

XVIII. NEW SPECIES OF SLUG-LIKE MOLLUSCS  
BELONGING TO THE FAMILY ZONITIDAE  
FROM THE DAWNA HILLS, TENASSERIM,  
COLLECTED BY DR. F. H. GRAVELY.

By Lieut.-Colonel H. H. GODWIN-AUSTEN, *F.R.S.*

(Plate XVIII.)

So long ago as 1912 I received a collection of shells made in the winter of 1911 in the Amherst District, Tenasserim, by Dr. F. H. Gravelly of the Indian Museum, Calcutta. Undoubtedly the most interesting new species obtained are those I now describe, slug-like forms belonging to the genera *Austenia* and *Girasia*. I am much indebted to Dr. Gravelly for seeing them, and I have much pleasure in naming one *Girasia* after its discoverer. Unfortunately there are few examples to deal with, and I have hesitated to cut up type specimens to see the internal anatomy. It is, I know, very difficult at certain seasons to find many specimens of these molluscs; if it be possible 6 at least should be collected, the whole anatomy can then be seen and a couple reserved for the Museum.

The photographs have been made by my friend Mr. J. S. Gladstone, they are very good and my best thanks are due to him.

These and allied genera are very abundant at the wettest season of the year, but with diligent search under stones and logs of wood they may be found at any time. Their preservation in alcohol is a difficulty and the collector must be prepared to face leeches and malaria. From the malacological point of view they form a most interesting group. Their exact distribution specifically is little known. Take for instance *Girasia peguensis*, Theobald.<sup>1</sup> Nothing is known of those inhabiting Hill Tipperah, the Chin Hills, Northern Burma and the Shan States, this large forest-clad area would yield many many species, probably even new genera.

This paper would have been published before now, but the large Abor collection took up much of my time. The times besides have been against and affected work of this kind.

***Girasia ? sukliensis*, n. sp.**

(Pl. XVIII, figs. 1—3.)

*Locality*.—Sukli, Dawna Hills, 900-2,300 ft., Tenasserim, November, 1911 (*F. H. Gravelly*).

*Shell* extremely thin, filmy and undeveloped; colour near the rounded apex white, rest pale green.

*Size*.—Major diameter about 9 mm.

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<sup>1</sup> *Moll. India*, vol. I, p. 227, pl. lix, figs. 6, 6a, 6b animal, 6c, 6d shell.

*Animal* (figs. 1 and 2).—About 26 mm. in length, contracted, pale grey in colour, with rather large scattered spots of black with smaller spots along the peripodial margin; mantle and head dark grey.

The side of the foot has a papillate surface, the oblique grooves from the margin close and distinct; foot sharply keeled up to the depression in which the shell rests, square at extremity, the mucous gland being a very narrow slit. Sole of the foot narrow with a well marked central area, bordered on each side by a very finely segmented one.

Right shell lobe very small, oblong, narrow, rounded at the posterior end. Cicatrical line well marked. Left shell lobe broadly covering the edge of the peristome. Right dorsal lobe small, the left large, spreading over the neck and round to the left posterior side, thus similar to *G. peguensis* (fig. 3).

The visceral sac extends far back to near the extremity of the foot. The short oesophagus passes into a very capacious stomach and then continues into the lobes of the liver. The generative organs were atrophied, but sufficiently developed to show they are like those of *Girasia*. Only the amatorial organ was conspicuous.

#### ***Girasia gravelyi*, n. sp.**

(Pl. XVIII, figs. 7, 8.)

*Locality*.—Sukli, Dawna Hills (east side), Tenasserim (*F. H. Gravely*).

*Shell* polished, shiny; apex very small, with the very slightest sign of a coil.

*Size*.—Major diameter 10 mm.

*Animal* (figs. 7 and 8).—Length contracted in alcohol 28 mm., of a general dark grey colour with distinct irregular blackish spots on the side of the foot, peripodial (the fringed) margin narrow with two grooves above, its segmentation fine, and this applies to the foot above, the usual oblique grooves being indistinct and close together with the surface broken up into minute quadrate and pentacular areas, becoming almost papillate. The foot behind is square to the sole, with a slit-like mucous gland, it is sharply keeled up to the depression in which the shell and visceral sac rests. The sole of the foot has a central area, but is not crossed by segmental grooves. The mantle is very dark, rather smooth; a distinct cicatrix proceeds from the respiratory orifice upwards and backwards separating the narrow oblong right shell lobe, its rounded end just covering the anterior margin of the shell. The dividing line between these shell lobes and the right dorsal and left dorsal lobes is well seen.

In its general form this species comes nearest to *G. sikkimensis*, G.-A., *Moll. Ind.*, Vol. 1, p. 239, plate lix, figs. 2-2a (animal), 2b (shell).

#### ***Austenia dawnaensis*, n. sp.**

(Pl. XVIII, figs. 4-6.)

*Locality*.—Dawna Hills (west base), at 1,400 ft., only one specimen (*F. H. Gravely*).

*Shell* spatulate, coil of apex fine; sculpture none, surface smooth and shining; colour ochraceous with a green tinge; suture short impressed; whorls  $1\frac{1}{2}$ .

*Size*.—Major diameter 15.5; minor diameter 9.5 mm.

*Animal* (figs. 4 and 5).—Spirit specimen much contracted, 39 mm. in length. Two peripodal grooves lie above the edge of the foot, the area between them regularly segmented, the segments of the fringed margin extending beneath the foot, but do not cross the median area of the sole of the foot.

Mucous gland a narrow slit, nearly vertical and very slightly overhanging above, extremity of foot keeled for a short distance, then rounded as it approaches the shell, the apical part of which rests in a depression. Regular segmental grooves becoming close-set extend from the irregular upper peripodial groove to the keel.

The right shell lobe is very small, the left extends all round the peristome as a narrow band, leaving much of the shell exposed, a short cicatrix divides them running to the respiratory orifice; the right dorsal lobe is small, the left is very broad and ample up to the posterior margin.

The frontal side of the animal (fig. 6), although much contracted, gives an interesting view of the mouth, and shows the segmented sides of the foot and its plain central area.

#### ***Austenia* ? *dawnaensis*, young.**

*Locality*.—Dawna Hills, Tenasserim (*F. H. Gravely*).

*Shell* broken by sudden contraction in the spirit, very thin and spatulate.

*Size*.—Major diameter 13.0 mm.

*Animal*.—Pale coloured, dark on head and neck, and darkish on the forepart of the mantle.

The margin of the foot is fringed, but the usual grooves above it cannot be discerned, in fact the whole body is quite smooth, from some change, probably after being put into alcohol. Sole of foot similarly quite plain.

There is a small right shell lobe, while the left shell lobe overlaps the edge of the peristome right round from the respiratory orifice to the left side. The right dorsal lobe is very small, the left very ample. The extremity of the foot is truncate, the mucous gland a narrow slit.

This specimen may be compared with *A. dawnuensis* (No. 6063) in its general external characters and may possibly be a young specimen.