

NOTES ON FISHES IN THE INDIAN MUSEUM.

XXXVII. ON A COLLECTION OF FISH FROM THE BAILADILA RANGE, BASTAR STATE, CENTRAL PROVINCES.

By SUNDER LAL HORA, *D.Sc., F.R.S.E., F.N.I., Assistant Superintendent,
Zoological Survey of India, Calcutta.*

During the field-season of 1937-38, Mr. H. Crookshank, Superintending Geologist, Geological Survey of India, at the author's request, made a small collection of fish from the Bailadila range, Bastar State (17° 46' and 20° 14' N. and 80° 15' and 82° 15' E.), Central Provinces. The Bailadila range is situated to the south of the Indravati river, a tributary of the Godavari, and runs through the centre of the Bastar State from north to south; its highest peak is about 4,000 feet above sea-level. Mr. Crookshank made his collection from four different streams and noted the ecological conditions of their waters. The species of fish found at different localities are listed below :—

1. Galli Nalah near Loa at about 2,000 ft., and Taki Nalah, a large tributary of the Galli, at about 2,800 ft. April, 1938.

The specimens from the two localities got mixed up during preservation, but this is of no particular consequence as both the streams come from the same drainage basin within 3 miles of each other.

“The Loa fish live in a wider brighter stream than the Taki ones which live in deep shade in rock pools.

“The Galli Nalah falls over cataracts down from 2,000 ft. to 1,300 ft. and then makes its way gradually to the Godavari. It runs strongly throughout the year and drains a dense jungle area with practically no cultivation. The water should be rich in iron salts as it comes from the iron-ore ranges and all the rocks in the neighbourhood are markedly ferruginous”.

i. <i>Danio aequipinnatus</i> (McClelland) ..	33 specimens.
ii. <i>Rasbora daniconius</i> (Hamilton)	8 specimens.
iii. <i>Garra mullya</i> (Sykes)	2 specimens.
iv. <i>Parapsilorhynchus tentaculatus</i> (Annandale) ..	8 specimens.
v. <i>Barbus ticto</i> (Hamilton)	5 specimens.
vi. <i>Nemachilus dayi</i> Hora	16 specimens.
vii. <i>Nemachilus evezardi</i> Day	3 specimens.
viii. <i>Glyptothorax dekkanensis</i> (Günther)	4 specimens.
ix. <i>Ophicephalus gachua</i> Hamilton	12 specimens.

2. Bailadila stream opposite the garden of the Bailadila rest-house at about 3,200 ft. April, 1938.

“The stream is here some 10 yards wide and up to 18 inches in depth. It flows below a dense canopy of bushes over a rocky bottom. It is perennial, not very fast, and not liable to very big floods. Like the Galli Nalah it drains the iron-ore ranges so that the water should be rich in iron salts.

“Several miles further down stream there is a drop of 1,000 ft. over a succession of cataracts. After that the river takes a tortuous course across the plains finally entering the Indravati.”

i. <i>Danio aequipinnatus</i> (McClelland)	7 specimens.
ii. <i>Rasbora daniconius</i> (Hamilton)	1 specimen.
iii. <i>Garra mullya</i> (Sykes)	1 specimen.
iv. <i>Nemachilus dayi</i> Hora	5 specimens.
v. <i>Ophicephalus gachua</i> Hamilton	5 specimens.

3. A strong perennial stream south of Timinar at the foot of the Bailadila ridge at about 1,700 ft. April, 1938.

"This stream varies in a short distance from a lusty brook tumbling down the mountain side by a series of rocky pools hemmed in by high jungle to a more open stream with a gravelly bed and occasional large pools.

