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A NEW LAND SNAIL, *CURVELLA TRANSVAALENSIS*, FROM SOUTHERN AFRICA (GASTROPODA, PULMONATA: SUBULINIDAE)

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(With one Text-figure)

ABSTRACT

A new species of *Curvella* from the Transvaal and Rhodesia is described.

INTRODUCTION

Among the land mollusc material submitted for identification by Mrs E.A. Voigt of the Transvaal Museum there is an undescribed species of the pulmonate gastropod family Subulinidae. The family has a circumtropical distribution and many species have been recorded from the Ethiopian Region. In southern Africa, i.e. Africa south of the Zambezi and Cunene Rivers, about 80 species belonging to 11 genera have been identified. Since Connolly's South West Africa paper and his monographic survey (Connolly, 1931:297-307, 1939:327-68) the following eleven new taxa have been described:

Xerocerastus herero Zilch, 1939; *X. niethammeri* Zilch, 1939; *X. pegeoides* Zilch, 1939; *X. minutus* Zilch, 1939; *X. ovulum* Connolly, 1941; *Euonyma damarica* Jaeckel, 1962; *Pseudoglessula hamiltoni* van Bruggen, 1966; *P. haackei* van Bruggen, 1966; *Curvella amicitiae* van Bruggen, 1968; *Xerocerastus niethammeri jaeckeli* Zilch, 1973 and *X. pseudosericus* Zilch, 1973.

Genus *CURVELLA* Chaper, 1885

This genus has a tropical African and southern Asiatic distribution.

Curvella transvaalensis spec. nov., text-fig. 1.

DIAGNOSIS: A medium-sized, comparatively slender, species with six to six and a quarter whorls with little sculpture.

DESCRIPTION: Shell (fig. 1) medium-sized, slender, subulate, major diameter approximately at apex of aperture, (sub)rimate, glossy, uniform broken white (in fresh condition very probably transparent), almost smooth. Spire produced, sides practically straight, apex narrowly rounded. Whorls six to six and a quarter, regularly increasing, convex, faintly sculptured with fairly straight growth lines; suture well-defined, rather shallow, slightly filiform. Length of last whorl considerably more than half the total length of the shell. Aperture comparatively short, subovate, labrum sharp, thin, erect and somewhat arcuate in profile, columella straight, almost perpendicular, margin of columella triangularly reflexed over the (very) narrow umbilicus.

Animal unknown.

Measurements of shell: 7,6–8,9 × 3,2–3,9mm, ratio length/major diameter 2,26–2,48, last whorl 4,5–5,0mm, aperture 2,9–3,4 × 2,0–2,2 mm, 6–6½ whorls. Holotype shell: 8,9 × 3,9mm, ratio length/major diameter 2,29, last whorl 4,9mm, aperture 3,4 × 2,2mm, 6½ whorls (Table 1). A damaged shell may have reached a length of ± 10mm, major diameter 3,7mm, ratio length/major diameter approximately 2,67, 6½ whorls.

TYPE MATERIAL: South Africa, Transvaal, Messina District, Mapungubwe (22°12'S, 29°22'E), farm Greefswald 37. Material collected while screening archaeological deposits dated to between 1000 and 1200 A.D. by Prof. J.F. Eloff, c.s. during excavations on K2 and Mapungubwe Southern Terrace. Holotype (TM 11261), paratypes 3–7 (TM 11262–11266) and numerous, mainly immature, paratypes in Transvaal Museum, (TM 11267); paratypes 1–2 and a number of previously unnumbered paratypes (RMNH 55260) in Rijksmuseum van Natuurlijke Historie, Leiden; paratype 8 (TM 11268) and nine immature paratypes (TM 11269) in Transvaal Museum; one paratype (RMNH 55261) from Rhodesia, Buhera/Chipinga Districts, Birchenough Bridge, January 1938 (collector unknown) in Rijksmuseum van Natuurlijke Historie.

The new species is close to *Curvella elevata* Burnup, 1905. This is a somewhat rare species so far only known from the type locality Grahams-town in the eastern Cape Province. The holotype (BM 1905.8.11.6) and another sample ex M. Connolly, labelled "ants nest above Fern Kloof" (Grahamstown), were examined in the British Museum (Natural History), London. *C. transvaalensis* appears to differ in reaching a larger size with only six whorls (maximum for *elevata*: 7,9mm, 6½ whorls), its comparatively more convex whorls, its more obese shell (ratio length/major diameter of shell in *elevata* is under 2,20) and its less acute (pointed) apex. The relationship of the two taxa *elevata* and *transvaalensis* is obscure and may be on a subspecific level. In view of our as yet limited knowledge of the relationships within the genus in southern Africa and the distance between the known centres of distribution and consequent difference in

habitat, the Transvaal/Rhodesia taxon is provisionally considered to represent a new species.

