Notes on Malayan fresh-water fishes[1]

By M. W. F. TWEEDIE, M.A., C.M.Z.S.

3. The Anabantoid fishes

Fourteen indubitable species of this suborder occur in Malaya, of which two, *Betta splendens* and *Trichogaster pectoralis*, are possibly not indigenous and one, *Parosphromenus paludicola*, is described herein. The view is taken that all records of *Betta* from the Malay Peninsula, other than those of *B. splendens*, are of one variable species, which is referred to *B. pugnax* (Cantor).

Of the ten genera represented all are found also on one or more of the islands of the Sunda Shelf. Three of them, *Luciocephalus*, *Sphaerichthys* and *Parosphromenus* are not found outside the Malaysian subregion. *Betta* and *Helostoma* extend into Siam, *Trichopsis* and *Trichogaster* into Siam and Indo-China. Of the three remaining genera *Anabas* and *Osphronemus* have a wide distribution, but it is difficult to say how far it is due to artificial dispersion. One of the species of *Belontia* is confined to Malaysia, the other is found in Ceylon. I have never encountered specimens of the Indian species *Macropodus cupanus* in Malaya and consider that its status as a member of the Peninsular fauna requires confirmation.

Key to the species

1. Body elongate, subcylindrical; cleft of mouth horizontal, long, capable of wide gape; origin of dorsal and anal much nearer caudal base than head (Luciocephalidae) ..... *Luciocephalus pulcher*.

–. Body more or less compressed; cleft of mouth oblique, short, not capable of wide gape; origin of dorsal usually, of anal always, nearer head than caudal base (Anabantidae) ..... 2.

2. Origin of dorsal over or slightly in advance of base of pectorals, dorsal longer than anal ..... 3.

–. Origin of dorsal far behind base of pectorals, dorsal shorter than anal ..... 5.

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1. Continued from Bull. Raffles Mus., 21, 1950, 97–105.

3. Mouth rather large, its cleft extending back to below eye; opercle and preopercle serrated or spinate *Anabas testudineus.*

–. Mouth small, its cleft not reaching the vertical through front margin of eye; opercle and preopercle entire 4.

4. Teeth in jaws, lips not thickened; a reticulate pattern in caudal and posterior part of dorsal and anal; caudal rounded ..... *Belontia hasselti.*

–. No teeth in jaws, movable teeth on lips, which are thickened; no reticulate pattern in median fins; caudal emarginate ..... *Helostoma temminckii.*

5. Ventrals with a well-developed spine ..... 6.

–. Ventrals with a vestigial spine and the first soft ray produced into a very long filament (*Trichogaster*) ..... 12.

6. Lateral line complete and continuous; filament of ventrals long, reaching or surpassing the ends of the longest rays of the anal; size large ..... *Osphronemus goramy.*

–. Lateral line vestigial or absent; ventral filament shorter; small fishes, less than 10 cm. in length ..... 7.

7. Base of dorsal longer than its longest ray ..... 8.

–. Base of dorsal shorter than its longest ray ..... 10.

8. Body compressed, height about 2 in standard length; origin of dorsal midway between snout and caudal base ..... *Sphaerichthys osphromenoides.*

–. Body more elongate, height 3 to 4 in standard length; origin of dorsal much nearer to snout than caudal base (*Parosphromenus*) ..... 9.

9. Dorsal spines xi–xiii; median fins zoned ..... *P. deissneri.*

–. Dorsal spines xvii–xviii; median fins uniform *P. paludicola.*

10. Preorbital serrate; dorsal spines ii–vi, anal spines iv–viii; filament of ventral longer than head *Trichopsis vittatus.*

–. Preorbital entire; dorsal spines i–ii, anal spines ii–iv; filament of ventral shorter than head (*Betta*) ..... 11.

11. Head broad, interorbital space wide and flat; no bright coloration in the median fins; size larger, greatest length about 9 cm. ..... *B. pugnax.*

–. Head less broad, interorbital space narrow and convex; median fins with red and green coloration; size smaller, greatest length about 5 cm. ..... *B. splendens.*

12. Anal rays xii–xiv, 25–30; body with no dark oblique cross-bands, but with a reddish-brown reticulate pattern on a pale green ground and a dark stripe from eye to caudal base; diameter of eye more than half post-orbital part of head ..... *T. leeri.*

–. Anal rays ix–xii, 33–38; body with numerous dark oblique cross-bands; diameter of eye half post-orbital part of head or less ..... 13.

13. Soft dorsal rays 8 or 9; a round black spot on middle of flank and another on caudal peduncle; length does not exceed 12 cm. ..... *T. trichopterus.*

–. Dorsal soft rays 10 or 11; no black spots on sides; length may exceed 20 cm. ..... *T. pectoralis.*

Luciocephalus pulcher (Gray)

WEBER & DE BEAUFORT, 1922, p. 369.

Singapore and various localities in the Peninsula, the most northern of which is Kuala Brang in Trengganu.

This fish lives well in small aquaria and affords entertainment by its ferociously predatory habits. It must be given small fish and will take no other food.

Wing-Commander W. H. Marsack, writing on 27th November, 1949, sent me the following very interesting note on a specimen taken at Ayer Hitam in Johore: "When I was transferring my specimen into the narrow plastic tank for purposes of photographing it, she disgorged eight small fish, exact replicas of herself. Later, as a result of further unavoidable handling she disgorged a further ten. All are about half an inch in length. Although the babies are with her in a tank constantly under observation she has made no attempt to take them in her mouth again. It is clear, however, that she still has a number in her mouth, which can be seen through the membrane of the throat, but if the mouth is opened by hand the babies are apparently

taken further down the throat and are not visible, though the moment she is returned to the tank she 'regurgitates' them into their spacious nursery, and commences a gill movement to provide then with a through flow of water."

It is clear from this observation that the species is a mouth breeder.

Anabas testudineus (Bloch)

WEBER & DE BEAUFORT, 1922, p. 334.
SMITH, 1945, p. 447.

The Climbing Perch is common everywhere in Malaya. A good account of its history and biology is given by Smith, l.c. The Malay name is Puyoh or Bĕtok.

Belontia hasselti (Cuv. & Val.)

WEBER & DE BEAUFORT, 1922, p. 338 (*Polyacanthus hasselti*).
MYERS, 1923, p. 63.

Specimens are in the collection from Johore, Perak and Pahang. The black spot below the soft dorsal rays is conspicuous in young fish, but general darkening of the body colour obscures it in adults.

Helostoma temminckii Cuv. & Val.

WEBER & DE BEAUFORT, 1922, p. 340.
SMITH, 1945, p. 450.

Specimens from Perak and the River Bĕra in Pahang. Mr. H. J. Kitchener, who took the Pahang specimen, gives Tĕbakang as the Malay name.

Osphronemus goramy Lac.

WEBER & DE BEAUFORT, 1922, p. 344.
SMITH, 1945, p. 451.

Provision is made by the Malayan Department of Fisheries to assist the domestic culture of this fish, and it is common in rivers and swamps even in areas remote from habitation, such as the upper reaches of the River Tembeling in Pahang.

The Malay name is Kalui. Cantor calls it the "Ikan gorammi of the Malays" (1850, p. 1070), but I have never heard this name used.

Sphaerichthys osphromenoides Canestrini

DUNCKER, 1904, p. 163 (*Osphromenus malayanus*).
WEBER & DE BEAUFORT, 1922, p. 349.
TWEEDIE, 1940, p. 142 (last 8 lines of column 1, line 1–17 of column 2).

This species is common in Johore but not recorded north of Selangor. Intensive collecting in suitable localities in Trengganu failed to reveal it. Nine specimens from Johore show fin-ray counts: dorsal ix–x, 7–9, anal vii–ix, 20–21.

Racowicz's discovery (1949 p. 247) that this is a mouth breeder is confirmed by Mr. W. E. H. Wingett of Kuala Lumpur, who has had considerable experience of the species as an aquarium fish.

