

Further notes on the genus *Ptychotrema* MÖRCH in Eastern Africa

(Mollusca, Streptaxidae).

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With 6 figures.

Since my paper on the genus *Ptychotrema* (1958) I have examined a number of type specimens; also, amongst the numerous general collections of non-marine molluscs which have passed through my hands for naming, several new species have come to light and these are described here.

A m e n d m e n t s t o 1 9 5 8 p a p e r

p. 716 *Ennea syngenes* PRESTON is not a *Ptychotrema*, as was previously assumed by both PILSBRY (1919) and myself, but belongs to the genus *Gulella* and has been dealt with in a paper dealing with the East African species of that genus (in the press). The various "paratypes" distributed in European museums are not all conspecific; some are species near *G. commoda* (SMITH) e. g. specimens from between the Igembi Hills and Nyeri [British Museum (Nat. Hist.), Berlin]. Care must be taken with all members of this group since PRESTON's "paratypes" are not always conspecific with the holotype and even that needs checking against the original description! PRESTON's original comparison of his species with *E. unilirata* SMITH deluded PILSBRY into believing that it should be referred to *Ptychotrema*.

Ennea kigeziensis PRESTON described from Kigezi in Uganda, of which I have now seen the type is, as I tentatively suspected it might be, a *Ptychotrema* which may be distinguished by the following description. Shell cylindrical, smooth save for growth lines and subsutural plicae, 3×1.5 mm. Formula 1;1+L;0;L(3); the three lobes on the columella fold are pointed and deeply inset; there is also a very deeply inset groove and fold on the outer lip near the base.

p. 716 *Ptychotrema supradentatum* (THIELE).

I have examined the types of this species. The columella is slightly three-lobed or, in some specimens, only undulate with merely a faint suggestion of lobing. The second palatal fold from the top is very short but varies a good deal. If this is included there are four palatal folds.

p. 717 *Ptychotrema superadornatum* GERMAIN.

In my key this is placed in subgenus *Ennea* since the description mentions "deux funicules" The type shows one mid-palatal fold which does not reach

the margin but the other is so deeply placed near the columella that it is not really visible from the aperture. It needs comparison with *P. cedrorum* CONNOLLY. The latter is described as having a smooth apex whereas GERMAIN's species has a faintly spirally striate apex; CONNOLLY mentioned, however, that his specimen was not fresh. I have examined material from Turi and Kericho, Kenya. GERMAIN's species also has one whorl more but the dimensions are the same for both species. They are almost certainly conspecific and CONNOLLY's name is much the earlier.

p. 718 *Ptychotrema stuhlmanni* (MARTENS).

I have examined the type of this species which certainly appears to belong to the subgenus *Parennea* and is, as previously stated, very readily distinguished by means of the strong, widely spaced costae, the small additional mid-parietal denticle and the single mid-palatal furrow ending in a denticle.

The holotypes or paratypes of *P. pollonerae* (PRESTON), *P. limbatum* (MARTENS), *P. quadrinodatum* (MARTENS), *P. geminatum* (MARTENS) and *P. runsoaranum* (MARTENS) were also examined and present interpretations checked.

p. 720 *Ptychotrema paradoxulum* (MARTENS).

I have examined the type of this and it differs a little from the original description. The shell measures 4.2×1.8 mm. and is pointed and pupiform. The peristome is thick; the columella is smoothly rounded and without folds (not with two as stated). The two furrows give rise to denticles on the outer lip and near the base respectively, the upper very much larger than the lower which is not on the peristome. *P. masakaense* (PRESTON), the holotype of which, I have not seen, no longer distinguishable by the columella and size, is, however, less pointed and the basal groove is not figured as ending in a small denticle.

SMITH (1903) described a remarkable species *Ennea prodigiosa* from the Mau escarpment. THIELE (1933: 283, f. 63) referred the species to *Ptychotrema* and erected a new section for it — *Mirellia*. He describes the radula, presumably obtained from a paratype sent by SMITH. The only other collection of the species known to me was made by Mr. R. POLHILL as follows: Kenya. Ngong Hills, under moss and litter in *Euphorbia* forest, 11th June 1960, POLHILL 96a (3 in spirit, 1 shell). — I have retained this species in *Gulella* in my keys to that genus (VERDCOURT, in the press).