The new species also somewhat resembles *C. shimbiense* Preston, 1910. Recently, the present author was able to examine seven paratypes in the Forschungsinstitut Senckenberg (Frankfurt-am-Main, German Federal Republic). The sample bears the No. 5084 and is from the Shimbi Hills, eastern Kenya. *C. shimbiense*, the status of which is as yet uncertain, has less convex whorls than *transvaalensis*, the sculpture (growth lines) is somewhat more pronounced, the suture is shallower and the apex is slightly more acute. Moreover, the suture lines in front view are less horizontal than in the new species.

C. transvaalensis was found to be accompanied in the archaeological samples from the northern Transvaal by the following four species of terrestrial molluscs: *Succinea badia* Morelet, 1868, *Pupoides calabaricus* (Boettger, 1886), *Achatina immaculata* Lamarck, 1822, and *Xerocerastus burchelli* (Gray, 1834). These are all adapted to a life in arid savanna types of vegetation and climate. *Succinea badia* here reaches its easternmost limits and has so far not been reported from the Transvaal. The other three species are more widely distributed and still occur locally, e.g., in the northern districts of the Kruger National Park (van Bruggen, 1966). The Rhodesian specimens of *transvaalensis* were found together with *Edouardia metuloides* (Smith, 1899), *Subulina turtoni* Connolly, 1923, and *Pseudoglessula boivini* (Morelet, 1860). These species may have been obtained from a somewhat more humid pocket around Birchenough Bridge in an otherwise arid area (Sabi River valley).

ACKNOWLEDGEMENTS

Credit is due to Mrs E.A. Voigt for her painstaking work in sorting out the mollusc material while dealing with the associated faunal remains from the archaeological site. The continued use of the museum facilities in London and Frankfurt-am-Main is gratefully acknowledged.

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TABLE 1. Measurements of holotype and eight paratypes of *Curvella transvaalensis* spec. nov. are given in mm. The ratio length/major diameter (l/d) has been computed from micrometer readings. Holotype and paratypes nos. 1-7 are from the type locality, Mapungubwe; paratype no. 8 from Birchenough Bridge.

Museum number	specimen	length \times major diam.	l/d	last whorl	aperture	whorls
TM 11261	holotype	8,9 \times 3,9	2,29	4,9	3,4 \times 2,2	6 $\frac{1}{4}$
RMNH 55260	paratype 1	8,7 \times 3,9	2,26	5,0	3,0 \times 2,1	6
RMNH 55261	paratype 2	8,6 \times 3,7	2,30	5,0	3,2 \times 2,1	6 $\frac{1}{4}$
TM 11262	paratype 3	8,4 \times 3,7	2,23	5,0	3,1 \times 2,1	6
TM 11263	paratype 4	8,4 \times 3,6	2,31	4,9	3,0 \times 2,0	6
TM 11264	paratype 5	8,2 \times 3,5	2,36	4,7	3,1 \times 2,1	6
TM 11265	paratype 6	7,7 \times 3,4	2,29	4,6	2,9 \times 2,0	6
TM 11266	paratype 7	7,6 \times 3,2	2,35	4,5	3,0 \times 2,0	6
TM 11267	immature					
TM 11268	paratype 8	8,4 \times 3,4	2,48	4,6	3,1 \times 2,1	6
TM 11269	immature					

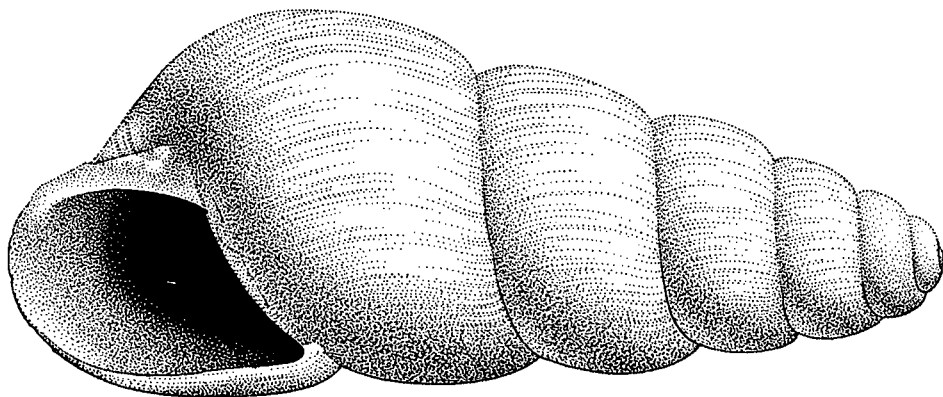


FIG. 1. Holotype shell of *Curvella transvaalensis* spec. nov., highly enlarged, in Transvaal Museum; H. Heijn del.