

## ON A COLLECTION OF FRESHWATER FISHES FROM ENDAU-ROMPIN, PAHANG-JOHORE, PENINSULAR MALAYSIA

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**ABSTRACT.** - Taxonomic notes on 47 species of freshwater fishes from the Endau-Rompin State Park and its adjacent areas in Johore and Pahang, Peninsular Malaysia are presented. The present paper complements a preliminary survey report by Lim *et al.* (1990).

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### INTRODUCTION

During the Ulu Kinchin phase of the faunal survey of Endau-Rompin State Park (Fig. 1) in conjunction with the Malayan Nature Society Scientific and Heritage Expedition: Rompin-Endau 1989, between April and August 1989, three teams from the Zoological Reference Collection, Department of Zoology, National University of Singapore (ZRC); Zoology Department, University of Malaya, Kuala Lumpur (UMKL); and the Department of Biology, University Sains Malaysia, Penang (USM) made collections of the fish fauna. All three teams made documentations in the expedition log book. For the Singapore team, collections were made in two five day phases from 12 to 16 June 1989, and between 17 and 21 July 1989.

As the log book records were preliminary, the second author has liaised with members of both the UMKL (Dr. Abdul Halim, Mr. Azmi Abu Bakar and Mr. George Liew) and USM (Dr. Ahyaudin Ali) teams to confirm all the listings. In this report, all the fish records are consolidated.

Of the 47 species discussed here, the Singapore team collected 31 species. The UMKL team documented and collected eight species not obtained by us, and four are based on other sightings and earlier expedition reports. Specimens of two other species collected from the Ulu Endau area in the 1970s and deposited in the ZRC (but never published) are also included.

A brief preliminary report on the fishes obtained from Ulu Kinchin as well as a list of all fishes known thus far from Endau-Rompin State Park was made by Lim *et al.* (1990). Being a survey report, the material examined and detailed taxonomy of the various taxa were not included. Species from areas outside the Ulu Kinchin area were also not discussed. The present paper is intended to remedy these aspects and supplement that report.

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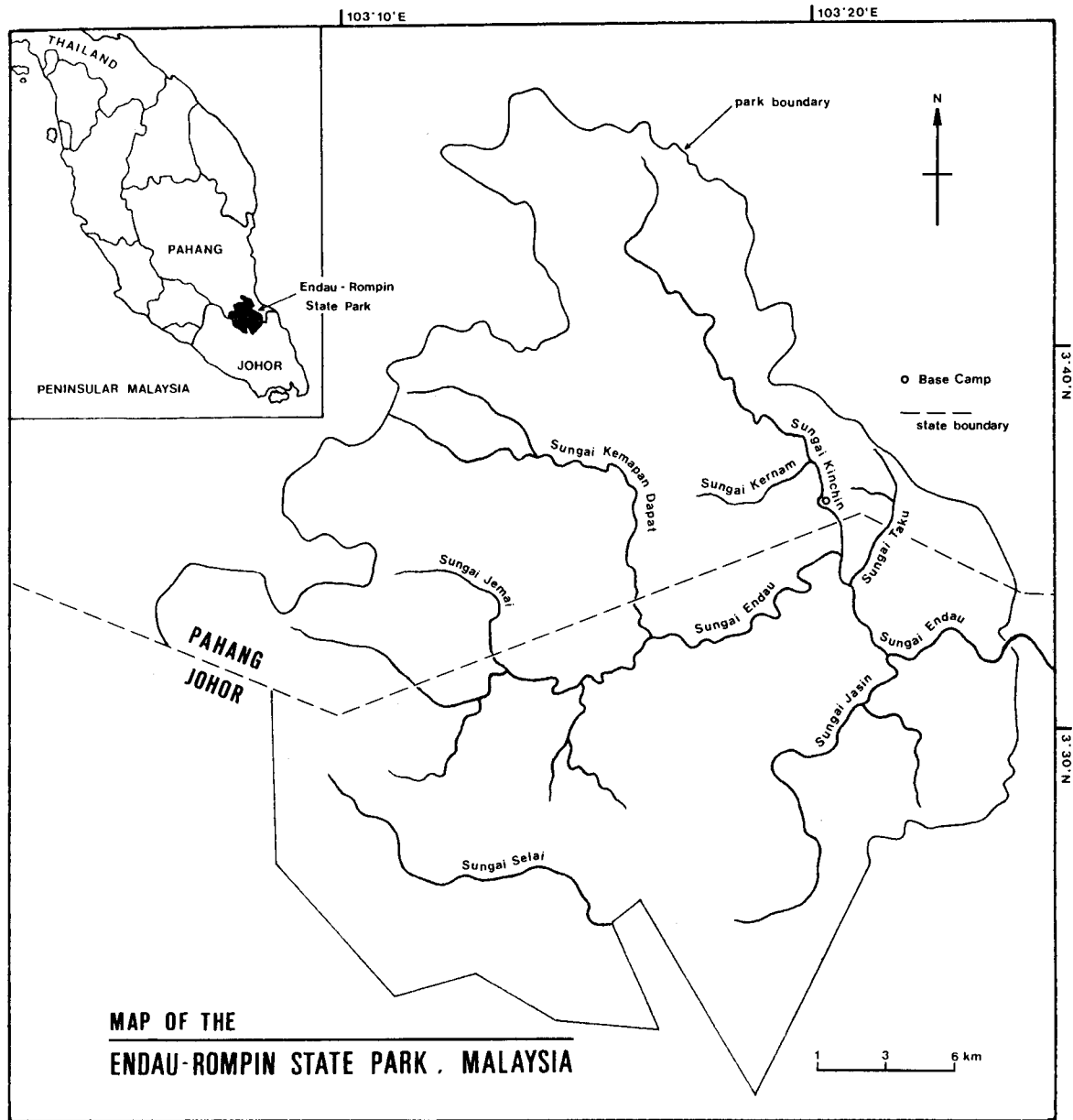


Fig. 1 Map of the Endau-Rompin State Park, Malaysia. Most of the material discussed herewith were collected from the northeastern part of Endau-Rompin, along Sungai Kinchin in Pahang and Sungai Taku in Johore. Sungai Seladang, one of the key areas, is on the eastern bank of Sungai Kinchin, about midway between the mouth of Sungai Kernam and the base camp.

The taxonomy of Southeast Asian freshwater fishes is still in a survey and discovery phase, with many older incorrect identifications creating substantial confusion. Two recent works are especially important for any student of Malaysian fishes - Kottelat (1989) and Roberts (1989). Kottelat's paper is basically a tentative listing of the valid fish names (at that time) used for mainland Southeast Asia (including Peninsular Malaysia), discussing the taxonomy when necessary. Roberts' monograph on the west Bornean (Kapuas drainage) fishes is very useful, but although published in July 1989, it does not incorporate many of the recent taxonomic changes as it was sent to press in November 1984.

