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SEXUAL DIMORPHISM IN *AMBLYCEPS MANGOIS* (HAMILTON- BUCHANAN) (AMBLYCIPITIDAE : SILURIFORMES : PISCES) WITH NOTES ON SOME MORPHOLOGICAL CHARACTERS

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INTRODUCTION

The genus *Amblyceps* was first described by Blyth (1858). It is a monotypic genus with only one species *Amblyceps mangois* (Hamilton-Buchanan). Earlier, considerable variations amongst different populations resulted in description of several names for this species (Blyth 1860; Day 1878; Chaudhuri 1919). Menon (1999) in his checklist included two species under genus *Amblyceps* namely *A. laticeps* (McClelland) and *A. mangois* (Hamilton-Buchanan).

Nath and Dey (1989) described two new species namely *A. apangi* and *A. arunachalensis* from Arunachal Pradesh, N. E. India on the basis of presence of complete or incomplete lateral line, shape of caudal fin, length of adipose dorsal fin etc. Jayaram (1999) synonymised these two species with *A. mangois* quoting Hora (1933). Hora (1933) in his revisionary work gave diagrams of different specimens showing variations in the form and extent of adipose dorsal fin, shape of caudal fin etc. (p. 618, fig. 5). Though as per diagram, in top two specimens dotted lines have been shown but as per text, "the lateral line is entirely absent" The same was reported by different authors (Hamilton-Buchanan, 1822; Blyth, 1860; Day, 1878; Talwar and Jhingran, 1991). Jayaram (1999) only mentioned, "lateral line generally absent"

In spite of considerable differences in various populations, Day (1878) and Hora (1933) opined that all are varieties of one species only, which is still followed (Talwar and Jhingran, 1991; Jayaram, 1999).

OBSERVATIONS

While studying the *A. mangois* specimens from North East India, the author also came across considerable and interesting variations amongst same or different populations. A detailed study resulted some significant findings.

The present paper deals with 139 examples of *Amblyceps mangois* from different states (Meghalaya, Assam, Manipur, Tripura and Arunachal Pradesh) of N. E. India. 73 exs. (25-72 mm TL) from Meghalaya, 22 exs. (25-91 mm TL) from Assam, 1 ex. (55 mm TL) from Manipur, 31 exs. (28-63 mm TL) from Tripura and 12 exs., (45-110 mm TL) from Arunachal Pradesh were studied.

Diversified variations noticed in different populations are as follows :

(1) *In Meghalaya populations* : Body is generally subcylindrical; sometimes it is elongated with equal depth throughout. Pelvic fins may or may not be closer to anal fin; when closer, sometimes touching anal fin. The length of adipose dorsal fin varies; either smaller, slightly longer or equal to anal fin base length; sometimes even confluent with caudal fin. Concealed dorsal and pectoral fin spines are generally sharp; either long, short or not visible; when it is not visible first unbranched ray is fleshy. The barbels are longer or shorter than head length. Anal opening placed in between pelvic fins, either middle or end of its length; *with or without fleshy papilla just behind*. Caudal fin either slightly or deeply emarginated or forked. When forked, lobes are subequal or upper lobe slightly longer; sometimes lobes are filamentous. Lateral line generally absent; in few specimens 4-5 pores are noticed; sometimes extending upto end of dorsal fin.

(2) *In Assam populations* : Body is generally subcylindrical. Pelvic fins may or may not be closer to anal fin. The length of adipose dorsal and anal fin base almost equal; in some, adipose fin confluent with caudal fin. Concealed dorsal and pectoral fin spines are generally sharp, long. The barbels are longer. Anal opening placed in between pelvic fins, either at base, midway or end of fins *with fleshy papilla just behind*. Caudal fin deeply emarginated or forked; lobes subequal or upper lobe slightly longer. Lateral line generally absent; Sometimes with 3-4 pores.

