

THE COWRIES OF THE EAST AFRICAN COASTS

Supplement III

By

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This short supplement is devoted to a few brief additional records which have come to my notice mainly through the collectors calling on me with specimens for identification; I am also indebted to W. Old Jr. of Norfolk, Va., U.S.A., for some records based on material sent to him from Zanzibar by Mr. Hashim Makame.

In a recent paper (Proc. malac. Soc. 33, 278-287 (1960)) Alison Kay has demonstrated that only two anatomical categories appear to be distinguishable in the *Cypraeinae* and that these cut right across existing systems of generic classification; she therefore concludes that only one genus *Cypraea* should be retained for species of the *Cypraeinae*. I have retained the other names in brackets for ease of reference but they are not even proper subgenera.

Cypraea (Erosaria) gangranosa

Very few specimens of this rare cowry have come to hand. Kenya, Ukunda, "Sandy Bay". inner reef (M. J. H. Liversidge).

Cypraea (Erosaria) helvola

Zanzibar, up to 3.2 cm. (W. Old).

Cypraea (Erosaria) poraria

Kenya, Shanzu (Metcalf).

Cypraea (Erosaria) erosa

Zanzibar, up to $5 \times 2.7-3$ cm. (W. Old.).

MILLET COWRY

Cypraea (Erosaria) inocellata Gray (= *miliaris* auctt. non Gmelin)

Fig. 1.

Description: Shell ovoid-pyriform, about 3 cm. long, rather narrowed and produced at bottom end. Back bistre with dense, but faint and obscure small white spots of various sizes. Edges white, pitted, the left-hand one margined. Base white but with a faint yellowish tinge about the teeth. I am accepting Steadman and Cotton's change of name for this species.

Zanzibar, Bawi Island, found by Mr. Kanyani, a native fisherman, who gave it to Mr. Mehta (communicated by Mrs. C. D. Knight).

This species is not recorded by the Schilders from west of Malaysia, N. Australia, Japan and Central Melanesia. The Zanzibar shell does not fit very well with the description of any of the described races and may belong to a new one. Further material is required. There seems to be no doubt as to the authenticity of the record. Schilder remarks (p. 138) that *miliaris* (as he called it) might be regarded as a race of *lamarckii* but that the two were quite separate in their distributions. This new record disposes of that idea.

Viader does, however, record the species in his catalogue of Mauritius molluscs but that is a rather uncritical compilation. In my original key the species would key to couplet 49, assuming the teeth to be uncoloured as would almost certainly be the case. It differs from *cribraria* in being larger and in having much more obscure, smaller spots on a much paler ground, and from *vitellus* in being usually smaller and paler, with far less obvious spots and also by lacking the bands and fine hair lines on the left side.

Cypraea (Erosaria) turdus turdus

Kenya, Shanzu (Metcalf) (not seen).

Cypraea (Erosaria) turdus zanzibarica Sullioti

A shell 3.8 cm. long and 2.9 cm. wide with remarkably thickened margins (in much the same way as *caput-serpentis* is margined) was found at Port Reitz, Mombasa, Kenya (C. J. Metcalfe). This shell is much larger and very dissimilar to the races found in the Red Sea etc., or even at Lamu and I can only assume it is a true specimen of race *zanzibarica* which although described from E. Africa does not appear to have been recorded since then. Mr. Metcalfe actually found two specimens; I have examined only one.

Cypraea (Erosaria) marginalis

Fig. 3.

Although there is still not a fresh specimen of this in the Coryndon Museum collections several private collectors have excellent specimens.

Kenya, Waa Beach (Davison); Diani Beach, inner reef (M. J. H. Liversidge); mouth of Tiwi River and in Maida Creek (Hennings); Shanzu, outer reef (Metcalf).

Cypraea (Erosaria) lamarckii

Kenya, Port Reitz (Metcalf) (including two peculiar specimens, one very pale and abnormally coloured and another with an exceedingly thick calloused margin quite distinct from the normal form but only a variant); Zanzibar, up to 5.1×3.1 cm. (W. Old).