This is the so-called Chocolate Goramy of aquarists. Duncker gives Biji Durian (Durian seed) as the Malay name; it is so aptly descriptive that I do not doubt its authenticity, though I have never heard it used.

Parosphromenus deissneri (Bleeker). Fig. 1

WEBER & DE BEAUFORT, 1922, p. 348.
HERRE & MYERS, 1937, p. 72.
TWEEDIE, 1940, p. 142 (column 2, line 18)—143 (column 2, line 2).

Eleven specimens from a ditch by the road between Ayer Hitam and Yong Peng in Johore, January 1939; seventeen from a similar situation between Ayer Hitam and Kluang, October 1941. Of the former series the largest has total length 39 mm. (standard length 32·5 mm.); those of the latter are all small.

The lateral line count is 25–26 plus 2 or 3 scales on caudal base, the dorsal xi–xii, 5–6, anal xi–xii, 8–10; in specimens with dorsal xii the first dorsal spine is very small. The median fins are quite scale-less.

I kept some of these fish in an aquarium in 1939. The males do not fight but display very beautifully. The median fins are widely spread and of the two pigmented bands in them the proximal assumes a crimson colour, the distal brilliant green. In all the living specimens I have seen the light bands on the body are yellowish-buff; Bleeker and Herre recorded the colour as rose-pink.

The species was described from the island of Banka in 1859 and there were no further records until Herre's rediscovery of it in 1934 near Malacca.

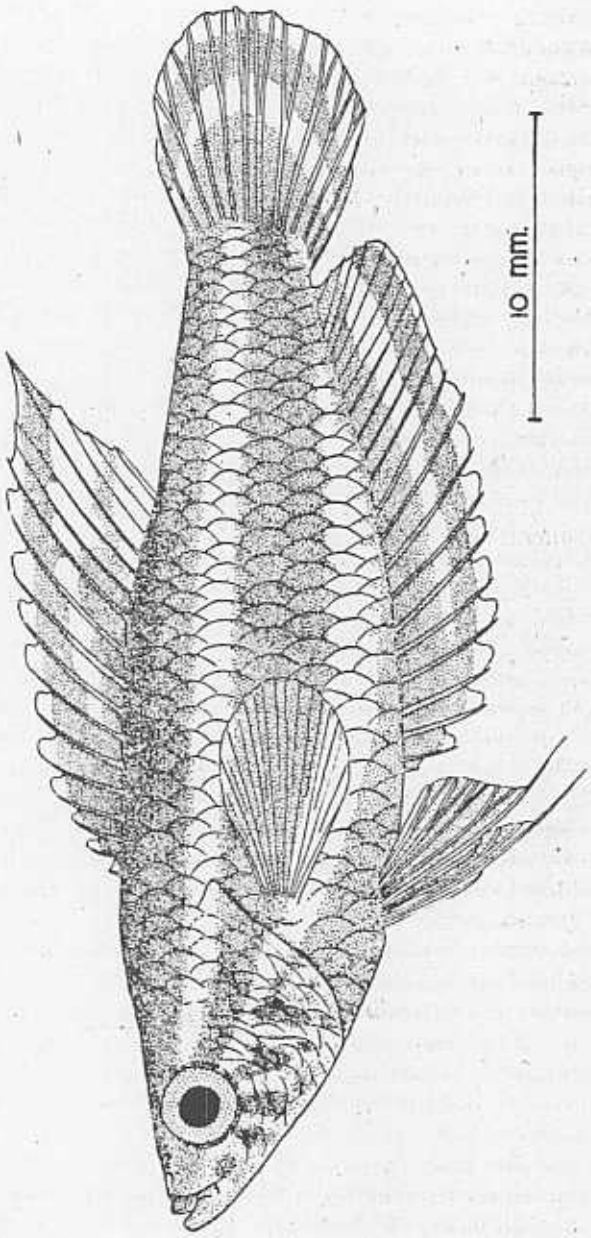

Fig. 1. *Parosphromenus deissneri.*

Parosphromenus paludicola sp. n. Fig. 2

Type. A specimen of 29·5 mm. total length (22 mm. standard length) from near Merchang in Trengganu on the east coast of the Malay Peninsula, taken on 13th August, 1950.

Material. Ten specimens, in addition to the type, from the type locality; four from a stream near Kuala Brang, Trengganu, 16th August, 1950.

Description. The characters of the genus as described by Bleeker (Weber & de Beaufort, 1922, p. 348) are typically developed, except that the dorsal is longer, with more spines, and ends near the origin of the caudal, and the middle rays of the caudal are produced so that the caudal is pointed, not obtusely rounded.

Head 2·9–3, height 3·9–4 in standard length; eye 3–3·1 in head, much greater than its distance from tip of snout; lateral line 26–27 plus two or three scales on caudal base; dorsal xvii–xviii, 6–7, anal xv, 7, ventrals i, 5; first soft ventral ray produced into a filament of varying length, reaching to middle of anal or nearly to caudal base; the central caudal rays produced so that the caudal fin is pointed.

Colour dark olive-brown usually with longitudinal lighter stripes, a broad one above the anal and containing the pectoral base, a very obscure and narrow one at the base of the dorsal, and a dorso-lateral stripe. These stripes may be light yellow and well defined, or they may be almost wanting and the colour uniform dark brown. On each side of the body, below about the 9th or 10th dorsal ray, there is in the heavily pigmented specimens a vertically oval black spot and sometimes a second black spot behind this; in specimens having the light stripes distinct these spots may be absent. Fins more or less deeply suffused with brown except at the tips of the dorsal and anal spines where the membrane is very briefly clear; none of the specimens show any sign of zoning or banding in the fins.

The following table summarises the differences between the new species and the genotype.

deissneri	*paludicola*
Dorsal spines xi–xiii, anal spines xi–xiii, dorsal ending far from caudal base.	Dorsal spines xvii–xviii, anal spines xv, dorsal ending near to caudal base.
Body deeper, about 3·5 in length.	Body more elongate, about 4 in length.

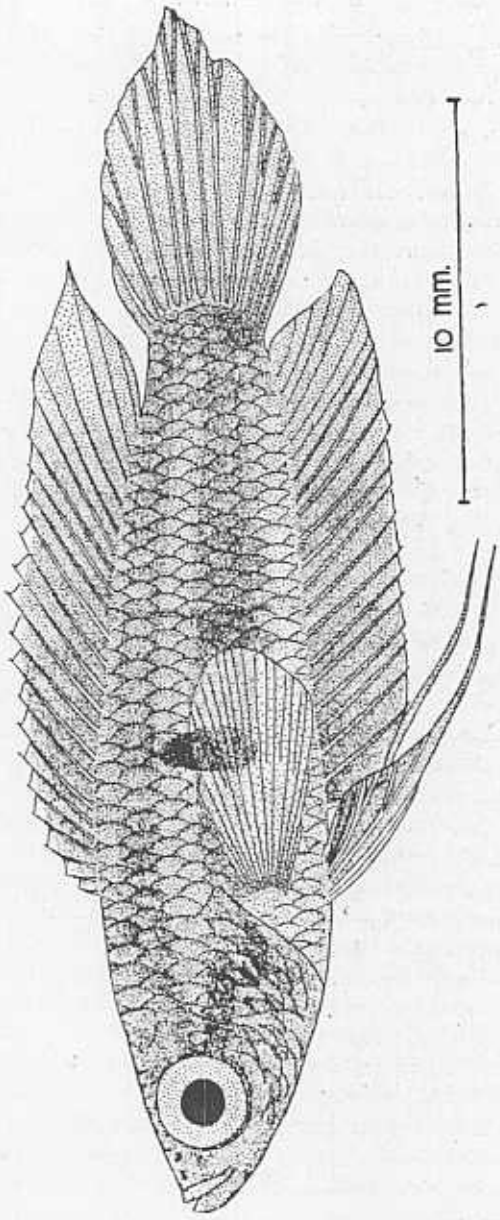

Fig. 2. *Parosphromenus paludicola* sp. n.