Description of little-known and new species.

***Ptychotrema (Parennea) uniliratum* (SMITH).**

Fig. 1.

1903 *Ennea unilirata* SMITH, J. of Conch., 10: 315, pl. 4 f. 8.

Shell whitish, hyaline, elliptic-ovoid, widest at the middle, quite markedly narrowed to the base and apex. Whorls about 6.65, moderately convex, the last with two shallow furrows, the upper distinct but the lower one obscure and

not commencing until about some 0.75 mm. from the peristome and the corresponding lamella is not visible from the front if indeed it exists at all. Apical $2\frac{1}{4}$ whorls almost smooth, later whorls irregularly and rather weakly striate, save near the peristome where there are fairly strong, regular costae. The suture is moderately impressed and, between the later whorls, noticeably crenellate. The shell is minutely umbilicate and there is an impressed linear umbilical furrow bounded by a ridge formed by a compression of the base of the last whorl. Aperture triangular-ovate, more or less straight above, rounded below, the edges of the slightly reflexed peristome joined by a thin callus. The parietal lamella is sinuate and deeply entering. There is a deep labial lamella corresponding to the circumscribing furrow; this is strong up to a point some distance from the peristome but then fades away; there is, however, a tubercle on the outer lip corresponding to it. The columella fold is visible from outside and there is a small lamella at the top of it. Mr. POLHILL notes that the body is white.

Dimensions Height, 4 mm., breadth 2 mm.; height of aperture 1.1 mm., breadth of aperture 1.1 mm. In the same lot there are narrow shells 3.7×2 mm. and more globose shells 3.7×2.2 mm. Specimens from the Ngong Hills are smaller, $3.3\text{--}3.5 \times 1.8\text{--}2$ mm. with the aperture 0.9×0.9 mm.

Distribution: Kenya. Kiambu District, without locality, 1960, leg. POLHILL [Coryndon Museum]. Thika, Chania Falls, under moss on gorge side in spray zone of waterfall, 18 June 1960, leg. POLHILL 117 (14 in spirit, 10 dry) [Senckenberg Museum, British Museum (Nat. Hist.) and Coryndon Museum]. Masai District, Ngong Hills, *Euphorbia* forest, under moss and litter, 8 May 1960, leg. POLHILL 61 [Coryndon Museum] and same locality, 11 June 1960, leg. POLHILL 96 [Coryndon Museum].

I am indebted to Messrs. PEAKE and DANCE for comparing specimens of this species with SMITH's type. I suspected that it was closely allied from the description but was unable to be certain without a direct comparison of specimens. SMITH's original specimens were collected by WILLIAM DOHERTY on the Mau Escarpment

***Ptychotrema (Haplonepion) mahariense* n. sp.**

Fig. 2.

