

NOTES ON FISHES IN THE INDIAN MUSEUM.

XXXIX.—ON THE SYSTEMATIC POSITION OF *MATSYA ARGENTEA* DAY.

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In his "Supplement to the Fishes of India", Day referred to a number of species represented in Col. Tickell's "volume of beautiful coloured drawings of Burmese fishes with their descriptions", and of these seven were described by him as new to science. Among the new species, there are three freshwater forms, viz., *Leiocassis fluviatilis* Day (*Loc.* Anin, a stream rising near Weywoon, Wagroo in the Tenasserim Provinces), *Acanthonotus argenteus* Day (*Loc.* Streams of the interior of the Tenasserim district) and *Rohtee cunma* Day (*Loc.* Moulmein). So far as I am aware these species are not represented in any collection and are only known from Day's account based on the coloured drawings and descriptions of Col. Tickell. It is no wonder, therefore, that considerable confusion prevails regarding their taxonomy. Through the courtesy of Mr. D. E. B. Manning, Divisional Forest Officer, Tavoy Division, Burma, the Zoological Survey of India received a fine collection of freshwater fishes from the Tavoy District during 1939, and among this lot representatives of Day's two species, *Matsya* (= *Acanthonotus*) *argentea* and *Rohtee cunma*, have been found. In this note the systematic position of the former is elucidated, while the latter will be dealt with subsequently in an account of the revision of the fishes of the genus *Rohtee* Sykes. I am very grateful to Mr. Manning for the gift of this valuable material from a very important zoogeographical district. His entire collection will be dealt with in a separate note.

In my¹ account of the systematic position, geographical distribution and evolution of the Cyprinoid genera with a recumbent predorsal spine I recognised Day's *Matsya*² as a valid genus and from his description regarded it as a form with only 5 branched rays in the anal fin³. It was on this presumption alone that *Spinibarbus* Oshima⁴ and *Spinibarbichthys* Oshima⁵ were relegated to its synonymy. From the fresh material I now find that in Day's species the anal fin is provided with 6

¹ Hora, S. L., *Rec. Ind. Mus.* XXXIX, pp. 311-319 (1937).

² Day, F., *Faun. Brit. Ind. Fish.* I, p. 292, fig. 102 (1889). In his 'Supplement to the Fishes of India', Day (p. 807) described *Acanthonotus* as a new genus, but later he discovered that the name was preoccupied by *Acanthonotus* Bloch and Schneider. Accordingly, he proposed *Matsya* to replace his *Acanthonotus*.

³ Day in characterizing *Matsya* noted "anal short", and in the description of the species he only noted "A.7", without giving any indication of the number of spines and branched rays in the anal fin. Ordinarily in Cyprinoid fishes "A. 7" indicates 2 unbranched and 5 branched rays.

⁴ Oshima, M., *Ann. Carnegie Mus.* XII, p. 217 (1919).

⁵ Oshima, M., *Annot. Zool. Japon.* XI, p. 10 (1926).

branched rays, the last being divided to the base, and not with the usual Cyprinoid number 5. Since great importance has generally been attached to this character in the classification of the Cyprinoid genera, I am of the opinion that the Chinese genera *Spinibarbus* and *Spinibarbichthys* must be regarded as distinct from *Matsya*.

The only other Cyprinoid genus with a recumbent predorsal spine known so far is *Mystacoleucus* Günther¹, which is distinguished from the above-mentioned three genera by its relatively long anal fin. It has hitherto been characterised by the possession of 8-10 branched rays in the anal fin, but I² showed that *Rohtee ogilbii* Sykes of Southern India, with 13 to 14 branched rays in the anal fin, also belongs to this genus. In view of such a wide range of variation in the number of anal rays in the species at present included under *Mystacoleucus*, it seems reasonable to regard *Matsya* as a synonym of *Mystacoleucus*, the definition of which should be emended to comprise forms having 6-14 branched rays in the anal fin.