Cypraea (Monetaria) annulus

Zanzibar, up to 3.1. × 2.2. cm. (W. Old).

Cypraea (Monetaria) moneta

Zanzibar, up to 3.3 cm. long (W. Old). Mr. Old points out that *C. moneta* rarely has an annular ring which may account for some of the reports of hybrids between this species and *C. annulus*.

Cypraea (Blasicrura) owenii

Kenya, Waa Beach (Davison); Diani Beach (Miss G. Benton). Tanganyika, Dar es Salaam (Haywood) (figured in fig. 2. from a photograph kindly supplied by the collector); Zanzibar (Barton). Fig. 2.

Cypraea (Blasicrura) stolidia

Kenya, Shimoni (Benton, Hennings, 7 specimens in all); Shanzu (Metcalf, two specimens); Zanzibar, three specimens entirely lacking the central blotch (C. D. Knight *et al.*).

Cypraea (Cribraria) cribraria

Mr. Old has suggested that the specimens from Shanzu in the collection of Mr. Penn mentioned in Supplement II may be *C. esontropia* Duclos a species not recorded from E. Africa but which occurs in Mauritius. This species is anyway very close to *cribraria* and probably no more than a variety of it. I would welcome material so as to settle the question of its identity, by sending it away for comparison with authentic material.

Cypraea (Luria) isabella

Zanzibar, up to 4 cm. long (W. Old).

Cypraea (Cribraria) teres

Tanganyika, Mtwara, a very small specimen, 1.7 × 0.9 cm. (Childs). Mr. Childs thought this might be *C. subteres* but that is a S.E. Polynesian species.

Cypraea (Palmadusta) punctata

Kenya, Shimoni (Benton & Metcalfe) (three specimens).

A form 18 mm. long and 10.5 mm. wide, with salmon-coloured back and very pronounced deep brown spots, not at all typical. Kenya, Ukunda, "Sandy Bay", inner reef (M. J. H. Liversidge).

Cypraea (Palmadusta) asellus

Kenya, Shimoni (Benton & Metcalfe) (one).

Cypraea (Palmadusta) ziczac

Kenya, Port Reitz (Miss A. Benton) (one).

SMALL-TOOTHED COWRY

Cypraea (Palmadusta) microdon Gray subsp. *chrysalis* (Kiener)*

In my original paper I mentioned that there was a fossil record of this species from Mombasa; I am indebted to Mrs. C. D. Knight of Zanzibar for pointing out to me that I had confused two species under the name *fimbriata*, one of which has proved to be *microdon*. Some time ago Mrs. Knight sent me a single small cowry from Zanzibar which, I must admit, I did not examine carefully enough; I named it *fimbriata*. In August, 1960, Mrs. Knight queried this after she had noticed it was quite different from her other specimens of *fimbriata* and she sent me three *fimbriata* and one *microdon* also from Zanzibar. These two *microdon* are the only ones I have seen but I expect if every collector overhauls their *fimbriata* after reading this, a good many more specimens will be found. Mr. Haywood wrote to me a few days after I received Mrs. Knight's letter and states that he also has seen two specimens of this species from Zanzibar.

Shell elongate-ovoid, somewhat cylindrical, closely resembling *C. fimbriata* in shape, 13-15 mm. long and 7-7.5 mm. wide, pale yellow-brown above or bistre, with about three vague darker bands above limited by transverse lines of brown subquadrate spots. The ends are spotted with lilac-purple, the twin spots at both ends being visible from above and below. The base is white save for the bands which enter the columella side of the mouth. The teeth are exceedingly fine and the mouth much less dilated below than it is in *fimbriata*. Careful examination of the teeth will immediately separate this species from *fimbriata*. In the latter there are 16 teeth on the outer lip per centimetre and in *microdon* there are at least 25 per centimetre. The basal columella teeth are also much more widely spaced in *fimbriata*.

Cypraea (Callistocypraea) testudinaria

Kenya, Waa Beach (Davison); Tanganyika, Kilwa District, Kiswere (Kirkby).

* M. J. H. Liversidge has now found this on the Kenya Coast at Diani beach; he is publishing details in a separate note.

