

ON THE EXTENSION OF RANGE OF *HORALABIOSA* SILAS
(CYPRINIDAE ; CYPRININAE) TO SILENT VALLEY, KERALA

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INTRODUCTION

While studying the unidentified collections in the Southern Regional Station, Madras, one lot of 9 small specimens from Silent Valley was encountered, which turned out to be an interesting assemblage of hill stream fishes comprising *Horalabiosa* sp., *Garra menoni* Rema Devi & Indra and *Bhavana australis* Jerdon. The genus *Horalabiosa* was described by Silas in 1953 to accomodate an interesting hill stream species, *H. joshuai*. These superficially resemble *Garra* but lack a mental disc, instead possess a rostral groove and have a post-labial callous structure in the mental region. Its identity was disputed by subsequent workers and was either overlooked or synonymised with *Garra*. Recently its specific identity was re-established and the species redescribed based on a large series of specimens from different altitudes and drainages of the Western Ghats of the Kalakad Wildlife Sanctuary, Tirunelveli District (Rema Devi, 1992). Subsequently a new species *H. palaniensis* (Rema Devi and Menon, 1994) was described from Palani Hills of the Western Ghats, draining into the Cauvery system. The presence of *Horalabiosa* from the west flowing drainage of the Western Ghats is of great ichthyological significance.

Material examined : ZSI/SRS F 4100, 4 exs., 26-27.5 mm SL, India : Western Ghats : Kerala : Silent Valley ; R. S. Pillai, 1st Feb. 1979. Measurements were made with dial calipers with an accuracy of 0.02 mm and are presented following standard practices.

Diagnostic features : D 3/7 ; P 1/14 ; V 1/7/1 ; A 3/5 ; C 19 ; L1 35 ; L tr 4 $\frac{1}{2}$ -5/3 $\frac{1}{2}$; predorsal scale rows 15 approx. ; two pairs of barbels ; a deep and well defined rostral groove separating upper lip from snout ; a post-labial callous structure in the mental region ; body moderately elongate, depressed anteriorly with horizontally placed well developed paired fins ; compressed posteriorly ; lateral line complete ; origin



- A. Lateral view of *Horlabiosa* sp. from Silent Valley ; 26.5 mm SL.
B. Lateral view of *H. joshuai* from Kalakad ; 25.5 mm SL.

of dorsal fin is slightly in advance of that of the pelvic fins and the last undivided ray is non-osseous, weak and articulated.

Comparison with specimens from Kalakad: The different body proportions are compared with the populations from Kalakad (data pooled for different populations from different drainages and altitudes) are presented in Table 1. It is seen that the data for the specimens from Silent Valley fall within the range of the Kalakad population. The slight difference observed in the mean values could be attributed to the smaller size and number of the fish sampled from Silent Valley. These fall within the range observed for juvenile, namely larger eyes, smaller snout, smaller interorbital, longer fins and slender body. The meristic characters showed no difference except in the number of predorsal scales, 15 in the present specimens vs., 10-12 is the former. The predorsal distance is slightly greater in the present specimens compared with specimens of the same size group from Kalakad. The alimentary canal and air bladder studied in two specimens of the same length showed no difference; the gut length is 1.08 times in SL. The air bladder is slightly bigger with a comparatively

Table 1 : Comparison of body proportions of *H. joshuai* (n=59) from Kalakad and from Silent Valley (n=4).

	From Kalakad	From Silent Valley
Length range	30-116 mm TL 22.5-90 mm SL	35-36 mm TL 26-27.5 mm SL
<i>Morphometric</i>		
TL/Body depth	5.81 (5.08-7.22)	6.01 (5.77-6.25)
SL/Body depth	4.45 (3.92-5.56)	4.44 (4.19-4.77)
TL/Head length	4.59 (4.00-5.08)	5.01 (4.93-5.10)
SL/Head length	3.53 (3.09-3.92)	3.75 (3.66-3.91)
Head length/Head width	1.41 (1.23-1.70)	1.51 (1.48-1.56)
Head length/Head depth	1.59 (1.27-1.76)	1.51 (1.48-1.56)
Head length/Width of mental pad	4.57 (3.60-5.81)	4.78 (4.45-5.0)

