

FURTHER OBSERVATIONS ON THE FISH FAUNA OF THE MANIPUR STATE

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The earliest record of any comprehensive list of the fish fauna of Manipur is by Hora¹ who made an extensive survey of this State in February and March 1920. In his introduction on page 166, Hora makes a reference to another small collection made in 1910 by Rev. Mr. Pettigrew and observes that "the species in this collection, as Dr. Annandale informs me, were all obtained in the hill country, probably from the neighbourhood of Ukhrul which is situated at an altitude of 6,000 feet. Two new species found by Mr. Pettigrew, *Nemachilus manipurensis* and *Danio naganensis* were described by Dr. B. L. Chaudhuri, while notes on some of the other species are incorporated here" The only addition to our knowledge of the ichthyology of Manipur since Hora's account of it is a report by Menon² on the collection made by Dr. Roonwal from Central Manipur, about thirty miles radius of Imphal.

The present collection on which this paper is based was made by a Zoological Survey party consisting of the writer, Mr. A. K. Dutta, Zoological Assistant, one Collection Tender and one Peon, which surveyed the State for six weeks in January and February 1953, with a view to make a faunistic survey of the region and in particular to study the ecological changes and consequently the changes in its aquatic fauna since the last survey of the area in 1920. Dr. S. L. Hora, who had conducted the previous survey in 1920, also visited Manipur for a week in February to make a study on the spot of the present ecological conditions of the valley, so as to enable him to compare the present-day conditions with those of 1920.

The party made very extensive collections from the Loktak Lake, the Imphal river and the Barak river at different localities. In addition to these, collections were also made from all the major streams within the State, most of which, however, ultimately join either the Barak or the Imphal river. From a zoogeographical point of view, the great interest of this survey lies in the fact that the Imphal river is a tributary of the Chindwin River (Irrawadi Drainage System), while the

¹ Hora, S. L., *Rec. Ind. Mus.* XXII, pp. 165-224 (1921).

² Menon, M. A. S., *ibid.*, L, pp. 265-70 (1952).

Barak river forms part of the Brahmaputra River System. The following is the list ¹ of the species so far known from the Manipur State :

Family CYPRINIDÆ.

Sub-family ABRAMIDINÆ.

- 1.
- Chela laubuca*
- (Ham.)

Sub-family RASBORINÆ.

2. *Barilius barila* (Ham.)
 3. *Barilius bendelisis* chedra (Ham.)
 4. *Barilius bola* (Ham.)
 5. *Barilius dogarsinghi* Hora
 6. * *Barilius guttatus* Day
 7. *Brachydanio acuticephala* Hora
 8. *Danio aequipinnatus* (McClell.)
 9. * *Danio dangila* (Ham.)
 10. *Danio naganensis* Chaudhuri.

Sub-family CYPRININÆ

11. * *Crossochilus latius burmanicus* Hora
 12. * *Garra abhoyai* Hora
 13. *Garra gotyla* (Gray)
 14. *Garra lissorhynchus* (McClell.)
 15. *Garra naganensis* Hora
 16. * *Garra nasutus* (McClell.)
 17. * *Garra rupiculus* (McClell.)
 18. * *Labeo angra* (Ham.)
 19. * *Labeo calbasu* (Ham.)
 20. * *Labeo pangusia* (Ham.)
 21. *Puntius clavatus* (McClell.)
 22. *Puntius conchoniis* (Ham.)
 23. *Puntius phutunio* (Ham.)
 24. *Puntius sarana* (Ham.)
 25. *Puntius ticto* (Ham.)
 26. *Rohtee belangeri* (C. V.)
 27. *Rohtee cotio cunma* Day.
 28. *Tor putitora* (Ham.)
 29. *Tor tor* (Ham.)

Family PSILORHYNCHIDÆ.

- 30.
- Psilorhynchus homaloptera*
- Hora and Mukerji

Family COBITIDÆ.

