

## NOTES ON FISHES IN THE INDIAN MUSEUM.

### XLVII.—ON TWO NEW SPECIES OF THE GENUS *Nemachilus* FROM THE KANGRA VALLEY, PUNJAB.<sup>1</sup>

(Plate VII.)

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During the course of my studies on the distribution of specialised hill-stream fishes along the Himalayas, the results of which have not yet been published, all the unnamed collections from the southern face of the Himalayas lying in the Zoological Survey of India were worked out. Among this material, a large number of well preserved specimens of two new species of *Nemachilus* collected by Dr. S. L. Hora, in the year 1926, from the Kangra Valley, Punjab, were found. I propose to describe them in this paper and designate the species as *Nemachilus horai* and *Nemachilus kangrae* respectively.

#### ***Nemachilus horai*, sp. nov.**

D. 12 (4/8) ; P. 11 (1/10) ; V 7 (1/6) ; A. 6 (1/5) ; C. 19.

The new loach, which I associate with the name of Dr. S. L. Hora, Director, Zoological Survey of India, is a large, strongly built species. The dorsal profile is gently arched but the ventral is almost straight or horizontal, except in gravid females where it is somewhat bulged out in the region of the stomach. The head is conical and the snout bluntly pointed. The length of the head is contained from 4.1 to 4.4 times in the standard length, its width 1.3 to 1.6 times and its height at the occiput 1.5 to 1.7 times in its length. The depth of the body varies considerably with the sex of the individuals ; in ripe females it is contained from 4 to 4.4 times whereas in the males it is 5.2 to 6 times in the standard length. The eyes are dorso-lateral in position and are not visible from the ventral surface. The diameter of the eye is contained from 4.2 to 4.6 times in the length of the head and 2 to 2.2 times in the length of the snout. The inter-orbital width is about one and a half times the diameter of the eye. The nostrils are situated considerably nearer to the eye than to the tip of the snout. There are three pairs of barbels ; all of them are longer than the diameter of the eye ; the inner rostrals are shorter than the other two pairs. The mouth is semicircular and horizontal ; it is bordered by fleshy lips which are continuous around the corners of the mouth. The lower lip is interrupted in the middle. The lateral line is complete and well marked throughout its length. The caudal peduncle is somewhat short and deep ; its least height is contained from 1 to 1.2 times in its length.

The commencement of the dorsal fin is in the middle between the tip of the snout and the base of the caudal fin ; the longest ray of the dorsal fin is shorter than the depth of the body in ripe females whereas

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<sup>1</sup> Based on the work carried out in the laboratories of the Zoological Survey of India when I was a Research Scholar of the Government of India.

in the males it is as long as the depth of the body below it. The upper margin of the fin is almost straight or slightly emarginate. The pectoral fin is about the length of the head in the male but slightly shorter in the female; it extends to almost three-fourths of the distance to the base of the ventral fins in the males whereas in the females it reaches only two-thirds the distance. The posterior margin of the fin is rounded in the females whereas in the case of the males a few anterior rays are somewhat elongated. The ventral fin is provided with a fleshy appendage; it does not extend to the anal opening. The caudal fin is long and deeply emarginate with the lobes rounded.

The colouration is very characteristic of the species. The dorsal surface and the sides are dull-brown in colour. There are four dark broad bands encircling the body behind the dorsal fin; they are much wider than the interspaces between them. The caudal fin is marked by a V-shaped band in its middle portion.

*Type-specimens.*—F 637/2, *Holotype*, ♂; F 638/2, *Paratype* 5♀ and 3♂ specimens, Zoological Survey of India, Calcutta.

*Locality.*—Bener khand, south of Kangra, Kangra District, Punjab.

*Remarks.*—The species can be readily distinguished from all the other known forms by its characteristic colouration and stumpy nature of the body.

*Measurements in millimetres.*

	♀	♀	♀	♀	♀	♂	♂	♂	♂
	(Fig.)					(Fig.)			
Total length ..	75.0	75.0	71.50	64.50	64.0	67.70	75.0	64.50	54.0
Standard length ..	62.50	63.5	59.5	53.0	53.0	55.0	62.50	53.0	43.0
Length of head ..	14.0	14.0	14.0	12.50	12.0	12.50	14.50	12.0	10.50
Height of head ..	9.50	9.50	9.0	8.0	7.50	7.50	9.0	7.50	6.0
Width of head ..	10.50	10.50	9.50	8.0	8.50	8.50	10.0	7.50	6.50
Diameter of eye ..	3.0	3.0	2.75	2.50	2.50	2.50	3.0	2.50	2.50
Length of snout ..	6.50	6.50	6.0	6.0	5.50	5.25	6.50	5.50	4.50
Interorbital distance ..	4.50	4.50	4.0	4.0	4.0	4.0	4.50	4.0	3.0
Depth of body ..	15.50	15.50	13.50	12.0	12.0	10.50	11.0	10.0	7.0
Length of caudal peduncle.	10.50	7.50	7.0	6.0	6.0	9.5	10.5	6.0	5.50
Height of caudal peduncle.	8.5	8.5	7.5	6.5	6.5	7.5	8.0	7.0	5.5
Height of dorsal fin ..	10.50	12.0	11.0	10.50	11.0	10.50	12.50	10.5	8.50
Length of pectoral fin	12.50	13.50	13.0	11.50	11.0	11.5	14.50	11.0	9.0
Length of anal fin ..	10.50	11.50	10.0	8.50	9.0	10.0	11.0	9.0	7.50
Length of the inner rostral barbel.	3.0	4.0	3.50	3.50	3.0	3.0	3.50	3.0	2.50
Length of the outer rostral barbel.	4.0	5.0	4.50	4.50	3.50	4.50	4.50	4.0	3.0
Length of the max. barbel.	4.0	4.0	3.50	3.50	3.50	3.50	4.0	4.0	3.0

