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ON THE STATUS OF *DEVARIO ASSAMENSIS* BARMAN, 1984 (PISCES : CYPRINIDAE) WITH COMMENTS ON DISTRIBUTION OF *DEVARIO REGINA* FOWLER, 1934

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Past two decades have witnessed sea-change in the systematics of the Danionin fishes (Cypriniformes: Cyprinidae), especially by the discovery of several species in Myanmar region. Many Danionin species have been moved into different genera, in some cases repeatedly; similarly some species have been synonymised with other species and even in some cases later unsynonymised, all of which has caused a lot of confusion. In the same process, *Danio assamensis*, described from Assam by Barman (1984), has been redescribed by Tilak and Jain (1987), but relegated to synonymy of *Danio regina* Fowler by Talwar and Jhingran (1991) without discussion or assigning any reason. Menon (1999) and Jayaram (1999) followed the same synonymy. This resulted in report of *Danio regina* from Assam, India (Kapoor *et al*, 2002) and even record of it from West Bengal (Patra and Datta, 2010). Kullander (2001) considered the former a valid species and now it is placed under genus *Devario* Heckel.

This paper is planed to provide diagnosis of *Devario assamensis* (Barman) and to distinguish it from related species. Further, distribution of *Devario regina* (Fowler) is being discussed.

Devario assamensis (Barman)

1984. *Danio assamensis* Barman, *Bull. zool. Surv. India*, **6** (1-3): 163 (Streamlets near Tangla, Darrang dist., Assam, India).

2001. *Devario assamensis* : Kullander, Phylogenetic analysis of cyprinid genus *Danio* Hamilton: 17.

Material : FF 1861, 1 ex. (Holotype), 65 mm, streamlet near Tangla, Darrang dist., Assam, 14.xi.1939, Dr. S.L. Hora; FF 1862, 1 ex. (paratype), 60 mm, other details as of Holotype.

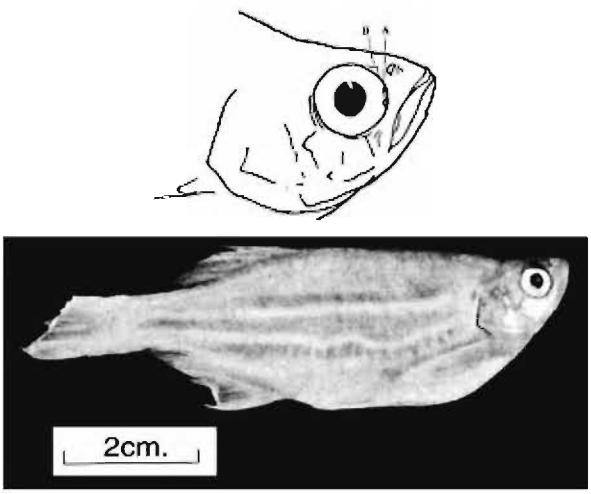

Fig. 1. Head region showing (A) preorbital spine and (B) supraorbital spine, and lateral view of *Devario assamensis* (Barman) (Holotype).

Diagnosis : D ii, 12; A ii, 16-17; P 12; LL 36; Ltr 7½/2½; predorsal scales 16; scales around caudal peduncle 14; barbels 2 pairs, short. Anterior rim of orbit with a small backwardly projecting spine and one forwardly directed spine on antero-superior margin. Body depth 2.6 to 2.7, head length 3.75 to 3.93 in standard length. Mouth small, directed upward. Snout shorter than eye diameter. Lower jaw with a small knob at its symphysis, fitting into a more or less distinct notch of the upper jaw. Lateral line complete, descending abruptly under pectotal fin for first 8 scales and than running in the same horizontal scale row closer to ventral profile. In preserved specimens, 'P-stripe' three in

numbers with two distinct narrow pale interspaces. Black cleithral spot present behind upper edge of gill opening.

Distribution : Darang district, Assam, India, possibly in West Bengal also. It is known by type specimens only but probably occur in aquarium trade.

