Indian J.Sci.Res. 13 (1): 208-211, 2017

ISSN: 0976-2876 (Print)
ISSN: 2250-0138 (Online)

REDISCOVER OF NERITE SNAIL *Neripteron cornucopia* (GASTROPODA, NERITIDAE) AFTER 180 YEARS IN INDIA

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ABSTRACT

Eleven numbers of Nerite snails of family Neritidae are collected from the Digha of West Bengal and Khadibil Mangrove of Odisha state, and later identified as *Neripteron cornucopia* (Benson, 1836) on the basis of morphology, colour pattern and structure of operculum. In India, this species was only known from its type locality Hugli estuary at Fort William and Tolly's Nullah which are now within the city of Kolkata; and in Indian subcontinent this species was last time reported from Irawady deltae, Pegu in Myanmar by Blanford (1867). Hence, this species was rediscovered from India after 180 years. Present report also extends the geographical distribution range of this species to Digha of West Bengal and Khadibil Mangrove of Odisha state.

KEYWORDS: Neritidae, *Neripteron cornucopia,* rediscover, east coast, India.

Nerites, from family Neritidae, are small to medium- sized euryhaline gastropods widely distributed from marine to freshwater habitats. They are herbivores inhabiting in the middle to upper intertidal zones. They are many times misidentified being extremely polymorphic due to wide variety of colour patterns and shape. Shells are low spired with a swollen last whorl and D-shaped calcareous operculum. The heavy shell is to resist desiccation and to protect from predators. Genus *Neripteron* Lesson, 1831 is one of the dominant Genera of the family Neritidae represented by twenty four species globally (Bouchet, 2016), i.e. *Neripteron amoenum* (Gould, 1847), *N. asperulatum* (Récluz, 1843), *N. auriculatum* (Lamarck, 1816), *N. bensoni* (Récluz, 1850), *N. bicanaliculatum* (Récluz, 1843), *N. cariosum* (W.Wood, 1828), *N. cornucopia* (Benson, 1836), *N. dilatatum* (Broderip, 1932), *N. holosericum* (Garett, 1872), *N. lecontei* (Récluz, 1853), *N. mauricie* (Lesson, 1931), *N. neglectum* (Pease, 1861), *N. obtusum* (Sowerby I, 1836), *N. pileolus* (Récluz, 1850), *N. platyconcha* (Annandale & Prashad, 1919), *N. rostratus* (Reeve, 1856), *N. rubicundum* (Martens, 1875), *N. simoni* (Prashad, 1921), *N. siquijorense* (Récluz, 1844), *N. spirale* (Reeve, 1855), *N. subauriculatum* Eichhorst, 2016, *N. taitense* (Lesson, 1831), *N. vespertinum* (Sowerby II, 1849) and *N. violaceum* (Gmelin, 1791). But only four species i.e. *N. amoenum* (Gould, 1847), *N. cornucopia* (Benson, 1836), *N. simoni* (Prashad, 1921) and *N. violaceum* (Gmelin, 1791) inhabits different coastal and freshwater bodies of India (Benson, 1836; Subba Rao, 1989; Subba Rao et al. 1991; Subba Rao et al. 1992; Mitra and Dey, 1992; Subba Rao et al. 1995a, 1995b; Surya Rao and Maitra 1998; Subba Rao and Dey, 2000; Subba Rao, 2003; Ramakrishna et al. 2003, 2007; Ramakrishna and Dey, 2007; Pati and Sharma, 2012). The *N. cornucopia* (Benson, 1836) is described from the Hugli estuary at Fort William and Tolly's Nullah which is now within the city of Kolkata (Benson, 1836). Present report is rediscover of *Neripteron cornucopia* (Benson, 1836) after 180 years in India; which was only known from its typelocality. Present report is also extends its geographical distribution to Digha of West Bengal and Khadibil Mangrove of Odisha coast respectively in northern part of east coast, India. But in Indian subcontinent it was last reported from Irawady deltae by Blanford (Blanford, 1867).

MATERIALS AND METHODS

The specimens were collected during faunistic survey along Northern East coast of India; 6 ex (Reg. no. MARC/ZSI/M4021), date of collection 17.07.2014 and 4 ex (MARC/ZSI/M4022) date of collection 10.11.2014 are collected from Digha (21° 37′ 20″N and 87° 31′ 04″E) and a single example (MARC/ZSI/M4015) from intertidal Mangrove forest of Khadibil village of Balasore district (Odisha) (21° 35′ 18"N and 87° 25′ 13"E). The Monsoon canal is close to sea, which is part of sea waters outlet system of the Marine Aquarium and Regional Centre where sea water is drained regularly (Fig. 1, a-e). Khadibil Mangrove forest is part of Subarnarekha estuary of Odisha state. Specimens and habitat of the animals are photographed with Sony DSC hx400v digital camera with GPS and measured with Vernier Caliper in millimeter

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scale. Classification follows Bouchet et al. (2005). The specimens are deposited at the museum of Marine Aquarium and Regional Centre, Zoological Survey of India, Digha, West Bengal, India.

RESULTS AND DISCUSSION

Systematic classification

Class: Gastropoda

Subclass: Neritimorpha

Order: Cycloneritimorpha

Super Family: Neritoidea Rafinesque, 1815

Family: Neritidae Rafinesque, 1815

Genus: *Neripteron* Lesson, 1831

Neripteron cornucopia (Benson, 1836) (Figure.1.)

