



Short Communication

Distribution of the spotted codlet, *Bregmaceros mccllellandi* Thompson (Family: Bregmacerotidae) in lower Hooghly Estuary and Sundarbans mangrove region

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Abstract

This communication is on the distribution of the codlet, *Bregmaceros mccllellandi* in Sundarbans estuarine complex including the lowermost part of the Hooghly estuary in the east coast of India. The species has been found to be well distributed in the Sundarbans mangrove region. The availability of the species in the estuary indicates that it is probably salinity dependent. Some characteristic features of the species have also been presented.

Keywords: Spotted codlet, *Bregmaceros mccllellandi*, Sundarbans, Hooghly estuary

Introduction

Bregmaceros mccllellandi, the spotted codlet belonging to Family Bregmacerotidae (Order: Gadiformes), is a small fish attaining a maximum length of about 13 cm. Though it supports a seasonal fishery around Bombay (Talwar and Kacker, 1984) in the west coast, the species is considered as rare along the east coast of India. Bose *et al.* (1999), while giving an account of the distribution of different fish species in Sundarbans, reported its presence only in the Western Sundarbans (*i.e.*, in Bokkhali/Fresergunj area). Recent investigations conducted by the Central Inland Fisheries Research Institute on the fish fauna of the Hooghly estuary and Sundarbans mangrove area during April 2005 - March 2007 revealed the presence of the species in Jharkhali (Herobhanga estuary in Central Sundarbans), Fresergunj-Bakkhali and Sagar island (lowermost high saline part of Hooghly estuary) in Western Sundarbans, and Hingalgunj (Ichhamati estuary, Eastern Sundarbans). The species has been found to be

well distributed in the Sundarbans mangrove region in the Eastern coastal zone.

Material and methods

Specimens of *Bregmaceros mccllellandi* were collected from bagnet landings at different places of Sundarbans such as Hingalgunj (Ichhamati estuary, Eastern Sundarbans); Jharkhali (Heronbhanga estuary, Central Sundarbans); lowermost part of Hooghly estuary at Fresergunj/Bakkhali and Sagar Island (Western Sundarbans) during April 2005 – March 2007. Identification and taxonomic characterization were done following Day (1875-'78, 1889), Talwar and Kacker (1984) and Cohen *et al.* (1990). Water salinity at the places of sampling was measured following Standard Methods (APHA, 1980).

Results

The length of the specimens (n = 15) ranged from 50 mm (TL) to 98 mm (TL) with body weight in the range of 0.7 g to 6.3 g. Colour of the specimens in fresh condition was brownish on the back and upper side of the body and silvery white

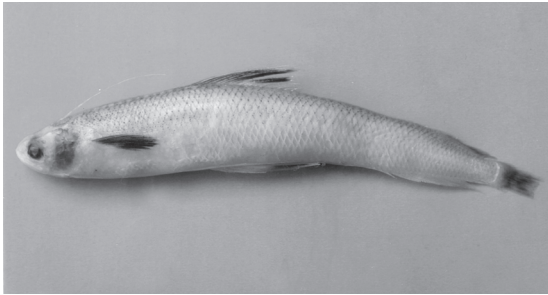


Fig. 1. The spotted codlet, *Bregmaceros mccllellandi* Thompson

on the lower side and belly. Scattered minute blackish brown dots on the body. Distal parts of dorsal, pectoral, anal and caudal fins black (Plate I). Head small, a little compressed; opercular spine absent. Head length 6.78 to 7.85 in total length. Body moderately elongate, slightly cylindrical at the anterior end and slightly compressed posteriorly. Two dorsal fins-1st dorsal fin with a single long delicate ray situated anteriorly in the occipital region reaching almost the base (or even the base) of the first part of 2nd dorsal; 2nd dorsal fin long, extends from about first S¹rd of the body to almost base of the caudal, with a median notch; anterior part of the 2nd dorsal fin is higher than the posterior portion following the notch, the posterior portion is rather rounded; the median notch with shorter rays. Anal fin long with a large notch in the middle, placed opposite to the second dorsal; pectoral fin placed just behind the operculum with 24 rays, pelvic fin jugular, consists of six rays of which three outer rays long, separate filaments extend backwards almost to half of the body. Inter dorsal space is around $\frac{1}{4}$ th of total length. Caudal fin small, indistinctly forked. Scales cycloid; lateral line complete, placed above the middle line with proximity towards the dorsal margin; slightly indistinct in some specimens.

Discussion

The description of the species given above corroborates that of Barman *et al.* (2004), but differs slightly from that of Day's (1889) description. Cohen (1984) and Cohen *et al.* (1990) opined that the taxonomy of *B. mccllellandi* was doubtful and that the Indian Ocean species was difficult to define.

Doubt has also been expressed with regard to their distribution along the east coast of India.

Bose (1956) reported the presence of the species at Uluberia in Hooghly estuary, about 110 km upstream from the mouth of the estuary, where the salinity was 7.1 ppt. A re-description of the species (topotype) from the Gangetic delta was provided by Barman *et al.* (2004) based on three specimens collected from Bokkhali in 1981. The Bokkhali/Fresergunj area, situated in the lowermost high saline zone of the Hooghly estuary is located in the western part of the Sundarbans. Talwar *et al.* (1992) opined that the spotted codlet is found rarely in the Hooghly estuary and gets caught in the collections accidentally. Bose *et al.* (1999) gave an account of the distribution of different species of bony fishes in Sundarbans and from the table provided by them it is evident that *B. mccllellandi* is present only in the western part and absent in the other zones. Investigations conducted earlier by the Central Inland Fisheries Research Institute (Sinha *et al.*, 1998) did not indicate the presence of the species in the lower Hooghly estuary and in the Sundarbans estuarine complex. Das and Nandi (1999) gave a detailed account of the faunal diversity of Sundarbans, which included a list of 94 commercially important species of fish, but not *B. mccllellandi*. However, during the present investigation, *B. mccllellandi* was collected from all the three regions of Sundarbans and the highest number of different sizes could be collected from Heronbhanga estuary (Jharkhali) in the Central Sundarbans.

The present study indicates that the availability of the species in the estuary is probably salinity dependent. At Hingalgunj (Ichhamati estuary), *Bregmaceros mccllellandi* was not encountered when the salinity was low (2.0 ppt.) during November, 2006, but could be collected during March, 2007 when the salinity increased to 13.9 ppt. The water salinity in Heronbhanga estuary at Jharkhali was found to be high ranging from 12.4 ppt. to 32.1 ppt. and that of the lowermost part of the Hooghly estuary (Fresergunj / Bakkhali and Sagar island) from 13.0 to 33.4 ppt. During the period of study no specimen of *B. mccllellandi*

could be collected from Diamond Harbour about 40 km downstream of Uluberia, which has turned almost into a freshwater zone. It can therefore, be concluded from the present study that the species is available in the estuaries when the salinity is not less than 7.0 ppt.

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