There have been collections and reports of fishes from the Endau-Rompin area before the recent expeditions. Dr. Lim Chuan Fong made collections at Sungai Endau and its tributaries in the 1970s (in and adjacent to the present Endau-Rompin State Park) (see Lim, 1973), most of which are now deposited in the ZRC, National University of Singapore. Willbourn (1926) recorded several food fishes from the northern parts of Ulu Rompin (= Ulu Kinchin, notably Ikan Sebarau (*Hampala macrolepidota*), Ikan Tengas (probably *Tor soro*) and Ikan Bujok (*Channa lucius*). He also commented that the natives caught large numbers of "Ikan Batu". The identity of this fish is difficult to ascertain. Following Tweedie (1952c, d), this fish could be *Barbichthys laevis* (Valenciennes, 1842) (known locally as Ikan Batu Ulu). This fish however, was not recorded by either Zakaria-Ismail (1987), Kiew (1986) or the present surveys. Willbourn (1926) mentions that the fish occurs in large schools. The exact identity of his "Ikan Batu" will have to await further investigations.

## METHODS AND MATERIALS

The ZRC specimens were mostly collected using two methods. A gill net (mesh size 1.0 cm) was laid across and along Sungai Kinchin, Sungai Kernam and Sungai Taku during the day and collected the subsequent morning. Most of the larger free-swimming fishes from deeper waters were obtained this way. Large rectangular nets (72.0 by 40.0 cm) of two mesh sizes (0.2 and 0.5 cm) were also used to sample submerged leaf litter, mud substrates and shallow waters. The UMKL specimens were mainly obtained by stunning them with electricity from a DEKA generator.

Specimens obtained by the ZRC were fixed in formalin before transfer into 70% alcohol. Some of the larger specimens were degutted before preservation. All species were photographed alive or freshly dead for the colour records.

All measurements are in millimetres. The standard length is measured from the tip of the snout to the base of the caudal peduncle. The predorsal length is the distance from the tip of the snout to the base of the first ray of the dorsal fin. The interdorsal length refers to the distance between the base of the last ray of the dorsal fin to the beginning of the base of the adipose fin.

Specimens examined in this study are deposited in the ZRC, ZSM (Zoologische Staatssammlung, München) and UMKL.

## SYSTEMATICS

### Family Osteoglossidae

#### Genus *Scleropages* Günther, 1864

##### *Scleropages formosus* (Müller & Schlegel, 1844)

*Material examined.* - None from Ulu Kinchin.

*Remarks.* - A specimen was sighted by a member of the UMKL staff in Sungai Kinchin. They have previously been reported from Sungai Endau to the south (Zakaria-Ismail, 1987).

### Family Notopteridae

#### Genus *Notopterus* Lacepède, 1800

This genus is currently being revised by Roberts and Wongratana (Roberts, *in litt.*).

##### *Notopterus aff. chitala* (Hamilton, 1822)

*Material examined.* - None from Ulu Kinchin.

*Remarks.* - Kiew (1986) reported the capture of large Ikan Belida from Sungai Kinchin during the Ulu Endau phase of the expedition. He commented that the "..... fishing party arrived with six huge featherback[s] and a pail full of small carp ..." (p. 37). The only species of large Ikan Belida from Malaysia is the species known as *N. chitala*. The exact identity of the Malayan species however, has yet to be ascertained (Roberts, *in litt.*). All known Malayan specimens lack the black ocelli on the sides of the body. Zakaria-ismail (1987) had reported the other Malayan species, *Notopterus notopterus* from Ulu Endau.

### Family Cyprinidae

#### Genus *Rasbora* Bleeker, 1860

Other than the species collected by ourselves from Ulu Kinchin, we have also examined some specimens in the ZRC collected by Dr. Lim Chuan Fong from the Ulu Endau area in the 1970s. We have incorporated these species here to make the study more complete. Howes (1980) transferred several species of *Rasbora* into a new genus *Parluciosoma*, but Rainboth & Kottelat (1987), Kottelat (1989) and Roberts (1989) recommended the continued use of *Rasbora* sensu lato until a complete revision of the genus can be accomplished. Until then, Brittan's (1954, 1972) work remains the most comprehensive reference on the genus.

***Rasbora elegans* Volz, 1903**

**Material examined.** - 5 spec. (ZRC.1989.8264-8268), eastern tributary between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng & H. P. Ng, 13.vi.1989. — 1 spec. (ZRC.1989.8269), Sungai Taku, Johore, leg. P. K. L. Ng, 15.vi.1989. — 2 juvs. (ZRC.1989.8277-8278), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989. — 1 juv. (ZRC.1989.8649), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 2 spec. (ZRC.1989.8673-8674), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 2 spec. (ZRC.1989.8690-8691), second tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 6 spec. (ZRC.1989.8700-8705), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

**Remarks.** - A very common cyprinid in the entire area.

***Rasbora bankanensis* (Bleeker, 1853)**

**Material examined.** - 4 spec. (ZRC 1989.8273-8276), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989. — 1 spec. (ZRC 1989.8272), Sungai Taku, Johore, leg. P. K. L. Ng, 15.vi.1989.

**Remarks.** - Specimens from the Sungai Kinchin were collected by handnet in shallow water at night. At Sungai Taku, schools of small individuals were observed near the water surface. However, only one specimen was obtained from this locality because the mesh size of our nets was too large. *Rasbora bankanensis* is common in southern Malaysia.

***Rasbora caudimaculata* Volz, 1903**

**Material examined.** - 6 spec. (ZRC 1989.7740-7745), Sungai Sembrong, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 26.xi.1972.

**Remarks.** - This large and distinctive species is a much sought after aquarium fish. Zakaria-Ismail (1987) reported the species from Ulu Endau, the present record being adjacent to the park's boundary.

***Rasbora cephalotaenia* (Bleeker, 1852)**

**Material examined.** - 1 spec. (UMKL), Sungai Taku, Johore, leg. G. Liew, vi.1989. — 1 spec. (ZRC 1989.7193), Sungai Sembrong, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 26.xi.1972.

**Remarks.** - A single specimen from Sungai Taku was obtained by electrofishing. Another was collected from near the park's boundary by Dr. Lim Chuan Fong in 1972.

***Rasbora myersi* Brittan, 1954**

*Material examined.* - 4 spec. (ZRC 1989.7758-7761), Sungai Sembrong, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 26.xi.1972.

