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## NOTES ON THE SNAILS OF NORTH-EAST TANGANYIKA TERRITORY

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2. *Pseudoglessula leroyi* (Bgt.) Von Martens, *Beschaltie Weichthiere*, 115, pl. V, fig. 3 (1897), and *P. conradti* Von Marts. (ibid.), 116, pl. V, fig. 13.

THE genus *Pseudoglessula* is an important one in the E. African fauna and contains common and widely distributed species. Many of them would appear to be ancient species judging by this wide distribution.

*P. leroyi* is common in the rain forest at Amani and also occurs near the coast in forest remnants. It is also common in the drier forests of the W. Usambaras, and the largest shells collected (about 3.7 cm. high) were in the Juniper forests at Ndamanyilu. The shell is either self-coloured and greenish-brown, or bears four darker brown bands. It is often tinged with purple especially when viewed in transmitted light. The base of the columella is greenish. Unbanded specimens seem to be commoner than banded ones. The sole is white tinged with red, and the fringe is brick-red. The head and back (save for a median band of red-brown)

are purplish black. The tail and flanks have reticulate patches of red-brown to brick-red. Other animals examined have shown a good deal of variation; in some the sole and fringe are orange-salmon, with an orange patch on the back and on the base of the tentacles. The back is rugose longitudinally, and the rest of the body is reticulated with blackish purple lines between the pale areas. The species is capable of forming an epiphragm like *Achatina*. Crop contents were found to contain wood particles from the ground débris, together with unidentifiable animal remains. There is a prominent caudal pore. The radula (Fig. 1A) is about 4.25 mm. long and 2.0 mm. broad. There are 95 transverse rows of teeth, the youngest 15 of which stain in acid dyes. The formula is approximately 20; 14; 1; 14; 20, but the distinction between the laterals and marginals is not at all clear. The central tooth is narrow, unicuspid, with a pointed anterior margin and a notched base. The laterals have a well developed mesocone and a rounded ectocone. The marginals are essentially similar but oblique and situated on a curved line. The jaw is large and not striated (Fig. 1c).

*P. conradti* belongs to quite a different group, many of the members of which have been confused with "*Bulinminidae*" owing to the shape of the columella, a character of little importance in the genus *Pseudoglossula*. The species is common under débris in parts of the Amani forest (by the R. Kwankuyu) which are untouched, and seems to be much less adapted to living in disturbed habitats than the former species. The body is tinged with pale brown or darker grey. Shells referable to this species have been found in the W. Usambaras at Mkusi. The species forms an epiphragm. The radula (Fig. 1B) is 0.89 mm. broad and 2.2 mm. long. There are 82 transverse rows of which the nascent 10 stain in acid dyes. The formula is approximately 22; 8; 1; 8; 22. The central tooth is much as in *P. leroyi*. The laterals have a long sharp pointed mesocone and a minute ectocone. The jaw is about 1 mm. broad.

### 3. The genus *Tayloria* Bgt.

*Tayloria usambarica* Crv. is one of the most conspicuous shells to be found in the wooded parts of the coastal area between the E. Usambaras scarp and the sea. It is not at all common on the plateau of the Usambara Mountains and I have not observed it at Amani above 2,800 ft. It is easily confused with the young of *Gonaxis craveni* (Sm.), which are frequent on the plateau, but are very much less strongly ribbed. The shell of *T. usambarica* is normally depressed helicoid, averaging 22 mm. broad, 14 mm. high, and having an apertural breadth of 10 mm. In the scrub on the lower slopes of Mt. Tongwe, where the species is particularly abundant, a much taller quite adult shell occurs which is worth a varietal name, but it is clearly the same species, although it is much less striate. The breadth is 16.5 mm. and the height 13 mm. The aperture measures 7.5 mm. by 8 mm. From the specimens seen and the description this variety is probably identical with *Colpanostoma leroyi* Bgt, which genus therefore should not be retained. Despite the abundance of the shell only one living specimen, a juvenile, was found. The animal of this was entirely whitish with very pale brown fleckings on the back and tentacles. The radula of this species is of interest since a central tooth is present.

The juvenile radula measured 9 mm. in length and 1 mm. in breadth. Two representative teeth are figured (Fig. 2A).

On the plateau of the W. Usambaras at Sungwe and Ndamanyilu some old shells of a closely related species were found, which differs from the coastal one in having finer transverse striae and also traces of a spiral element between them. Further material is needed to decide its status.

