

ON THE FISH FAUNA OF BANDA DISTRICT I—FAUNISTICS AND BIONOMICS
MYSTUS SCOPOLI (SUB-GENUS : *MYSTUS*) SPECIES (BAGRIDAE)

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*A brief resume of salient features of three Bagrid catfishes viz., **Mystus (Mystus) bleekeri** (Day), **M. (M.) cavasius** (Hamilton) and **M. (M.) vittatus** (Bloch), recorded from the drainages of Banda district are given. Many characters of these species as compared to earlier works are recorded. The specificity of **M. (M.) tengara** (Hamilton) and **M. (M.) vittatus** (Bloch) has also been discussed and the former appeared synonymous with the latter. Considerable variations have been noticed in a number of morphological characters of **M. (M.) vittatus**.*

The fish fauna of Banda district has been studied^{1,2}, and a check-list of fishes of river Ken and Banda district (U.P.) is given. Of the order—Siluriformes the Family—Bagridae is fairly represented in the fish fauna by *Mystus* spp. Faunistics and bionomics of these fishes are studied by the author³ in detail and interesting variations in some characters were recorded.

Material and Methods

The fishes were collected by the author from various localities at river Ken, Baghain, Paisuni (tributaries of Yamuna) and Yamuna as well as from the ponds and tanks of Banda. The material was thoroughly examined for its meristic and morphometric features which were compared with the works of Day⁴, Jayaram^{5,6} and Misra⁷. Bionomical studies were made in the field itself which include mainly the habit and habitat, food and feeding and breeding behaviour of the fish.

Results and Discussion

Species:

1. *Mystus (Mystus) bleekeri* (Day)

Local name : KATUWA

(Plate —1-A)

Specimens : 108-120 mm in total length.

Bionomics:

Occasional in occurrence and shares a common habitat with *M. (M.) vittatus* which is abundantly found in shallow parts of the rivers, ditches and ponds with some weeds. Gut contents showed the presence of insect parts and fish scales indicating its predaciousness. It mostly abounds the benthos hence classified as bottom-feeder.

Remarks:

The present material in all its essential features agrees with Jayaram⁶, but the

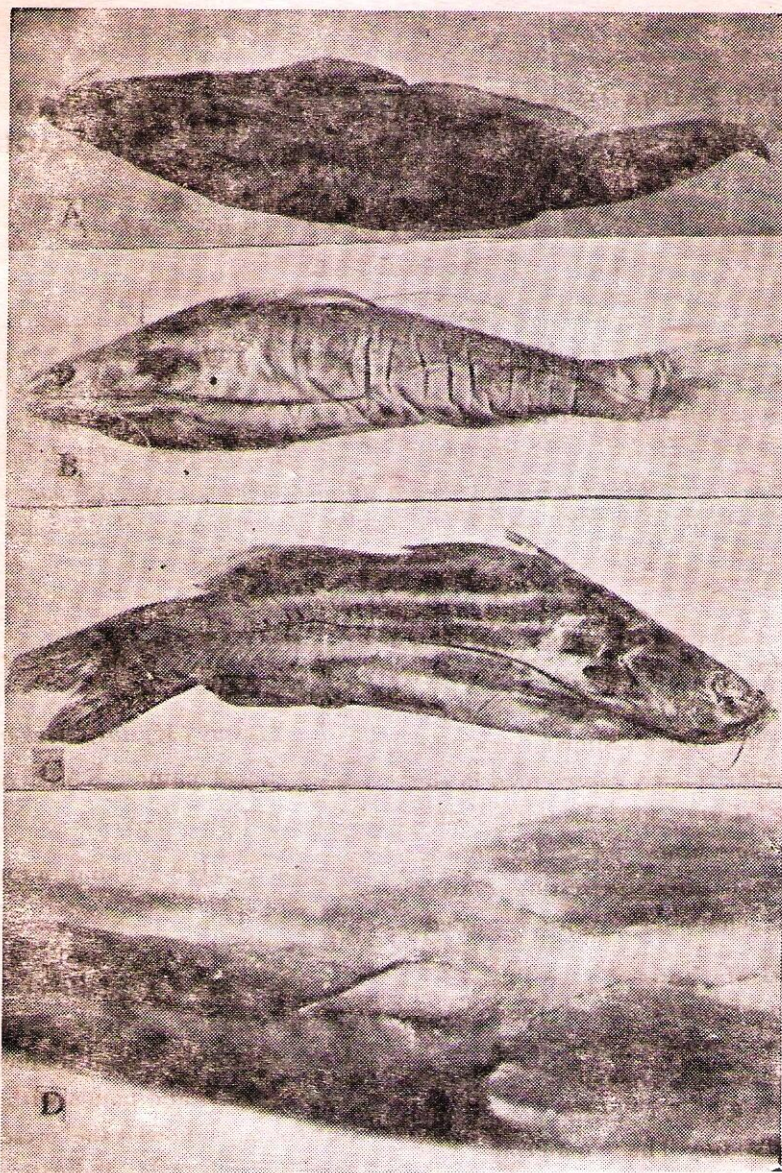


PLATE 1

(A) *Mystus (Mystus) bleekeri* (Day), (B) *M. (M.) cavasius* (Hamilton), (C) *Mystus (Mystus) vittatus* (Bloch), (D) Ventral view of *M. (M.) vittatus* male showing genital papilla.

range of variations is enlarged in the following as compared to:

(i) Day⁴ : Height of body, length of head and length of caudal fin in TL.