*Remarks.* - The present specimens collected from an area adjacent to the park's boundary agree very well with *R. myersi* in all major characters including colouration. There are 12 predorsal scales, which is within the range mentioned for this species by Brittan (1954). Its presence in the main Endau-Rompin Park area can be expected.

**Genus *Puntius* Hamilton, 1822**

We follow Kottelat (1989) and Roberts (1989) in using the genus *Puntius* in a broad sense although this genus can probably be divided into distinct groups after the taxonomy of the many species is resolved.

***Puntius binotatus* (Valenciennes, 1842)**

*Material examined.* - 3 spec. (ZRC 1989.8261-8263), eastern tributary between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng & H. P. Ng, 13.vi.1989. — 2 juvs. (ZRC 1989.8675-8676), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 1 spec. (ZRC 1989.8689), second tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 1 spec. (ZRC 1989.8699), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

*Remarks.* - This common barb appears to favour the smaller tributaries of Sungai Kinchin, with no specimens being collected or observed from the main river.

***Puntius lateristriga* (Valenciennes, 1842)**

*Material examined.* - 2 spec. (ZRC 1989.8253-8254), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989. — 1 spec. (ZRC 1989.8729), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989.

*Remarks.* - Unlike *Puntius binotatus*, this species seems to prefer the larger and more open water channels. Young fish however, were found at the mouth of the small tributary streams. The dark markings on the sides of the fishes from the areas studied correspond with the geographical variety from this area (Tweedie, 1961).

**Genus *Barbodes* Bleeker, 1860**

We follow Rainboth (1981) in using this generic name for large species previously assigned to *Puntius*. Kottelat (1989) recognised seven species of *Barbodes* in the Indochinese area, including the commercially important *B. gonionotus* (Bleeker, 1850).

***Barbodes schwanefeldii* (Bleeker, 1853)**

**Material examined.** - 1 spec. (ZRC 1989.8226), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 1 spec. (ZRC 1989.8714), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989. — 3 spec. (ZRC 1989.8754-8756), Sungai Kinchin, base camp, Pahang, leg. 18.vii.1989.

**Remarks.** - Specimens of this species (including large specimens) (known as Lampam Sungai to the locals) were collected by lines baited with flour and by gill-netting. This fish seems to be a likely candidate for aquaculture.

**Genus *Tor* Gray, 1833**

The taxonomy of *Tor*, *Poropuntius* Smith, 1931 and *Neolissochilus* Rainboth, 1985 has yet to be satisfactorily resolved (see Rainboth, 1981, 1985). Following the existing keys (eg. Smith, 1945; Mohsin & Ambak, 1983) which use the median lobe of the lower lip as a character for differentiation, it would appear that there might be three species of *Tor* in the Sungai Kinchin drainage; *Tor tambroides* (Bleeker, 1854), *Tor douronensis* (Valenciennes, 1842) and *Tor soro* (Valenciennes, 1842). Tweedie (1956b: 62) questioned the value of their distinguishing characters in his brief note on *Tor douronensis*, and commented that *T. tambroides* (as perhaps even *T. tambra* (Valenciennes, 1842)) might be a synonym of *T. douronensis*. Lim (1973) "revised" the genus *Tor* and *Acrossocheilus* Oshima, 1919. Rainboth (1985) showed that the name *Acrossocheilus* was incorrect for the Southeast Asian fishes and provided another generic name (*Neolissochilus*) for the Southeast Asian fishes previously classified in it. Most of his discussion of *Neolissochilus* vs. *Tor* however, is quite ambiguous and does not allow a clear differentiation of the two genera. An earlier name, *Lissochilus* Weber & de Beaufort, 1916 is preoccupied and not available for these fishes. Lim (1973) placed *T. douronensis*, *T. tambra* and *T. tambroides* as synonyms of *Tor progeneius* (McClelland, 1839). Lim's "revision" cannot be used with any confidence as he did not indicate if he had examined the types nor did he cite which material he examined. In addition, the characters he utilised were unsatisfactory. There is an urgent need to resolve the taxonomy of these commercially important fishes. Lim (1973) reported *Tor* (*Acrossocheilus*) *deauratus*, *T. (A.) hexagonolepis* and *T. (Tor) progeneius* from Sungai Endau. We appear to have obtained all his three species from Sungai Kinchin but with the present classification, they are should be called *Tor douronensis*, *Tor soro* and *Poropuntius deauratus* respectively instead.

***Tor soro* (Valenciennes, 1842)**

**Material examined.** - 3 spec. (ZRC 1989.8734-8736), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989.

**Remarks.** - The present specimens might well be the *Acrossocheilus hexagonolepis* McClelland, 1839 of Lim (1973). Compared to *T. douronensis*, *T. soro* has a thicker, rounder head, and is characterised by the marked absence of a median lobe on the lower lip. The present specimens were collected by gill-netting. This species may also be a good candidate for aquaculture and is fished for food by the natives. The fish Willbourn (1926) reported as Ikan Tengas which was caught by natives in the Sungai Sekin area in the northern part of Ulu Rompin (= Ulu Kinchin) probably belong to *T. soro* (see Tweedie, 1952b, c).

***Tor douronensis* (Valenciennes, 1842)**

*Material examined.* - 1 spec. (ZRC 1985.8230), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 14.vi.1989. — 1 spec. (ZRC 1989.8696), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989. — 3 spec. (ZRC 1989.8737-8739), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989.

*Remarks.* - This is an important food and game fish in Peninsular Malaysia. Zakaria-Ismail (1987) indicated that there was good potential of it being used for aquaculture. A large specimen measuring over 60 cm in length, probably belonging to this species, was obtained using lines in mid-June. It was photographed but not preserved. It is noted that fresh large specimens of this species are often gold in colour. Smaller specimens are more silvery with a tinge of gold. The name *T. douronensis* is used here in its widest sense. Tweedie (1956b) commented that the length of the lower labial lobe is variable and cannot be used to separate the two species. He also noted that the median lobe on the upper lip, cited by Weber & de Beaufort (1916) and Smith (1945) to help distinguish *T. douronensis* from *T. tambroides* was not present in any of the Malayan specimens he had examined. His observations are valid for our specimens. Tweedie (1956b) suggested that *Tor tambroides* Bleeker, 1854 might be a synonym of *T. douronensis*. Most of the present specimens were gill-netted at Sungai Kernam, a tributary of the Sungai Kinchin.

**Genus *Poropuntius* Smith, 1931**

See discussion for *Tor*.

***Poropuntius deauratus* (Valenciennes, 1842)**

*Material examined.* - 4 spec. (ZRC 1989.8740-8743), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989.