(3) *In Manipur population* : Body elongate. Pelvic fins placed at considerable distance from anal fin. The length of adipose dorsal fin longer than anal fin base. Concealed dorsal and pelvic fin spines are smaller. The barbels are shorter. Anal opening placed in between pelvic fins at the end of its length *without fleshy papilla*. Caudal fin slightly emarginated. Lateral lines with a few pores.

(4) *In Tripura populations* : Body subcylindrical. Pelvic fins placed closer to anal fin; sometimes even touching the later. The length of adipose dorsal fin equal to anal fin base. Concealed dorsal and pectoral fin spines are sharp, long. The barbels are long. Anal opening placed in between pelvic fins at the end of its length *with fleshy papilla behind*. Caudal fin forked; lobes are either subequal or upper lobe slightly longer or sometimes filamentous. Lateral line absent.

(5) *In Arunachal Pradesh population* : Body generally robust. Pelvic fins placed almost midway between pectoral and anal fins (more closer to anal fin). The adipose dorsal fin is confluent with caudal fin with a depression at base of caudal fin. Concealed dorsal and pectoral fin spines are weak and first unbranched ray of both the fins are fleshy. The barbels are smaller. Anal opening placed in between just at the base of pelvic fins in a pit followed by a *fleshy papilla* in most of the

