

NOTES ON MOLLUSCS IN THE COLLECTIONS OF THE
ZOOLOGICAL SURVEY OF INDIA (INDIAN
MUSEUM), CALCUTTA.

By B. PRASHAD, D.Sc., F.R.S.E., Zoological Survey of India, Indian
Museum, Calcutta.

(Plate XXII.)

I. ON A NEW SPECIES OF THE GENUS *PYRULA* LAMARCK.

For several years preceding the Great War the work of the Surgeon Naturalist on the Royal Indian Marine Survey Steamer "Investigator" was mainly confined to littoral and sub-littoral faunas in comparatively shallow waters, and the exigencies of the survey work did not permit of a great deal of trawling in the deeper areas. Thanks to the zeal of the Surgeon Naturalists in charge, however, the few opportunities for deep-sea trawling that occurred were never missed, and on one of these rare occasions the beautiful new species of *Pyrula*, described below, was collected. About the end of the Survey Season 1913-14, and on its return journey to Bombay the Agassiz Trawl on board the "Investigator" was used for dredging in depths of 180-167 fathoms on the 26th of April, 1914 in the Laccadive Sea (Station 611, 9° 34' 18" N. 75° 37' 48" E. to 9° 35' 36" N. 75° 36' 54" E.). In addition to other forms a fine series of living specimens of the new species of *Pyrula*, described below, was obtained.

I have great pleasure in dedicating this new species to my chief, Major R. B. Seymour Sewell, I.M.S., who, previous to his appointment as the head of the Zoological Survey of India, was the Surgeon Naturalist on board the "Investigator," and who has done so much towards filling up the gaps in our knowledge of the fauna of the Indian Seas.

Smith in 1894¹ revised the recent species of the genus *Pyrula* Lamarck, and published a critical account of the literature on the various species. It is not necessary, therefore, to refer to the earlier work on the genus, but it may be noted that there seems to be no justification for the change in the spelling of *Pyrula* to *Pirula*, as Smith has done.

It is also of interest to note here that I have compared the specimens of my new species with those of all the recent species in the collections of the Zoological Survey of India (Indian Museum), Calcutta, the British Museum (Natural History), South Kensington, London, and the Paris Museum, and have no doubt as to the species being an undescribed one.

The species *Pyrula sewelli* is of special interest in that it was found at a depth between 180-176 fathoms, and in view of the fairly large series of specimens having been obtained in a single trawl, there can be no question as to the species being an inhabitant of these great depths.

¹ Smith, *Journ. Malacol.* III, pp. 64-69 (1894).

Unfortunately, except for *P. investigatoris* Smith,¹ which was obtained "Off Ganjam Coast, east coast of India, in 98-102 fathoms," there are no records as to the exact depths at which the other species of this genus are found.

***Pyruia sewelli*, sp. nov.**

(Plate XXII, figs. 1, 2, 4.)

Shell pyriform, moderately thin; spirally ribbed, ribs flat and narrow, distinctly though only slightly raised, of a darker colour than the interspaces, which latter are much broader than the ribs; interspaces often with a single thin thread-like rib running in the middle of each, parallel to the ribs themselves; vertical ribs distinctly marked, but not so well developed as the spiral ridges, the shell surface as a result appears under a moderate magnification to be tessellated or cut up into squarish or rectangular areas. Vertical lines of growth distinct, often taking on the form of low varices. Shell whorls 6, increasing rapidly, distinctly swollen; spire consisting of $4\frac{1}{2}$ -5 whorls of which 2-2 $\frac{1}{2}$ are formed by the smooth and horny protoconch. Aperture elongated, rather narrow, a little over $\frac{5}{6}$ th of the total length of the shell, anteriorly produced into a rather narrow almost straight canal; columellar margin nearly straight; outer lip sharp. Colour light brownish with the interspaces distinctly white, and without any other colour patches on the surface, inner surface shining white.

Measurements of the shells (in millimetres).