31. *Acanthopthalmus pangia* (Ham.)
 32. *Botia berdmorei* (Blyth)
 33. * *Botia histrionica* (Blyth)
 34. *Lepidocephalichthys berdmorei* (Blyth)
 35. *Lepidocephalichthys guntea* (Ham.)
 36. *Lepidocephalichthys irrorata* Hora

37. *Nemachilus botia* (Ham.)
 38. *Nemachilus kanjupkhulensis* Hora
 39. *Nemachilus manipurensis* Chaudhuri
 40. * *Nemachilus prashadi* Hora
 41. * *Nemachilus sikmaiensis* Hora
 42. *Nemachilus zonalternus* Blyth

Family SILURIDÆ.

43. *Callichrous bimaculatus* (Blyth)
 44. * *Wallago attu* (Bl.)

Family BAGRIDÆ.

45. *Mystus affinis* Blyth
 46. *Mystus bleekeri* Day

Family SISORIDÆ.

47. * *Gagata cenia* (Ham.)
 48. *Glyptothorax platypogonoides* (Blkr.)
 49. *Glyptothorax manipurensis*, sp. nov.
 50. *Glyptothorax trilineatus* Blyth

Family CLARIIDÆ.

- 51.
- Clarias batrachus*
- (Linn.)

Family AMBASSIDÆ.

- 52.
- Ambassis ranga*
- (Ham.)

Family NANDIDÆ.

- 53.
- Badis badis*
- (Ham.)

Family CHANNIDÆ.

54. * *Channa gachua* (Ham.)
 55. *Channa harcourbutleri* (Ann.)
 56. *Channa punctatus* (Bloch)
 57. *Channa striatus* (Bloch)

Family ANABANTIDÆ.

- 58.
- Anabas testudineus*
- (Bloch)

Family OSPHRONEMIDÆ.

59. *Colisa chuna* (Ham.)
 60. *Colisa fasciatus* (Bl.)

Family SYMBRANCHIDÆ.

- 61.
- Fluta alba*
- (Zuiew)

Family MASTACEMBELIDÆ.

62. *Mastacembelus armatus* (Lacép.)
 63. * *Mastacembelus manipurensis* Hora

¹ Only species which have been actually recorded from the Manipur State are included. *Rasbora rabsora* (Ham.) and *Rhynchobdella dhanshorii* Hora recorded from Dimapur (Hora, *Rec. Ind. Mus.* XXII, pp. 187 and 205, 1921) and *Erethistes hara* (Ham.) = *Erethistes pussilus* Müller and Troschel) and *Erethistes elongata* Day (= *Couts conta* Ham.) (Hora, *loc. cit.*, p. 173) have therefore been omitted.

The species, whose names are preceded by an asterix (*), are not represented in the recent collection, while *Chela laubuca*, *Psilorhynchus homaloptera*, *Glyptothorax trilineatus*, *Colisa chuna* and *Mastacembelus armatus* are recorded here for the first time from Manipur. A new species resembling the Chinese species *Glyptothorax sinense* has also been found in the present collection. Full description of this form is given in the paper in addition to a few remarks on species newly recorded here from the Manipur State.

