

ON TWO RARE SPECIES OF NERITIDAE (MOLLUSCA :
GASTROPODA), FROM INDIA

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ABSTRACT

Nerita (*Theliostyla*) *textilis* Gmelin and *Nerita* (*Ritena*) *grayana* Recluz are redescribed. Their distribution was redefined. Both the species are rarely encountered in the collections. Their occurrence in Indian waters is established beyond doubt.

Neritids are common in the intertidal zone along coasts of Indian mainland and Andaman and Nicobar Islands. Majority of the species belonging to the family Neritidae are truly marine, but some are found extending into estuarine regions and some into fresh water streams connected to the sea. About 42 species belonging to 8 genera are recorded from the Indian region (Subba Rao, 1975).

Two species belonging to the genus *Nerita*, namely *textilis* Gmelin and *grayana* Recluz are very infrequently met with in the collections. The former was reported only once and the occurrence of latter in Indian region was received with some doubt. In the present paper the two species are fully described and their occurrence in India is established beyond doubt.

Genus *Nerita* Linnaeus, 1757

Subgenus *Theliostyla* Mörch, 1852

Nerita (*Theliostyla*) *textilis* Gmelin, 1791

(Pl. II, figs. 1 & 2)

Nerita plexa Chemnitz, 1781, *Conch. Cab.*, 5 : 288, pl. 190, figs. 1944, 1945 ; Dillwyn, 1817. *Descrip-*

tive Catalogue of Recent Shells. 2 : 998 ; Reeve, 1855, *Conch. Icon*, 9, *Nerita*, sp. no. 12, pl. 111, figs. 12 a, b ; Von Martens, 1887—1889, in Martini & Chemnitz's *Syst. Conch. Cab.*, 2 (11) : 10, 107, pl. 4, figs. 1—3 ; Tryon, 1888, *Man. Conch.*, 10, : 19, pl. 2, figs. 27—28 ; Melvill & Standen, 1901, *Proc. Zool. Soc. Lond.* 2 : 353 ; Dautzenberg, 1932, *J. Conch. Paris*, 74 ; Ray, 1948, *Rec. Indian Mus.*, 46 (1—4) : 93.

Nerita textiles Gmelin, 1791, *Syst. Nat.*, ed. 13 : 3683 no. 53 (Refers to *Rumph. Mus.*, t. 22. f. 3 (Type locality, Not mentioned) : Lamarck, 1822, *Hist. nat. Anim. sans Vert.*, 6 (2) : 190 : 8 (2) : 601 ; Krauss, 1848, *Die Sudafrikanischen Mollusken*, p. 90.

Material : (1) 2 ex. Bombay ? Coll. Prof. Awati. (2) 1 ex., Sta. 23—Veraval beach, Gujarat, 26. viii. 1972. Coll. K. V. Surya Rao & Party.

Description : Shell ovately globose, thick, whorls 3, gradually expanding towards the aperture, spirally ribbed—ribs strong, rotundate, rugose or nearly nodose, alternately broad and narrow, rather irregular, spire flat, apex tinged with yellow, white, rather distantly tessellated with black.

Aperture yellowish, slightly thickened within and ridged, columellar area flatly excavated, callus tinged with yellow near the lower half of the outer margin, granular throughout, inner columellar margin, concave with two faintly marked teeth, outer margin of outer lip thickened, fimbriated, inner margin white, with 15—20 teeth.

Operculum thick and even, thickly granulated, gray with white nuclear area, internally reddish-gray, the rib short and white, peg broad and pointed.

Radula—central long and upper area more distinct. The first 28 marginals rounded, smooth and the following 7 marginals with serrations.

Measurements :

Length	Width	Height of aperture
35.15	27.20	17.10

Range : From East African Coast to West Coast of India.

Distribution : India : Bombay (Recluz) ; Tranquebar (Chemnitz). Elsewhere : Red Sea, Mekran coast, Natal Bay, Mocambique and Querimba island, Kendoa island, South of Zanzibar, Madagascar, Seychelles, Amiran-tes ; PAKISTAN : Karachi.

The localities "the Philippines" and "Nicobars" cited by Reeve (1855) and Chemnitz (1781) respectively are doubtful.

Habitat : Generally distributed on rocks at high water mark, but also found above high water mark, where they could only be reached by spray (Melvill & Standen, 1901, p. 333). It is usually restricted to exposed shores in the high eulittoral (Taylor, 1968, p. 149).

Remarks : Ray (1948) reported it from

Madras, where its occurrence is doubtful. The material on which Ray based his report, was collected by Prof. Awati from various localities on the Coromandel Coast and also from Bombay, on the West Coast of India. From Ray's remarks it is clear that "records of exact localities from which the different species were obtained, the dates of collections and other data are not available". As such, possibly there was mix up of collections and the specimens of this species might have been collected from Bombay.

So far there is no authentic collection or report of this species from east coast of India. *Nerita textilis* is restricted to Indian Ocean not extending beyond west coast of India eastwards.