Besides Day and the writer, Vinciguerra³ is the only ichthyologist who has commented upon the systematic position of *Matsya argentea*; he regarded it as a synonym of *Barbus altus* Günther⁴, a species originally described from Siam and now known to inhabit Cochin-China⁵ also. In referring his series of specimens from Kokariet and Meetan to *Barbus altus*, Vinciguerra attached considerable importance to the serration on the dorsal spine. He noted the presence of a predorsal spine in his specimens, which had not been described by Günther in the typical specimens of *B. altus*. However, on the authority of Boulenger, who compared one of his specimens with the type of Günther's species, he considered the two forms conspecific. At my request Dr. Trewavas re-examined this material and very kindly favoured me with the following note:—

“The type of *Barbus altus* Günther is a specimen of 65+14 mm. It is in rather poor condition but quite clearly it has no recumbent predorsal spine. We have other specimens from Siam which match it very well and agree with it in this respect. We have two specimens of Fea's collection from Kokariet and these both possess a recumbent predorsal spine; it seems that Boulenger was in error in identifying them with *B. altus*, in comparison with which they also have a more inferior mouth.”

Several authors who have recorded *B. altus*⁶ make no mention of a predorsal spine in this species, and it seems obvious, therefore, that Vinciguerra was misled in identifying his Burmese specimens as *B. altus*. I have examined two examples of the species from Fea's collection and find them almost identical with specimens in Mr. Manning's material.

In view of what has been stated above, *Matsya argentea* Day should now be designated as *Mystacoleucus argenteus* (Day). I give below a description of the species from fresh material.

¹ Günther, A., *Cat. Fish. Brit. Mus.* VII, p. 206 (1868).

² Hora, S. L., *Rec. Ind. Mus.* XXXIX, p. 312, fig. 1 (1937).

³ Vinciguerra, D., *Ann. Mus. Civ. Stor. Nat. Genova*, (2) IX, pp. 289, 290 (1890).

⁴ Günther, A., *Cat. Fish. Brit. Mus.* VII, p. 119 (1868).

⁵ Tirant, G., in P. Chevey's *Oeuvre ichthyologique de G. Tirant, Réimpression avec Révision synonymique*, p. 158 (1929).

⁶ Fowler, H. W., *Proc. Acad. Nat. Sci. Philadelphia* LXXXIX, p. 198 (1939).

***Mystacoleucus argenteus* (Day).**

1888. *Acanthonotus argenteus*, Day, *Suppl. Fish. India*, p. 807.

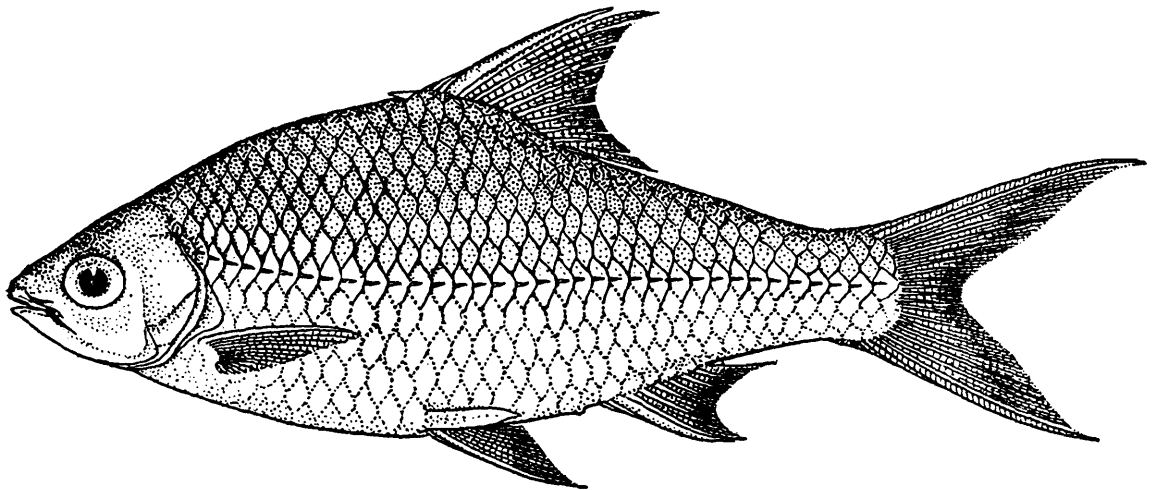
1889. *Matsya argentea*, Day, *Faun. Brit. Ind. Fish.* I, p. 292, fig. 102.

1890. *Barbus altus*, Vinciguerra (*nec* Günther), *Ann. Mus. Civ. Stor. Nat. Genova*, (2) IX, p. 289.

1937. *Matsya argentea*, Hora, *Rec. Ind. Mus.* XXXIX, p. 311.