"It joins the Indravati some miles below without having crossed any large cataracts."

i. <i>Mastacembelus armatus</i> (Lacépède)	..	3 specimens.
ii. <i>Danio aequipinnatus</i> (McClelland)	..	30 specimens.
iii. <i>Rasbora daniconius</i> (Hamilton)	..	33 specimens.
iv. <i>Garra mullya</i> (Sykes)	..	94 specimens.
v. <i>Parapsilorhynchus tentaculatus</i> (Annandale)		4 specimens.
vi. <i>Barbus amphibius</i> (Cuvier & Valenciennes)		4 specimens.
vii. <i>Barbus pinnauratus</i> (Day)	..	1 specimen.
viii. <i>Barbus ticto</i> (Hamilton)	..	9 specimens.
ix. <i>Nemachilus botia</i> var. <i>aureus</i> Day	..	4 specimens.
x. <i>Nemachilus dayi</i> Hora	..	23 specimens.
xi. <i>Glyptothorax dekkanensis</i> (Günther).		6 specimens.
xii. <i>Ophicephalus gachua</i> Hamilton	..	2 specimens.

In all 13 species of fish were obtained by Mr. H. Crookshank. Of these, *Mastacembelus armatus*, *Danio aequipinnatus*, *Rasbora daniconius*, *Barbus ticto* and *Ophicephalus gachua* are fairly widely distributed all over India; in fact the ranges of the first and the last extend much further towards the east. The remaining species are generally restricted to Peninsular India, but their occurrence in the Bastar State deserves special attention. *Parapsilorhynchus* has hitherto been known from the Western Ghats (Poona, Satara and Nasik Districts) and the Satpuras (Pachmarhi, C. P.). Similarly *Glyptothorax dekkanensis* was so far known from the neighbourhood of Poona. *Barbus pinnauratus*, which was known from South India only, was recently recorded from the Upper Chindwin drainage¹, and its presence, in an intermediate region, therefore, is of great zoogeographical interest. *Garra mullya*, *Nemachilus aureus* and *N. evezardi* were originally described from the environs of Poona, but have since been recorded from several localities both in the Ghats and the Satpuras; their occurrence in the Bastar State is of special significance. Day in his *Fishes of India* recorded *Barbus amphibius* from "Central India, Deccan, Bombay and the Western coast of India, Madras and up the coast as high as Orissa," and the present record from the Bastar State falls within its known range. *Nemachilus dayi* (= *N. savona* Day nec Hamilton) was known to Day from "Bengal and N. W. Provinces", but has since been recorded from the Paresnath Hill and the Bombay Ghats; it has now been found in the Central Provinces also.

Taking into consideration the fish-fauna of the Bailadila range as a whole there is clear evidence of its very close affinity to that of the Satpuras and the Western Ghats. In a recent article I² expressed the view that the Satpura trend, when it stretched across India from Gujrat to the Assam Himalayas, probably served as a highway for the migration

¹ Hora, S. L., *Rec. Ind. Mus.* XXXIX, p. 336 (1937).

² Hora, S. L., *Rec. Ind. Mus.* XXXIX, p. 255 (1937).

of the Eastern Himalayan forms to the Western Ghats. It seems probable that the Satpuras of that period comprised the hills of Chhota Nagpur, Orissa and the Central Provinces. There is considerable geological evidence to show that the lower portion of the Godavari is of great antiquity, so the Bailadila range, which just lies to the north of it, may be regarded as the southern limit of the early Satpuras in this part of India. The fish, while migrating from north-east to south-west, probably spread all over the Satpuras, and some of the earlier forms became isolated in small hill ranges of to-day, while the main wave of migration passed on to the Western Ghats and thence to the hills of Peninsular India.

According to Mr. Crookshank "Banded hematite-quartzite ridges like the Bailadila ridge extend from Chilpi Ghat in the Satpuras down into the Chanda Dist. Chanda is closely connected with N. Bastar and the hills of N. Bastar are but the continuation to the N. of the Indravati of the Bailadila ridge. Before the jungle in the Central Provinces was cut the humidity and rainfall was probably much higher than it is now and perennial streams suitable for hill fishes were probably common over all this country"

I take this opportunity to express my sincerest thanks to Mr. H. Crookshank for the great interest taken by him in the collection and preservation of fishes from a faunistically unknown part of the country.