Cypraea (Mauritia) mappa

Kenya, Shanzu (Mrs. Cowen fide Benton); Zanzibar, 7.3 cm. long, 1957 (W. Old). This appears to be frequent in Zanzibar.

Cypraea (Mauritia) arabica

Zanzibar, Fumba Island, 8.4 × 5.1 cm. (W. Old).

Cypraea (Mauritia) depressa

Kenya, Tiwi (Mrs. Hatfield).

Since very few records have been previously received from Dar es Salaam* it seems worth while to give in full a report received from E. T. Haywood, Umkomaas, Natal, who has collected in that area.

"*Cypraea (Pustularia) globulus*: I know of no one who has found a specimen in and around Dar es Salaam.

"*Cypraea (Pustularia) cicercula lienardi*: I have found a *very* beach-worn specimen in Dar es Salaam during the last three months, but otherwise I know of no one who has found a specimen, dead or alive.

"*Cypraea (Staphylaea) staphylaea*: In the past a reasonable number of these were to be found in the Dar es Salaam area, but on a visit of just over three months recently I never found a single specimen alive. I have two pale brown variants, collected several years ago in Dar es Salaam—somewhat similar, I imagine, to the specimens of *C. limacina* mentioned in your Supplement II as having been found by Mr. Bentley, but I am unable to say if age has anything to do with it, as I cannot remember now if they were alive when taken. I doubt it, although they do not appear to be very beach-worn.

"*Cypraea (Staphylaea) limacina*: The remarks I have made in the first sentence above, relative to *C. staphylaea* apply.

"*Cypraea (Staphylaea) nucleus*: I know of no one who has found a live specimen in the Dar es Salaam area. Beach-worn specimens occasionally appear, and three months ago I got one measuring 3.5 cm. in length.

"*Cypraea (Erosaria) helvola*: Common in the Dar es Salaam area.

"*Cypraea (Erosaria) caput-serpentis*: Not plentiful, but at the same time not uncommon.

"*Cypraea (Erosaria) erosa*: Fairly common in the Dar es Salaam area. I have one specimen collected at Dar es Salaam which has no trace of a blotch on one side, and only the minutest mark on the other side—about the size of a pinhead. The shell is thus virtually blotchless. I mention this having regard to the first sentence when you dealt with this shell in Supplement II, and to your 'Note' in the original paper of June, 1954.

"*Cypraea (Erosaria) marginalis*: No trace dead or alive.

"*Cypraea (Erosaria) lamarchii*: In Dar es Salaam and its environs I have never seen a specimen, dead or alive, on the reefs or beaches during the daytime. Out at night, with a torch at very low tide, on a muddy bottom, adhering to and surrounding the base of stakes planted by Africans for affixing their fishing nets, and at low water mark, I have found as many as 24 in one night—in fact the only night I tried.

"*Cypraea (Erosaria) poraria*: None has been found in the Dar es Salaam area as far as I know.

"*Cypraea (Erosaria) turdus*: Same remarks as under *poraria*.

"*Cypraea (Monetaria) annulus*: Your note in Supplement II leads me to observe that on a recent visit to Dar es Salaam I collected a similar specimen, save that the orange-brown extends faintly from about the centre of the dorsum, and getting really dark all round one side between the "annulus" and the margin, and faintly on the other side. I thought when I just picked it up that it was a weirdly coloured "*moneta*", but no, it is undoubtedly "*annulus*". I also have *C. annulus* without the "annulus".

"*Cypraea (Monetaria) moneta*: I have one from Zanzibar which measures 3.46 cm. in length and 2.27 cm. in width.

"*Cypraea (Erronea) onyx*: I have never heard of a specimen dead or alive being found in the Dar es Salaam area.

"*Cypraea (Erronea) caurica*: Fairly common in the Dar es Salaam area. I have a *juvenile* from Zanzibar which measures 5.13 cm. in length.

* Since this was written I have seen a proof copy of Mr. Spry's valuable illustrated account of the shells of Dar es Salaam but Mr. Haywood's list is still worthy of reproduction.

