

REDISCOVERY OF THE DWARF SNAKEHEAD,
CHANNA GACHUA (HAMILTON, 1822) (CHANNIDAE)
IN SINGAPORE

Peter K. L. Ng and Kelvin K. P. Lim

During two recent field trips to the Nee Soon fresh water swamp forest, Singapore (ca. 123°28'N, 103 48'42"E), in December 1989, we obtained nine specimens of the Dwarf Snakehead, *Channa gachua* (Hamilton, 1822). This was one of the 31 species which Alfred (1966: 56) (as *Channa orientalis* Bloch & Schneider, 1801) had regarded as extinct in Singapore. Although many recent authors regard *C. orientalis* (type locality "India orientali") as the senior synonym of *Ophiocephalus gachua* Hamilton, 1822 (type locality "ponds and ditches of Bengal"), some studies (eg. Deraniyagala, 1929: 93, 1932: 40, 1963: 71; Etrich, 1986: 289; see also Kottelat, 1989: 20) suggest otherwise. The original *C. orientalis* described has no pelvic fins whereas *C. gachua* has. We prefer to

use the name *C. gachua* for Malaysian and Singapore specimens previously referred to *C. orientalis* by other workers. All the Malaysian and Singapore specimens of this species we have examined have distinct and well developed pelvic fins.

Channa gachua was first reported from Singapore by Peters (1868: 262) (as a new form of *Ophiocephalus gachua* - var. *malaccensis*) from Kranji River. Hanitsch (1901: 4, 1904: 14) and Duncker (1904: 165) listed specimens from Bukit Timah. Herre & Myers (1937: 71) recorded two specimens from the Mandai Road area while Fowler (1938: 124) and Tweedie (1950: 103) mentioned the species from Bukit Timah. Alfred failed to find the species in Singapore and regarded it as extinct (Alfred, 1966: 56, 1968: 331). Johnson (1973: 110, 111) however, listed *Ophiocephalus gachua* as present in Singapore tree country and torrent streams. He noted that it is the largest carnivore in the torrent streams of Bukit Timah Hill. He later commented on fishes Alfred regarded as extinct - "Negative records are always dangerous and at least two of these species do still occur though in very small numbers" (Johnson, 1973: 123). He did not indicate the identities of these two species, but it is very likely that one of them is *Channa gachua*. Alfred examined Johnson's specimens and comments that they had been collected from the base of the hill and not in the more torrential waters higher up (personal communication). Much of the lower areas of Bukit Timah Hill have since been lost to development.

The present record thus confirms the presence of the Dwarf Snakehead in Singapore, 16 years since Johnson's report. This is also the first time this species has been reported from the Nee Soon area in acid waters. It is noteworthy that Herre & Myers' (1937) specimens from the Mandai Road area were collected near the present locality. The entire area is relatively flat and thickly forested. *Channa gachua* has been reported to occur in hill streams (Tweedie, 1950) as well as slow flowing forest streams and their associated pools, close to hills (Alfred, 1966). Six of the specimens collected from Nee Soon are preserved in the Zoological Reference Collection (ZRC), National University of Singapore. The others are being kept alive for study.

The specimens were all obtained from very shallow (seven cm depth or less), slow flowing, leaf litter strewn waters at night. The substrate was very soft and muddy. The fishes attempted to escape by digging into the detritus and soft mud. A half-digested palaemonid prawn (*Macrobrachium* sp.) and parathelphusid crab (*Irmengardia johnsoni*) were disgorged by two separate specimens shortly after capture.

In the ZRC, there are only two specimens of *C. gachua* from Singapore on the shelves. One (ZRC No. 1116) from Bukit Timah is probably the one listed by Hanitsch (1901, 1904) and was examined by Alfred (1966). Whether it was from Bukit Timah Hill or the adjacent area was not stated. The problem with the precise locality also arises for Duncker's (1904) record. Another specimen (ZRC No. 367) was obtained by Hanitsch in 1915 from a Singapore fishmarket. Its exact collection locality cannot be ascertained. Examination of two specimens (ZRC No. 1034) collected in Sungai Seletar (near Nee Soon Rifle Range), Singapore, by Alfred in 17 February 1958 (identified as *C. striata* by him) showed that they should be referred to *C. gachua* instead. These specimens were listed under the material examined for *C. striata* by Alfred (1966: 56). Johnson's (1973) specimens could not be found.

The increasing popularity of this fish for the aquarium trade is a serious threat to the continued survival of this fish in Singapore. The red colour of the fins endear it to some local Chinese who associate the colour with good luck. Imported specimens (averaging 10 cm) command relatively high prices in Singapore of between US\$8 to US\$25.

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LITERATURE CITED

- Alfred, E., 1966. The freshwater fishes of Singapore. *Zool. Verh., Leiden*, 78: 1-68, Pls. 1-8.
- Alfred, E. R., 1968. Rare and Endangered Freshwater Fishes of Malaya and Singapore. In: Technical Session IV - Threatened Species, Conference on Conservation of Nature and Natural Resources in Tropical South-east Asia, Bangkok, Thailand. IUCN Publications, new series, Number 10, part 4, pp. 325-331.
- Deraniyagala, P. E. P., 1929. The Labyrinthici of Ceylon. *Spoila Zeylanica*, 15(2): 79-111, Pls. 23-31.
- Deraniyagala, P. E. P., 1932. Ichthyological Notes. The systematic position of the genus *Channa*. *Spoila Zeylanica*, 17(1): 40-41.
- Deraniyagala, P. E. P., 1963. The distribution of the genus *Channa* Gronov 1763 in Ceylon. *Spoila Zeylanica*, 30: 71-74.
- Duncker, G., 1904. Die Fische der malayischen Halbinsel. *Mitt. naturh. Mus. Hamburg*, 21: 133-207, Pls. 1, 2.
- Etrich, G., 1986. Fische voller überraschungen. *Aquar. Terra. Ztschr.*, 39: 289-283.
- Fowler, H. W., 1938. A list of the fishes known from Malaya. *Fish. Bull. Singapore*, 1: i-1vi, 1-268.
- Hanisch, R., 1901. *Annual Report of the Raffles Library and Museum for the Year 1900*. Straits Settlement, Singapore, pp. 1-11.
- Hanisch, R., 1904. *Annual Report of the Raffles Library and Museum for the Year 1903*. Straits Settlement, Singapore, pp. 1-16.
- Herre, A. W. C. T. & G. S. Myers, 1937. A contribution to the ichthyology of the Malay Peninsula. Part II. Fresh-water fishes. *Bull. Raffles Mus.*, 13: 53-74, Pls. 5-7.
- Johnson, D. S., 1973. Freshwater Life. In: *Animal Life and Nature in Singapore*. Pp. 103-127. Ed. S. H. Chuang, Singapore University Press.
- Kottelat, M., 1989. Zoogeography of the fishes from Indochinese inland waters with an annotated check-list. *Bull. Zool. Mus., Univ. Amsterdam*, 12(1): 1-55.
- Peters, W. C. H., 1868. über die von Herrn Dr. F. Jagor in dem ostindischen Archipel gesammelten Fische. *Monatsber. Akad. Wiss. Berlin*, 1868: 254-281, 460-461.
- Tweedie, M. W. F., 1950. Notes on Malayan Fresh Water fishes. 2. The species of *Channa* Scopoli (= *Ophicephalus*) in the collection of the Raffles Museum. *Bull. Raffles Mus.*, 21: 99-105.

Address: PKLN, KKPL - Department of Zoology, National University of Singapore, Kent Ridge, Singapore 0511, Republic of Singapore.