*Remarks.* - The present specimens were gill-netted at Sungai Kernam. This species can easily be separated from the two species of *Tor* discussed above by the inner margin of its first dorsal ray being distinctly serrated.

**Genus *Hampala* Bleeker, 1860**

This is a characteristic genus with at least four species from Southeast Asia.

***Hampala macrolepidota* Kuhl & van Hasselt, 1823**

*Material examined.* - 2 spec. (ZRC.1989.8227-8228), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 1 spec. (ZRC.1989.8721), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 21.vii.1989. — 4 spec. (ZRC.1989.8730-8733), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989. — 1 spec. (ZRC.1989.8751), Sungai Taku, Pahang, leg. K. L. Yeo & E. Koh, 18.vii.1989.



**Remarks.** - This important food fish is common in Endau-Rompin State Park. In Ulu Kinchin, juveniles of this species were not seen or caught from the small, shady tributary streams. Large specimens were reported to have been caught by natives from the northern parts of Ulu Kinchin as early as 1926 by Willbourn.

**Genus *Cyclocheilichthys* Bleeker, 1859**

The genus was recently revised by Sontirat (1976) and Roberts (1989) used this as the basis for his key to the Bornean taxa. Kottelat (1987) listed seven species from Peninsular Malaysia, Thailand and Indo-China but *C. apogon* was inadvertently left out and should be added to the list of Malaysian species.

***Cyclocheilichthys apogon* (Valenciennes, 1842)**

**Material examined.** - 2 spec. (ZRC 1989.8235-8236), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 14.vi.1989. — 1 spec. (ZRC 1989.8237), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 2 spec. (ZRC 1989.8238-8239), eastern tributary between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng, 13.vi.1989.

**Remarks.** - This species can be distinguished from other Malayan species in the same genus by the absence of barbels. While the adults were gill-netted in the larger water channels, the juveniles were all collected in the small tributary streams. The young fishes differ significantly from the adults in colouration, lacking the bright red fins and eyes. The longitudinal stripes on the body are also less pronounced. Gravid females were obtained in June.

**Genus *Labiobarbus* van Hasselt, 1823**

The name *Labiobarbus* predates *Dangila* Valenciennes, 1842 (see Smith, 1945; Inger & Chin, 1962; Kottelat, 1989). *Labiobarbus* should have priority and be used instead.

***Labiobarbus festivus* (Heckel, 1843)**

**Material examined.** - 1 spec. (ZRC 1989.8229), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 4 spec. (ZRC 1989.8692-8695), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989. — 1 spec. (ZRC 1989.8718), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 21.vii.1989.

**Remarks.** - This near-bottom dwelling cyprinid is common in the Sungai Kinchin drainage.

**Genus *Osteochilus* Günther, 1868**

A large genus revised (but not published) by Karnasuta (1981). The exact identification of the many specimens obtained from Ulu Kinchin at present will have to await the complete publication of Karnasuta's revision. The specimens identified as *O. microcephalus* (Valenciennes, 1842) by Zakaria-Ismail (1987) are probably referable to the two following species. Zakaria-Ismail (*in litt.*) indicates that there also appears to be an undescribed species from the Endau-Rompin drainage.

***Osteochilus cf. enneaporos* (Bleeker, 1852)**

*Material examined.* - 5 spec. (ZRC 1989.8198-8199, 8202-8204), 1 spec. (ZSM), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 15.vi.1989. — 1 spec. (ZRC 1989.8205), 1 spec. (ZSM), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & K. Lim, 12.vi.1989. — 10 spec. (ZRC 1989.8207-8216), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 14.vi.1989. — 7 spec. (ZRC 1989.8218, 8220-8225), 1 spec. (ZSM), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 3 spec. (ZRC 1989.8715-8717), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989. 1 spec. (ZRC 1989.8720), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 21.vii.1989. — 2 spec. (ZRC 1989.8745-8746), Sungai Taku, Johore, leg. K. L. Yeo & E. Koh, 18.vii.1989.

*Remarks.* - Except for two specimens, all the others were caught by gill-net in the Kinchin and Taku drainages. The two were handnetted while they were apparently resting among rocks at night. This taxon is the most abundant fish gill-netted during the course of the present survey. The specimens consistently show red fins, a slender head with three main tubercles on the tip of the snout. There is a distinct dark lateral band that runs from behind the eye to the end of the caudal fin rays. The band tends to fade considerably after death. The dorsum is dusky, becoming yellowish-silver on the sides. These characters bring the specimens closest to *O. enneaporos*.

***Osteochilus cf. microcephalus* (Valenciennes, 1842)**

*Material examined.* - 1 spec. (ZRC 1989.8200), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 15.vi.1989. — 1 spec. (ZRC 1989.8217), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 2 spec. (ZRC 1989.8712-8713), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989. — 1 spec. (ZRC 1989.8719), Sungai Kinchin, base camp, Pahang, leg. 21.vii.1989. — 1 spec. (ZRC 1989.8747), Sungai Taku, Johore, leg. K. L. Yeo & E. Koh, 18.vii.1989.

*Remarks.* - Specimens identified tentatively to this species were collected from both the Sungai Kinchin and Sungai Taku drainages, but in considerably smaller numbers compared to *O. cf. enneaporos*. These animals are similar to the other species in that it has a distinct blackish lateral bar which stretches from the eye to the extremity of the median rays of the caudal fin. They differ significantly however in having yellow fins (except for some slight red colour on the dorsal fin), a single tubercle on the snout, and the side of the abdomen having an arrangement of orange scales. Compared to *O. cf. enneaporos*, it also has a shorter, smaller head, and a higher body.

**Genus *Mystacoleucus* Günther, 1868**

Zakaria-Ismail (1985) discussed the taxonomy of this genus and provided a key to the Malaysian species.

***Mystacoleucus marginatus* (Valenciennes, 1842)**

*Material examined.* - 2 spec. (ZRC 1989.8233-8234), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 15.vi.1989. — 3 spec. (ZRC 1989.8250-8252), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 2.vi.1989. — 1 spec. (ZRC 1989.8711), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

*Remarks.* - Very common in the Sungai Kinchin at the base camp area, but surprisingly not observed or collected elsewhere. This cyprinid is characteristic of torrent stretches.

**Genus *Crossocheilus* Kuhl & van Hasselt, 1823**

Alfred (1971) revised the Malaysian species of this genus and *Epalzeorhynchus* Bleeker, 1855, showing both to be distinct genera.

***Crossocheilus oblongus* Kuhl & van Hasselt, 1823**

*Material examined.* - 1 spec. (UMKL), Sungai Taku, Johore, leg. G. Liew, vi.1989.

