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# Notes On Hampala (Cyprininae) Distribution From Six Localities In Sabah

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**ABSTRACT** – This study was conducted from the 9th until 16th November 2003. A total of 31 fish from six localities throughout Sabah were sampled. It was found that at least four forms of Hampala inhibit the Sabah river system. The widely spread form, H. macrolepidota and the Bornean endemic form, H. bimaculata was recorded on the west coast region of Sabah. The Sabah endemic form, H. sabana dominated the central eastern region of Sabah. The south eastern region demonstrates the existence of two forms distinctly different by their number of gill rakers: (1) Tawau population (gill raker counts: 10-11) and Kalabakan population (gill raker counts: 12-13). The Kalabakan form could possibly be a crytic species.

**Keywords** – Hampala, distribution, morphological counts, Sabah.

**ABSTRAK** – Kajian ini telah dijalankan dari 9-16hb November 2003. Sejumlah 31 individu ikan dari enam lokasi di seluruh Sabah telah disampelkan. Didapati sekurang-kurangnya empat jenis Hampala mendiami sungai-sungai di Sabah. Didapati, H. macrolepidota yang merupakan jenis yang paling banyak tersebar, dan juga H. bimaculata mendiami kawasan barat Sabah. H. sabana yang merupakan spesies endemik di Sabah pula mendominasi kawasan tengah dan timur Sabah. Kawasan tenggara Sabah pula terdiri daripada dua jenis Hampala yang berbeza berdasarkan bilangan 'gill rakers'nya: (1) populasi Tawau (bilangan 'gill rakers': 10-11) dan (2) populasi Kalabakan (bilangan 'gill rakers': 12-13). Jenis yang mendiami kawasan Kalabakan pula disyaki spesies yang kriptik.

**Kata kunci** –Hampala, taburan, kiraan morfologi, Sabah.

*Hampala* is one of the primary freshwater cyprinid fishes of Malaysia. It has a wide distribution ranging from the Peninsular Malaysia, Sumatra, Java and Borneo and also roaming the Indo-China region (Mohsin and Ambak, 1983; Ryan, 2005; Ryan and Esa, 2006). In Malaysia, it is usually abundant and it is large enough (maximum total length ~700mm) to be of interest as a food fish (Ryan, 2005; Ryan and Esa, 2006).

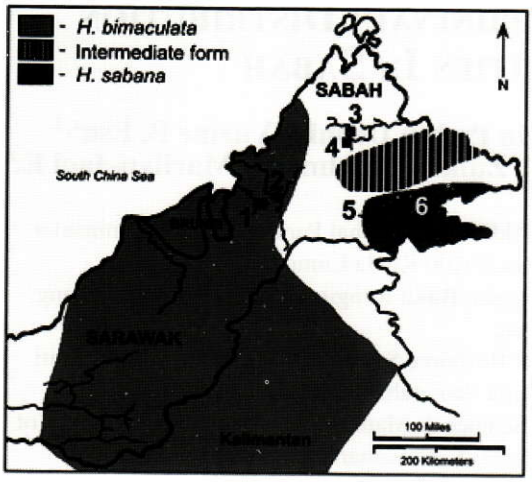


**FIGURE 1**
Sampling localities of the present study (see Table 1 for detailed information of each locality). Shaded regions represents the distributions of three forms of Hampala in Borneo as described by Inger and Chin, (1962)

*Hampala* displays much geographical variations in coloration and morphological counts (Inger and Chin, 1962; Ryan, 2005; Ryan and Esa, 2006). Inger and Chin (1962) studied much on their distribution in Sabah and described at least three forms of *Hampala* inhabiting the Sabah waters (Figure 1). Ryan (2005) and Ryan and Esa (2006) later used molecular genetic approaches to study *Hampala* in Malaysia and identified at least six forms with four of them corresponding with the distribution described by Inger and Chin (1962). Therefore, the aim of this study was to document the distribution of the *Hampala* fishes inhibiting the Sabah waters.

This study was conducted from the 9th until 16th November 2003. A total of 31 fish from six localities throughout Sabah were sampled (Table 1; Figure 1). The samples were morphologically recognized using the keys of Inger and Chin (1962), Mohsin and Ambak (1983), and Kottelat *et al.* (1993). All samples were deposited at the Universiti Malaysia Sarawak Zoological Museum.

**TABLE 1**
Sampling localities (geographical regions), abbreviation used (Abbv.) and sample size (n) in the present study

| No. | Localities | Abbv. | n |
|---|---|---|---|
| 1 | Iti River, Sipitang (west coast Sabah) | HbBS | 3 |
| 2 | Ulu Padas River, Beaufort (west coast Sabah) | HmBE | 3 |
| 3 | Liwagu River, Ranau (central eastern Sabah) | HsL | 1 |
| 4 | Susuban River, Ranau (central eastern Sabah) | HsS | 5 |
| 5 | Uyun River, Kalabakan (south eastern Sabah) | HiU | 16 |
| 6 | Balung River, Tawau (south eastern Sabah) | HiB | 3 |
| | | Total | 31 |

Samples collected from the six localities showed morphological variation in coloration and counts (Table 2). The Sabah endemic, H. sabana exhibited significant morphological differences from the other forms of Hampala by having higher circumpeduncular scale (30-32) and lateral line scale (13-15) counts, in keeping with Lim and Wong's (1994) taxonomic classification. Tawau and Kalabakan samples (southeastern Sabah) as described by Inger and Chin (1962), represent the intermediate form of *H. sabana* and *H. bimaculata*. Morphological measurements found differences in gill raker counts between the intermediate form samples from Kalabakan (gill raker counts: 12-13) and Tawau (gill raker counts: 10-11).

**TABLE 2**

Morphological description based on selected characters for the three forms of Hampala caught in Sabah

| No. | Species/Form | Description | n | LLS | CS | BPR | GR (total) |
|---|---|---|---|---|---|---|---|
| 1 | H. macrolepidota | Having a single dark band below the dorsal fin | 33 | 26-29 | 12 | 15-16 | 9-11 |
| 2 | H. sabana | Having a single dark band below dorsal fin | 6 | 30-32 | 13-15 | 13-14 | 9-10 |
| 3 | Intermediate form (Tawau population) | Having one dark band below dorsal fin. A very faint spot in front of caudal fin is absent when fish length is above 45mm | 3 | 27-28 | 12 | 14-15 | 10-11 |
| 4 | Intermediate form (Kalabakan population) | Having one dark band below dorsal fin. A very faint spot in front of caudal fin is absent when fish length is above 45mm | 20 | 27-29 | 12 | 14-15 | 12-13 |

(n= samples analyzed; LLS = Lateral Line Scales; CS = Circumpeduncular Scales; BPR = Branched Pectoral Rays; GR = Gill Raker)

Generally, the morphological measurements carried out in this study correspond with the previously described *Hampala* species in North Borneo (Inger and Chin, 1962: Kottelat *et al.*, 1993). It was found that at least four forms of *Hampala* inhibiting Sabah river system. The widely spread form, *H. macrolepidota* and the Bornean endemic form, *H. bimaculata* was recorded to roam the west coast region of Sabah. The Sabah endemic form, *H. sabana* dominated the central eastern region of Sabah. The south eastern region demonstrates the existence of two forms, distinctly different by their number of gill rakers. The Kalabakan form could possibly be a crytic species.

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