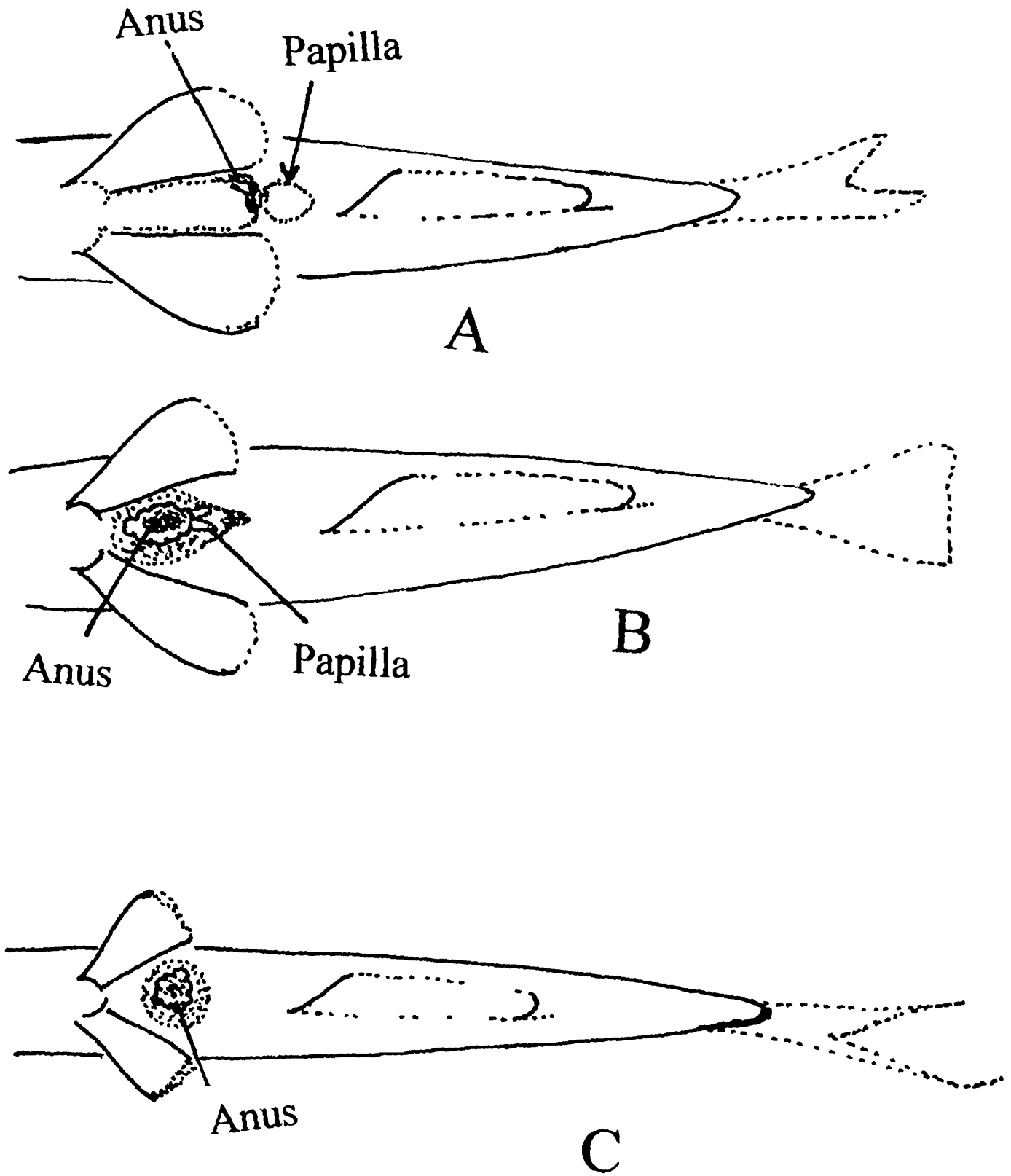


Fig. 1. : Diagrammatic representation showing position of anal aperture in male with papilla (A, B) and in female without papilla (C).

specimens except one *without papilla*. Caudal fin truncate or slightly emarginated. Lateral line generally absent; in some specimens 5-6 pores are there and one specimen is having distinct, complete lateral line.

From the above, considerable variations amongst inter and intra populations leads the author to study in details resulting some significant findings which are not reported earlier.

Out of 139 specimens studied, 11 specimens (8 from Meghalaya, 1 from Manipur, 2 from Arunachal Pradesh) are *not having any papilla behind anus*. On detailed study it is noted that the specimens *having papilla are males* (Plate II. A, B and Figure 1. A, B) and those *without papilla are females* (Plate II. C, D and Figure 1. C). Further, there are differences in following characters also :

Females : Body is elongated, almost equal depth throughout (Plate I. C, D). The pelvic fins always placed at a considerable distance from anal fin (Plate IV. C, D). Concealed dorsal and pectoral fin spines are sharp, minute or shorter than in males. Anal opening placed in between pelvic fins, generally mid way, occasionally at the end of its length (Plate II. C, D); rarely it is placed just at the base of pelvic fins (Arunachal Pradesh specimen). Lateral lines always present with 5-6 pores, ceases at middle or end of dorsal fin. The barbels are generally smaller than in males. Caudal fin generally emarginated, occasionally forked and filamentous (Plate III. C, D). The length of adipose dorsal fin smaller than anal fin base in general; sometimes equal and rarely confluent with caudal fin.

Males : Body subcylindrical, anteriorly lower surface is flattened in front of pelvic fins (Plate I. A. B). The head greatly swollen in opercular region. The pelvic fins always placed closer to anal fin (Plate IV. A), sometimes even reaching the later except in Arunachal Pradesh specimens where pelvic fins placed at a distance (Plate IV. B). Concealed dorsal and pectoral fin spines are generally sharp, longer than in females; occasionally spines are weak and present as soft, fleshy unbranched ray. Anal opening placed in between pelvic fins, generally at the end of its length (Plate II. A) but occasionally either midway or at base of pelvic fins (Plate II. B). Lateral line entirely absent. The barbels are generally longer than in females. Caudal fin generally forked (Plate III. A) with lobes either equal or upper lobe longer; sometimes subround, truncate (Plate III. B) or slightly emarginated. The length of adipose dorsal fin varies; it is either equal or slightly longer than length of anal fin base or confluent with caudal fin.

DISCUSSION

From above findings it is clear that *A. mangois* shows considerable variations amongst inter and intra populations. Some of the variations may be due to sexual dimorphism. Other variable characters in same sex are also remarkable. It can be concluded that only genetical studies may throw some light whether the divergent forms can be separated as new species or not.

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