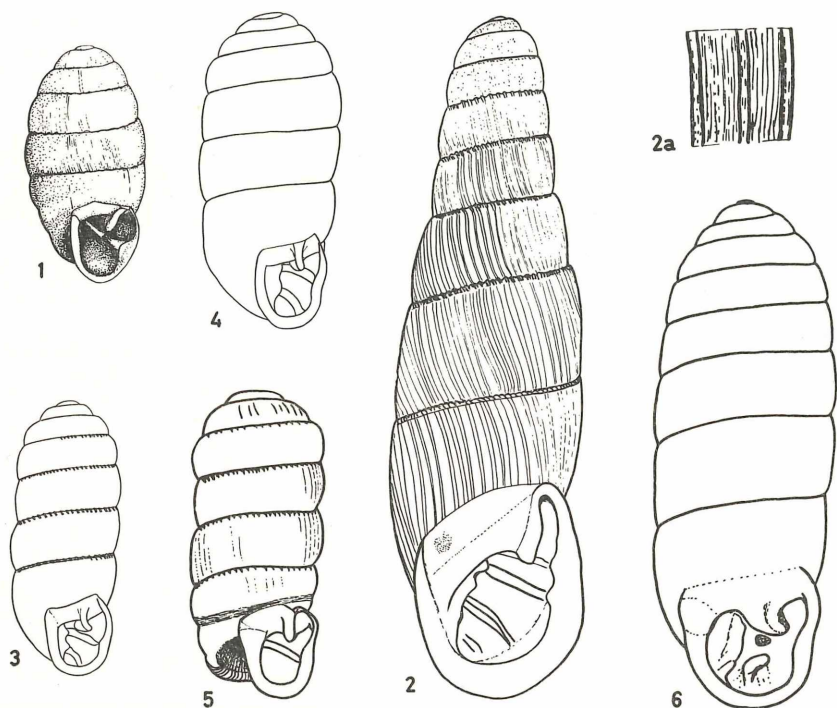
Shell large, white, imperforate, clavate-fusiform, gradually narrowed to the rounded apex, base rounded. Whorls 9.5, slightly convex, gradually enlarging, the last with two rather short external furrows, the upper the longer. Upper $3\frac{3}{4}$ whorls weakly and irregularly transversely striate and also malleated with shallow pits, the suture scarcely crenellate; rest of the whorls separated by a moderately impressed and very strongly crenulate suture, with slightly sinuate, spaced costae; the areas between these costae are not smooth but weakly striate and shagreened. There is a moderate umbilical depression. Aperture ovate, peristome flared and reflexed; none of the folds reach its edge; though appearing smooth this area is minutely and very closely pitted. There is a strong, slightly sinuate, inrunning, parietal lamella which forms a narrow sinulus with the top of the outer edge of the peristome and there is also a broad, thin callus extending to the left across to the columella. There are four inrunning lamellae on the outer lip, of which the lowest is short and weak; the upper is a little stronger. The two central lamellae are strong and correspond to the external furrows previously mentioned. The columella bears three lamellae deeply situate within;

these appear as low mammiform nodules, the upper two quite marked, but the lowest is barely noticeable.

Dimensions of holotype: Height 23 mm., breadth 7 mm.; height of aperture 7.2 mm., breadth 5.8 mm.

Distribution: Tanganyika. Mahari Peninsula, Musenabantu, south-east side, litter on floor of dense steep forest, 6100 ft., 17 August, 1959, J. A. COOKE, 342 (Second Oxford University Tanganyika Expedition) [holotype in SMF 164298]; ridge north of Lukandamila, under stones in open forest, 6500 ft. 4 October 1959, D. H. ECCLES (Second Oxford University Tanganyika Expedition) [an exceedingly worn and broken specimen, Coryndon Museum].

This splendid new species is closely allied to *P. ujijiense* (SMITH) and *P. supradentatum* THIELE, the former described from Ujiji, and the latter from Lake Rukwa. So far as I know, neither has been recollected. *P. supradentatum* is a smaller species, 17 mm. tall and 4.5 mm. wide; the dentition is also diffe-



- Fig. 1. *Ptychotrema uniliratum* (SMITH). — Kenya, Ngong Hills. leg. R. POLHILL.
 Fig. 2. *Ptychotrema mahariense* n. sp. — Tanganyika, S. E. side of Musenabantu. leg. J. A. COOKE (holotype SMF 164298).
 Fig. 3-4. *Ptychotrema kungwense* n. sp. — Tanganyika, S. ridge of Kungwe. leg. D. H. ECCLES. — 3) holotype SMF 164299; 4) worn paratype.
 Fig. 5. *Ptychotrema somaliense* n. sp. — Somali Republic (Northern Region), Mait-Erigavo Escarpment. leg. C. F. HEMMING (holotype SMF 164300).
 Fig. 6. *Gulella meneleki* (PRESTON). — Holotype (Mus. Roy. Afr. Centr. No. 17560). (Fig. 1 was drawn by Mr. POLHILL, the rest by the author; Fig. 2 = $\frac{4}{1}$, Fig. 1 and 3-6 = $\frac{10}{1}$).