Eye smaller, 3·5 in head, its diameter about equal to its distance from tip of snout.	Eye larger, 3 in head, much greater than its distance from tip of snout.
Caudal rounded, ventral filament short.	Caudal pointed, ventral filament long.
Stripes on body always bright and distinct, no black spots on sides, median fins banded.	Stripes on body may be obscure, sometimes one or two black spots on sides, median fins not banded.

The type series of *paludicola* was taken in swamp forest just south of Merchang, Trengganu. From the 26¾ mile on the coast road south of Kuala Trengganu a path leads inland, at first over dry open scrub, later through fresh-water swamp-forest. Here the path itself was flooded, knee-deep or more, and formed a slowly flowing water-course in which the fish were caught with a dip-net. Even for the time of year the season was unusually dry. Other species of fish were *Puntius hexazona, Rasbora taeniata, R. pauciperforata, R. dorsiocellata* (these four very abundant), *R. cephalotaenia, R. kalochroma, Cyclocheilichthys apogon, Luciocephalus pulcher, Nandus nebulosus* and several others. In a stream near Kuala Brang, Trengganu, further inland, four specimens of *P. paludicola* were taken, all of which are less deeply pigmented than the type series, lacking the oval black spots and having the stripes on the body distinct. One of these is the largest taken, 28 mm. standard length.

Trichopsis vittatus (Cuv. & Val.)

WEBER & DE BEAUFORT, 1922, p. 351 (*Ctenops vittatus*).
HERRE & MYERS, 1937, p. 72.
SMITH, 1945, p. 452.

Specimens are in the collection from Singapore, Johore, Pahang, Kelantan and Trengganu. I have found it to be common wherever I have collected it. The Malay name is Karim; Smith gives Pla Krim as the Siamese name.

Genus **Betta**

There is in the collection a large number of specimens of *Betta* from lowland, and a few foot-hill, localities in Malaya. They show a considerable range of variation in fin-ray formulae, and if the specific criteria indicated in such keys to the genus as Tate Regan's (1910, p. 778), Weber & de Beaufort's (1922, p. 353) and Herre's (1940, p. 40) are applied to them they might be divided into several species. I am persuaded, however, that they belong to one.

When examining this material I was struck by the fact that in many cases the spines in the dorsal and anal fins are poorly ossified, and I also suspect that they become softened by preservation. Five specimens from Singapore are in the collection identified by Dr. de Beaufort as *B. fusca* Regan, a species described as being without a dorsal spine. Close examination of them shows in every case that the first dorsal ray is not articulated but is an imperfectly ossified (or artificially softened) spine. Dr. de Beaufort himself seems to have been assailed by doubts on the validity of the presence or absence of a dorsal spine as a specific character when he reported *B. anabatoides* Bleeker from Billiton Island (1939, p. 193) ; I am convinced that it is not admissible. *B. brederi* Myers (1935A and B) was described primarily on the presence of two, instead of one, spines in the dorsal, but in 1937 Herre and Myers (p. 72) record under the name *B. taeniata* a large series from Malaya of which they say: "these specimens do not agree entirely with *taeniata;* they are very variable, some having one, others two dorsal spines. They may represent *B. brederi.*" I am not certain whether "they" of the last sentence is intended to apply to the whole series or only to those with two dorsal spines, that is to say whether or not the authors wish to imply that the presence of two spines instead of one is not, after all, a specific character. I incline to the latter view; specimens in the present collection with two spines appear to me to differ in no other respect from those with one.

Any attempt to elucidate the synonymy of all the Malaysian species of *Betta* would require collections from Sumatra, Java and Borneo as well as from Malaya, and such material is not available to me. I am, however, prepared to state my belief that all the specimens recorded from Malaya, except those referable to *B. splendens* Regan, belong to one variable species. I propose, pending a more complete revision of the genus, to use for it the earliest name published for a *Betta* of definitely Malayan provenance. This is *pugnax* Cantor, described from Penang in 1850. In many cases doubt attaches to the correctness of Cantor's type localities, especially those of his reptiles, but his account of the occurrence of *pugnax* is quite circumstantial. On p. 1068 of his Catalogue he states "at the foot of the hills at Pinang this species is numerous in rivulets". His *Macropodus pugnax* Var. (p. 1068) is quite clearly *Betta splendens,* and the fact that he distinguished between the two affords confirmation that his *Macropodus pugnax* forma typica was the Malayan and not the Siamese species. To make doubly sure I asked Mr. D. W. Le Mare, Director of fisheries, Malaya, to make a collection of

Fighting Fish in Penang. Collecting in two distinct environments, rice-fields and streams, produced the interesting result that all the specimens from the former were *B. splendens* and all those from the latter representatives of the common Malayan species, which I have no doubt is identical with Cantor's *pugnax* and which I record here under that name.

The following species of *Betta* are recorded by Weber & de Beaufort (1922) from the Malay Peninsula and Singapore: *B. fusca* Regan, B. *anabatoides* Bleeker, *B. picta* (C.V.), *B. taeniata* Regan, *B. bellica* Sauvage; *B. macrophthalma* is regarded by them as identical with *B. picta*. Of these *bellica* and *macrophthalma* were described in the first place from Malayan specimens, as also was *brederi* Myers (1935), and I regard these three names as synonyms of *pugnax*. The anal count of *bellica* (described from Perak) is rather higher than the maximum I have observed, but the species may well vary beyond the limits of my series, or a mistake may have been made in the count; Weber & de Beaufort (1922, p. 263) point out a discrepancy connected with it. The colour description of *bellica*, quoted by Regan (1910, p. 779) accords well with large individuals of *pugnax*, as also does its size, 90 mm.

Weber & de Beaufort's Malayan records of the other species are probably referable to *pugnax*, as also are those of *anabatoides* and *taeniata* by Herre & Myers (1937, p. 72), and of *picta, taeniata, rubra, anabatoides* and *fusca* by Herre (1940, pp. 44–46), who claims to have taken all these species, and *splendens*, on Singapore Island. Finally, the form described in Smith's key to the Siamese species (1945, p. 454) under the name *taeniata* is certainly better referred to *pugnax*.

Cantor's paper, dated 1849, was published in 1850. *B. picta* (C.V.) was described from Buitenzorg (now Bogor) in Java in 1846; *trifasciata* of Bleeker, Java, 1850, is certainly a synonym of *picta*. Bleeker's *B. anabatoides* from Borneo was described in 1851. All the other species of *Betta* were described considerably later than 1850. In the not impossible event of all the Malaysian forms of *Betta* (apart from the doubtfully indigenous *splendens*) proving to belong to one variable species, its valid name will therefore be *picta* of Cuvier & Valenciennes.

Betta pugnax (Cantor)

CANTOR, 1850, p. 1066 (*Macropodus pugnax*).

The synonymy is discussed under the genus.

Material: Singapore Island, mainly Mandai Road, 32 specimens; Mawai District, Johore, February 1937, 62; Johore,

other localities, 12; Tasek Bera, Pahang, October 1949, 4; Ampang River, Selangor, 1926, 4; West of Ginting Sempak, Selangor, March 1937, 6; Lenggong, Perak, March 1937, 6; Kuala Brang, Trengganu, August 1950, 3; Baling, Kedah, December 1938, 2; Penang, February 1951, 7; Langkawi Islands, 1911, 2.

Description, based on the above material: Dorsal i–ii, 8–9; anal ii, 22–29, dorsal and anal spines often feebly ossified; pectoral 12; caudal 13; origin of dorsal slightly nearer to vertical of end of operculum than to caudal base (not conspicuously nearer, as described for *taeniata*); central caudal rays produced, so that the caudal is pointed. Scales in lateral line 28–32 (plus 2–3 on caudal base). The scales on the snout and interorbital region are not regularly arranged and opinions might differ on the predorsal count; it appears to me to be 25–30; scales transverse between dorsal and anal 11. Form robust, size large, exceeding 90 mm. in total length. Head broad, interorbital region flat; head equal to or rather less than depth, about 3 in standard length. Eye 3 (in small fish) 4 (in large fish) in head.