*Remarks.* - Alfred (1971) suggested that *Epalzeorhynchus siamensis* Smith, 1931 was a junior synonym of *C. oblongus* but he did not examine the type specimens. He reasigned several species of *Epalzeorhynchus* to *Crossocheilus* instead. Bănărescu (1986) also refers *E. siamensis* to *Crossocheilus*. Apparently not aware of Alfred's (1971) paper, he adopted a different opinion, regarding both *C. siamensis* and *C. oblongus* as valid species. He noted that *C. oblongus* appeared confined to Java, Borneo and Peninsular Malaysia whereas *C. siamensis* was present only further north. On the basis of Bănărescu's revision, Kottelat (1989) recognised both species as valid. This genus obviously deserves further study. The only specimen collected was obtained by electrofishing from Sungai Taku.

**Genus *Parachela* Steindachner, 1881**

Following Howes (1979: 189), the species *hypophthalmus* Bleeker, 1860, *maculicauda* Smith, 1934, *oxygastroides* Bleeker, 1852, *pointoni* Fowler, 1934, *siamensis* Günther, 1868 and *williaminae* Fowler, 1934 belong to *Parachela*, and not *Oxygaster* Günther, 1868, which is now restricted to *O. anomalura* van Hasselt, 1829. Howes (1979) examined the holotype of *Parachela breitensteini* Steindachner, 1881, and considered it to be a junior synonym of *Chela hypophthalmus* Bleeker, 1860. Although the genus *Parachela* was originally established for species which lack ventral fins, this does not appear to be a valid generic character (Howes, 1979).

***Parachela cf. maculicauda* (Smith, 1934)**

*Material examined.* - 2 spec. (ZRC 1989.8255-8256), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989.

*Remarks.* - The two specimens collected were hand-netted in the shallows of Sungai Kinchin at night. They appear to be closest to *P. maculicauda*, but lack the distinctive black spot present on the tail. Their state and small size also makes a more precise identification difficult.

**Genus *Luciosoma* Bleeker, 1855**

***Luciosoma setigerum* (Valenciennes, 1842)**

*Material examined.* - 2 spec. (ZRC 1989.8722-8723), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 21.vii.1989. 3 spec. (ZRC 1989.8748-8750), Sungai Taku, Johore, leg. K. L. Yeo & E. Koh, 18.vii.1989.

*Remarks.* - Five specimens were gill-netted in both the Sungai Kinchin and Sungai Taku drainages.

**Family Balitoridae**

Balitoridae Swainson, 1839 takes precedence over the Homalopteridae Bleeker, 1858 (Kottelat, 1988, 1989). This family includes both the typical stream loaches (subfamily Nemacheilinae, formerly placed in Cobitidae) as well as the highly specialised torrent loaches (Sawada, 1982).

**Genus *Nemacheilus* Bleeker, 1863**

The Sundaic and Indochinese species formerly referred to this large genus have been revised by Kottelat (1984, 1990).

***Nemacheilus selangoricus* Duncker, 1904**

*Material examined.* - 1 spec. (ZRC 1989.8280), Sungai Kinchin, south of base camp, Pahang, leg. P. K. L. Ng, 14.vi.1989.

*Remarks.* - A specimen was obtained from leaf-litter along the Sungai Kinchin.

**Genus *Homaloptera* van Hasselt, 1823**

Alfred (1969) last revised this genus from Malaysia recognising three subgenera.

***Homaloptera orthogoniata* Vaillant, 1902**

**Material examined.** - 1 spec. (UMKL), Sungai Taku, Johore, leg. G. Liew, vi.1989.

**Remarks.** - One large specimen was collected by electrofishing from a fast-flowing part of Sungai Taku. This species is collected for the aquarium trade and wild stocks will need to be carefully monitored to prevent over-exploitation.

**Family Cobitidae**

**Genus *Pangio* Blyth, 1860**

The nomenclature of this genus was discussed by Kottelat (1987) who showed that *Acanthophthalmus* of former authors is a junior synonym of *Cobitis* Linnaeus, 1758. The next available name is *Pangio* Blyth, 1860.

***Pangio muraeniformis* (de Beaufort, 1933)**

**Material examined.** - 2 spec. (ZRC 1989.8280-8281), Sungai Kinchin, south of base camp, Pahang, leg. P. K. L. Ng, 14.vi.1989. — 8 spec. (ZRC 1989.8285-8292), 3 spec. (ZSM), Sungai Kinchin, at mouth of Sungai Seladang, Pahang, leg. P. K. L. Ng, H. P. Ng & K. Lim, 13.vi.1989. — 1 spec. (ZRC 1989.8710), Sungai Seladang, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

**Remarks.** - Specimens were common in the leaf-litter at the mouth of small tributary streams along the Sungai Kinchin. One specimen from south of base camp was characteristically different from the others in being peppered with small brown spots. The specimen however is morphologically identical with the others and is here regarded as conspecific.

**Family Siluridae**

**Genus *Silurichthys* Bleeker, 1856**

***Silurichthys hasseltii* Bleeker, 1858**

**Material examined.** - 4 spec. (ZRC 1989.8241-8244), 1 spec. (ZSM), eastern tributary between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng & H. P. Ng, 13.vi.1989. — 1 spec. (ZRC 1989.8245), Sungai Taku, Johore, leg. H. P. Ng, 15.vi.1989. 1 spec. (ZRC 1989.8677), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 1 spec. (ZRC 1989.8688), second tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989.

**Remarks.** - All specimens in our collection have their dorsal fins inserted distinctly ahead of the pelvic fins. Following Haig's (1952) and Alfred's (1966b) keys, the present specimens are all identifiable with *S. hasseltii*. Zakaria-Ismail (1987) reported *S. phaiosoma* Bleeker, 1851 from Ulu Endau and commented that it was a rare fish. Whether his specimen is identical to ours will have to await a direct comparison. *Silurichthys hasseltii* however, is very common in Ulu Kinchin. They were obtained mainly from under submerged logs and leaf-litter both from the sides of the larger channels, as well as in the shady tributary streams.

**Genus *Wallago* Bleeker, 1851**

These are the fishes known as Ikan Tapah to the natives and are among the largest catfishes known from Peninsular Malaysia. The genus was last revised by Roberts (1982b).

***Wallago leerii* Bleeker, 1851**

*Material examined.* - None from Ulu Kinchin.