rent, the outer lip bearing a small tooth above and only three main folds. There is also an additional small fold between the two upper main folds; the columella also is slightly different. The holotype of SMITH's species is broken at the apex but must have measured at least 19×5.3 mm.; the remaining six whorls measure 17×5.3 mm. with an aperture 5×4 mm. Six whorls of the new species measure 21 mm. I am indebted to Mr. PEAKE for sending me an enlarged sketch of the mouth of *P. ujijiense* at my request, since neither SMITH's original figure nor my own sketch made several years ago are quite adequate. There are three prominent ridges in the mouth, the uppermost one placed lower than in *P. mahariense* so that its disappearance under the parietal wall (with the shell held normally) occurs at the same place as that of the upper end of the columella fold. As in *P. supradentatum* there is an additional feeble ridge between the upper pair of strong ridges. The outer lip bears sinuations but is not toothed. The three species form a small well-characterised group.

***Ptychotrema (Ennea) kungwense* n. sp.**

Fig. 3, 4.

Shell oblong or oblong-cylindrical, narrowly perforate, shining, brownish-white, apex rounded. Whorls 8, moderately convex, the last with two deep furrows extending for about half a whorl. Upper three whorls more or less smooth, lower whorls with the moderately impressed suture crenellate, the whorls themselves smooth or almost so; under a high magnification the surface is seen to be shagreened, the areas cut off by fine spiral and transverse scratches. There are a few transverse striae just behind the peristome. Aperture ovate-quadrangle, peristome white, slightly reflexed; there is a strong, inrunning, sinuate parietal fold; two palatal inrunning folds which do not reach the edge of the peristome and the columella bears two deeply situated mammiform nodules.

Dimensions of holotype: Height 4.3 mm., breadth 1.8 mm.; height of aperture 1.3 mm., breadth 1 mm. — A paratype of 7 whorls is much more oblong, 3.8×1.8 mm.; the worn specimen from a higher altitude (7800') measures 4.2×2 mm.

Distribution: Tanganyika. Kungwe, south ridge, Camp II, in rotten log on floor of gallery forest on hillside, 6000 ft., 14 September 1959, leg. D. H. ECCLES (Second Oxford University Tanganyika Expedition) [holotype in SMF 164299, paratype in Coryndon Museum]; south ridge, under litter in "elfin forest" — dry, 7800 ft., 12 September 1959, leg. D. H. ECCLES (with *Maizania* cf. *volkensii* (MARTENS) [Coryndon Museum] (specimen broken, a very worn shell).

This species is related to *P. monotes* PILSBRY and *P. bequaerti* (DAUTZENBERG & GERMAIN) but they are both striate and, in both, the second palatal lamella is not visible from the front.

***Ptychotrema (Parennea) somaliense* n. sp.**

Fig. 5.

Shell small, colourless, oblong-cylindrical, slightly clavate, widest about 1 mm. below the blunt, rounded apex; imperforate but umbilical depression quite deep. Whorls 7, slightly convex, the last with a deep, external furrow extending right round it and a little way in to the whorl above and also the

slightest traces of a furrow below it. Suture moderately impressed, strongly crenellate, the rest of the surface of the whorls more or less smooth, though there are obscure transverse striae, particularly just behind the peristome and on the third whorl, descending from the rather long sutural crenellations. Aperture triangular-oval, peristome rather thick, reflexed and pitted, the outer margin constricted at the middle, thicker below the constriction and thinner above it, the junction between the two areas almost nodulous and corresponding to where the furrow would meet the peristome. Columella margin vertical, widened. Parietal fold strong, the lamella projecting and forming a sinulus with the upper margin of the outer lip, very sinuate within; a single strong labral fold not reaching the margin.

Dimensions of holotype: Height 4 mm., breadth 1.7 mm.; height of aperture 1 mm.; breadth of aperture 0.9 mm. — A paratype is shorter and wider 3.5×1.75 mm.