DISCUSSION

Distinction of the genus *Brachydanio* Weber and de Beaufort by Kottelat (1989) based on the characters such as six or seven branched dorsal fin rays and incomplete or no lateral line has been discarded on the basis of phylogenetic analysis, karyotype and molecular studies (Kullander, 2001). The genus *Danio* Hamilton (type species : *Cyprinus dangila* Hamilton, 1822) is now recognized by having two pairs of long barbels, about the eye diameter or longer; stripe on anal fin rays (A-stripe) and more than one horizontal stripes (P-stripe) extending to the end of caudal fin rays and, the genus *Devario* Heckel (type species : *Cyprinus devario* Hamilton, 1822, by tautonymy) is diagnosed by presence of short barbels, about half the eye diameter or less; a 'P stripe' along midline of body extending to end of middle caudal fin ray; relatively developed infraorbital and other osteological characters.

The genus *Devario* Heckel is now being represented by 37 species (Froese and Pauly, 2010) and 11 are found in India. Among the species from Indian subcontinent, at least 7 species, *viz.*, *D. aequipinnatus* (McClelland), *D. annandalei* (Chaudhuri), *D. assamensis* (Barman), *D. kakhienensis* (Anderson), *D. patherana* (Kottelat and Pethiyagoda), *D. regina* (Fowler) and *D. spinosus* (Day), are known to have a backwardly directed spine on anterior rim of orbit. Jayaram, (1999) erroneously included *D. fraseri* (Hora) and *D. malabaricus* (Jerdon) among this group, but they do not possess a preorbital spine (Kottelat and Pethiyagoda, 1990; Barman, 1991).

It has rightly been observed that like *D. assamensis*, only *D. spinosus* possess a blunt spine on antero-superior margin of orbit (Tilak and Jain, 1987). All other species included here do not have this characteristic supraorbital spine. *D. spinosus* can easily be distinguished from *D. assamensis* in having higher lateral line scale count (above 50 vs less than 40). Apart from absence of supraorbital spine, *D. annandalei* have higher lateral line scale count (above 50); *D. patherana* have a distinct barred colour pattern with 3 unbranched rays in dorsal and anal fins; *D. kakhienensis* have lower dorsal and anal fin rays (D iii, 9-10; A iii, 12-13) and *D. aequipinnatus* have a relatively slender body.

While erecting a new subgenus *Rambaibarnia*, Fowler (1934) observed that *D. spinosus* has '.... a second broader and blunter spine before the centre of the preorbital', indicating its absence in *D. regina*. Apart from absence of supraorbital spine, *D. regina* has a smaller head (4.05 to 4.33 in standard length vs 3.75 to 3.93) and 5 pale narrow longitudinal bands (2 pale bands in *D. assamensis*).

At this point Talwar and Jhingran (1991) were erroneous in keeping *D. regina* along side with *D. spinosus*, as both having supraorbital spine. With regard to the clubbing of *D. assamensis* with *D. regina*, both the species are distinctly separable and as observed in Tilak and Jain (1987), *D. assamensis* is rather closely resemble *D. spinosus* than *D. regina*. Hence, in the key to species given in Talwar and Jhingran (1991) and Jayaram (1999), *D. regina* should be replaced by *D. assamensis*.

Further, *D. regina* was never reported from India till Talwar and Jhingran (1991) brought it in against *D. assamensis*. Kapoor *et al.* (2002) has stated occurrence of both the species in Assam obviously following Talwar and Jhingran (1991) in respect of *D. regina* and Kullander (2001), where *D. assamensis* is shown as a valid species. The synonymy given in Talwar and Jhingran (1991) has been followed throughout the world and *D. regina* is thought to occur in Assam, India, where as there is no material confirmation. It further led to report *D. regina* from northern West Bengal (Patra and Dutta, 2010). The materials collected from north Bengal need to be checked for presence of supraorbital spine along with backwardly directed lacrimal spine. Distribution of *D. regina* is confined to Thailand, Malaysia and Mekong basin (Laos). Its occurrence in Myanmar needs to be verified

CONCLUSION

Devario assamensis Barman is a valid species that closely resemble *Devario spinosus* (Day) in having a backwardly directed spine on anterior border of

eye and a forwardly directed supraorbital spine anteriorly. *D. regina* (Fowler) do not possess the supraorbital spine and also differ from *D. assamensis* in having a smaller head and different P-stripe pattern. Hence, Talwar and Jhingran (1991) is erroneous in considering *D. assamensis* as a junior synonym of *D. regina* and thus, distributional records of *Devario regina* in India are result of mistaken identity.

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