***Glyptothorax manipurensis*, sp. nov.**

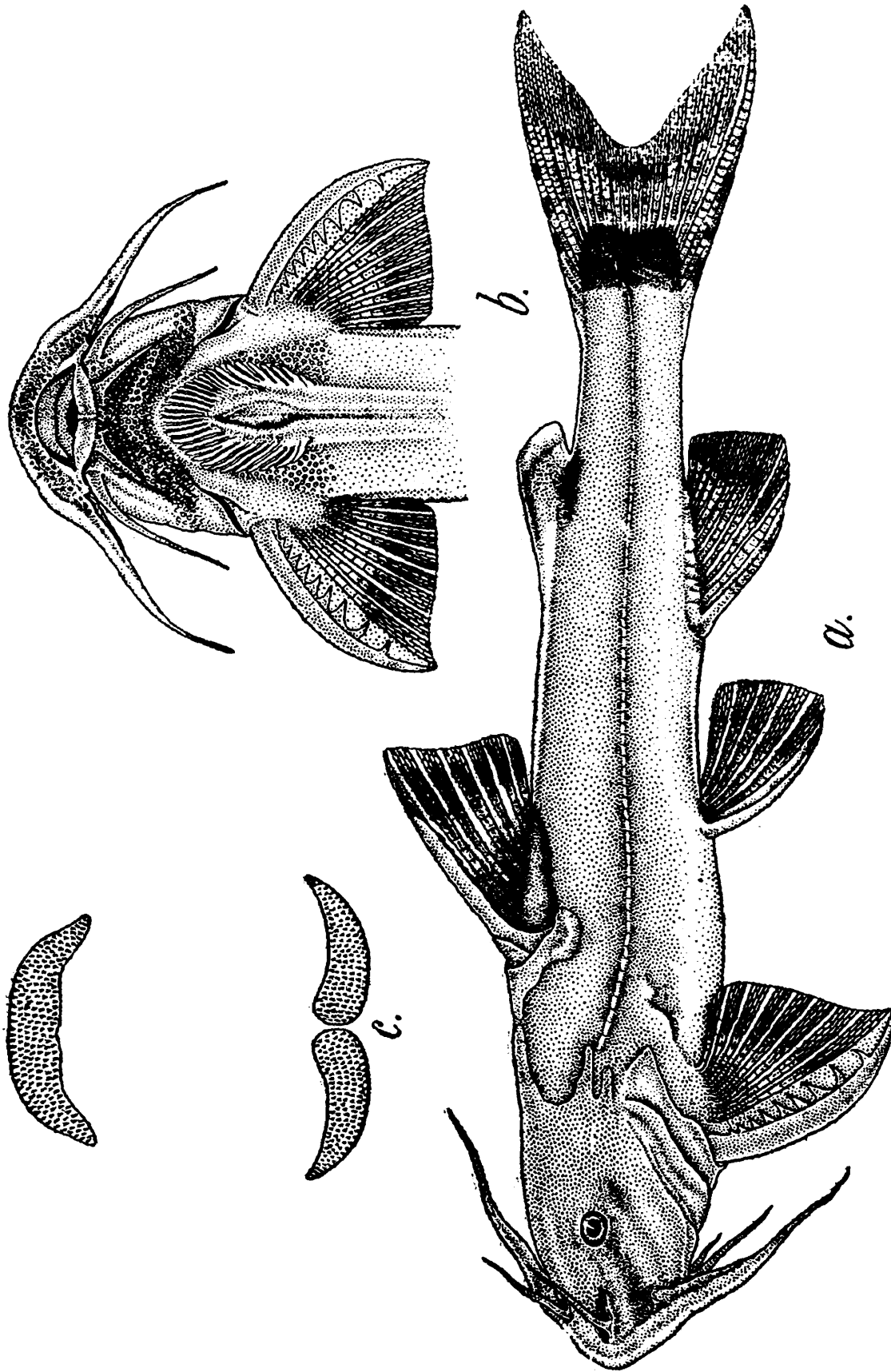
In the collection under report there are seven specimens belonging to the genus *Glyptothorax* which differ from all the other members of this genus so far known from India. However, they approximate to *Glyptothorax sinense* Regan, a species known from Burma and China, from which they differ in the body colouration and the much broader nature of their head. I propose to describe them here as belonging to a new species of *Glyptothorax*.

D.1/6., A.2/9., P.1/9., V.1/5., C.22-24.

Glyptothorax manipurensis is a very much laterally compressed, elongated form in which the dorsal profile rises from the tip of the snout to the origin of the dorsal fin whence it slopes down gradually to the base of the caudal fin. The head and part of body in front of the ventrals is greatly depressed. Beyond the anal fin the ventral profile rises to the base of the caudal fin. The head is broadly pointed, its length is contained from 4 to 4.6 times in the standard length; its height at the occiput is contained about 1.6 times and its width about 1.1 times in its length. The eyes are of the medium size and their diameter is contained from 6 to 7 times in the length of the head. The mouth is inferior and horizontal, the width of its gape is almost equal to the length of the snout. The lips are well-developed and are studded with papillae. The teeth in the jaws are villiform; those in the upper jaw form a narrow, continuous band while in the lower jaw the band is interrupted in the middle. The nostrils are situated much nearer to the tip of the snout than to the anterior margin of the orbit. The length of the snout is contained about 2 times in the length of the head. The inter-orbital width is contained from 2.7 to 3.1 times in the width of the head. The nasal barbels when pressed reach slightly beyond the anterior margin of the orbit, the maxillaries reach the middle of the base of the pectorals, the outer mandibulars reach the upper angle of the gill opening and the inner mandibulars reach as far as the anterior end of the adhesive apparatus.