"*Cypraea (Palmadusta) clandestina*: Uncommon, but I have collected about ten specimens in the last three or four years.

"*Cypraea (Palmadusta) asellus*: I have not heard of anyone collecting a dead or a live specimen in the Dar es Salaam area.

"*Cypraea (Palmadusta) ziczac*: Unknown in the Dar es Salaam area, as far as I know.

"*Cypraea (Palmadusta) diluculum*: Rare in Dar es Salaam area. I have *only once* come across three together, and I know of no one else who has come across any at all.

"*Cypraea (Palmadusta) felina*: I have only found isolated specimens in and around Dar es Salaam, save at outer Sinda Island during 1956, where I picked up this species under almost every stone I turned over in a particular locality of somewhat dead reef. Obviously they were somewhat localised, and whether or not they are to be found there today I cannot say.

"*Cypraea (Palmadusta) fimbriata*: During 1956 and 1957 I found quite a number of these, about 18, at Kendwa Island, but on several visits paid to the same parts during the last four months I never came across one.

"*Cypraea (Palmadusta) gracilis*: No sign in the Dar es Salaam area.

"*Cypraea (Palmadusta) punctata*: In years of shelling in and around Dar es Salaam I have only found two, and they were together under the same stone.

"*Cypraea (Blasicrura) kieneri*: During 1956 and 1957 I collected quite a number of these—only isolated specimens—but visiting the same haunts on various occasions during the last four months I never came across a specimen at all.

"*Cypraea (Blasicrura) stolidia*: I have never heard of anyone collecting a specimen in the Dar es Salaam area. When in Zanzibar recently—they do not appear to be uncommon there—I was shown, in the collection of Mrs. Dalton, a "live" specimen with no blotch on the dorsum, and without the marginal streaks.

"*Cypraea (Cribraria) teres*: During 1956 and 1957 I would have described this species as common on Kendwa Island, Dar es Salaam, but recently I only came across two or three there, and none elsewhere in the Dar es Salaam area.

"*Cypraea (Cribraria) chinensis*: Never plentiful in the Dar es Salaam area, but during 1956 and 1957 I collected about ten fine specimens on Kendwa Island. On several recent visits to the island I saw no sign of them.

"*Cypraea (Cribraria) cribraria*: My observations with regard to "*chinensis*" apply.

"*Cypraea (Luria) isabella*: Common in the Dar es Salaam area.

"*Cypraea (Callistocypraea) testudinaria*: Save for the one referred to in your Supplement II, I have never heard of anyone collecting a live specimen in the Dar es Salaam area. In 1955 I found a *very dead* specimen under a stone at Kendwa Island, and how I wished it had been worth keeping, as it measured 13.44×6.7 cm. It was a monster. It is a shell which turns up periodically in Zanzibar, and I have three specimens, all "alive" from there, the largest of which measures 11.45 cm. in length.

"*Cypraea (Talparia) argus*: It appears to be easy enough to obtain beach-worn specimens in a certain locality in Zanzibar, but it is *very* difficult to obtain a live specimen. I have a fine specimen from Zanzibar, which measures 8.6 cm. in length. (M. A. Kirkby reports very worn specimens from Kiswere haven in Kilwa District. B.V.)

"*Cypraea (Talparia) talpa*: I agree with the first sentence in your Supplement II. I have collected specimens in the Dar es Salaam area, but very infrequently.

"*Cypraea (Mauritia) mappa*: I have never heard of anyone finding a specimen in the Dar es Salaam area. It is obtainable in Zanzibar, but is rather rare. I have three lovely specimens from Zanzibar, the largest of which measures 7 cm. One of my specimens is a peculiar green form, similar to your description of the green form of "*fimbriata*" in Supplement II, collected by Mr. Spry (I was with him when he found it, and I have thus seen his *fimbriata*). In my *mappa* the green pigmentation is also in no way superficial, but an integral part of the shell throughout. It is an interesting specimen.

"*Cypraea (Mauritia) scurra*: This species appears to be not uncommon in Zanzibar, but I have never heard of anyone finding a specimen in the Dar es Salaam area.