Garra mullya (Sykes).

1921. *Garra mullya*, Hora, *Rec. Ind. Mus.* XXII, p. 658.

Garra mullya, which is the commonest species of the genus in the Indian waters, is represented by a large number of specimens in Mr. Crookshank's collection from the Bastar State. Its range extends from Kathiawar through the hills of the Central Provinces, Chhota Nagpur and Orissa to the whole of Peninsular India.

Parapsilorhynchus tentaculatus (Annandale).

1919. *Psilorhynchus tentaculatus*, Annandale, *Rec. Ind. Mus.* XVI, p. 128.

1920. ? *Psilorhynchus tentaculatus*, Hora, *Rec. Ind. Mus.* XIX, p. 210.

1921. *Parapsilorhynchus tentaculatus*, Hora, *Rec. Ind. Mus.* XXII, p. 13.

1921. *Parapsilorhynchus discophorus*, Hora, *Rec. Ind. Mus.* XXII, p. 14.

1925. *Parapsilorhynchus tentaculatus*, Hora, *Rec. Ind. Mus.* XXVII, p. 457.

Misra and I¹ recently commented on the occurrence of *Parapsilorhynchus* in the Western Ghats and the Satpuras.

In *Parapsilorhynchus* the gill-openings are restricted to the sides, just extending to the base of the pectoral fin. The specimens of *P. tentaculatus* in the collection vary from 35 mm. to 45 mm. in total length.

Barbus pinnauratus (Day).

1937. *Barbus pinnauratus*, Hora, *Rec. Ind. Mus.* XXXIX, p. 336.

Barbus pinnauratus is represented in the collection by a single specimen, 55 mm. in total length; it is partially desiccated and several

¹ Hora, S. L. & Misra K., S., *Journ. Bombay Nat. Hist. Soc.* XL, p. 34 (1938).

scales have been rubbed off. The characteristic black spots at the bases of the scales, as also the dark bands behind the opercles, are represented by series of small black dots. The lateral blotches at the sides of the tail, as also the vertical spots just below the commencement of the dorsal fin are, however, well marked. The dorsal spine, as already indicated by Day¹ for the young specimens, is weak and sparsely serrated posteriorly.

In the paper cited Hora extended the range of *B. pinnaruatus* from South India to the Upper Chindwin drainage. The occurrence of the species in the Bastar State is, therefore, of special interest.

Barbus ticto (Ham.).

1938. *Barbus ticto*, Hora & Misra, *Journ. Bombay Nat. Hist. Soc.* XL, p. 28, fig. 3.

In the specimens under report the lateral line extends over 12 to 17 scales and the number of predorsal scales varies from 9 to 10. In these respects the specimens agree with *Barbus stoliczkanus* Day, but in colouration and body proportions they are like the typical form of *B. ticto*. From the material preserved in the collection of the Indian Museum, *B. ticto* appears to be a very variable species.

Nemacheilus botia var. **aureus** Day.

1878. *Nemacheilus botia* var. *aureus*, Day, *Fish. India*, p. 614, pl. clvi, fig. 4.

The specimens under report correspond to the variety *aureus*; the lateral line ceases below the dorsal fin and the dorsal fin is of much less extent than is the case in the typical *botia*. From observations made so far it seems probable that *aureus* is the common variety occurring in South India, while the typical form is found more towards the north and the east.

Nemacheilus dayi Hora.

1878. *Nemacheilus savona*, Day nec Hamilton, *Fish. India*, p. 619, pl. clv, fig. 8.
 1919. *Nemacheilus savona*, Annandale nec Hamilton, *Rec. Ind. Mus.* XVI, p. 127.
 1935. *Nemacheilus dayi*, Hora, *Rec. Ind. Mus.* XXXVII, p. 57.