The depth of the body is contained 5.1 to 5.5 times in the standard length. The caudal peduncle is more than twice as long as high. The dorsal fin commences almost in the beginning of the second third of the distance between the tip of the snout and the base of the caudal fin, it is slightly higher than the depth of the body below it. The basal bone of the dorsal is narrowly separated from the occipital spine which is two and a half times as long as wide. The dorsal spine is sheathed in skin; it is strong and is finely serrated along its posterior margin. The pectoral spine is broad and denticulated along its inner margin. The

pectoral fins are shorter than the head and are separated from the pelvics by a considerable distance. The pelvic fins are almost as long as the dorsal spine and extend well beyond the vent, but separated from the anal fin. The anal fin originates slightly in front of the commencement



Glyptothorax mampurensis, sp. nov.
a. Lateral view of the type specimen, $\times 4$; *b.* Ventral view of the head and body, $\times 23$; *c.* Teeth; bands of the upper and lower jaws, $\times 6$.

of the adipose dorsal and its longest ray is about the length of the dorsal spine. The caudal fin is deeply forked, the lobes being almost of the same length. The paired fins are not plaited.

The adhesive apparatus on the chest is longer than broad and is without any depression. The skin is smooth.

In spirit the colour is olivaceous with dark patches at the base of the dorsal, the caudal and the adipose fins.

Type-specimens.—F. 738/2, Holotype ; F. 739/2, Paratype, Zoological Survey of India, Calcutta.

Locality.—Barak river, Karong, Manipur State (Assam).

Remarks.—*Glyptothorax manipurensis* can be easily distinguished by the conspicuous dark patches at the base of the dorsal, the adipose and the caudal fins, whereas in *Glyptothorax sinense* there are two dark brownish transverse bands, one below the dorsal and the other below the adipose fin.

Measurements in millimetres.

Total length including caudal	94.5	84.5	78.5	76	75	66.5	60
Length of caudal	20	17	17.5	16	15.5	14.5	13
Length of head	18.5	18	17	15.5	15.5	14.5	12
Width of head	17	15	15	14	14	12	11
Height of head near occiput	11.5	11	11	9.5	9.5	9	7.5
Length of snout	9.5	8.5	8	8	8	7.5	6
Inter-orbital width	5.5	5	5	4.5	4.5	4	4
Depth of body	14.5	11.5	11.5	11	11	10	8.5
Height of dorsal fin	13	12.5	10.5	11	11.5	11	9
Length of pectoral fin	16.5	14.5	13	13.5	12	11	10
Length of ventral fin	11.5	10.5	9.5	9	9	9	7.5
Longest ray of anal fin	11.5	11	10.5	10	10	8	8
Length of caudal peduncle	15	12.5	12.5	12	12.5	11	10
Least height of caudal peduncle	7.5	6	5.5	5.5	5.5	5	4.5
Distance between tip of snout and commencement of dorsal fin	29	24.5	23.5	23	21.5	20.5	18
Distance between commencement of dorsal fin and that of adipose fin	26.5	26.5	22.5	21	21	18.5	17
Distance between commencement of dorsal fin and base of caudal fin	49	44.5	40	39.5	39	35	31
Distance between base of dorsal fin and commencement of adipose fin	16.5	15	14	13.5	13	11	11
Length of base of adipose fin	8	8.5	7	7	7.5	7.6	6

***Chela laubuca* (Ham.)**

1822. *Cyprinus laubuca*, Hamilton, *Fish Ganges*, pp. 260, 384.

