breast, the lateral line, which is continued to base of caudal, point all in the direction of *L. brevirostris*. The finely serrated supraorbital edge and the presence of the two rather strong nasal spines show that we have not to do here with *L. daura*, which moreover has a lateral line not reaching so far backwards. Thus, after all, I consider it justified to call the above mentioned specimens *L. brevirostris*.

164. *Leiognathus splendens* (Cuv.).

1 spec., 5 cm. July 1930. Fishmarket Pontianak. Leg. C. DE R.

165. *Leiognathus equulus* (Forsk.).

2 spec., 7 cm. July 1930. Sungei Terentang; 9 spec., 2.5 - 8 cm. August. 1930. Sungei Terentang; 1 spec., 12 cm. Sept. 1930. Peniti-river; 6 spec., 5.5 - 7.5 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

166. *Leiognathus dussumierii* (C.V.)?

1 spec., 5.7 cm. August 1930. Sungei Terentang. Leg. C. DE R.

This very young specimen has only fully developed scales on the upper part of the body and on the caudal peduncle. From thereon the scales are diminishing gradually towards the breast, so that about the whole abdomen is destitute of scales. The naked area therefore is far greater than in any other species of *Leiognathus*. When I give this specimen the name of *L. dussumierii*, it is only because the other features quite agree with the description of this species. Perhaps in bigger animals the breast and chest are more conspicuously scaled.

167. *Gerres abbreviatus* BLKR.

2 spec., 5 - 8 cm. May 1930. Padang Tikarbay; 1 spec., 12 cm. Sept. 1930. Sungei Kakap; 2 spec., 8 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Kapas Kapas.

168. *Gerres punctatus* C.V.

1 spec., 9 cm. Sept. 1930. Telok Pekadai. Leg. C. DE R.



## Fam. Mullidae.

169. *Upeneus sulphureus* C.V.

1 spec., 13 cm. July 1930. Sungei Kakap; 1 spec., 13 cm. Sept. 1930. Sungei Kakap Leg. C. DE R.

## Fam. Pristipomatidae.

170. *Pristipoma maculatum* BLOCH.

1 spec., 9 cm. June 1930. Padang Tikarbay; 1 spec., 10 cm. October 1930. Mouth Peniti-river. Leg. C. DE R.

171. *Pristipoma hasta* BLOCH.

1 spec., 11 cm. June 1930. Padang Tikarbay; 2 spec., 11 - 12 cm. Sept. 1930. Telok Pekadai; 2 spec., 9 - 10 cm. Nov. Telok Pekadai. Leg. C. DE R.

*Pristipoma hasta* as well as *Pristipoma maculatum* are regular visitors of the brackish waters.

## Fam. Lutjanidae.

172. *Lutjanus johnii* (BLOCH).

1 spec., 3 cm. July 1930. Padang Tikarbar; 1 spec., 9 cm. August 1930. Sungei Terentang; 2 spec., 9 - 10 cm. Oct. 1930. Mouth Peniti-river; 3 spec., 10 - 15 cm. Nov. 1930. Telok Pekadai; 1 spec., 16 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

A regular visitor, though in small numbers, of rivermouths. By far the most common *Lutjanus* in such regions.

## Fam. Datnioidae.

173. *Datnioides polota* (HAM. BUCH.).

1 spec., 12 cm. May 1930. Padang Tikarbay. (Batu Ampar); 1 spec., 8.5 cm. July 1930. Sungei Terentang; 1 spec., 12 cm. July 1930. Sungei Kakap; 1 spec., 5 cm. Oct. 1930. Fishmarket Pontianak; 2 spec., 13 - 14 cm. Nov. 1930. Sungei Terentang. Leg. C. DE R.; 2 spec., 19 - 20 cm. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ringau.

## Fam. Toxotidae.

174. *Toxotes chatareus* (HAM. BUCH.).

2 spec., 11 - 12 cm. May 1930. Padang Tikarbay. (Batu Ampar); 2 spec., 9 cm. July 1930. Padang Tikarbay; 1 spec., 6 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Ikan sumpit. Rather common in small creeks in the lower course of the big rivers of Sumatra and Borneo.

175. *Toxotes microlepis* GÜNTHER.

1 spec., 13 cm. June 1930. Fishmarket Pontianak; 3 spec., 11 - 13 cm. Aug. 1930. Sungei Terentang; 1 spec., 7 cm. Oct. 1930. Fishmarket Pontianak. Leg. C. DE R.

Native name: Ikan sumpit.

## Fam. Scatophagidae.

176. *Scatophagus argus* (L.).