Synonyms:

Neritina cornucopia Benson 1836, *J.Asia.Soc.Bengal,* vol-V, p.748.[15]

Neritina (Dostia) cornucopia Huang 1997, *J.Zoo.(London),* 241(2), p.343-369.[18]

Neritina cornucopia Tan & Clements 2008, *Zoological Studies* 47(4), p.489. fig.3(27,28).[19]

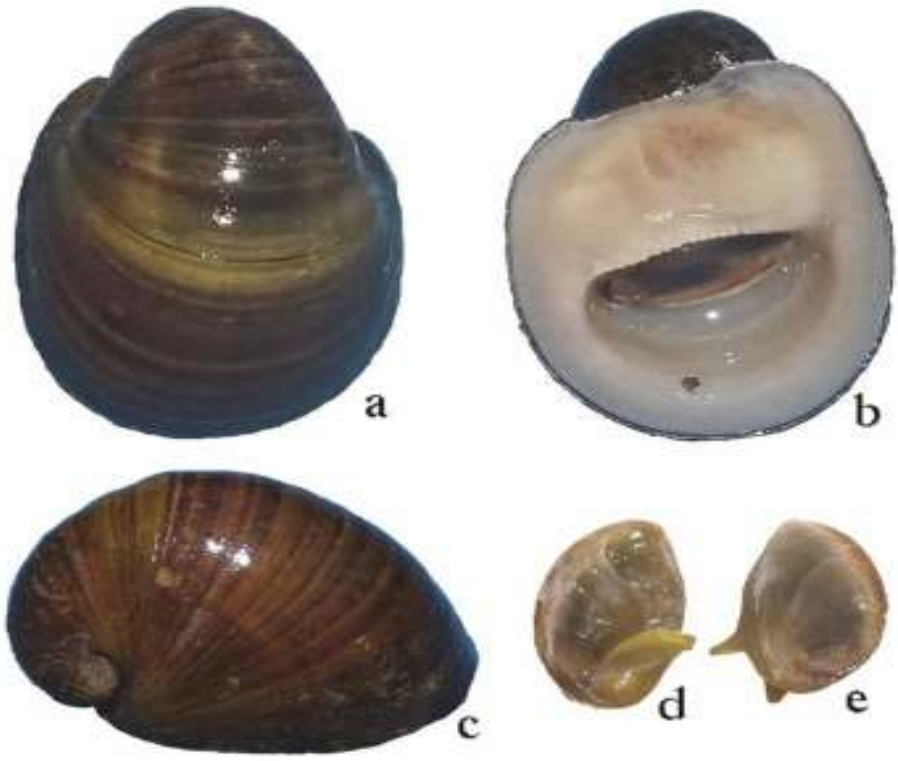

Figure 1(a-e): *Neripteron cornucopia* (Benson, 1836), a- dorsal view, b- ventral view, c- lateral view of shell, d- ventral and e- dorsal view of operculum.

Diagnosis

Shell length 13-19.6 mm and width 10-13 mm; depressed shell with rapidly expanding body whorl, nearly symmetrical when viewed from dorsum; spire sunken. Colour dark brown with purplish and greenish spiral bands line pattern often devoid of markings or sometimes tent pattern. Periostracum usually covering dorsum, brown, with algae or silt. Peristome ovate, continuous. Parietal shield and aperture white with grayish shades or very dark gray throughout. Columellar edge with several teeth throughout aperture, and with livid white in colour and sometimes blackish shades; spire sunken. External shell somewhat shiny, darker brownish or olive colour and barely visible reticulations or lines with lighter spots. Operculum with reddish brown with several growth lines visible on externally and two coastate teeth are more developed. Animal black or dark grayish with black outline in colour.

Distribution

The type locality of this species is Hugli River (Fort William) (Benson, 1836), later reported from Irawady deltae, Pegu now in Myanmar (Blabford, 1867) and it is reported from Hong Kong (Huang, 1997) and Singapore (Tan and Clements, 2008). Present report extends the distributional range to Digha of West Bengal and Khadibil mangrove near Subarnarekha estuary of Odisha coast.

This snail is morphologically similar with *N. violaceum* (Gmelin, 1791) but they different in pigmentation patterns i.e. dorsal colour *N. violaceum* is purple, coarse and tent pattern, aperture purple to orange and teeth central only whereas *N. cornucopia* is never purple, finer and tent or lined pattern, aperture white and teeth across the aperture, ventral shell character and radular teeth characters (Huang, 1997). The present report is rediscover of *Neripteron cornucopia* (Benson, 1836) after 180 years, which was last reported from only from its type locality; and present report is from Digha and Khadibil Mangrove of Northern East coast, India which extend the geographical distribution range of this species.

CONCLUSION

Morphological characters like colour pattern, radular teeth characters, shell structure confirms it as *Neripteron cornucopia* (Benson, 1836) and sufficiently differentiate it from similar species *N. violaceum* (Gmelin, 1791) available in this locality. According to literature available, it is reported from in India from type locality only hence, the present report of this is species rediscover after 180 years.

ACKNOWLEDGEMENT

Our sincere thanks to the Director, Zoological Survey of India, Kolkata for providing necessary facilities as well as technical support for the study.

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