*Remarks.* - The record of this large catfish from the Ulu Kinchin is based on reports of specimens collected by the native Orang Asli by our camp manager, Mr. Heah Hock Heng. Although Zakaria-Ismail (1987) did not report it from the Ulu Endau, its presence in the Sungai Endau river system, of which the Sungai Kinchin and Sungai Taku drainages form a part, is well known to the natives. The species is present in the Sungai Pahang system and Tasek Bera swamp to the north (Hora & Misra, in Hora & Gupta, 1941; Tweedie, 1950; Mizuno & Furtado, 1982), as well as the Kota Tinggi area (Tweedie, 1956c) and Sungai Sedili drainage to the south (Eric Alfred, pers. comm.) and there is no reason to doubt its presence in Endau-Rompin. The taxonomy of this fish was discussed by Roberts (1982b, 1989) who suggested that the giant *Wallagonia tweediei* Hora & Misra, 1941 (see also Tweedie, 1950) might be a synonym of *W. leerii*. In the absence of sufficient Malayan material however, he could not be certain. Unpublished studies by Roberts and the second author (including examination of a cast of the holotype of *Wallagonia tweediei* in the ZRC) have shown that there is little doubt that they are synonymous. The specimen referred to *Wallago miostoma* Vaillant, 1902 by Tweedie (1956c) from Kota Tinggi (in the ZRC) is merely a very large *W. leerii*. Vaillant's species is now transferred to *Ompok* Lacepède, 1803 (Roberts, 1982b). The colour differences noted by Tweedie (1956c) are known to vary (Ng, unpublished data).

**Family Bagridae**

**Genus *Mystus* Scopoli, 1777**

The taxonomy of the genus and identities of many of the constituent species is in urgent need of revision (see Roberts, 1989). Most of the larger species are important food fishes. Three species were identified from the Ulu Endau area in the earlier study (Zakaria-Ismail, 1987)

***Mystus* aff. *nemurus* (Valenciennes, 1839)**

*Material examined.* - 1 juv. (ZRC 1989.8293), Sungai Kinchin, at mouth of Sungai Seladang, Pahang, leg. K. Lim & H. K. Lua, 13.vi.1989. — 2 spec. (ZRC 1989.8294-8295), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 1 spec. (ZRC 1989.8296), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 15.vi.1989. — 1 spec. (ZRC 1989.8653), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 3 spec. (ZRC 1989.8726-8728), Sungai Kemam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989. — 2 spec. (ZRC 1989.8752-8753), Sungai Taku, Johore, leg. K. L. Yeo & E. Koh, 18.vii.1989. — 1 spec. (ZRC 1989.8757), Sungai Kinchin, base camp, Pahang, leg. 18.vii.1989. 2 spec. (ZRC 1989.8758-8759), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

*Remarks.* - The specimens in our collection are identified close to this common species with some doubt. The characters that have been used thus far to separate many of the species are questionable. Following Inger & Chin's (1962) key, many of the larger specimens closely approach *M. planiceps* (Valenciennes, 1839). The smaller specimens however, agree better with their definition of *M. nemurus*. Mohsin & Ambak (1983) discusses only five species they regard as still common, merely citing *M. planiceps* in their lists. Roberts (1989) however, noted problems with the status of "*M. planiceps*" reported from outside Java, the type locality of *M. planiceps*. The thin and dark midaxial streak was cited as an important character for *M. nemurus*, being present in juveniles and adults. He synonymised *M. johorensis* Herre, 1940 and *M. pahangensis* Herre, 1940 with *M. nemurus*. Roberts' comparisons showed that Inger & Chin's specimens of *M. planiceps* are different from those from Java. The present specimens differ from the *M. nemurus* (Valenciennes, 1839) of Inger & Chin (1962) and Roberts (1989) by being much more slender, flatter and the body lacking the dark midaxial body stripe. This however fits the description of *M. planiceps* (fide Roberts, 1989). The first two authors have obtained specimens of *M. nemurus* from southern Johore and these show the dark midaxial line very clearly. The distance between the end of the dorsal fin and beginning of the adipose fin was used by Inger & Chin (1962) to separate *M. nemurus* and *M. planiceps*. The value of this character appears to vary with size (Table 1). It may well be that the present specimens are not *M. nemurus* but another species allied to *M. planiceps*.

Table 1

Catalogue Number (ZRC)	SL: Standard Length (mm)	PL: Predorsal length (% SL)	IL: Interdorsal length (% SL)	Ratio of PL to IL
Ulu Kinchin Specimens				
1989.8293	29.0	41.4	8.6	4.8
1989.8653	70.0	40.0	8.6	4.6
1989.8726	172.0	42.4	18.6	2.3
1989.8728	180.0	36.1	15.6	2.3
1989.8759	230.0	40.0	15.2	2.4
1989.8294	235.0	36.6	16.2	2.3
1989.8758	250.0	34.4	16.0	2.2
1989.8727	253.0	36.0	20.6	1.8
1989.8295	285.0	34.7	14.7	2.4
1989.8757	290.0	34.1	16.9	2.0
1989.8753	295.0	35.9	17.3	2.1
1989.8752	395.0	36.2	23.3	1.6
Specimen from Mawai, Johore				
1989.9555	132.0	43.9	7.6	5.8
Specimens from Tasek Bera, Pahang				
1989.9556	195.0	39.5	10.8	3.6
1989.9558	235.0	42.6	12.3	3.4
1989.9559	290.0	41.4	12.1	3.4
1989.9557	330.0	40.9	15.2	2.7

The two smallest specimens from Ulu Kinchin have PL to IL ratios above four, closest to the ratio observed for the specimen of *M. nemurus* from Mawai. The larger Ulu Kinchin (greater than 172 mm SL) specimens have a ratio of less than 2.5, this figure decreasing with increasing size. The PL to IL ratios of the Tasek Bera specimens appear intermediate, but generally closer to the Mawai *M. nemurus* than most of the Ulu Kinchin ones. This problem might be the reason for Zakaria-Ismail (1987) recognising both *M. planiceps* and *M. nemurus* from Ulu Endau.

**Genus *Leiocassis* Bleeker, 1858**

***Leiocassis* cf. *micropogon* (Bleeker, 1852)**

*Material examined.* - 1 spec. (ZRC 1989.8260), first tributary south of base camp, Sungai Kinchin, Pahang, leg. Mohd. Hanifah Yahaya, 13.vi.1989.

*Remarks.* - Other than the material examined, another specimen was observed by the second author (but not collected) swimming along the banks of Sungai Kinchin near the base camp at night. There have been few records of this species from Peninsular Malaysia (Hora & Gupta, 1941; Tweedie, 1952b; Roberts, 1989). Zakaria-Ismail (1987) reported a specimen of *L. leiacanthus* Weber & de Beaufort, 1912 from Ulu Endau. The identity of that specimen will have to be verified.

**Family Clariidae**

**Genus *Clarias* Scopoli, 1777**

***Clarias teijsmanni* Bleeker, 1857**

*Material examined.* - 1 spec. (ZRC 1989.8744), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 20.vii.1989.