	Holotype.					
Total length	89.9	80	79.4	66	66.5	63.4
Maximum diameter	44.1	41.8	39.2	33.4	36.5	35.3
Height of the aperture	77.9	71.7	67.8	55.2	60.8	55.5
Maximum diameter of the aperture	27.3	22.6	22.2	18.2	18.1	18.1

Locality.—Laccadive Sea, in 180-167 fathoms on a bottom consisting of sand, sandy mud and shells.

Holotype.—No. M. $\frac{12573}{2}$ in the collections of the Zoological Survey of India (Indian Museum), Calcutta. Paratypes No. M $\frac{12574-83}{2}$.

Remarks.—*P. sewelli* is allied to *P. investigatoris* and with it forms a distinct group from amongst the recent species, in which the spire is high and distinctly raised. It differs from the latter in the shell being much narrower with the body-whorl much less swollen, the aperture narrower with a longer and nearly straight canal with hardly any curvature, the columellar margin similarly straight and more prominent sculpture. On Plate XXII, figs. 1-5 I give figures of the two species with portions of the outer surface of the shells of the two species magnified 15 times to show the exact differences in their sculpture.

¹ Smith, *Ann. Mag. Nat. Hist.* (6) XIV, p. 367 (1894). A wood-cut of this species was published by Wood-Mason and Alcock in the same Journal, Vol. VI, p. 15 (1891), and excellent figures of the Type were later published in the "Illustrations of the Zoology of the R. I. M. S. S. "Investigator," Mollusca, pl. vi, figs 2, 2a (Calcutta, 1897).

II. ON A NEW SPECIES OF THE GENUS *ENA* FROM CHITRAL.

Mr. G. H. Tipper, Superintendent, Geological Survey of India, made a small collection of land and freshwater molluscs in Chitral in 1923. The few specimens of the genus *Limnaea* from this collection were dealt with by Annandale and Rao¹ in their revision of the Indian Limnaeidae, and I propose publishing here the description of a new species of the genus *Ena*, Turton, and belonging to the subgenus *Subzebrinus* Westerland. For the new species I propose the name *Ena (Subzebrinus) tipperi* in honour of the collector.

***Ena (Subzebrinus) tipperi*, sp. nov.**

(Plate XXII, fig. 6.)

Shell distinctly umbilicated, fusiform; dull white, irregularly striated with feeble more or less vertical striae or low ridges, whorls 9; protoconch consisting of $2\frac{1}{2}$ smooth, polished whorls of a horny colour; whorls slightly convex, increasing rapidly in size; body-whorl slightly oblique, about half the height of the spire. Spire subconoidal; suture shallow. Aperture slightly oblique, ovate; margins continuous over the parietal wall; peristome expanded and markedly reflexed, anterior and outer margins regularly curved, columellar margin slightly slanting; umbilicus narrow.

Measurements of the shells (in millimetres).

	Holotype.						
Length	31.0	29.9	30.8	29.4	26.8	27.3	
Maximum diameter	8.9	9.2	8.2	8.8	8.9	8.5	
Height of the aperture	11.8	11.4	12.1	11.2	11.0	10.6	
Maximum diameter of the aperture	8.5	8.2	7.8	8.7	7.5	8.0	

Locality.—Chitral, on the road from Naguar to Utsun (alt. ca. 4,000 ft.), common on bushes.

Holotype.—No. M $\frac{1257}{2}$ and paratypes in the collections of the Zoological Survey of India (Indian Museum), Calcutta.

Remarks.—*Ena (Subzebrinus) tipperi*, sp. nov. is allied to *E. (S.) longstaffi* Gude² from Samana Tsuk, near Upper Kurram Valley, N. W. Frontier Province, India, but differs in the form of the shell, the aperture and the relative sizes of the whorls. I have compared the specimens of the new species with that of the types of *E. (S.) longstaffi* and other allied species in the British Museum (Natural History), S. Kensington, London, and in the Indian Museum collections, and have no doubt as to the species being a new one.

