

Notes on Kenya Land and Freshwater Snails

7. Variation in *Gulella pilula* (Preston) (Streptaxidae) ¹⁾

by

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INTRODUCTION

In a recent revision of the subgenus *Primigulella* Pilsbry, VERDCOURT & VENMANS (1956) stated that more material was needed to study the infraspecific variation of *G. pilula*. During a recent collecting expedition to the Nyambeni Hills (= Jombene Hills) and Meru (= Mweru), Mr. R. POLHILL and the author made a special search for members of this subgenus since these two localities are cited by PRESTON for his *Ennea jombeneensis*, the former being the type locality. Although several specimens belonging to the *pilula* complex were discovered in both localities, none agreed with the description of *E. jombeneensis*. A detailed account of the variation in the apertural dentition is given below. One of the specimens was obtained alive and this has allowed its anatomy to be compared with that of the two species already dissected.

ANATOMY

A single specimen from Marimba Forest near Meru, north east Mt. Kenya was dissected. As is usual in this subgenus the penis bears a large appendage; in this species it is situated at the base of the penis and is narrowed and coiled at its apex. It thus resembles *G. usagarica* (Crosse) rather than *G. grossa* (von Martens), but until other members of the subgenus have been dissected little comment can be made. The gross genital anatomy is shown in fig. 1a & b. The radula measures about 3 mm in length and 0.5 mm in breadth, the formula being 29.C.29 with about four additional very reduced teeth on either margin; there are about 49 transverse rows of teeth.

¹⁾ No. 6, see: *Basteria*, vol. 22, p. 91 (1959)

VARIATION IN THE SHELL

The original description of *G. pilula* gives the size as 11.25×6.5 mm. The apertural dentition is described as follows: a bifid parietal tooth, two teeth on the outer wall, two basal teeth and five columellar teeth, i.e. similar to fig. 2 with tooth 3 missing and an extra one above tooth 10.

Two paratypes in the Coryndon Memorial Museum collections measure 11×6 and 11×6.2 mm respectively and the dentition is as in fig. 2 with tooth 3 missing.

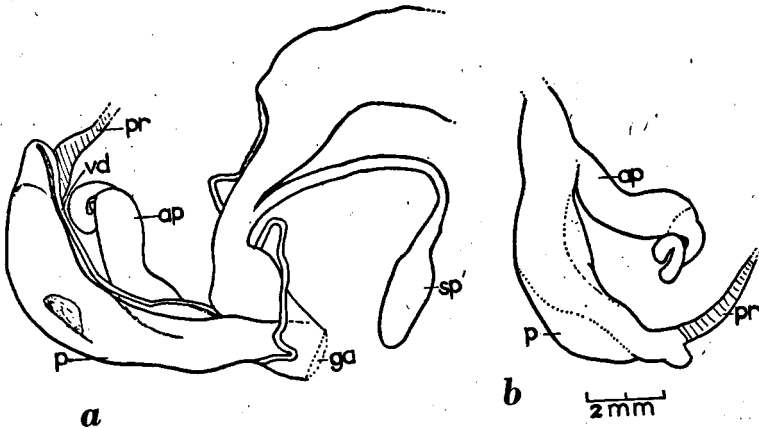


Fig. 1 a. General view of genitalia of *Gulella pilula* (Preston). b. Penis showing appendage. ap: penial appendage; p: penis; ga: genital aperture; pr: penial retractor; sp: spermatheca; vd: vas deferens.

A lot of 9 shells from the Thiba River Forest, south Mt. Kenya, 6,850 ft., 19 July 1943, leg. H. COPLEY are bigger than the types.

Height	13.5	13.0	12.5	12.5	12.5	12.2	12.0	12.0	12.0	mm.
Breadth	7.5	8.0	8.5	7.5	7.5	8.2	8.0	7.5	7.5	mm.

Five of these shells have apertures more or less as depicted in fig. 2 with the omission of tooth 3. One has a small additional tooth above tooth 10 i.e. as PRESTON describes; another has a small second parietal tooth near the columella; another has a small raised line

between the two parallel ridges of the main parietal tooth and yet another has an additional tooth at the junction of the basal and outer walls i.e. between teeth 4 and 5.

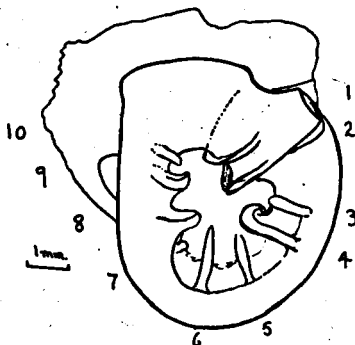


Fig. 2. Aperture of shell of *Gulella pilula* Preston, north east Mt. Kenya, Marimba Forest, leg. B. Verdcourt and R. Polhill.

The lot from Marimba Forest near Meru, north east Mt. Kenya collected by the author and Mr. POLHILL have the following measurements.

Height	14.3	14.0	14.0	14.0	mm.
Breadth	8.0	8.5	8.0	8.0	mm.

These four specimens conform to fig. 2 save that tooth 7 is marked in only one, tooth 3 is weak in another and tooth 2 has a V-shaped inner end in another.

Only three specimens were found on the Nyambeni Hills themselves; these are somewhat larger and relatively narrower than the specimens from Marimba.

Height	16.0	15.0	14.5	mm.
Breadth	8.0	9.0	8.0	mm.

In two specimens the aperture is as shown in fig. 2 but the tooth above 10 is represented by a trace only and teeth 3 and 7 are absent. The third specimen has the tooth above 10 missing, 3 represented by a trace and there are three basal teeth, the additional one not being equivalent to tooth 7 but larger; tooth 2 also has a V-shaped addition at its inner end.

From the figure and description given by PRESTON, *Ennea jombeneensis* measures 12.25 mm in height and 6.5 mm in breadth (his aperture measurements are obviously incorrect) and has an aperture similar to that depicted in fig. 2 with the addition of a minute se-

cond parietal tooth close to the main one, an additional basal tooth and the omission of tooth 3. Thus none of the material from the Nyambeni Hills collected by the author resembles PRESTON's description closely, either in dentition or size; one of the Thiba River specimens is closer. One cannot therefore call the distinctly larger form which occurs to the north east of the mountain by PRESTON's name, as one might have suspected one could from the locality. Insufficient is known about the variation of *G. pilula* throughout its range to divide it into named races. A further search should be made for material exactly matching PRESTON's types of *jombeneensis* and *pilula*. The type locality of the latter was not defined any more accurately than „Mt. Kenya, 6000-7000 feet". The differences between the small typical *G. pilula* and the much larger specimens found on the Nyambeni Hills are, however, quite striking. No small typical specimens have been found during the last fifty years.

GEOLOGICAL HISTORY

Two or three species which undoubtedly belong to subgenus *Primigulella* have been found in Miocene beds at Songhor and Koru showing that the subgenus has long been clearly established. These fossil species are described in a paper dealing with the Miocene mollusca of Kenya which is in the press.

REFERENCES

- VERDCOURT, B., & L. A. W. C. VENMANS, 1956. A synopsis of the section *Primigulella* Pilsbry of *Gulella* Pfr. (Mollusca, Streptaxidae). *Basteria*, vol. 20, pp. 65-77.