*Remarks.* - One large individual was gill-netted at Sungai Kernam. Roberts (1989) commented that since Bleeker consistently made the typographical mistake of substituting "ij" for "y" for his taxa, the proper name should be *C. teysmanni*. This is incorrect. Bleeker first used "ij" and later emended all the Dutch "ij" to a Latin "y". The original spelling with "ij" was based on Teijsmann, a Dutch name. The Dutch language has no "y".

**Family Pangasiidae**

**Genus *Pangasius* Valenciennes, 1840**

This genus of generally very large catfishes is currently being revised by Roberts (in litt.).

***Pangasius* sp.**

*Material examined.* - None from Ulu Kinchin.

*Remarks.* - The present record is based on a report by Kiew (1986: 36) in his explorations up the Sungai Kinchin during the Ulu Endau phase of the expedition. He noted that



"..... for dinner we had a 2 lb Ikan Patin (catfish)." Ikan Patin is the native name for large catfishes of the genus *Pangasius*. The fish had been identified by two reliable Orang Asli fishermen attached to the expedition members (Kiew Bong Heang, pers. comm.).

**Family Sisoridae**

**Genus *Glyptothorax* Blyth, 1860**

Kottelat's (1989) list of the Malaysian *Glyptothorax* species omitted *G. major* which should now be added.

***Glyptothorax major* (Boulenger, 1894)**

*Material examined.* - 3 spec. (ZRC 1989.7752-7754), Sungai Jasin, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 12.xi.1972.

*Remarks.* - The present record of this catfish is new for the Endau-Rompin State Park.

**Family Chacidae**

**Genus *Chaca* Gray, 1831**

The genus was revised by Roberts (1982a) who showed that all previous Malaysian and Indonesian records of *Chaca chaca* (Hamilton, 1822) should be referred to *C. bankanensis* instead.

***Chaca bankanensis* Bleeker, 1852**

*Material examined.* - 1 spec. (ZRC 1989.8259), eastern tributary between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng & K. Lim, 13.vi.1989. — 1 spec. (ZRC 1989.8652), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989.

*Remarks.* - This cryptically coloured fish was collected from accumulations of leaf-litter in the small tributary streams of the Sungai Kinchin.

**Family Hemirhamphidae**

**Genus *Hemirhamphodon* Bleeker, 1866**

***Hemirhamphodon pogonognathus* (Bleeker, 1853)**

*Material examined.* - 8 spec. (ZRC 1989.8297-8304), tributary north and south of base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 13-14.vi.1989. — 2 spec. (ZRC 1989.8650-8651), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 2 spec. (ZRC 1989.8671-8672), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 3 spec. (ZRC 1989.8685-8687), second stream south of base camp, Sungai Kinchin, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 2 spec. (ZRC 1989.8697-8698), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

*Remarks.* - Although common in the tributary streams, this halfbeak was not collected from the main river channels. Roberts (1989) reported that it is predominantly myrmecophagous.

**Genus *Dermogenys* van Hasselt, 1823**

***Dermogenys* cf. *pusillus* van Hasselt, 1823**

*Material examined.* - None from Ulu Kinchin.

*Remarks.* - Dr. Ayaudin Ali (USM) has kindly informed the second author that he had definitely observed this species at close proximity in the Sungai Kinchin drainage (pers. comm.). No specimens were obtained. Another revision will have to be carried out to ascertain the identities of the various taxa synonymised at present under *D. pusillus*.

**Family Belontiidae**

**Genus *Xenentodon* Regan, 1911**

***Xenentodon canciloides* (Bleeker, 1853)**

*Material examined.* - 1 juv. (ZRC 1989.8257), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989. — 1 spec. (UMKL), Sungai Taku, Johore, leg. G. Liew, vi.1989.

*Remarks.* - The presence of two species of *Xenentodon* in Peninsular Malaysia is disputed by some authors like Mees (1962, 1964) and Alfred (1961, 1966a, b). Kottelat (1989), while recognising both *X. cancila* (Hamilton, 1822) and *X. canciloides*, questioned the latter's validity. Mees (1962), while revising the Belontiidae, noted that all the Indian specimens he had examined of *Xenentodon cancila* (as *Belone*) had the dorsal fin directly above the anal fin whereas in some Malayan specimens, the dorsal fin was sometimes slightly behind the anal fin. He consequently synonymised both species. Alfred (1966a) followed Mees (1962) but noted that all the dorsal fins of all the Malayan specimens he had examined were slightly behind the anal fin. This is also true for the present specimens from Ulu Kinchin. Roberts (1989) recognised both species. All the features of the Ulu Kinchin specimens correspond very well with his descriptions of *X. canciloides*. Roberts also indicated that only *X. canciloides* is known at present for certain from Peninsular Malaysia as well as another possibly undescribed "large-scaled" species. Zakaria-Ismail's (1987) record of *X. cancila* from Ulu Endau is also probably *X. canciloides* as well.

**Family Syngnathidae**

**Genus *Doryichthys* Kaup, 1856**

***Doryichthys martensii* (Peters, 1869)**

*Material examined.* - 1 spec. (ZRC 1989.8258), first tributary south of base camp, Pahang, leg. Mat. Asri bin Ngah Sanah, 13.vi.1989. — 1 spec. (ZRC 1989.7663), Sungai Emas, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 11.xi.1974.

*Remarks.* - In addition to the above specimen, another was collected (but not preserved) from near Sungai Seladang from a clump of *Blyxa*-like plants. Identification follows Dawson (1981).

**Family Synbranchidae**

**Genus *Monopterus* Lacepède, 1800**

***Monopterus albus* Zuiew, 1793**

*Material examined.* - 2 spec. (ZRC 1989.8246-8247), Sungai Kinchin, at mouth of Sungai Seladang, Pahang, leg. P. K. L. Ng, H. P. Ng & K. Lim, 13.vi.1989.

*Remarks.* - The eel was obtained from leaf-litter accumulations, together with specimens of *Betta pugnax*, *Pangio muraeniformis*, *Macrognathus maculatus*, and a caecilian, *Ichthyophis* sp. (see Lim, 1990).

**Family Pristolepidae**

**Genus *Pristolepis* Jerdon, 1848**

Although most authors classify *Pristolepis* in Nandidae, Liem (1970) supported Regan's (1913) classification in regarding this genus as constituting a distinct family. This classification was followed by Roberts (1989).