In 1935, I (*loc. cit.*) pointed out the precise specific limits of Hamilton's *savona* and tabulated the points in which Day's *savona* differs from it. As these differences were of sufficient specific value a new name was proposed for the latter form. According to Day, his *savona* is found in "Bengal and N. W. Provinces." It was obtained by Jenkins² from the Paresnath Hill and Annandale (*loc. cit.*) found it to be "common in many of the smaller rivers of Peninsular India and the Indo-Gangetic plain" He recorded it from the Yenna river at Medha.

N. dayi is represented in Mr. Crookshank's collection from all the streams investigated by him, and from the number of specimens collected it seems to be the commonest loach of the Bailadila range.

¹ Day, F., *Fishes of India*, p. 561 (London, 1877).

² Jenkins, J. T., *Rec. Ind. Mus.* V, p. 128 (1910).

Nemachilus evezardi Day.

1878. *Nemacheilus Evezardi*, Day, *Fish. India*, p. 613, pl. cliii, fig. 11.

1919. *Nemachilus evezardi*, Annandale, *Rec. Ind. Mus.* XVI, p. 126, pl. i, figs. 2, 2a.

Nemachilus evezardi was originally described from Poona but Annandale (*loc. cit.*) found it to be the commonest species in the Bombay Ghats and also recorded it from Pachmarhi (Satpuras) in the Central Provinces. The present record of the species from the Bastar State extends its range considerably towards the east. Annandale has already directed attention to the great variation in colouration undergone by the members of this species living under different environmental conditions.

Glyptothorax dekkanensis (Günther).

1864. *Glyptosternum dekkanense*, Günther, *Cat. Fish. Brit. Mus.* V, p. 187.

Since Günther described *Glyptothorax dekkanensis* from a specimen "Three and a half inches long. From the collection of Colonel Sykes", there has been great confusion regarding the validity of this species. Day¹ at first regarded it as a distinct species and recorded it from the Jumna river "near where it emerges from the Siwalik hills", but later, in his *Fishes of India*, he considered it a synonym of *G. lonah* (Sykes). In my² revision of the Glyptosternoid fishes of India I assigned a specimen described by Annandale³ as *Euglyptosternum saisii* from the Yenna river at Medha to *G. dekkanensis*, and later⁴ another similar specimen from the Tunga river at Shimoga was referred to *G. dekkanensis*. I now find that these specimens should have been referred to *G. lonah*, as they possess a relatively longer caudal peduncle and in them the pectoral spine is provided with fine serrations on the outer side.

The specimens under report seem to represent Günther's species as they possess a relatively broad caudal peduncle and a pectoral spine which is smooth externally. In other respects also these specimens correspond more closely with *G. dekkanensis* than with *G. lonah*. To clear up the systematic position of the species, a specimen has been sent for comparison with the type in the British Museum, and on receipt of the report a full description of the species will be published.

In all the specimens under report the outer rays of the paired fins are somewhat plaited on the ventral surface. In referring a young specimen from Deolali to *G. annandalei* Hora, Misra and I⁵ were greatly influenced by this character, but now I consider that the Deolali specimen belongs to *G. dekkanensis*.

Day's specimens of *G. dekkanensis* from the Jumna river probably belong to *G. conirostris* (Steind.).

Mastacembelus armatus (Lacépède), *Danio aequipinnatus* (McClelland), *Rasbora daniconius* (Hamilton), *Barbus amphibius* (Cuvier & Valenciennes) and *Ophicephalus gachua* Hamilton are well known species and do not need any further comments.

¹ Day, F., *Proc., Zool. Soc. London*, p. 714 (1871).

² Hora, S. L., *Rec. Ind. Mus.* XXV, p. 24 (1923).

³ Annandale, N., *Rec. Ind. Mus.* XVI, p. 126 (1919).

⁴ Hora, S. L., *Rec. Ind. Mus.* XXXIX, p. 14 (1937).

⁵ Hora, S. L. & Misra, K. S., *Journ. Bombay Nat. Hist. Soc.* XL, p. 36, pl. iii figs. 3, 3a (1938).