D. 4/8 ; A. 3/6 ; P. 15 ; V 8 ; C. 19+ ; L. l. 34-35 ; L. tr. $7\frac{1}{2}/4\frac{1}{2}$ up to base of pelvics.

Mystacoleucus argenteus is a greatly compressed, bream-like fish in which both the profiles are considerably arched. The dorsal surface

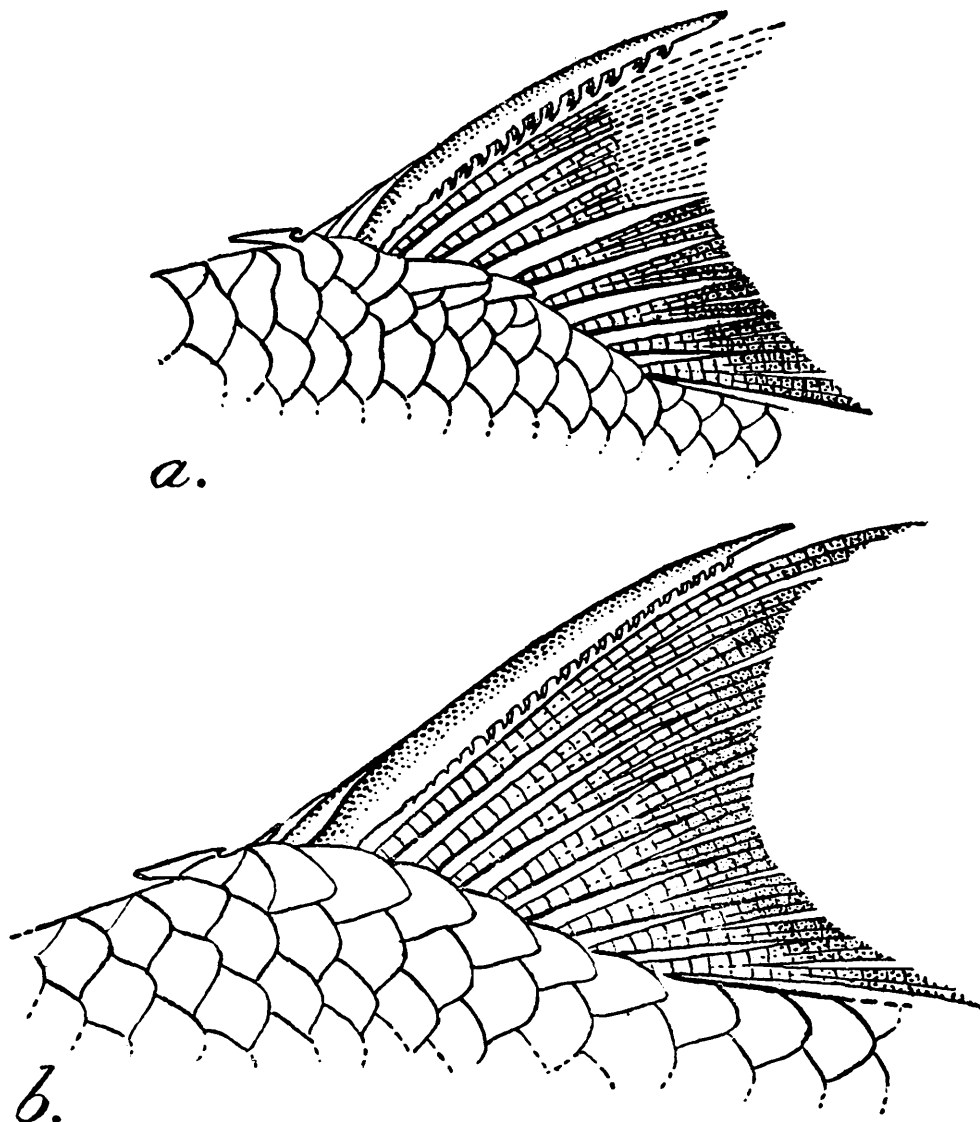


TEXT-FIG. 1.—Lateral view of a specimen of *Mystacoleucus argenteus* (Day) from Tavoy. $\times \frac{2}{3}$.

between the head and the dorsal fin is sharp and keel-like, while behind the latter it is rounded. The ventral surface in front of the anal fin is somewhat flattish. The broadest part of the fish is the posterior part of the head. The head is short and broadly pointed anteriorly ; its length is contained about 4.7 times in the standard length ; its height at occiput is contained about 1.1 times and its breadth 1.6 times in its length. The depth of the body is slightly less than twice the length of the head and is contained from 2.5 to 2.6 times in the standard length. The caudal peduncle is almost one and a half times as long as broad. The eyes are large and lateral in position ; they are hardly visible from above or below. The diameter of the eye is considerably greater than the length of the snout, but is equal to or slightly greater than the inter-orbital width ; it is contained from 2.6 to 2.8 times in the length of the head. The mouth is small, inferior, semicircular and horizontal. The lips are thin ; the lower lip is reflected from the jaw which is sharp. The postlabial groove is interrupted in the middle. There are two pairs of short barbels.