Head length/Eye diameter	4.42 (3.40-5.75)	3.41 (3.29-3.45)
Head length/Interorbital width	2.35 (1.50-2.77)	2.62 (2.43-2.73)
Head length/Snout length	2.70 (2.39-3.17)	2.92 (2.82-3.20)
Snout length/Eye diameter	1.65 (1.27-2.28)	1.17 (1.08-1.22)
Interorbital width/Eye diameter	1.88 (1.37-2.63)	1.30 (1.25-1.42)
SL/Length of pectoral fin	4.02 (3.42-5.10)	4.39 (4.27-4.44)
SL/Length of pelvic fin	4.75 (4.09-6.00)	5.32 (5.15-5.45)
Body depth/Height of dorsal fin	1.01 (0.83-1.19)	1.05 (1.02-1.09)
Body depth/Length of anal fin	1.26 (0.75-1.63)	1.35 (1.14-1.55)
SL/Base of dorsal fin	7.39 (6.38-9.43)	6.75 (6.31-7.22)
SL/Base of anal fin	12.86 (10.0-17.9)	10.90 (9.61-12.0)
SL/Predorsal distance	1.94 (1.75-2.09)	1.90 (1.88-1.92)
Predorsal dist./Postdorsal dist.	1.00 (0.93-1.15)	1.10 (1.08-1.14)
SL/Length of body cavity	1.95 (1.74-2.23)	2.08 (2.01-2.20)
Dist. from Pelvic base to anal fin/Dist. from anus to anal fin	3.99 (2.50-5.99)	3.42 (2.89-3.79)
Length of caudal peduncle/Depth of caudal peduncle	1.24 (0.92-1.64)	1.45 (1.24-1.58)

Meristic

Lateral line scales	32-35	35
Scale rows between dorsal fin origin and lateral line & to anal origin	4-4½ 2½-3½	4½-5 3¼
Predorsal median scales	10-12	15 approx.
Dorsal fin rays	3/7-8	3/7
Pectoral fin rays	1/12-14	1/14
Pelvic fin rays	1/6-7/1	1/7/1
Anal fin rays	2-3/5	3/5
Caudal fin rays	19	19

smaller anterior chamber and a more tapering posterior chamber, in the present specimen its length is 2.98 times in SL vs., 3.15 in SL in the former.

Since the specimens from Silent Valley are juveniles (maximum length 36 mm TL) and resemble *H. joshuai* in almost all the characters studied except in the number of predorsal scales, the specimens are tentatively placed under *H. joshuai* (Fig. 1) This is known to attain a length of 116 mm TL. Studies on larger specimens alone can clarify the exact identity of the population from Silent Valley.

DISCUSSION

The genus *Horalabiosa* is endemic to India. Subsequent to its first description from the headwaters of the Tambraparni in Western Ghats, it is known from Palani Hills and now from Silent Valley, Kerala, from the Western slopes of the Western Ghats, thus exhibiting a wider range of distribution along the Western Ghats. The specimens differ from typical *H. joshuai* in possessing more number of predorsal scales and relatively greater predorsal distance. The scales are also smaller in size compared to specimens of the same size from Kalakad Wild life Sanctuary. Even in typical *H. joshuai* the predorsal scale rows become more subcutaneous with increase in size of the fish, only 8 scale rows are discernible in some, with a naked portion just behind the head. The scales are absent on the chest and are subcutaneous in the abdominal region. *H. palaniensis* is characterised by the complete absence of predorsal rows of scales. A general reduction in the extent of scalation and in scale size provides greater adaptation for life in the torrents with a smooth surface offering least resistance to water currents. In this regard the specimens from Silent Valley exhibit greater adaptation than those occurring in Kalakad and Tambraparni River.

The other specimens encountered along with *Horalabiosa* sp. from Silent Valley are *Garra menoni* Rema Devi and Indra and *Bhavana australis* Jerdon. All these species are slendered bodied with a flattened ventral surface, flattened and well developed paired fins and adhesive devices well adapted for life in the hill streams. So far 9 species have been reported from Silent Valley (Rema Devi and Indra, 1986). This report extends the range of distribution of *Horalabiosa* and *Bhavana australis* to Silent Valley.

SUMMARY

Horalabiosa Silas, 1953, described from the headwaters of the Tambraparni river draining the eastern face of the Western Ghats is now found to occur further north

along the Western face of the Western Ghats, in Silent Valley, Kerala. The greater range of distribution of this endemic genus is of great ichthyological significance. The specimens, all juveniles, are described here and compared with *H. joshuai* Silas from Kalakad Wildlife Sanctuary, Tirunelveli District. These differ in the number of predorsal scales and may possibly belong to a distinct species which only the study of adults will reveal.

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