Distribution Somali Republic (Northern Region). Mait-Erigavo escarpment, Juniper zone, 5900-6900 ft., with *Buxus*, *Dodonaea*, and *Dracaena*, 28 September, 1960, C. F. HEMMING M 180 (holotype in SMF 164300, paratype in Coryndon Museum).

This species appears to belong to the section *Parennea* PILSBRY and is allied to *P. nyangweense* (PUTZEYS) and to *P. mukulense* PILSBRY but these have a labral tooth and also differ in dimensions. The new species may be separated from the other species known from the Somali-Ethiopia region by the key given below. This is I believe the first record of the genus from Somaliland. The fauna and flora of the area where the new species is found, is a peculiar mixture of species, some having tropical African affinities, others Indian and near Eastern affinities and still others, European affinities.

1. Shell 4.5×1.9 mm., ± shining; aperture narrowly obtriangular, three lamellae equally spaced on the columella, formula 1; 2; 0; 3 *gratum* THIELE.
- Aperture and other characters not as above 2
2. Only one labral fold and corresponding external furrow; shell 3.5-4 mm. long, suture crenellate *somaliense* VERDCOURT.
- More than one labral fold 3
3. Columella smooth, no folds or teeth, only a slight fold showing in the top left corner of aperture — the slope of the columella itself 4
- Columella with teeth or folds not clearly visible from outside (see couplet 6).. 7
4. Suture very strongly crenulate; shell 4.5-9×3 mm *denticulata* (MORELET).
- Suture less strongly crenulate or quite smooth 5
5. Shell 8×3.4 mm., oblong, subclavate, widest towards the apex; peristome and lamellae rather thin *hyalinum* THIELE.
- Shell oblong or even slightly tapering, not widest near apex; peristome and lamellae thick 6
6. Shell 9×3 mm., suture faintly crenellate (description mentions two "Knoten" on columella but they are not shown in the figure) *laeve* THIELE.
- Shell 6.2×2.75 mm.; suture smooth; peristome very thick (Note, description mentions two "schwach Knötchen" on the columella but these are not shown in the figure) *massauiense* THIELE.
7. Three lamellae on outer whorl, 7 smooth whorls, shell 11.25-13×3 mm.; a strong revolving lamella at base of columella and an internal shelf above it thickened into a nodulous tooth grooved down the middle (BACCI put this in *Ptychotrema* but there is nothing in the description to suggest the correctness of this) *roberti* (PRESTON).
- Only two lamellae on outer whorl 8

8. Shell 6.25×2 mm., shining but suture crenellate, columella with a broad squarish shelf-like tooth at its base *meneleki* (PRESTON).
 — Shell with strongly crenellate suture, often striate; columella with one or two small denticles on upper oblique fold in top left hand corner 9
 9. Shell small, 3.1×1.2 mm.; outer lip with a fairly strong tooth
 *denticulata nana* CONNOLLY.
 — Shell larger 10
 10. Shell 7.3-11×3.5-4 mm., costulate, columella fold subplicate; outer lip with a small tooth and upper part of outer lip joined to parietal lamella by a callus....
 *denticulata hildebrandti* (JICKELI).
 — Shell smoother but with a denticulate suture and more distinct nodules on the columella 11
 11. Shell 7-8×2.75-3 mm., striate; columella with two distinct nodules on fold
 *denticulata papillifera* (JICKELI) (= var. *quinqueplicata* BOURGUIGNAT).
 — Shell with only one plication on columella *denticulata hamacenicica* (BOURGUIGNAT).

A d d e n d u m .

Through the kindness of M. BENOIT I have now examined the holotype of *Ennea meneleki* PRESTON [Musée Royal de l'Afrique Centrale No. 17560] and believe that BACCI is correct in retaining it in *Gulella*. PRESTON's description is somewhat misleading. The suture is only very slightly crenellate and the "bistrangulation" of the last whorl is not marked and does not correspond to any lamellae on the outer lip; there is a very deeply inset tooth only. The original figure of this species is quite useless so I am refiguring it here (Fig. 6).

R e f e r e n c e s .

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