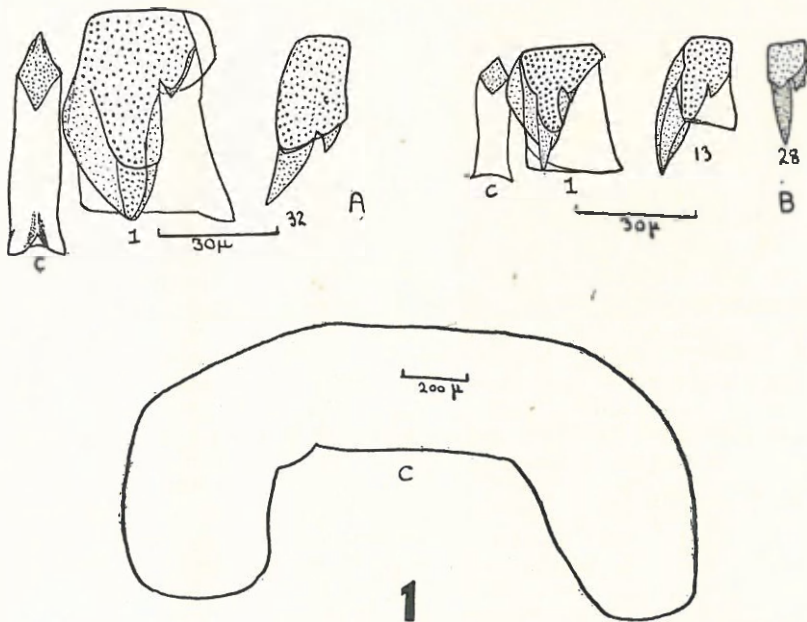


FIG. 1.—Representative teeth from the radulae of: A, *P. leroyi*. B, *P. conradti*. C, Jaw of *P. leroyi*.

A third member of the genus, a quite different species, was found under moss close to the summit of Mt. Bomole near Amani in the E. Usambaras. One specimen almost adult and a small juvenile were the only ones found. The adult shell has the lip practically finished and is a depressed shell much the shape of *Helicella itala*, 12.5 mm. broad, 7 mm. high and having a broadly lunate aperture 6 by 5 mm. The first two whorls are smooth, but the rest are very finely striate and there are fine spiral elements between the transverse ones. The animal is mostly white. The back is densely flecked with grey and the mantle is spotted with black marks which show through the shell. Though bearing some resemblance to several species of *Streptaxis* described by H. Preston from Kenya, it does not coincide with any descriptions which I have been able to see.

4. *Trochozonites leroyi* Bgt.; Bourguignat, *Moll. de l'Afr. equat.*, p. 18, pl. 2, fig. 13-14 (1889).

This elegant trochiform shell is not uncommon in the E. Usambaras and is also frequent in the Sigi Valley and on Mt. Tongwe. The shell



attains 11.5 mm. in height and 15 mm. in diameter, and bears, in addition to coarse transverse growth lines, fine spiral striae above and below the sharp keel. The shell is a pale pinkish brown, but the white and grey-brown speckled mantle shows through the shell. The sole is whitish, flanks and tail pale blue-grey, caudal horn blue-black, and the actual tip of the tail brownish-orange, neck and back grey-blue, tentacles grey and their retractor muscles deep blue black. A very interesting behaviour is shown by the young, which were found in abundance (23.8.50, 2.0 p.m.) in the bush bordering the south bank of the R. Kwamkuyu near Amani, mostly on the wet leaves of *Piper umbellatum* and the alien *Cludmia hirta*. It is suspected that they were not feeding on the leaves but on decaying debris scattered over them. These juveniles extend their tails into long filaments and wave them about, the tips describing a circle. This was observed in every one of some fifty individuals. It has not been noticed in any of the few adult specimens seen.

The radula is characteristic in general appearance and quite distinct from that of *Ledoularia*. It is 2.4 mm. long and 1.6 mm. broad, the broad shape being very noticeable. The teeth are minute and difficult to count. There are 95 rows, 23 of which stain in acid dyes. The radula formula is approximately 125 ; 1 ; 125. Representative teeth are shown (Figs. 2B and c). The central tooth is tricuspid. The first lateral has a very oblique mesocone in the nascent rows, but it is much straighter in the older rows. The next three teeth are smaller laterals with straight mesocones and the remainder are marginals or at least transitional teeth, with a curved base of attachment and two cusps much like the pincers of a lobster. The second cusp is the ectocone of the lateral teeth lowered and enlarged. Higher up there are 1-6 smaller ectocones which give a serrated appearance to the shank. In the *Ledoularia* which I have examined, the teeth are much larger, there are 7-8 laterals and only about 30 marginals. The radula of this genus is more like that of *Thapsia*.

5. *Thapsia leroyi* Grandid. : in *Bull. Soc. Mal. de la France*, 4, 184 (1887).