This is the first record from Gujarat coast.

Type-locality : Gmelin (1791) did not mention the type-locality. He however referred to Rumphius figures (pl. 22, fig. 3)

Subgenus *Ritena* Gray, 1858

Nerita (Ritena) grayana Recluz, 1843

(pl. II, figs. 3&4)

Nerita grayana Recluz, 1843, *Rev. Zool. Soc. Cuvier*, p. 200 (Type-locality : Port Curimao, Province of North Ilocos, Luzon Island, Philippines) ; Reeve, 1855, *Conch. Icon.*, 9, *Nerita*, sp. no. 33, pl. VII, figs. 33 a, b.

Nerita (Cymostyla) grayana Recluz, Von Martens, 1887 in Martini & Chemnitz's *Syst. Conch. Cab.*, 2 (11) : 44, pl. 7 figs. 8, 10.

Nerita (Pila) undata var. *grayana* Recluz, Tryon, *Man. Conch.*, 10 : pl. 6, figs. 2, 3.

Material : (1) 2 ex., sta. 33—Nancowry, 2. iv. 1959—Coll. K. K. Tiwari. (2) 8 ex. Sta. 15—between Chota Inak village and Naval Garrison, Kamorta Island, 4. x. 1972 ; (3) 5 ex., Sta. 18—on mangroves in Nancowry bay, S. E. of Champion jetty, Nan-

cowry Island, 6. x. 1972 ; (4) 34 ex. Sta. 23—on mangroves in front of Ramjao village, Kamorta Island, 8. x. 1972 : (5) 11 ex., Sta 31—on the mangroves, near the jetty, Barakhali, N. W. of Forest Dept. Rest House Chiriatapu, 27. x, 1972—coll. K. Reddiah & N. V. Subba Rao.

Description : Shell ovately globose and thick, colour greyish-black, flecked with white, whorls $3\frac{1}{2}$, narrow, spire sharp but distinct and elevated, apex white and pointed, sculpture consists of 24 to 30 strong, exalted and crenulated ribs, spire and upper half of body-whorl with alternately thin and strong ribs : interstices generally larger than the actual ribs.

Aperture large, light yellow, columellar callus with a deep inward slope with strong and uninterrupted wrinkles in the upper half but small and scanty in the lower half, inner columellar margin concave with 2 to 4 strong and blunt teeth, a ridge-like elevation runs on the superior side near the outer lip. Outer margin of latter straight on the superior side, moderately thick, tessellated and fringed with black, dipping straight inwards to the inner margin, the inner marginal callosity with 19 to 20 small teeth, the first superior tooth knob-shaped, the following longitudinally elongated, moderately weak, internal hinge tooth lacking.

Operculum externally flat, thickly granulated, gray with white nucleus, internal surface also grayish, rib strongly developed and furrowed.

Measurements (in mm.)

	Length	width	Height of aperture
Smallest (Ramjao, Kamorta)	11.15	8.65	5.00
Average (Between Chota Inak and Naval Garrison)	31.05	21.00	15.25
Largest (Nancowry Bay)	38.30	25.65	17.00

Range : Andamans to the Philippines.

Distribution : Andaman and Nicobar Island ; Philippines : Luzon Island. Tahiti ?. It is not found on the coast of the Indian mainland.

Frauenfeld's report of this species from Nicobars was doubted by Von Martens (889). But the present author collected a good series of examples from the mangrove zones of Andaman and Nicobar Islands. The niches in the mangroves are not easily accessible and after reaching surmounting the difficulties, a careful scrutiny is needed to detect the snails in the crevices of the mangrove trees. Perhaps this is the major factor for the scanty collections and few reports of its occurrence in the Indo-Pacific region.

Habitat : Von Martens' (1887, p. 45) report of its occurrence on stones may not be correct. In Andaman and Nicobar Islands it was always found above the high tide level clinging to the roots and in the crevices of the branches of mangroves exhibiting a tendency for gregarious habit, often five or six in number. *Nerita planospira* Anton was also found occupying the same habitat.

Remarks : *Nerita grayana* bears a striking resemblance to *Nertia lineata* Gmelin in its general colour, nature of ribs and in habitat. However, it can be easily distinguished from the latter by the more globose shell, elevated spire and strongly wrinkled columellar callus without conspicuous yellow colour.

Von Martens (1887) showed its resemblance to *Nerita undata*, a true marine form. Tryon (1888) considered it as a variety of *N. undata*. But *N. grayana* differs from *N. undata* in occupying an entirely different habitat, in its more exalted ribs, and in slightly thinner outer margin of outer lip, which bears less number of teeth.

Reeve (1855) adopted the description of Recluz. Von Martens (1887) also followed the same, as he had only one specimen, from an unknown locality in the Berlin Museum.

A large collection from Andaman and Nicobar Islands does not exhibit any kind of variation and all conform to the description given above.

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