Colour (preserved material): In young fish the dorsal one-third of the body is dark brown, the ventral two-thirds lighter brown. In this lighter area a dark stripe runs back from the eye, and below it there may be another stripe; posteriorly the space between them is usually filled in with dark brown, and this condition may extend forwards so that instead of two stripes there is a single broad dark longitudinal band. The (separate or conjoined) stripes end short of the caudal peduncle on which there is, on each side, an isolated dark spot. In larger fish the dark stripes are ill-defined or represented only by two rows of dark spots on scale-rows 6 and 8 in the transverse series. The fins are brown to pinkish brown, usually without markings, but occasionally with dark spots or lunules in dorsal and caudal (seen in specimens from Ginting Sempak, Lenggong and Penang, and perhaps a character of hill-stream specimens). In life the young fish are as described, but with a greenish tint, and adults are olive, often with a bright bluish-green spot on each scale and a patch of the same colour on the operculum.

Myers (1935B) reports *Betta brederi* a mouth-breeder.

The usual Malay name for *Betta* is Ikan Pĕlaga. Sĕpilai is used in the north, and *splendens* and *pugnax* were labelled respectively Sĕpilai and Sĕpilai Batu (batu, stone) by Mr. Le Mare's collector who took the series in Penang in 1951. The name is rendered Sĕmpilai in Wilkinson's dictionary.

Betta splendens Regan

SMITH, 1945, p. 454, 456.

Two from Alor Star, Kedah, 1950; one from Kuala Brang, Trengganu, August 1950; 13 from Penang, February 1951; 19 from Kedah (Alor Star and Sungei Patani), coll, E. D. B. Wolfe, 1951.

It is impossible to say whether this fish is native to the northern part of Malaya or whether specimens captured are descendants of released domesticated fish. It is certainly established as a feral species in Kedah and Trengganu and probably in Kelantan and Perlis. In Penang it appears to be the dominant species in the rice-fields, while *pugnax* holds its own in the streams and rivers. It is a point of interest that Cantor regarded *splendens* (his *Macropodus pugnax* Var.) as a purely artificial product only found in a state of domestication. If at that time it had occurred in a feral state in Penang he would surely have been aware of the fact. I have never collected it in any of the Malay States south of Kedah or Trengganu, but it is found here and there on Singapore Island. Herre (1940, p. 46) records two specimens from Mandai Road and I have recently seen living examples taken at H.M. Naval Base on the north coast.

The late Dr. H. M. Smith's account of the Siamese Fighting Fish (1945, pp. 456–461) would merit a place in any anthology of ichthyological writing.

Trichogaster trichopterus (Pallas)

WEBER & DE BEAUFORT, 1922, p. 366 (*Trichopodus trichopterus*).
SMITH, 1945, p. 463.

Very common throughout the country. As in *T. pectoralis* the sexes can be distinguished by the form of the dorsal fin. In the male the 5th and 6th or 5th to 7th dorsal rays are produced so that the fin is pointed and when depressed surpasses the caudal base; in the female none of the dorsal rays are produced and the fin is short and rounded. Also the lips are more thickened in the male.

Malay name, Sĕpat, Sĕpat Padi.

Trichogaster leeri (Bleeker)

WEBER & DE BEAUFORT, 1922, p. 637 (*Trichopodus leeri*).
HERRE & MYERS, 1937, p. 73.
SMITH, 1945, p. 463.

This species is very much less common in Malaya than *trichopterus*. I have never collected it, but two specimens are in the collection from Herre's series from Ayer Hitam, Johore.

Trichogaster pectoralis (Regan)

SMITH, 1933, p. 259; 1945, p. 464.
SOONG, 1948, p. 87.

This fish appears to have been introduced into Malaya at some time during the earlier part of the present century. Soong gives about 1921 as the date of introduction into Krian in Perak, and refers to the Report of the Wild Life Commission, Vol. I, in which a witness mentions the year 1925. Smith (1933) quotes a statement from the Director, Raffles Museum that the fish Sepat Siam was introduced into Singapore about 35 years, and into the Krian District about 20 years, previously to that date, i.e. about 1913 for Krian. I have not been able to find copies of this correspondence and I do not know on what grounds the statement was made. The fish is now established in Singapore.

Soong gives an interesting account of its economic exploitation in Krian. Sump-ponds or "tĕlagas" are dug in the lower parts of the rice-fields. These are situated on the flat coastal region of the country and are subject to inundation during the wet seasons of the year, which extend from April to June and September to November, and from June to December are submerged by controlled irrigation. During the period of irrigation the fish spread over the rice-fields and find in the warm shallow water an abundant growth of algae on which they feed; they reach maturity, and a length of about ten centimetres, in four months. At the approach of the harvesting season, which is in February, the irrigation water is gradually drained off and large numbers of the fish become concentrated in the sump-ponds, where they can easily be captured. Sufficient always escape into drains and irrigation canals to provide for the next season's generation. "Thus once the sump-ponds are established we have here annually a succession of cropping and innoculation of the padi-fields with no extra effort on the part of the padi planters beyond labour expended in baling out the fish from the ponds".

In 1939 as much as 1,200 tons of these fish were recorded to have been exported from Krian. It is known to the Malays as Sĕpat Siam.

4. Some new and interesting records

The following records are from a variety of sources and represent collecting done both before and after the war. Some of the pre-war material recorded was sent to the Indian Museum for determination in 1940 and supplemented by small collections sent in 1947 and 1949. This is now in the hands of Mr. A. G. K.

Menon, who has kindly allowed me to record some of the species in advance of the publication of his report on them. Determinations made by Mr. Menon are acknowledged in every case. Two of these, *Puntius leiacanthus* and *Puntius daruphani*, recorded here under binomial combinations, will be described by him as new subspecies.

Collecting expeditions in recent years have been made by the writer to Tasek Bĕra, a swampy area in a sparsely inhabited district in the jungle of south Pahang, in October 1949, and in August 1950 to the State of Trengganu. The most important contribution to these records, however, has been made by collecting at Kuala Tahan in Pahang, the headquarters of the game warden in charge of the King George V National Park.

Kuala Tahan is at the confluence of the Tahan and Tembeling rivers, affluents of the Pahang river, and could not be more ideally situated for the collection and study of the fish inhabiting the headwaters of the large Malayan rivers. It is a most fortunate circumstance that Mr. C. S. Ogilvie has held the office of game warden in charge of the Park for the greater part of the period following the war. His methodical collecting of the river fish and recording of their Malay names and living colours has contributed most substantially to our knowledge of Malayan fresh-water ichthyology, and I am glad of this opportunity to express my thanks, both to Mr. Ogilvie and to the Chief Game Warden of the Federation of Malaya, for the valuable series of specimens that has been presented to the Raffles Museum.

Scleropages formosus (Müller & Schlegel)

Weber & de Beaufort, 1913, p. 13.
Smedley, 1931, p. 67.
Smith, 1945, p. 55.

A specimen of 53 cm. from Tasek Bĕra, Pahang, October 1949. The only previous formal record from Malaya is that of Smedley, 1931, from the Bukit Merah Reservoir in Perak, where it is still taken frequently.

The Malay name is Kĕlĕsa. I have not heard the alternative name Baju Rantai, which Robinson (quoted by Smedley) says is used by the Malays of the Tembeling.

Danio regina Fowler

Herre & Myers, 1937, p. 56.
Smith, 1945, p. 97.

Identified by Mr. Menon.

The only record of this fish from a Malayan locality is that of Herre & Myers from the River Plus in Perak. It has since

been collected at Jalong in a tributary stream of the Plus, at Baling in Kedah and at Kaki Bukit in Perlis. These records suggest that it is confined to the north-western part of Malaya; it does not seem to occur anywhere east of the main range or in the south of the country.

Rasbora borapatensis H. M. Smith

SMITH, 1934, p. 302; 1945, p. 107.