2 spec., 4-5 cm. June 1930. Padang Tikarbay; 2 spec., 2-5 cm. July 1930. Sungei Terentang; 1 spec., 7 cm. July 1930. Fishmarket Pontianak; 2 spec., 5-11 cm. Aug. 1930. Sungei Terentang; 1 spec., 5 cm. Sept. 1930. Sungei Terentang; 2 spec., 4 cm. Sept. 1930. Telok Pekadai; 1 spec., 5 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Ikan kiper or kêtang kêtang. Common. The young live in small shoals of a few specimens or sometimes more, in small creeks and inlets, close to the shore. Mature specimens live farther out in sea, although in all probability never more than a few hundreds yards from the coast.

## Fam. Drepanichthyidae.

177. *Drepanichthys punctatus* (L.).

1 spec., 12 cm. July 1930. Padang Tikarbay; 4 spec., 8-9 cm. Aug. 1930. Sungei Terentang; 3 spec., 7-10 cm. Sept. 1930. Mouth Peniti-river; 2 spec., 7-9 cm. Sept. 1930. Telok Pekadai; 4 spec., 7-9 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

Native name: Ikan tapi tapi.

## Fam. Ehippiidae.

178. *Ehippium orbis* BLOCH.

1 spec., 8 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

A rare species.

## Fam. Girellidae.

179. *Proteracanthus sarissophorus* CANTOR.

1 spec., 13 cm. October 1930. Mouth Peniti-river. Leg. C. DE R.

Single individuals of this curious fish are regularly found in some rivermouths as for instance those of the Rokan and Panei in Sumatra and the Kapuas in Borneo. In front of other rivermouths, as the Musi in South Sumatra, this species seems to be absent altogether for no apparent reason.

## Fam. Nandidae.

180. *Nandus nebulosus* BLKR.

1 spec., 95 cm. Sept. 1930. Gunung Ambawang. Leg. C. DE R.

181. *Pristolepis fasciata* (BLKR.).

2 spec., 12-13 cm. 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Patung.

I have hesitated to give these specimens the name *Pristolepis fasciata*, but Prof. Dr. MAX WEBER assured me that the name was quite correct. As a matter of fact the numbers of scales and finrays and the measurements of head, body and so on are quite in accordance with the descriptions in literature. The colouration however is quite different. My specimens are brownish red. The



black spot in the axilla is wanting. On the innerside of the operculum is found a black spot shining through at the outside, a spot which is not mentioned in literature. There are no traces of vertical bands, which however may have disappeared in the formaline.

Fam. Kurtidae.

182. *Kurtus indicus* BLOCH.

1 spec. 12 cm. June 1930. Padang Tikarbay; 2 spec., 13 - 14 cm. Sept. 1930. Sungei Kakap; 2 spec., 9 - 12 cm. Sept. 1930. Mouth Peniti-river; 1 spec., 10 cm. Nov. 1930. Sungei Kakap. Leg. C. DE R.

A very common species in front off rivermouths. It is curious to remember that with the closely related *Kurtus gulliveri* CASTELNAU the male has a hook on the head, to which the eggs are fastened. Although I have seen thousands of individuals of *Kurtus indicus*, which has the hook on the head too, I have never found a specimen, with eggs. The mode of propagation seems therefore to be different of *K. gulliveri*.

Fam. Sciaenidae.

183. *Johnius sina*. (CUVIER.). (*Sciaena vogleri* (BLKR.)).

1 spec., 11 - 13 cm. May 1930. Padang Tikarbay; 1 spec., 13 cm. July 1930. Fishmarket Pontianak; 1 spec., 13 cm. Noy. 1930. Telok Pekadai; 2 spec., 13 - 14 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Native name: Ikan samgeh or gulamah.

184. *Johnius weberi* nov. spec.

D. X I. 27; A. II. 7; P. 16; V. 6. Tubular scales in lateral line 51 (those on caudal not counted).

Low slender body. Height 4, head 3.5 in length without caudal. Snout 2.7, eye 4 in head. The eye goes about twice in postorbital part of head. Nostrils just in front of eye. Snout much longer than upper jaw. Crescentic mouth inferior, lower jaw included by upper. 5 pores on chin. On lower side of snout 4 - 5 tentacle-like flaps of skin. Praeoperculum with fine remote denticulations. A band of villiform teeth in both jaws. 5 à 6 rows of scales above lateral line, 14 - 15 below. Second dorsal spine longest, somewhat longer than postorbital part of head. Last rays of soft dorsal highest. Second anal spine strong, about as long as snout and half eye. Pectorals as well as ventrals about  $5\frac{1}{2}$  in length of head and body. Colour brownish, lighter beneath. Each scale has a darker hindborder. Spinous dorsal darkish. Black patch on inner side operculum shining through.