The commencement of the dorsal fin is somewhat in advance of the pelvics, and is almost midway between the tip of the snout and the base of the caudal fin ; it is provided with 4 spines and 8 branched rays. The last spine is strong and bony, and denticulated along the posterior border.

In smaller specimens these denticulations are fewer and coarser¹. The recumbent predorsal spine is short, but fairly strong and well marked.



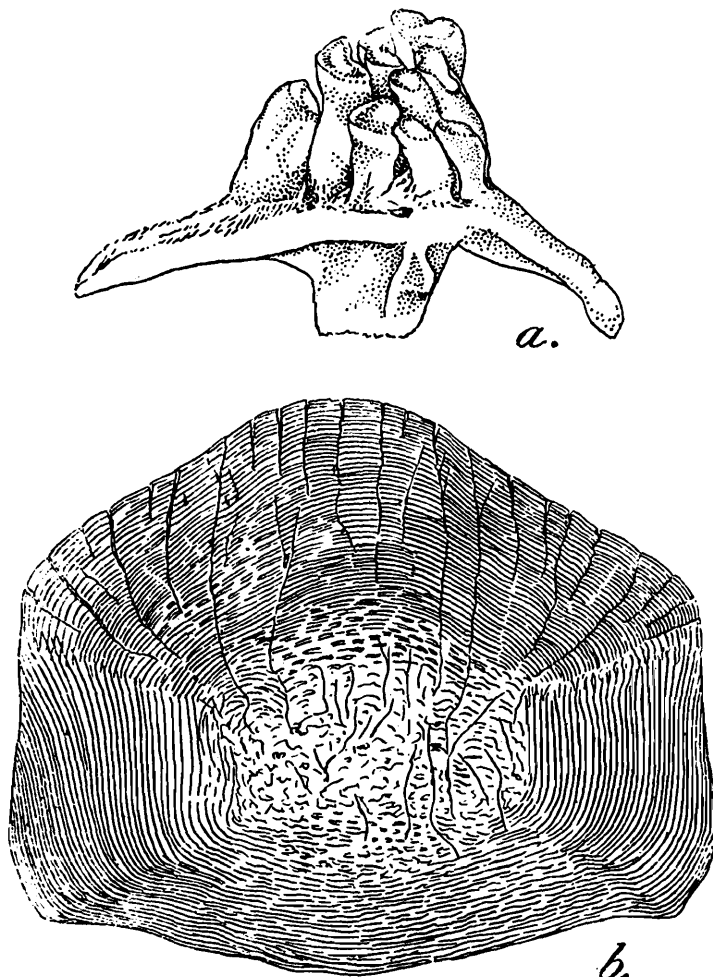
TEXT-FIG. 2.—Dorsal fin of *Mystacoleucus argenteus* (Day), showing nature of recumbent predorsal spine and denticulations on the dorsal spine. $\times 2$.

a. Drawn from a specimen obtained by Dr. Fea in Burma; *b.* Drawn from a specimen collected by Mr. Manning from Tavoy.

It is sharp and pointed both anteriorly and posteriorly. The pectoral fins are sharp above and slightly shorter than the head; they are separated from the pelvics by a considerable distance. The pelvic fins are also pointed and possess prominent scaly appendages in their axils which are longer than the bases of the fins. The pelvics extend to the anal opening, but miss the base of the anal fin by a short distance. The anal fin possesses 3 spines and 6 branched rays; the last spine is fairly well developed and the last branched ray is divided to the base. The caudal fin is deeply forked with both the lobes sharply pointed; the upper lobe is slightly longer than the lower.

¹ It may be noted that Vinciguerra's largest specimen was 115 mm. in length and in two of his specimens examined by me the denticulations are certainly coarser than those in Mr. Manning's examples. It has been indicated already that the nature of serrations on the dorsal spine had influenced Vinciguerra to refer his specimens of this species to *Barbus altus* Günther.