The extension of this Siamese species into Malaya has not previously been recorded. Specimens were taken by the road side between Kuala Trengganu and Kuala Brang in Trengganu, near the 12th mile, August 1950, and I saw others in a domestic aquarium in Kota Bharu, Kelantan.

My thanks are due to Dr. Martin Brittan for confirming the identity of the Trengganu specimens by comparison with paratypes in the U.S. National Museum.

Rasbora kalochroma (Bleeker)

WEBER & DE BEAUFORT, 1916, p. 70.

In swamp forest near Merchang, Trengganu, the locality has been described above under *Parosphromenus paludicola*.

Although Weber & de Beaufort quote "Malacca" as a locality, these are the first Malayan specimens I have seen. A field note reads: back olive, flanks greenish, underparts pale, a somewhat diffuse dark blotch above the middle of the pectoral and another larger one below the hind border of the dorsal; all fins, including caudal, orange-red, anal and ventrals brightest. The upper caudal lobe is distinctly longer than the lower. The largest specimen has standard length about 65 mm.

Rasbora dorsiocellata Duncker

WEBER & DE BEAUFORT, 1916, p. 68.
DE BEAUFORT, 1939, p. 192.

This little fish occurs in extraordinary profusion in the clear, slowly flowing waters of the Tasek Bĕra swamps in south Pahang. It extends north at least to central Trengganu, where I collected it in 1950, but I have not found it in south-east Johore (the Kota Tinggi and Mawai districts) where many other small swamp-dwelling fish are abundant.

It was described from Malaya (Kuala Jĕlai, Negri Sĕmbilan and the Muar river in Johore) and is recorded from Sumatra and Billiton.

Puntius partipentazona Fowler

SMITH, 1945, p. 175.

This species is also amazingly abundant at Tasek Bĕra and shares with the last the position of dominant small fish of those waters. The body markings are somewhat variable. There are always four transverse black bands, one through the eye, a second before the dorsal, a third behind it and a fourth at the base of the caudal. In addition there is often a black spot on the side below the dorsal, and in heavily pigmented specimens this may be joined to the black patch at the base of the dorsal.

Specimens are in the collection from Malacca, Perak, Pahang, Trengganu and Kelantan. Mr. Ogilvie records Pĕlampong Jaring as the Malay name. The normal connotation of this term is the floats that support the upper edge of a seine net. They may be painted with a conspicuous pattern to distinguish them from floating rubbish, and this is presumably the reason for associating them by name with this gaily coloured little fish.

Puntius leiacanthus (Bleeker)

SMITH, 1945, p. 172.

Identified by Mr. Menon.

A series from Kota Bharu, Kelantan, July 1939. The species was described from Java and is otherwise known only from Siam and, by the present record, from northern Malaya.

Puntius daruphani H. M. Smith

SMITH, 1945, p. 182.

Identified by Mr. Menon.

This fish was collected in April 1940 at Kuala Tahan and again at the same locality by Mr. Ogilvie in June 1950. A specimen of 420 mm. standard length was among the former series and a cast of it is in the Museum exhibition galleries.

The colours in life, recorded by the writer in 1940, are: Light greyish-green above, the scales darkly bordered, passing into golden yellow below; pectorals greenish-yellow, ventrals golden yellow, anal whitish, dorsal and caudal greenish-grey. The Malay name is Krai Kunyet; Kunyet (saffron) refers to the golden yellow colour.

Probarbus jullieni Sauvage

HERRE & MYERS, 1937, p. 61.

SMITH, 1945, p. 151.

Herre & Myers' record from Chenderoh in Perak is the only previous one from Malaya. Mr. Ogilvie has taken several specimens at Kuala Tahan, including one of which he recorded the

total length as 3 feet 11½ inches (about 1,200 mm.) and the weight as 44 pounds.

Puntioplites proctozysron (Bleeker)

SMITH, 1945, p. 194.

Specimens were taken at Kuala Tahan in Pahang in 1939 and 1940 and in recent years by Mr. Ogilvie. Hitherto the known range has been confined to Siam and the Mekong in Indo-China.

The living colours, from Mr. Ogilvie's account, are: head coppery brown above mottled with blackish, a narrow dark grey stripe behind the gill-covers, reaching to base of pectorals; rest of body silvery white. All the fins clear white with blackish borders. Large specimens are called Pata Puling, smaller ones Kĕrengkek.

Amblyrhynchichthys truncatus (Bleeker)

WEBER & DE BEAUFORT, 1916, p. 105.
SMITH, 1945, p. 229.

Specimens were taken at Kuala Tahan in Pahang in 1939 and again by Mr. Ogilvie in 1950, but the species has not previously been recorded from Malaya.

I encountered the name Mata Bĕsar (big-eye) in 1939, but Mr. Ogilvie sent specimens under the name Pata Puling, which is also used for large specimens of *Puntioplites proctozysron*.

Leptobarbus hoeveni (Bleeker)

WEBER & DE BEAUFORT, 1916, p. 96.
SMITH, 1945, p. 122.

Several specimens from Kuala Tahan collected by Mr. Ogilvie.

The colours in life, summarised from his notes, are: back blackish olive; the scales of the sides, above the lateral line, are divided sharply into olive-grey anterior and greenish white posterior halves, below the lateral line they are similarly divided into pinkish and silvery white halves; ventral surface creamy-nacreous. Dorsal fin grey, anal white with orange flush and deep orange border, caudal grey with a pink flush; pectorals white, pink at base, with uppermost ray grey, ventrals white with orange borders.

This is the Jĕlawat or Krai Jĕlawat of the Malays. Krai is generic for several large Cyprinids.

Morulius chrysophekadion (Bleeker)

WEBER & DE BEAUFORT, 1916, p. 210.
SMITH, 1945, p. 248.

A specimen of about 50 cm. collected by the writer at Kuala Tahan in Pahang in April 1940, and another by Mr. Ogilvie in 1950. The species has not been recorded before from Malaya.

The living colours, from Mr. Ogilvie's account, are: head dark greyish brown above with pale greenish grey tubercles. Body dark grey above, rather paler below, the scales edged with paler grey. Fins dark grey to blackish. The Malay name is Jĕnkua or Jĕnkua Basong.

Barynotus microlepis (Bleeker)

WEBER & DE BEAUFORT, 1916, p. 120.

A specimen taken by the writer at Kuala Tahan in Pahang in April 1950 is the first to be formally recorded from Malaya. The Malay name is Umut or Umbut.

Labiobarbus ocellatus (Heckel)

WEBER & DE BEAUFORT, 1916, p. 114 (*Dangila ocellata*).

Two specimens collected by Mr. Ogilvie at Kuala Tahan in 1950 are the first recorded from this country.

The colours in life, summarised from Mr. Ogilvie's notes, are: olive above passing to dark brown or reddish brown posteriorly; sides pale olive above lateral line with a dark brown elongate patch below the dorsal; below lateral line silvery white. Caudal red with translucent grey border, dorsal red bordered with black anteriorly, pectorals, ventrals and anal red with whitish borders.

Labiobarbus festiva (Heckel)

WEBER & DE BEAUFORT, 1916, p. 118 (*Dangila festiva*).

Specimens from Kota Tinggi in Johore, March 1938 and from Tasek Bĕra, Pahang, October 1949.

Living colours, from field notes of the Pahang specimens, are: Body greenish-silvery with a dark spot on each scale. Paired fins and anal greenish; dorsal red in basal half, black in apical half, the colours sharply divided; caudal with a bright red band along the dorsal and ventral margin and a black band inside each of these, tapering towards the tip.

The species was described from Borneo and in Malaya seems to be confined to the south-eastern part of the country.

Labiobarbus lineatus Sauvage

HERRE & MYERS, 1937, p. 59 (*Dangila lineata*).
SMITH, 1945, p. 223.

A series from Baling, Kedah, December 1938. The species was recorded from northern Perak by Herre & Myers and is otherwise known from Indo-China and Siam. This is probably one of several continental species that extends into the northern Malayan states but not into the centre or south of the Peninsula.