This is one of the commonest snails on the plateau of the E. Usambara mountains. The shell is 5 mm. high and 8.5 by 9.5 mm. broad, glossy and existing in two distinct colour forms, a pale and a deep brown one. The animals of these two forms are identical and there is no doubt as to their specific identity. The shells are very similar to the British *Retinella* and *Oxychilus*, but the animals are strikingly different. There are two filamentous mantle lobes on either side and a marked caudal horn above the caudal pore. The animal is chiefly lead-coloured and pale, save for the bulbous-tipped tentacles, neck, tail and caudal horn, which are darker. The sole is pale, but darker at the edges posteriorly, and the flanks are colourless in the shell area. The jaw is 1.2 mm. long and 0.3 mm. high, with rounded ends (Fig. 2D). The radula is 2.3-2.4 mm. long and 1.1 mm. broad. There are 97-102 rows of teeth of which 22 nascent rows stain in acid dyes. The radula formula is 40-45 ; 10-11 ; 1 ; 10-11 ; 40-45. Representative teeth are shown in Fig. 2E.

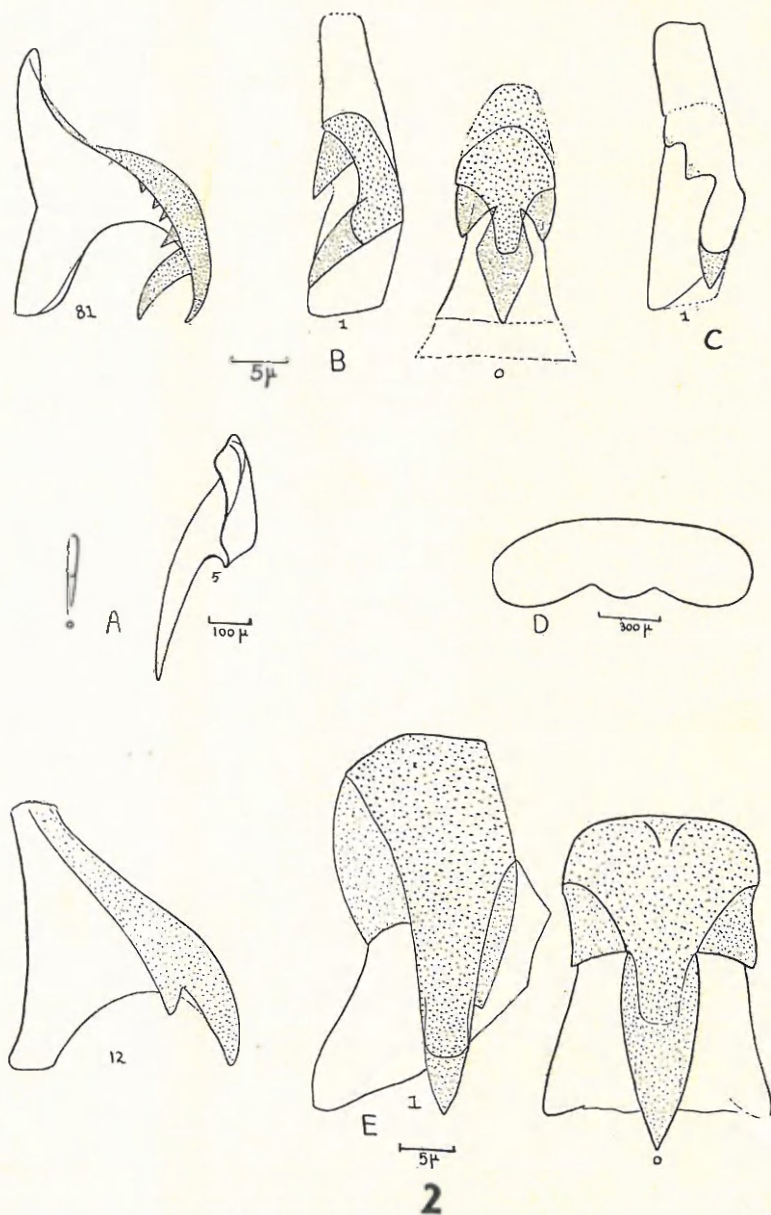


FIG. 2.—A. Central tooth and 5th lateral of *Tayloria usambarica* Cvn.  
 B. Representative nascent teeth of *Trochozonites leroyi* Bgt.  
 C. First lateral from older row of *Trochozonites leroyi* Bgt. (scale as for B).  
 D. Jaw of *Thapsia leroyi* Grandid.  
 E. Representative teeth of *Thapsia leroyi* Grandid.





