

**Notes on a damaged shell of *Cypraea carneola* L.**

(Notes on South African marine Mollusca 8 \*)

by

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All molluscs are able to repair their shells in case of not too serious damage. Damaged shells are particularly well known among species which are exposed to hazards such as an arboreal existence (tree snails, Achatinidae), life on rocky coasts with a heavy swell, etc. Repaired shells of Cypraeidae are usually quite common and testify to the tenacity of the species in this group (cf. e.g., SCHILDER, 1930).

Recently the Natal Museum, Pietermaritzburg, South Africa, received a fresh adult, heavily damaged but beautifully repaired, shell of *Cypraea carneola* L. (pl. 2 figs. 1, 2) that had been found by Mr. N. J. BLEEKER in 1964 at Pennington on the Natal South Coast. The specimen must have suffered considerable damage, probably due to a rockfall or kindred mishap. It is quite distorted, mainly on the dorsum. Two vertical lines with some pits indicate the area where a long and fairly narrow strip of the shell has been broken and subsequently had to be replaced (text-fig. 1, zone 2 is the repaired area). All this has resulted in a peculiar pattern on the dorsum; zone 1 is normal, the repaired zone 2 is much more intensely patterned than the others, while zone 3 is even paler than zone 1 and appears to show a repaired minor crack which separates it from zone 4, which once more is quite normal. It is likely that zone 3 is part of the original shell, while zone 2 is a replacement as shown by its particularly marked pattern; the latter zone is 9 mm wide. The colour bands in the pattern have not shifted as frequently happens in damaged shells; this shows that the surface of the mantle underneath has not been damaged too seriously. The whole shape, pattern and sculpture of the shell have thus become noticeably abnormal.

For comparison a number of adult shells in the same size range from the coast of Natal have been measured and the teeth counted; all specimens belong to the Natal Museum. The following table shows the measurements in mm; in the fourth column the figure for the major diameter of the base of the shell has been divided into three

\*) Do. 6, vide Ann. Natal Mus., vol. 15, pp. 267-272, 1962; 7, vide Bas-  
teria, vol. 30, pp. 15-18, 1966.

components, viz., firstly the width of the inner lip, secondly that of the aperture and finally that of the outer lip (terminology of SCHILDER & SCHILDER, 1938-39).

locality and particulars	length	major diameter	maj. diam. subdivided	height	col. teeth	lab. teeth
Umhlali (very inflated)	47.7	31.7	17-3.7-11	25.6	27	26
Kelso Junction (abnormally broad)	44.3	28.2	15-3.2-10	22.9	23	25
Pennington (damaged shell)	42.4	28.0	14-4-10	19.8	23	27
Isezela	42.0	25.5	15-2.5-8	20.5	26	26
Isipingo (NM 725)	37.1	24.3	13-3.3-9	19.6	23	24
Do.	36.8	24.7	12-3.7-8	19.8	22	26
Scottburgh	36.5	21.7	12-2.7-7	19.2	21	22
Port Shepstone	36.3	23.0	12-3-8	19.7	21	21
Scottburgh	34.3	21.7	12-1.7-8	18.1	24	24

In Natal the species ranges from 23-48 mm, the average length of 15 being 39 mm and the "average relative breadth as a percentage of the length" 64. SCHILDER & SCHILDER (*op. cit.*) note that the western subspecies, *C. carneola sowerbyi* Anton, 1839, occurs on the East African coast as far south as Algoa Bay (Port Elizabeth); their average length is 33 mm and "average relative breadth as a percentage of the length" 62. This shows that shells from the coast of Natal are well above the average length and major diameter of the subspecies as a whole.

Surprisingly these measurements show that the Pennington specimen is hardly abnormal, because all measurements and ratios (e.g., length/maj. diam., length/height, maj. diam./height, etc.) are within the variation of normal specimens of the area. The plotting of these figures in graphs compels one indeed to accept the fact that the specimen is almost normal except for its apical contour (pl. 2 fig. 2), which is very difficult to express in figures, and its dorsal pattern and sculpture. The outline of the shell is also somewhat aberrant and the

aperture is slightly too wide in relation to the length of the shell (see third column in table). Shells of Cypraeidae and allied groups are particularly prone to individual variation and it is indeed very difficult to find two reasonably identical specimens, even in a single population. This may account for the fact that at a first glance the specimen under discussion looks quite abnormal, although obviously it really is not.

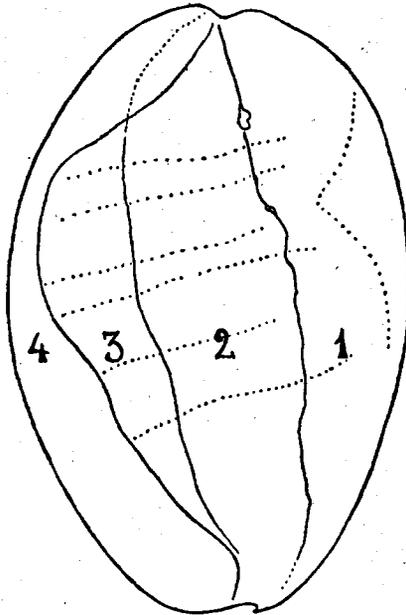


Fig. 1. Schematic drawing of dorsum of damaged shell of *Cypraea carneola* L. from Pennington, Natal. Actual length 42.4 mm. Explanation in text.

#### REFERENCES

- SCHILDER, F. A., 1930. Missbildungen an Schalen der Cypraeacea (Moll. Gastr.). Zeitschr. Morph. Ökol. Tiere, vol. 19, pp. 144-159.
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