Garra tæniata H. M. Smith

SMITH, 1945, p. 260.

Identified by Mr. Menon.

A series from Baling, Kedah, December 1938. The species was described from Peninsular Siam and later found to be widely distributed also in continental Siam; it seems to be in the same distributional category as the last species.

Homaloptera ocellata van der Hoeven. Fig. 3

WEBER & DE BEAUFORT, 1916, p. 17 (*H. erythrorhina* in part, excluding *H. salusar*); p. 18 (*H. pavonina*).
HORA, 1932, p. 277.

A single specimen of standard length 63 mm. (with caudal 77 mm.) taken by Mr. Ogilvie at Kuala Tahan in December 1951.

Although I have little doubt that the specimen is correctly identified, its proportions, especially those of the head, differ considerably from those given by Weber & de Beaufort for both *H. erythrorhina* and *H. pavonina*, and I shall therefore record the measurements:

Standard length 63; height at origin of dorsal 10·5; length of head 15; length of preorbital part of head 8·8; breadth of head at base of pectorals 9; eye 1·8. The number of perforated scales in the lateral line (61 or 62) and the fin-ray counts admit of its inclusion in *ocellata;* the greatest length of the pectoral (12·8) is less than the head. It is in the greater proportional length of the head that the specimen appears to be atypical. As the measurements show it is 4·2 in the standard length and its preorbital part is more than half of its length; the eye is 8·3 in the length of the head. A field note says that the specimen shrunk when preserved in spirit, but such shrinking would not materially affect the proportion of length of head to body, and (as pointed out by Hora, l.c. p. 278) it makes the eye appear relatively larger. The three barbels are not equal, but increase in size from before backwards.

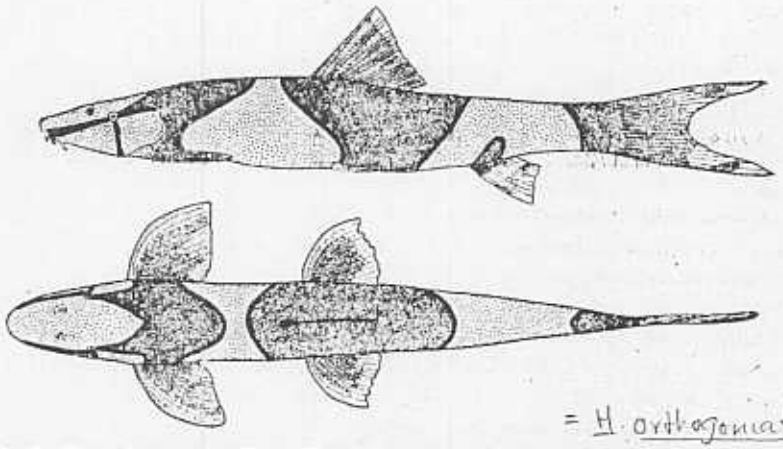

Fig. 3. *Homaloptera ocellata*. Semi-diagrammatic representation of pattern in lateral and dorsal view.

The pattern is very distinct and is illustrated at fig. 3. The view of the dorsal surface is drawn from a photograph taken in life by Mr. Ogilvie and well shows the long, pointed head. The colours in life, adapted from the collector's notes, are as follows: The dark areas of the back and sides are dark red-brown, the pale areas pale red, with a posterior shade of grey and yellow, on the head, pale red-brown on the body; the areas are demarcated by a double border, black on the dark side, yellow on the light. Ventral surface pink and grey. Fins red with black or grey fringes and a pale yellow band in the anal; caudal very pale red with dark red-brown markings. In the preserved specimen all trace of the red colour (described by the collector as like that of a boiled prawn) has disappeared, but the pattern remains very distinct.

H. ocellata is an addition to the Malayan fauna, known previously from Java and Sumatra.

Aplocheilus panchax (Hamilton)

Smith, 1945, p. 422.

I have been informed by Captain M. A. W. Davies, M.C. that this fish is present in a natural pool fed by a spring on the plateau summit of the Cameron Highlands, at an altitude of over 5,000 feet. He made tests of surface temperature after five consecutive hours of full sunlight, which resulted in average readings of 73° F. As temperatures are known to fall below 50° F. in

the area, the water must often be considerably colder than this. The fish is a normal inhabitant of shallow waters in the lowlands, which probably seldom fall below 80° F. It must have an unusually wide temperature tolerance.

The species has not previously been recorded from the mountains and has probably been conveyed there by human agency.

Ceratoglanis scleronema (Bleeker). Fig. 4

WEBER & DE BEAUFORT, 1913, p. 214 (*Hemisilurus scleronema*).
SMITH, 1945, p. 339.

A specimen of 580 mm. standard length was taken at Kuala Tahan by Mr. Ogilvie. This seems to be the largest specimen yet recorded; Weber & de Beaufort give the length as 400 mm. Fig. 3 was drawn from a photograph taken by Mr. Ogilvie of the fish when freshly caught.

Living colours, from notes by the collector, are: dorsal surface dark greyish brown passing through light grey to almost white beneath and pinkish on throat and chin; sides with an iridescent sheen. The horn-like barbels pinkish grey. Caudal (damaged) grey, other fins grey with dark grey or black borders.

The species is known from Java, Borneo, Sumatra and Siam and so might be expected to occur in Malaya, but this is the first record of it. Mr. Ogilvie gives the Malay name as Bilut.

Kryptopterus moorei H. M. Smith

SMITH, 1945, p. 342.

Three specimens between 155 and 165 mm. standard length were collected by Mr. Ogilvie at Kuala Tahan in 1948 and 1950. The species was described in 1945 from central Siam, and this is the second record of its occurrence.

Kryptopterus macrocephalus (Bleeker)

WEBER & DE BEAUFORT, 1913, p. 217.
HORA & GUPTA, 1941, p. 15.

This species was encountered in a slowly flowing stream in rice fields near the 12th mile on the road from Kuala Trengganu to Kuala Brang in Trengganu in August 1950. It swims in dense shoals and large numbers can easily be caught with a dip-net. Under the name "Glass Cat-fish" it is exported by Singapore dealers in aquarium fish, who probably find it occurring in a similar way in Johore. The largest specimens in this series have standard length about 70 mm.

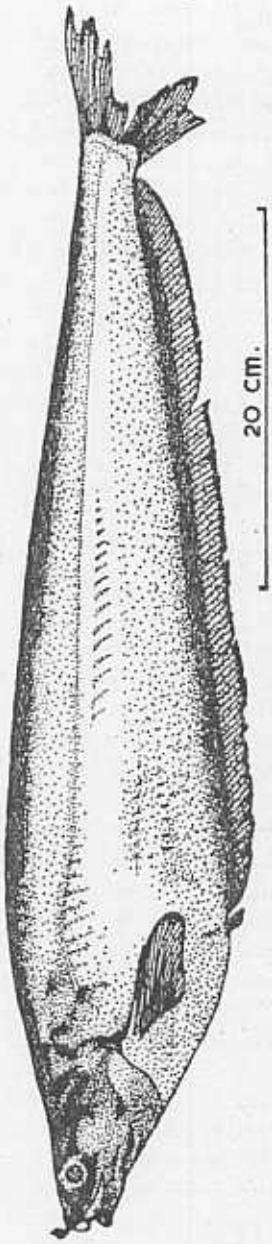

Fig. 4. *Cerateoglanis scleronema.*

Kryptopterus limpok (Bleeker)

WEBER & DE BEAUFORT, 1913, p. 219.
HORA & GUPTA, 1941, p. 15.
SMITH, 1945, p. 340.

Hora & Gupta reported a single specimen from Sungei Bĕra. Five more have since been obtained, four collected by Mr. H. D. Collings at Tasek Bĕra in 1940 and one by Mr. Ogilvie at Kuala Tahan. The largest of the former series is 180 mm. and the latter 210 mm. standard length. In the larger specimens the eye is relatively larger, about 3 in head, thus conforming with Weber & de Beaufort's description.