The body is covered with large, thin, but firmly adhering scales. There are 34 to 35 scales along the lateral line, $7\frac{1}{2}$ rows between it and



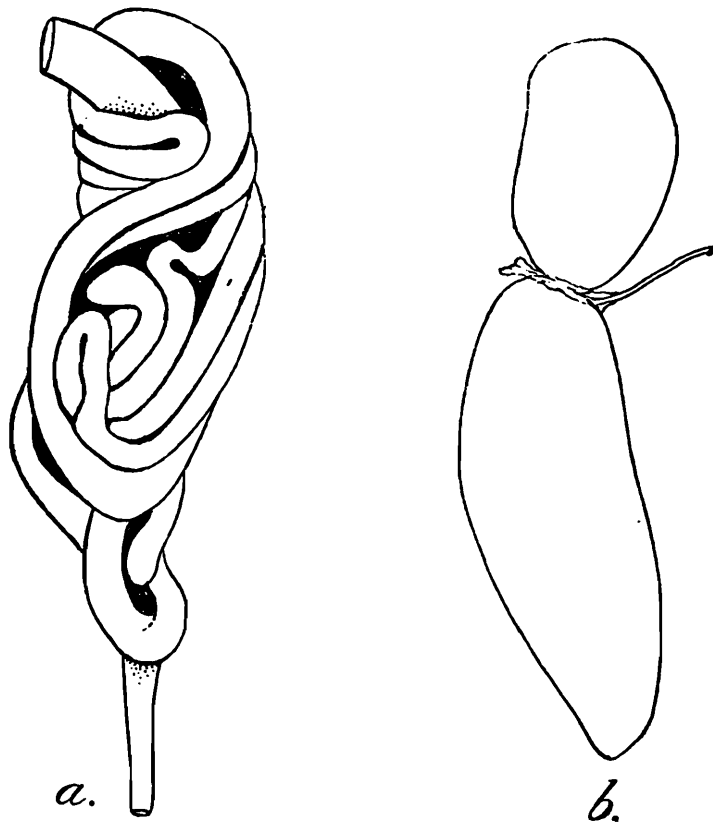
TEXT-FIG. 3.—Pharyngeal teeth and scale of *Mystacoleucus argenteus* (Day).

a. Pharyngeal bone and teeth. $\times 5\frac{1}{2}$; b. A scale from below base of dorsal fin. $\times 10$.

the base of the dorsal fin and $4\frac{1}{2}$ rows between it and the base of the pelvic fin. The unpaired fins possess scaly sheaths at their bases. A scale from below the base of the dorsal fin possess a broad, somewhat arched base, almost straight or slightly convex sides and a broadly pointed apex. The nuclear area is large and is situated more or less in the centre. The circuli are fine and numerous. There are a number of short, narrow radii in the apical region, only a few of which extend to the nuclear area. The pharyngeal teeth are arranged in three rows 4, 3, 2: 2, 3, 4. The alimentary canal is long, narrow and greatly convoluted. The air-blader is of the usual Cyprinoid type but owing to the narrowness of the body cavity, especially towards the dorsal region, its shape is correspondingly modified. Posteriorly it is co-extensive with the body cavity which extends into the tail region for a short distance.

The colour of the preserved specimens is pale olivaceous, which is replaced above by gray and on the ventral surface becomes much lighter. The dorsal surface of the head and the ridge along the back are somewhat darker. The anterior face of the dorsal spine and the distal margin of

the fin are also darkish. There is a short dark band between the superior angle of the gill-opening and the orbit, which meets a semicircular band



TEXT-FIG. 4.—Alimentary canal and air-bladder of *Mystacoleucus argenteus* (Day).
× 1½.

a. Alimentary canal; b. Air-bladder.

of the same colour across the nape. There are brownish marks on the snout and around the nostrils. The dorsal and the caudal fins are light gray, while the remaining fins are of a dull white colour.

Measurements in millimetres.

Standard length	123.0	124.2	124.3
Depth of body ..		46.0	50.0	49.0
Length of head		26.3	26.4	26.0
Width of head		15.5	16.5	16.0
Height of head at occiput		23.0	24.5	22.2
Length of snout ..		7.3	6.0	7.0
Diameter of eye ..		9.2	9.8	9.8
Interorbital width		9.7	9.8	10.3
Longest ray of dorsal		32.5	Damaged	
Longest ray of anal		18.8	18.5	Damaged
Length of pectoral		22.5	25.0	22.0
Length of pelvic	21.8	23.0	21.0
Length of caudal peduncle ..		23.0	22.0	22.0
Least height of caudal peduncle	..	14.0	14.3	15.0