III. ON A SINISTRAL SPECIMEN OF *PILA GLOBOSA* (SWAINSON).

In my recent revision of the Indian Ampullaridae³ I included a few notes on two sinistral specimens of *Pila globosa* (Swainson) from the

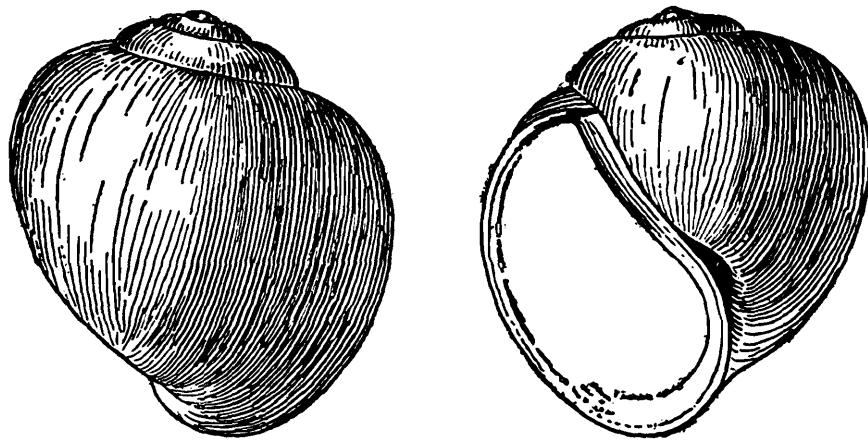
¹ Annandale & Rao, *Rec. Ind. Mus.* XXVII, pp. 137-189 (1925).

² Gude, *Faun. Brit. Ind. Mollusca*, II, pp. 246, 247, fig. 91 (London, 1914).

³ Prashad, *Mem. Ind. Mus.* VIII, p. 73, pl. xiii, figs. 10, 11 (1925).

collections of the Zoological Survey of India, and published photographs of the two shells. The two specimens, as was remarked, formed the types of Nevill's subvar. *sinistrosa*¹. One of the specimens is from the old collections of the Asiatic Society of Bengal, Calcutta, and bears the locality label "Mauritius," while the second was collected by Dr. John Anderson from the Royal Botanical Gardens, Sibpur near Calcutta. The provenance of the former specimens is undoubtedly wrongly noted. As is well known, no members of the family Ampullaridae are found in Mauritius², and the shell in question is quite similar to the Sibpur shell. It may also be noted here that it does not resemble any of the known species of the sinistral African genus of the family *Lanistes* Montfort. Under the circumstances I agree with Nevill that it is a sinistral shell of *P. globosa*, and is an Indian shell.

Another shell absolutely identical with the above mentioned specimens has recently been presented to the Zoological Survey of India by Mr. D. D. Mukherjee, Assistant in the Zoological Survey of India.



TEXT-FIGURE 1.—Sinistral specimen of *Pila globosa* (Swainson) from near Barrackpore, Calcutta. Natural size.

The shell was collected by him from a shallow pond near Barrackpore at a distance of about 12 miles from Calcutta, in 1922. Unfortunately the operculum of the specimen is missing. Its measurements in millimetres are :—Total height 40·5, maximum diameter 39·2, oblique height of the mouth 31·5 and maximum diameter of the mouth 17·6.

It is also of interest to note that these records, together with the one of a sinistral specimen of *Pila virens* (Lamarck) in the paper cited above (Prashad, *loc. cit.* pl. xiv, fig. 3), are the only ones of the occurrence of sinistral shells in the normally dextral genera of the family Ampullaridae, and that none were recorded by either Sykes³ or Ancey⁴ in their lists of sinistral forms.

¹ Nevill, *Hand-List Moll. Ind. Mus.* II, p. 2 (Calcutta, 1885).

² In this connection see for example, Germain, "Faune Malacol. Terr. et Fluv. des Iles Mascareignes." (Angers, 1921).

³ Sykes, *Proc. Malacol. Soc. London* VI, pp. 269-270 (1905).

⁴ Ancey, *Bull. Sci. France Belgique* XL, pp. 187-205 (1906).