

The Family Endodontidae (Mollusca, Gastropoda) in East Africa

by

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The family Endodontidae entirely comprises very minute or small land shells, being a very ancient family whose members occur in most parts of the world.

None were recorded for East Africa by VON MARTENS (1898) in his book on the non-marine mollusca. This book remains the only available work on our snails and nothing of any importance has appeared since which covers even a portion of the same field. E. A. SMITH (1903, p. 317) at one time the authority on African snails described two species from Uganda which he placed in the genus *Gonyodiscus* Fitz. DAUTZENBERG and GERMAIN (1914, p. 19) also described two. It is impossible to decide which genus these four species should really be placed in, since it is imperative that the animal should be dissected. Until living material is collected in the type localities it will not be possible to classify these forms satisfactorily.

Whilst residing at Amani in the E. Usambaras I detected two members of the family and since living material of each has been studied it seems worth while to place the details on record. It is certain that careful searching would reveal many further examples of the family. Many are recorded from South Africa (CONNOLLY, 1939, pp. 187—257) and one has long been known from Abyssinia.

Punctum hottentotum (Moss & Webb) var. *mkusiensis* var. nov.
Figs. 1a—d, 2.

(*Punctum hottentotum* Connolly, 1925, Trans. R. Soc. S. Afr., vol. 12, p. 149.)

Shell minute, depressed, helicoid, medium horn-coloured and of an equal intensity all over. The umbilicus is broad and deep and the suture is very deep. The $3\frac{1}{2}$ whorls are very convex. Aperture oblique, almost round, 0.75 mm in diameter, with the peristome reflected slightly in the columellar region. The embryonic shell is almost smooth but appears minutely rugulose at $\times 70$. The main whorls have oblique transverse riblets and fine closely placed spiral striae. The spiral elements are strongest in the region of the umbilicus. The shell is about 1.8 mm broad and 1.0 mm high. The animal is blue-grey above in front and the sole is pale. The jaw is 0.18 mm

broad and is composed of 18 plates, which are only slightly joined as is usual in this genus. Each plate is about 0.033 mm high and when mounted in a medium of low refractive index their bases

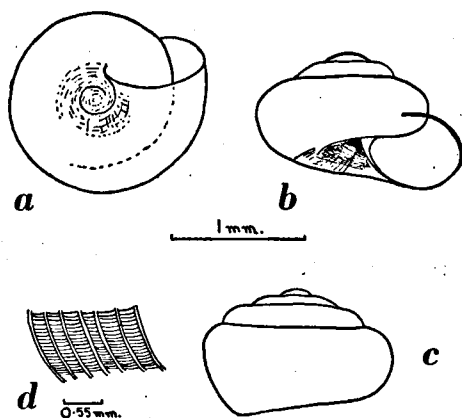


Fig. 1. *Punctum hottentotum* (M. & W.) var. *mkusiensis*, var. nov., a, b, c: shell, d: sculpture in detail.

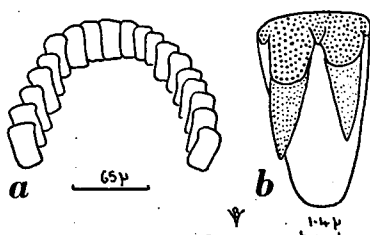


Fig. 2. *Punctum hottentotum* (M. & W.) var. *mkusiensis* var. nov., a: jaw, b: third lateral tooth.

seem to be a bit fimbriated. The radula is 0.54 mm long and 0.154 mm broad, and there are about 100 rows of teeth. As one proceeds outwards along a row the bases get progressively more quadrangular but the reflected portions are approximately equal in size. In this genus much has been made of the relative lengths of the ectocones and entocones but this character is very difficult to see even under a good oil-immersion lens. In the present form young teeth stained in Chlorazol Black E to render the cusps more

visible, have the entocone longer than the ectocone. This snail agrees with the descriptions in most ways, but is a little smaller and the aperture is slightly different in shape.

Numbers of this species were found at the roots of grass and the bases of *Typha* stems on the edges of a swamp on the plateau of the W. Usambaras, at Mkusi, 5,500 ft., Sept. 1950, VERDCOURT D1, Type. This swamp is composed of *Typha*, *Nasturtium*, and *Crassocephalum picridifolium* DC Sp. Moore. It occurred together with a species of *Pisidium* (also not recorded for Tanganyika apparently), a *Lymnaea*, a juvenile *Ledoulxia*, and a small species of Urocyclid slug.

Trachycystis ambigua Connolly

Fig. 3

Trachycystis ambigua Connolly, 1922. Ann. Mag. Nat. Hist., (9), vol. 10, p. 116.

This species belongs to the very distinctive sub-genus *Psichion* Gude, and no other snails have teeth which are specialised in the same peculiar way.

Shell globose conic, convex below, with the embryonic whorls minutely rugulose. The other whorls are extremely finely and closely transversely striate, with even finer spiral striae which are only satisfactorily visible at $\times 40$. The body is colourless save for the tail, tentacles, and neck which are greyish black. There is no caudal appendage. The single specimen taken was a juvenile of $4\frac{1}{2}$ whorls and 3.5 mm broad by 3.0 mm high. The radula was examined. It is squarely rectangular, 0.97 mm long by 0.38 mm broad, and there are about 90 transverse rows of teeth.

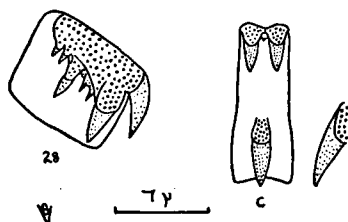


Fig. 3. *Trachycystis ambigua* Connolly, 28th marginal tooth and central tooth.

The radula formula is 12.22.C.22.12. The central tooth has three main cusps; the lateral cusps are in the usual position but the central cusp displays the subgeneric peculiarity. It arises from close to the posterior edge of the base of the tooth. There is sometimes a minute secondary central cusp between the two lateral ones. The

lateral teeth are similar to the central teeth. As one proceeds along a transverse row first some entocones are bifurcated and then both ectocones and entocones are divided. Finally the mesocone moves up to the normal position and the outermost marginals have 1—2 entocones and 3—5 ectocones, the middle one being the largest. The radula agrees well with the figures of that of *T. (P.) inclara* Morel given by WATSON (1934, pl. 20, fig. 25), which is another member of the same sub-genus.

A single juvenile specimen was found crawling on wet vegetation (*Clidemia*) by the R. Kwamkuyu, Amani, E. Usambaras. VERDCOURT CY.

The shells and slides of radulae of the above are to be deposited in the Coryndon Museum, Nairobi.

REFERENCES

- CONNOLLY, M., 1939. Monographic Survey of South African Non-Marine Mollusca. Ann. S. Afr. Mus., vol. 33, 660 pp., 19 pls.
- DAUTZENBERG, Ph., & L. GERMAIN, 1914. Récoltes malacologiques du Dr. J. Bequaert dans le Congo Belge. Rev. Zool. Afric., vol. 4, pp. 1—73, pls. 1—4.
- MARTENS, E. VON, 1898. Beschalte Weichtiere Ost-Afrikas, in: Deutsch-Ost-Afrika, vol. 4. Berlin.
- SMITH, E. A., 1903. Descriptions of new species of land shells from Central Africa. Journ. of Conch., vol. 10, pp. 315—319, pl. 4.
- WATSON, H., 1934. Natalina and other South African Snails. Proc. Mal. Soc. London, vol. 21, pp. 150—198, 2 figs., pls. 19—21.