The above description is made after a specimen of 140 mm. from Telok Pekadai.

2 spec., 122 and 140 mm. Telok Pekadai. Sept. 1930; 2 spec., 75 and 118 mm. Mouth Peniti-river. Sept. 1930; 2 spec., 133 and 140 mm. Padang Tikarbay. Nov. 1930. Leg. C. DE R.

185. *Johnius coiber* (HAM. BUCH.).

1 spec., Sept. 1930. Sungei Kakap. Leg. C. DE R.

A common species.

186. *Johnius cujus* (HAM. BUCH.).

1 spec., 22 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

187. *Sciaena (Umbrina) macroptera* (BLKR.).

1 spec., 11 cm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

*Sciaena (Umbrina)* species are rather rare in front of rivermouths.

188. *Otolithoides biauritus* (CANTOR).

1 spec., 14 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

A very common species in front of rivermouths.

## Fam. Trichiuridae.

189. *Trichiurus glossodon* BLKR.

1 spec., 67 cm. July 1930. Padang Tikarbay; 1 spec., 38 cm. Nov. 1930. Telok Pakadai. Leg. C. DE R.

190. *Trichiurus savala* (C.V.).

1 spec., 38 cm. Nov. 1930. Telok Pakadai. Leg. C. DE R.

## Fam. Scombridae.

191. *Scomber neglectus* v. KAMPEN.

2 spec., 10 cm. Sept. 1930. Mouth Peniti-river; 2 spec., 12 - 13 cm. Sept. 1930. Telok Pakadai; 3 spec., 14 cm. Nov. 1930. Telok Pakadai; 1 spec., 12 cm. July 1930. Sungei Kakap. Leg. C. DE R.

192. *Scomberomorus kuhli* (C.V.).

1 spec., 22 cm. July 1930. Padang Tikarbay. Leg. C. DE R.

193. *Scomberomorus guttatus* (BL. SCHN.).

1 spec., 16 cm. Sept. 1930. Sungei Kakap. Leg. C. DE R.

Native name: Tengiri which is the name for all *Scomberomorus* spec.

194. *Scomberomorus commersoni* LACEP.

1 spec., 15 cm. Sept. 1930. Mouth Peniti-river. Leg. C. DE R.

## Fam. Cottidae.

195. *Platycephalus scaber* L.

1 spec., 14 cm. July 1930. Sungei Kakap. Leg. C. DE R.

## Fam. Gobiidae.

196. *Brachygnathus doriae* (GTHR.).

2 spec., 32 - 36 mm. March 1930. Pontianak; 3 spec., 26 - 34 mm. April 1930. Padang Tikarbay; 9 spec., 29 - 42 mm. June 1930. Pontianak; 2 spec., 28 - 28 mm. Aug. 1930. Kubu Terentang; 1 spec., 38 mm. Sept. 1930. Telok Pakadai. Leg. C. DE R.

Common in shallow pools and ditches. This species seems to feed for the greater part on mosquito-larvae. A very handsome fish with its black and orange banded body.



197. *Stigmatogobius javanicus* (BLKR.).  
2 spec.,  $\pm$  55 mm. May 1930. Padang Tikarbay. Leg. C. DE R.
198. *Stigmatogobius tambujan* (BLKR.).  
1 spec., 29 mm. March 1930. Pontianak; 1 spec., 25 mm. Sept. 1930. Gunung Ambawang. Leg. C. DE R.
199. *Stigmatogobius borneensis* (BLKR.).  
1 spec., 38 mm. July 1930. Pontianak. Leg. C. DE R.
200. *Glossogobius giurus* (H.B.).  
1 spec., 128 mm. June 1930. Padang Tikarbay; 1 spec., 148 mm. July 1930. Padang Tikarbay; 1 spec., 143 mm. Aug. 1930. Sungei Terentang; 1 spec., 188 mm. Dec. 1930. Pontianak. Leg. C. DE R.  
A common species in brackish water and in mangrove swamps. One of the species of *Gobius* which are big enough to have some, although small, economical value.
201. *Acentrogobius caninus* (C.V.).  
1 spec., 161 mm. May 1930. Padang Tikarbay. Leg. C. DE R.
202. *Periophthalmodon borneensis* (BLKR.).  
1 spec., 105 mm. May 1930. Padang Tikarbay. Leg. C. DE R.
203. *Periophthalmodon schlosseri* (PALL.).  
1 spec.,  $\pm$  190 mm. May 1930. Padang Tikarbay. Leg. C. DE R.
204. *Periophthalmus koelreuteri* (PALL.).  
1 spec., 62 mm. July 1930. Padang Tikarbay. Leg. C. DE R.
205. *Boleophthalmus boddaerti* (PALL.).  
1 spec., 136 mm. May 1930. Padang Tikarbay. Leg. C. DE R.  
Native name: Ikan tembakul.
206. *Parapocryptus macrolepis* (BLKR.).  
1 spec., 86 mm. May 1930. Padang Tikarbay. Leg. C. DE R.  
Dr. KOUMANS of the Leyden Museum, who was so kind as to give me the name of this specimen, was not quite sure of his identification, as the measurements were not quite the same as given in literature.