Leiocassis micropogon (Bleeker)

WEBER & DE BEAUFORT, 1913, p. 357.
HORA & GUPTA, 1941, p. 26.

Hora & Gupta record a single Malayan specimen. Another, rather larger, 185 mm. standard length, was taken at Tasek Bĕra, Pahang, in October 1949.

Genus **Clarias** Gronovius

In Hora & Gupta's revision of the Malayan Catfishes (1941, p. 39) four species of *Clarias* are listed, *batrachus, leiacanthus, melanoderma* (=*meladerma*) and *teysmanni. Nieuhofi* is placed in a separate genus, *Prophagorus* H. M. Smith.

Since 1941 one species, *C. macrocephalus* Günther, has been added to the fauna. Also, in the course of examining some specimens of the genus sent to him for an opinion on their identity, Dr. S. L. Hora has communicated to me his opinion that the confluence of the dorsal and anal fins with the caudal, which is the character on which the genus *Prophagorus* is based, is a mere abnormality and that the genus is not valid. He further maintains that the character is not even a specific one and identifies with *nieuhofi* two specimens from the Chenderoh Lake, Perak (sent to him for re-examination) which he previously determined as *Clarias leiacanthus* (1941, p. 40), and which have dorsal and anal quite separate from the caudal. Another specimen with this character from Tapah, Perak, is also referred by him to *nieuhofi*, considered as a species of *Clarias*. The higher dorsal count, 80–110, distinguishes *nieuhofi* from *leiacanthus*, in which it is (fide Weber & de Beaufort) 76–78. Before sending these specimens to Dr. Hora I had suspected that the fish from Tapah was *nieuhofi*, and I fully agree with him that the confluence of the median fins is not a character of major taxonomic value, and that this species should be included in *Clarias*.

After examining series of *Clarias* I have reached the conclusion that the best primary character on which to divide the species is not the shape of the occipital process but the length of the interval between it and the dorsal fin. Based on this feature the key to the Malayan species will now run as follows:

1. Occipital process separated from the dorsal by a short interval, which is contained 3½ or more times in the median dorsal length of the head ..... 2.
–. Occipital process separated from the dorsal by a longer interval, which is contained 2½ or less times in the length of the head ..... 4.
2. Anterior border of pectoral spine with strong, prominent teeth ..... *meladerma.*
–. Pectoral spine without prominent teeth ..... 3.
3. Occipital process bluntly angular so that the hind border of the head is sinuous; post-occipital interval 3½–5½ in median length of head ..... *batrachus.*
–. Occipital process rounded, forming a common curve with the hind border of the head; post occipital interval 6–7½ in length of head ..... *macrocephalus.*
4. Dorsal rays 80–110; caudal reduced in size and sometimes confluent with dorsal and anal ..... *nieuhofi.*
–. Dorsal rays 70–78; caudal normal, separate from dorsal and anal ..... 5.
5. Length of occipital process 2½ times its base; anterior margin of the frontal fontanel reaches to a line joining the middle of the eyes or further forward *teysmanni.*
–. Length of occipital process 3 times its base; anterior margin of the frontal fontanel reaches only to a line joining the posterior borders of the eyes *leiacanthus.*

Soong Min Kong (1950) has given an interesting account of the economic exploitation of *Clarias* in the Perak rice-fields. All the species are known to the Malays as Kĕli except *nieuhofi*, which is called Lembat and is shunned by the Malays under suspicion of being a carrion eater.

The seasonal cycle in the rice-fields is described in this paper (note no. 3) under *Trichogaster pectoralis*. Fishing for Kĕli begins in September, during the period when the fields are flooded by irrigation. Methods employed are the use of fish-traps (tempang) and of baited lines, earthworms being the usual bait. This continues until December, after which the fields are drained

and such Kĕli as are taken come from the sump-ponds in which the Sĕpat Siam (*Trichogaster*) are harvested. Survival of sufficient fish for the next generation is assured by the fact that many of them bury themselves in the mud for a period of aestivation during the dry season.

In marketing the fish advantage is taken of their capacity for using atmospheric air to assist respiration. They are placed in large galvanised sheet containers with the minimum of water and taken to market, where they are sold alive. Dead fish have no market value.

Clarias macrocephalus Gunther

SMITH, 1934, p. 291; 1945, p. 351.

Five specimens from Kuala Trengganu, August 1950 and one, collected by the Fisheries Department, from Tapah, Perak, 1951. This is a Siamese species, not known from the Malaysian islands, and its extension into Malaya is recorded here for the first time.

Clarias nieuhofi C. & V.

WEBER & DE BEAUFORT, 1913, p. 189.
HORA & GUPTA, 1941, p. 43 (*Prophagorus nieuhofi*).
SMITH, 1945, p. 352 (*Prophagorus nieuhofi*).

In addition to the specimen from Tioman Island recorded by Hora & Gupta there are now in the collection two from Chenderoh Lake, Perak, the larger 395 mm. in length (recorded as *C. leiacanthus* by Hora & Gupta, p. 40) and one from Tapah in Perak. The generic status of this fish is discussed above; its Malay name is Limbat or Lembat.

Synaptura panoides Bleeker

WEBER & DE BEAUFORT, 1929, p. 174.
SMITH, 1945, p. 438.

Two specimens have been collected by Mr. Ogilvie at Kuala Tahan. Weber & de Beaufort give Singapore as a locality, but I believe the present record is the first for Malayan fresh waters.

This and the other fresh-water Flat-fish, *Achiroides achira* (Duncker), are known as Sisa Nabi to the Malays of the Tembeling. The name means "leavings of the Prophet" and refers to a legend that the fish was cooked, half of it eaten and the remainder mercifully restored to life and replaced in the water.

Chonerinus modestus (Bleeker)

DUNCKER, 1904, p. 191.
SMITH, 1945, p. 574.

Recorded from Kuala Lumpur by Duncker this species has been taken by Mr. Ogilvie at Kuala Tahan.

Tetraodon leiurus Bleeker

SMITH, 1945, p. 577.

Two from the Jĕlai River, Pahang, 1900 and four from Kuala Tahan, 1940 and 1949. These are the first inland records from Malaya.

Tetraodon palembangensis Bleeker

SMITH, 1945, p. 576.

Two collected by Mr. Ogilvie in 1950 at Kuala Tahan and one from Tasek Bĕra, Pahang, October 1949. Not previously recorded from Malaya.

Mr. Ogilvie gives the following account of the living colours: above, in front of eyes, dark yellowish-brown, rest of dorsal surface lemon-yellow with a net-work of blackish-brown lines, patches and spots; nine large black spots along each side. Lower surface white with a net-work of light brown lines. He quotes Buntal Bĕsar as the Malay name used on the Tembeling. Buntal is generic for Tetraodont fish and bĕsar is large.

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5. Malay names

Two main sources of Malay names of fishes have been available in the past. One is the book, Malayan Fishes, by C. N. Maxwell (1921) and the other R. J. Wilkinson's Malay-English Dictionary (1932). Maxwell admits in his preface that he knows very little about fresh-water fishes; in Wilkinson there is a large number of names, but knowledge of the taxonomy of our fishes was at that time rudimentary and in many cases the names are inadequately or incorrectly correlated with their ichthyological equivalents.

The following list represents all the names of which I am reasonably certain that this correlation is correct. It is limited to strictly fresh-water species; anadromous and brackish water fishes are not included. An important source of information has been the careful records kept by Mr. C. S. Ogilvie at Kuala Tahan in Pahang; acknowledgments in the form (C.S.O.) are to him. In conversation the word *Ikan* (fish) precedes the name or not, as the context requires.