Diameter of eye in HL, snout and interorbital width.

(ii) Jayaram⁵ : Height of body and length of head in TL. Diameter of eye in snout and the interorbital width.

(iii) Misra⁷ : Length of snout in HL. Adipose dorsal base in the rayed dorsal base and length of caudal fin in HL.

Day⁴ and Misra⁷ stated that 'Outer mandibular barbels reach to the pectoral base' but in the present material they are always found to reach beyond the pectoral base and even up to the middle of its length.

2. *Mystus (Mystus) cavasius* (Hamilton)

Local name : KATUWA

(Plate—I-B)

Specimens : 145-172 mm in total length.

Bionomics:

Found in all the river waters. Prefers sandy or muddy-bottomed reaches. Gut contents revealed the presence of crustaceans, odonata nymphs, insect appendages and fragments of fish. Highly predacious bottom-feeder as also observed by Das and Moitra^{8,9} and Moitra¹⁰. Agrawal and Tyagi¹¹ found it omnivorous. Monsoon breeder (July, August). Males generally possess a papilla¹² which is absent in females.

Remarks:

Morphometric features on the present material largely agree with Jayaram (5, 6), except the width of head in TL (vs. 6.5-6.75)

and number of teeth on the pectoral spine (vs. 11-12) where the range of variation is enlarged as compared to Jayaram⁵.

Range of variations in some other features is also enlarged as compared to Day⁴ in the length of head, height of body and length of caudal fin in TL and also diameter of eye in HL and interorbital width; and Misra⁷ in the length of head and height of body in TL and SL, snout in HL, diameter of eye in HL; pectorals, ventrals and anal in HL, caudal fin in TL and HL, height of caudal peduncle in its length (range considerably enlarged) and extent of adipose dorsal behind the last anal ray.

3. *Mystus (Mystus) vittatus* (Bloch)

Local name : KATUWA

(Plate—I-C)

Specimens : 104-121 mm in total length.

Bionomics:

Most frequent among smaller catfishes found in the rivers, ponds, pools, irrigation channels, ditches and roadside nullahs with or without aquatic vegetation. The gut contents showed large amount of animal matter represented mainly by fish scales, fragments of fish skeleton, insect appendages and eggs. Highly carnivorous and predacious⁸⁻¹². On the contrary it has also been classified as omnivorous¹¹ and Monsoon breeder (July-August). Males possess a genital papilla as a projection at the genital aperture lying close to the anal fin and is noticed throughout the year becoming enlarged during breeding season (Plate—I-D). No such papilla is found in females.

Remarks:

1. There has been a controversy regarding the specificity of *Mystus* (*Mystus*) *vittatus* (Bloch) and *M. (M.) tengara* (Hamilton) as they resemble each other in many respects. Hora¹³ stated *M. tengara* is probably synonymous with *M. vittatus*. Menon¹⁴ has also held the same view. Both the species have earlier been recorded from Banda². Later, a detailed examination of the material revealed overlapping in the diagnostic features of both the species. Despite this, the characters were closely agreeing with '*vittatus*'. Thus, the entire material was identified as *M. (M.) vittatus*. The characters like—length of barbels, extent of median longitudinal groove over the head, length of adipose dorsal base, interdorsal space, number of teeth on the pectoral spine etc. have been frequently used⁴⁻⁷ to prepare keys for their identification on which basis it appears very difficult to separate both the species at specific level. All the above mentioned characters are found to be variable within a group of individuals and such variable characters pose difficulty in defining a species. Following are the marked variations noticed in the present material as compared to the earlier works:

- (i) The medial longitudinal groove over the head is narrow or wide and may or may not reach base of occipital process.
- (ii) The maxillary barbel is very long and reaches to the commencement, anterior 1/3, to the end or slightly beyond end of anal fin, but never up to ventrals.
- (iii) Nasal barbel also long, reaching up to base of occipital process or end of medial

longitudinal groove over the head and is always more than half of the head length.

- (iv) Outer mandibulars reach up to top of pectoral spine or longest fin ray whereas the inner ones only up to base of pectorals.
- (v) Interdorsal space equal to or shorter than rayed dorsal base. Adipose dorsal sometimes extending beyond last anal ray.
- (vi) Caudal fin may be equal, slightly longer or slightly smaller than the head.
- (vii) Length of caudal peduncle is also variable.

2. All the morphometric features of the material agree with Day's⁴ *M. vittatus* except the length of caudal fin in TL and number of teeth on the inner side of pectoral spine, where the range of variation is enlarged.

3. The range of variation is also enlarged in the height of body in TL and diameter of eye in HL as compared to Jayaram⁵.

4. As compared to Misra⁷ the ranges are enlarged in the length of snout, dorsal spine, length of pectoral fin, length of ventral and anal fin base in HL; rayed dorsal base in adipose dorsal base and height of caudal peduncle in its length.

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