## Fam. Eleotridae.

207. *Oxyeleotris boddaerti* BLKR.  
1 spec., 89 mm. April 1930. Padang Tikarbay; 1 spec., 81 mm. Aug. 1930. Sungei Terentang. Leg. C. DE R.
208. *Oxyeleotris urophthalmus* (BLKR.).  
1 spec., 160 mm. May 1930. Padang Tikarbay. Leg. C. DE R.
209. *Oxyeleotris marmorata* BLKR.  
1 spec., 273 mm. June 1930. Padang Tikarbay. Leg. C. DE R.; 1 spec., from the middle course of the Kapuas. Leg. DE MOL.  
Native name: Batutuk.
210. *Ophiocara porocephalus* (C.V.).  
2 spec., 70 - 72 and 165 mm. May 1930. Padang Tikarbay. Leg. C. DE R.

211. *Butis melanostigma* (BLKR.).

1 spec., 100 mm. July 1930. Kapuas; 1 spec., 49 mm. Aug. 1930. Kubu Terentang. Leg. C. DE R.

212. *Butis amboinensis* (BLKR.).

1 spec., 25 mm. Aug. 1930. Kubu Terentang. Leg. C. DE R.

Fam. Callionymidae.

213. *Callionymus fluviatilis* DAY.

1 spec., 73 mm. Nov. 1930. Padang Tikarbay. Leg. C. DE R.

Fam. Rhynchobdellidae.

214. *Mastamcembelus maculatus* (C.V.)?

1 spec., 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Tilan balabon.

Fam. Gymnodontes.

215. *Xenopterus naritus* RICH.

1 spec., 8 cm. Sept. 1930. Mouth of Ambawangriver. Leg. C. DE R.; 1 spec., 1932. Middle course of Kapuas. Leg. DE MOL.

Native name: Ikan buntal lemas. The name buntal is given to all gymnodonts.

216. *Tetrodon lunaris* BL. SCHN.

8 spec., 6 - 75 mm. Sept. 1930. Mouth of Ambawangriver; 1 spec., 85 mm. Oct. 1930. Pontianak; 2 spec., 85 - 90 mm. Oct. 1930. Peniti-river; 3 spec., 93 - 105 mm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

217. *Tetrodon oblongus* BLOCH.

8 spec., 56 - 68 mm. Sept. 1930. Mouth of Ambawangriver. Leg. C. DE R.

218. *Tetrodon palembangensis* (BLKR.).

3 spec., 10 - 28 cm. 1932. Middle course of Kapuas. Leg. C. DE MOL.

219. *Tetrodon fluviatilis* HAM. BUCH.

3 spec., 17 - 85 mm. May 1930. Padang Tikarbay; 1 spec., 38 mm. July 1930. Sungei Terentang; 1 spec., 82 mm. Sept. 1930. Telok Pekadai; 5 spec., 58 - 80 mm. Sept. 1930. Mouth of Ambawangriver; 4 spec., 50 - 62 mm. Oct. 1930. Peniti-river. Leg. C. DE R.

Fam. Carcharinidae.

220. *Physodon mülleri* (MÜLLER and HENLE.).

2 spec., 19 cm. Nov. 1930. Telok Pekadai. Leg. C. DE R.

221. *Scoliodon palasorrah* (RUSSELL.).

1 spec., 34 cm. July 1930. Fishmarket Pontianak. Leg. C. DE R.

Fam. Myliobatidae.

222. *Aëtomylaeus maculatus* (GRAY and HARW.).

1 spec., 64 cm. (tail included) Dec. 1930. Fishmarket Pontianak. Leg. C. DE R.