Osteoglossidae	
Kĕlĕsa	*Scleropages formosus* (M. & S.).
Notopteridae	
Bĕlida	*Notopterus notopterus* (Pallas) and *N. chitala* (Ham).
Mastocembelidae	
Tilan	All species of *Mastocembelus.*
Tilan Pĕrayo (C.S.O.)	*Macrognathus aculeatus* (Bloch).
Flutidae	
Bĕlut	*Fluta alba* (Zuiew).
Cyprinidae	
Nyuar, Nyĕnyuar	*Luciosoma setigerum* (C. & V.).
Lalang	*Oxygaster anomalura* v. Hasselt, *O. oxygastroides* (Bleeker) and *Paralaubuca typus* Bleeker.
Bulu Ayam	Young of *Oxygaster* spp.
Bada	Several species of *Rasbora.*
Sĕluang, Bada Sĕluang	Species of *Rasbora,* especially *R. elegans* Volz.
Sikang	*Barilius guttatus* Day.
Parang	*Macrochirichthus macrochirus* (C. & V.) ; Also the marine *Chirocentrus.*
Krai	Used in combination for several large Cyprinids.
Jĕlawat, Krai Jĕlawat	*Leptobarbus hoeveni* (Bleeker).
Sia	*Mystacoleucus marginatus* (C. & V.).
Sĕbarau	*Hampala macrolepidota* v. Hasselt.
Kĕlah	Fishes of the genus *Tor,* including *T. tambroides* (Bleeker) and *T. douronensis* (C. & V.).

Chĕrĕchek	*Cyclocheilichthys apogon* (C. & V.) and perhaps *C armatus* (C. & V.).
Kĕmpĕras (C.S.O.)	A species of *Cyclocheilichthys*, at present unidentified.
Tĕmĕlian (C.S.O.)	*Probarbus jullieni* Sauvage.
Tĕbal Sisek (C.S.O.)	*Puntius binotatus* (C. & V.).
Krai Kunyet	*Puntius daruphani* H. M. Smith.
Bagoh	*Puntius lateristriga* (C. & V.).
Pĕlampong Jaring (C.S.O.)	*Puntius partipentazona* (Fowler).
Lampam	*Puntius schwanefeldi* (Bleeker).
Pata Puling (C.S.O.)	*Puntioplites proctozysron* (Bleeker).
Kĕrengkek (C.S.O.)	Young of *P. proctozysron*.
Daun	*Acrossocheilus deauratus* (C. & V.).
Kĕjor	*Acrossocheilus hexagonolepis* (McClell).
Tĕngas	Young of *A. hexagonolepis*.
Hangus (C.S.O.)	*Balantiocheilos melanopterus* (Bleeker).
Lomah	*Thynnichthys thynnoides* (Bleeker) and possibly *Labiobarbus ocellatus* (Heckel).
Petan (C.S.O.)	*Osteochilus brachynotopterus* (Bleeker).
Tĕrĕbol	*Osteochilus hasselti* (C. & V.).
Pĕroi (C.S.O.)	Young of *O. hasselti*.
Ara, Hara (C.S.O.)	*Osteochilus melanopleura* (Bleeker).
Rong (C.S.O.)	*Osteochilus vittatus* (C. & V.).
Kawan	*Labiobarbus cuvieri* (C. & V.) and possibly others of the genus.
Puchok Pisang	*Labiobarbus fasciatus* (Bleeker).
Lĕmek (C.S.O.)	*Labiobarbus ocellatus* (Heckel) and possibly *Thynnichthys thynnoides* (Bleeker).
Batu Ulu, Batu Hulu	*Barbichthys laevis* (C. & V.).
Umut, Umbut	*Barynotus microlepis* (Bleeker).
Jenkua, Jenkua Basong (C.S.O.)	*Morulius chrysophekadion* (Bleeker).

Jĕmĕrong (C.S.O.)	*Lobocheilus* sp., at present unidentified.
Sĕlimang, Sĕlimang Batu	*Crossochilus oblongus* (C. & V.).
Sĕlimang Batang (C.S.O.)	*Epalzeorhynchus kallopterus* (Bleeker).
Homalopteridae	
Susoh Batu, Puting Bĕliong	Species of *Homaloptera*.
Cobitidae	
Pasir	Any Cobitid other than *Botia;* especially *Acanthopsis choirorhynchos* (Bleeker).
Lali	*Botia hymenophysa* (Bleeker).
Lali Pĕlandok (C.S.O.)	*Botia modesta* Bleeker.
Siluridae	
Bilut (C.S.O.)	*Ceratoglanis scleronema* (Bleeker).
Lais	All species of *Kryptopterus*.
Tapah	*Wallago tweediei* (Hora & Misra) and perhaps others of the genus.
Tapah Bumban (C.S.O.)	*Ompok bimaculatus* (Bloch).
Bĕgahak, Gĕrehak (C.S.O.)	*Belodontichthys dinema* (Bleeker).
Clariidae	
Kĕli	Species of *Clarias*, especially *C. batrachus* (L.).
Sĕmbilang (C.S.O.)	Occasionally applied to Clariids, more usually to the marine Plotosids.
Lembat, Limbat	*Clarias nieuhofi* (C. & V.).
Schilbeidae	
Riu, Riu-riu	*Laides hexanema* (Bleeker).
Lawang	*Pangasius micronemus* Bleeker.
Patin	*Pangasius ponderosus* Herre & Myers and possibly other species of the genus.

Amblycipitidae	
Baung Batu (C.S.O.)	*Amblyceps mangois* (Ham.).
Bagridae	
Baung	*Mystus nemurus* (C. & V.).
Baung Akar (C.S.O.)	*Mystus planiceps* (C. & V.).
Sĕngiring	*Mystus cavasius* (Ham.).
Tengku Lolah (C.S.O.)	*Mystus wycki* (Bleeker).
Baung Pisang	*Leiocassis baramensis* Regan.
Sisoridae	
Kĕndĕrap, Tinggang (C.S.O.)	*Bagarius bagarius* (Ham.).
Dĕpu	*Glyptothorax majus* (Boulenger).
Akysidae	
Dĕpu	*Acrochordonichthys rugosus* (Bleeker) and probably others of the genus.
Belonidae	
Julong, Julong-julong	*Xenentodon canciloides* (Bleeker); also used of marine Belonids and Hemirhamphids.
Synapturidae	
Sisah Nabi (C.S.O.)	*Achiroides achira* (Duncker) and *Synaptura panoides* Bleeker.
Anabantidae	
Puyu	*Anabas testudineus* (Bloch).
Pĕlaga	*Betta splendens* Regan and perhaps *B. pugnax* (Cantor).
Sĕpilai (Penang)	*Betta splendens.*
Sĕpilai Batu (Penang)	*Betta pugnax.*
Tĕbakang	*Belontia hasselti* (C. & V.) and *Helostoma temminckii* (C. & V.).
Kalui	*Osphronemus goramy* Lac.
Sĕpat, Sĕpat Padi	*Trichogaster trichopterus* (Pallas).
Sĕpat Siam	*Trichogaster pectoralis* (Regan).
Karim	*Trichopsis vittatus* (C. & V.).

Channidae (= Ophicephalidae)	
Bakak, Bakap	*Channa gachua* (Ham.) and *C. melasoma* (Bleeker).
Ubi, Bujok (C.S.O.)	*Channa lucius* (C. & V.).
Jaloi (C.S.O.)	*Channa marulioides* (Bleeker).
Toman	*Channa micropeltes* (C. & V.).
Toman Tarong (C.S.O.)	Large *C. micropeltes.*
Toman bunga	Young *C. micropeltes.*
Aruan, Toman Paya	*Channa striata* (Bleeker).
Toman Jela (C.S.O.)	*Channa melanoptera* (Bleeker).
Toman Ekor Kuang (C.S.O.)	Young *C. melanoptera.*
Nandidae	
Kĕpar	*Pristolepis fasciatus* (Bleeker).
Eleotridae	
Bĕlontok	*Oxyeleotris marmoratus* (Bleeker).
Tetraodontidae	
Buntal	*Tetraodon leiurus* Bleeker and *T. palembangensis Bleeker;* applied also to marine species of *Tetraodon.*