***Nemachilus kangrae*, sp. nov.**

D. 10 (3/7) ; P. 7 (1/6) ; V 7 (1/6) ; A. 6 (1/5) ; C. 18.

In this new loach, the body is very much elongated, the dorsal profile rising very little from the tip of the snout to the base of the dorsal fin beyond which it is almost straight. The ventral surface is flattened and almost horizontal. The head is conical and snout pointed. The length of the head is contained from 5 to 5.8 times, the maximum depth of the body 7.5 to 8 times, and the length of the caudal fin from 5.2 to 5.7 times in the standard length. The eyes are dorso-lateral in position and are not visible from the ventral surface, they are situated almost in the middle of the head. The diameter of the eye is contained from 4.5 to 5.2 times in the length of the head and 2.1 to 2.5 times in the length of the snout. The inter-orbital width is about one and a half times the diameter of the eye. The nostrils are situated nearer to the eye than to the tip of the snout. There are three pairs of barbels; the outer rostral and maxillary pairs are longer than the eye while the inner rostrals are almost as long as the eye. The mouth is semicircular and horizontal, it is bordered by fleshy lips which are continuous around the corners of the mouth. The lower lip is interrupted in the middle. The lateral line is complete and well marked throughout its length. The caudal peduncle is somewhat long and narrow, its height is contained from 1.6 to 1.8 times in its length.

The origin of the dorsal fin is nearer to the base of the caudal fin than to the tip of the snout; it is very much higher than the depth of the body. The upper margin of the fin is almost straight with the anterior upper corner somewhat rounded. The pelvic fins commence almost opposite to the origin of the dorsal and are situated nearer to the base of the caudal than to the tip of the snout. The pectoral fins are shorter than the length of the head; they are without any elongated ray and extend only half way to the pelvic fins. The caudal fin is long and deeply emarginate; its lower lobe is slightly longer than the upper.

The body, including the fin, is dirty yellow in colour with eight to eleven dark transverse bands which extend to slightly below the lateral line. There is a dark patch at the base of the caudal which is also provided by a zig-zag band across the centre of its margin.

*Type-specimens.*—F 639/2 *Holotype*, F 640/2 *Paratype*, Zoological Survey of India, Calcutta.

*Locality.*—Baijnath, Kangra District, Punjab.

*Remarks.*—*Nemachilus kangrae* can be easily distinguished from all the other known forms by its short rounded pectoral fins and the much elongated form of the body. The pectorals are shorter than the length of the head and extend only half way to the pelvic fins.

*Measurements in millimetres.*

Total length	..	..	..	62.0	59.5	58.5	53.5
Standard length	..	..	..	52.0	50.5	49.5	45.5
Length of head	..	..	..	10.50	10.0	10.0	9.0
Height of head	..	..	..	5.75	5.5	5.0	5.0
Width of head	..	..	..	6.50	6.50	6.0	6.0
Diameter of eye	..	..	..	2.0	2.0	2.0	2.0
Length of snout	..	..	..	5.0	4.75	4.5	4.25
Inter orbital distance	..	..	..	3.5	3.25	3.0	3.0
Depth of body	..	..	..	6.5	6.5	6.0	6.0
Length of caudal peduncle	..	..	..	8.0	7.5	7.5	7.0
Height of the caudal peduncle	..	..	..	5.0	5.0	4.5	4.0
Length of dorsal fin	..	..	..	8.0	8.0	7.50	7.0
Length of pectoral fin	..	..	..	8.0	8.0	7.50	7.0
Length of anal fin	..	..	..	6.0	7.0	7.0	6.50
Length of the inner rostral barbel	..	..	..	2.0	2.0	2.0	2.0
Length of the outer rostral barbel	..	..	..	3.0	2.25	2.25	2.25
Length of the max. barbel	..	..	..	2.50	2.0	2.25	2.25