1876. *Perilampus laubuca*, Day, *Fish India*, p. 598, pl. cl. 1, fig. 5.

1889. *Perilampus laubuca*, Day, *Faun. Brit. Ind.*, Fish .1, p. 360, fig. 112.

1916. *Laubuca (Laubuca) laubuca*, Weber and Beaufort, *Indo-Austral. Archipel.*, 111, p. 48.

1937. *Laubuca laubuca*, Shaw and Shebbeare, *Journ. Roy. As. Soc. Bengal*, 111, p. 20-21.

1945. *Chela laubuca*, Smith, *Bull. U. S. Nat. Mus.*, 188, p. 81-82.

There are only two specimens of *Chela laubuca* obtained from the Imphal river in the collection under report ; they vary from 50-57 mm. in length.

The species is widely distributed in India, Burma and Sumatra ; also found in Siam.

***Psilorhynchus homaloptera* Hora and Mukerji**

1935. *Psilorhynchus homaloptera*, Hora and Mukherji, *Rec. Ind. Mus.* XXXVII, pp. 391-397.

There are 13 specimens of *Psilorhynchus homaloptera* which agree well with the description and figure of the species by Hora and Mukerji. They were collected from the Barak river at Kairong. *Psilorhynchus homaloptera* has so far been known only from its type-locality, Keleki stream at Emilomi in the Naga Hills. Hora¹ collected a few young specimens of a species of *Psilorhynchus* from Piphima in the Naga Hills and it is very likely that those specimens also belong to this species since Karong and Piphima are both drained by one and the same river system.

Glyptothorax trilineatus, Blyth.

1860. *Glyptothorax trilineatus*, Blyth, *Journ. As. Soc. Bengal*, XXIX, p. 154.

1953. *Glyptothorax trilineatus*, Menon, *Rec. Ind. Mus.* LI (In Press).

Glyptothorax trilineatus is represented by 3 specimens varying from 69 to 83 mm. in total length. They possess the characteristic three white stripes on the body and agree in every respect with Blyth's description of the species.

G. trilineatus is so far known only from Burma and Siam; its record from Nepal being erroneous.² It is recorded here from the Imphal river in Manipur for the first time, though it is already known to occur in the Chindwin drainage.³

Colisa chuna (Ham.)

1822. *Trichogaster chuna*, Hamilton, *Fish Ganges*, pp. 121, 372.

1876. *Trichogaster chuna*, Day, *Fish India*, pp. 373-44, pl. LXXIX, fig. 3.

1937. *Trichogaster chuna*, Shaw and Shebbeare, *Journ. As. Soc. Bengal*, III, p. 117.

There are a large number of specimens of *C. chuna* obtained from the Loktak Lake in the collection under report. This species is quite common in almost all the lakes and ditches in the valley. It is quite likely that this species had entered the Valley along with *Anabas testudineus* (Bloch) which was introduced there by the authorities of the State since 1920 and has now become a wild growth all over the Valley.

Colisa chuna is so far known only from Bengal and Assam and it is here recorded for the first time from Manipur.

Mastacembelus armatus (Lacep.)

1800. *Mastacembelus armatus*, Lacepede, *Hist. Nat. Poisson*, 11, p. 286.

1876. *Mastacembelus armatus*, Day, *Fish India*, p. 340, pl. LXXIII, fig. 2.

1919. *Mastacembelus armatus*, Annandale, *Rec. Ind. Mus.*, XVI, p. 125.

1937. *Mastacembelus armatus*, Shaw and Shebbeare, *Journ. As. Soc. Bengal* III, p. 126.

One specimen, 480 mm. in length was collected from the Loktak Lake. This species is widely distributed in Ceylon, India, Burma and China. It is, however, recorded here for the first time from the Manipur Valley.

¹ Hora, S. L., *Rec. Ind. Mus.* XXII, p. 173.

² Hora, S. L., *Rec. Ind. Mus.* XXV, p. 29 (1923).

³ Hora, S. L., *ibid.*, XXXIX, p. 338 (1937).