***Pristolepis fasciata* (Bleeker, 1851)**

*Material examined.* - 1 spec. (ZRC 1989.8231), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 16.vi.1989. — 1 spec. (ZRC 1989.8232), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng & H. P. Ng, 14.vi.1989. — 1 spec. (ZRC 1989.8279), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng, 13.vi.1989. — 2 spec. (ZRC 1989.8724-8725), Sungai Kinchin, base camp, Pahang, leg. K. L. Yeo & E. Koh, 21.vii.1989.

*Remarks.* - Living specimens were collected by hand- and gill-nets from the main river. They were maroon colour with bright blue striations on the head.

**Family Belontiidae**

**Genus *Betta* Bleeker, 1850**

***Betta pugnax* (Cantor, 1849)**

*Material examined.* - 2 spec. (ZRC 1989.8270-8271), Sungai Taku, Johore, leg. H. P. Ng, 15.vi.1989. — 1 spec. (ZRC 1989.8305), second tributary south of base camp,

Pahang, leg. C. M. Yang & Y. H. Koo, 13.vi.1989. — 6 spec. (ZRC 1989.8306-8311), eastern tributaries between base camp and Sungai Seladang, Pahang, leg. P. K. L. Ng & H. P. Ng, 13.vi.1989. — 1 spec. (ZRC 1989.8318), Sungai Kinchin, base camp, Pahang, leg. P. K. L. Ng, 13.vi.1989. — 1 spec. (ZRC 1989.8319), second tributary south of base camp, Pahang, leg. C. M. Yang & Y. H. Koo, 13.vi.1989. — 17 spec. (ZRC 1989.8654-8670), first tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 7 spec. (ZRC 1989.8678-8684), second tributary south of base camp, Pahang, leg. H. K. Lua & Y. H. Koo, 20.vii.1989. — 4 spec. (ZRC 1989.8706-8709), Sungai Kernam, Pahang, leg. K. L. Yeo & E. Koh, 19.vii.1989.

*Remarks.* - This mouth-brooder is common in all shaded streams of Endau-Rompin State Park (especially the smaller tributaries).

#### Family Osphronemidae

##### Genus *Osphronemus* Lacepède, 1802

##### *Osphronemus goramy* Lacepède, 1802

*Material examined.* - 1 juv. (ZRC 1989.8248), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 12.vi.1989. — 1 juv. (ZRC 1989.8249), Sungai Kinchin, south of base camp, Pahang, leg. P. K. L. Ng, 14.vi.1989.

*Remarks.* - Only two juveniles were found along the sides of Sungai Kinchin. Very young specimens are much darker in colouration compared to the adults. A large specimen was obtained by Kiew (1986: 36) in Sungai Kinchin.

#### Family Luciocephalidae

##### Genus *Luciocephalus* Bleeker, 1851

##### *Luciocephalus pulcher* (Gray, 1830)

*Material examined.* - 1 spec. (UMKL), Sungai Taku, Johore, leg. G. Liew, vi.1989.

*Remarks.* - The single specimen was obtained by electrofishing.

#### Family Channidae

##### Genus *Channa* Scopoli, 1777

The synonymy between *Channa* and *Ophicephalus* Bloch, 1794 will have to be maintained until stronger characters can be found to separate the various Asian species of this commercially important family. The absence or presence of pelvic fins cannot be used as a generic character by itself as it appears to vary between closely related species, the generic distinction unsupported by other characters (see Myers & Shapovalov, 1932).

***Channa lucius* (Cuvier, 1831)**

*Material examined.* - 1 spec. (UMKL), Sungai Kinchin, Pahang, leg. G. Liew, vi.1989.

*Remarks.* - See Alfred (1961, 1966) for more details about this species. The single specimen was caught by electrofishing.

***Channa gachua* (Hamilton, 1822)**

*Material examined.* - 1 spec. (UMKL), Sungai Kinchin, Pahang, leg. G. Liew, vi.1989.

*Remarks.* - Although Myers & Shapovalov (1932) synonymised this species with *C. orientalis* Bloch & Schneider, 1801, both taxa are probably separate. Both species are very similar and are separated by the absence or presence of pelvic fins (present in *gachua*, absent in *orientalis*). Myers & Shapovalov regarded specimens of *orientalis* merely as abnormal variants of *gachua*. Deraniyagala (1932, 1963) however, argued against this in his studies of the Sri Lankan (Ceylonese) specimens of both species. No specimens from Malaysia and Singapore are known to have either of the pelvic fins reduced or absent (see Ng & Lim, 1989). This small snakehead is characteristic of shallow forest streams. The red or yellow fringed dorsal, anal and caudal fins are characteristic. The pectoral fins are distinctively marked with semi-concentric rings and a dark spot at the base.

***Channa micropeltes* (Cuvier, 1831)**

*Material examined.* - 1 juv. (UMKL), Sungai Kinchin, Pahang, leg. G. Liew, vi.1989.

*Remarks.* - A school of young were observed along Sungai Kinchin. The single specimen obtained confirms the species identification. A large specimen was reported by Kiew (1986: 37) from Sungai Kinchin.

**Family Mastacembelidae**

**Genus *Macrognathus* Lacepède, 1800**

Roberts (1980, 1986) revised the taxonomy of the genera *Macrognathus* and *Mastacembelus*. The nomenclature used here follows these two papers.

***Macrognathus maculatus* (Valenciennes, 1831)**

*Material examined.* - 4 spec. (ZRC 1989.8312-8315), Sungai Kinchin, at mouth of Sungai Seladang, Pahang, leg. P. K. L. Ng, H. P. Ng & K. Lim, 13.vi.1989. — 1 spec. (ZRC 1989.7751), Sungai Jasin, Sungai Endau, Ulu Endau, Johore, leg. C. F. Lim, 12.xi.1972.

*Remarks.* - The specimens were all collected from among leaf-litter. They are characteristically very dark brown with a buff dorsum. *Mastacembelus perakensis* Myers, 1937 is certainly a synonym of this species (see Sufi, 1956; Alfred, 1966b; Roberts, 1986, 1989). The older specimen from Ulu Endau was labelled as *M. perakensis* by its collector

Dr. Lim Chuan Fong, but in all aspects, including colour, they conform with what we know for *M. maculatus*.

### Genus *Mastacembelus* Scopoli, 1777

#### *Mastacembelus favus* Hora, 1923

*Material examined.* - 1 spec. (ZRC 1989.8316), Sungai Kinchin, base camp, Pahang, leg. K. Lim, 13.vi.1989. — 1 spec. (ZRC 1989.8317), Sungai Kinchin, base camp, Pahang, leg. Yusaini Yusoff, 14.vi.1989.

*Remarks.* - One specimen of this very distinctive species (ZRC.1989.8316) was collected from amongst leaf-litter, while the other was hiding in a stem of hollow bamboo submerged in the shallows.

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