"*Cypraea (Mauritia) arabica*: Not uncommon in the Dar es Salaam area.

"*Cypraea (Mauritia) histrio*: Not uncommon in the Dar es Salaam area, where I have found quite a number. I found a fully adult specimen which measures only 4.35 cm. in length.

"*Cypraea (Mauritia) mauritiana*: Not plentiful in the Dar es Salaam area.

"*Cypraea tigris*: Very common in the Dar es Salaam area. I have collected a fully adult specimen measuring only 5.85 cm. in length, and yet another adult measuring 10.15 cm.

"*Cypraea lynx*: Very common in the Dar es Salaam area, where I collected one measuring 5.23 cm. in length.

"*Cypraea vitellus*: Fairly common in the Dar es Salaam area.

"*Cypraea carneola*: Very common in the Dar es Salaam area. I have a juvenile specimen from Zanzibar measuring 6 cm. in length."

I must add that I have not verified any of Mr. Haywood's records and that the report above is not altered in any way. He is naturally responsible for his own statements. I am very grateful to him for this valuable report from an area about which I have previously received little information.

ADDITIONAL NOTE ON SCORPION SHELLS.

Both Mr. Old and Mr. Spry have pointed out that in my note on the species of *Lambis* (this Journal 23, 146 (1959) I omitted mention of *Lambis scorpius* (L.) (= *L. scorpio* (Lmk.)). It is indeed this species which occurs in East Africa; *L. pseudoscorpio* Lmk. is known from a very few dubiously localised specimens in collections and the locality Zanzibar (one of the favourite vague localities beloved of older naturalists when they didn't really know the provenance of their specimens) is given by Reeve and others. Mr. Spry records *L. scorpius* from Dar es Salaam, Oyster Bay and Mr. Old from Zanzibar; there are specimens in the museum from Zanzibar and Kenya, Kikambala. In this species the third and fourth arms from the top, i.e. the first pair of lateral arms are free, whereas in *L. pseudoscorpio*, they are joined basally for a short distance.

(Received January, 1960)

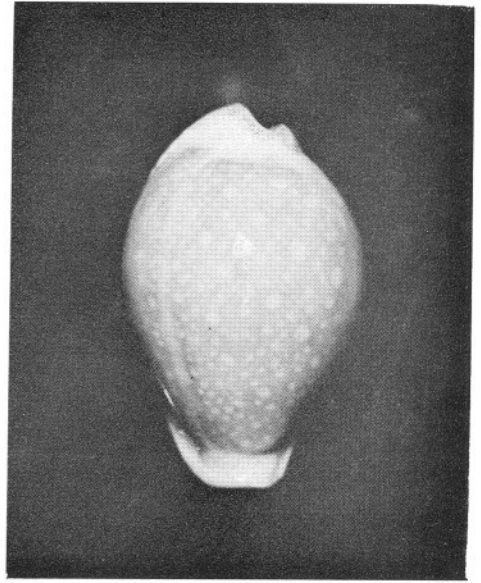
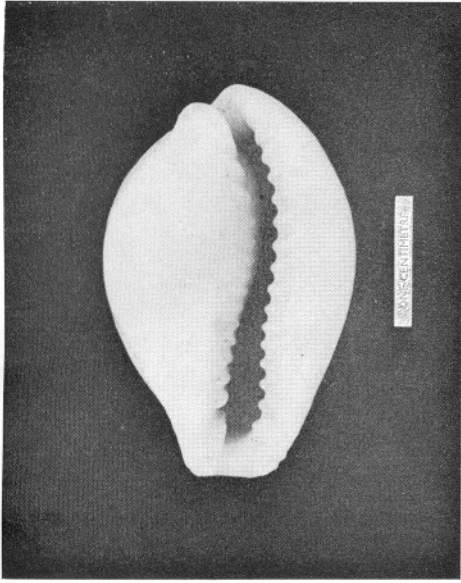


Fig. 1. Cypraea inocellata Gray, Zanzibar, Bawi Island, Kanyani (white line represents 1 cm.)

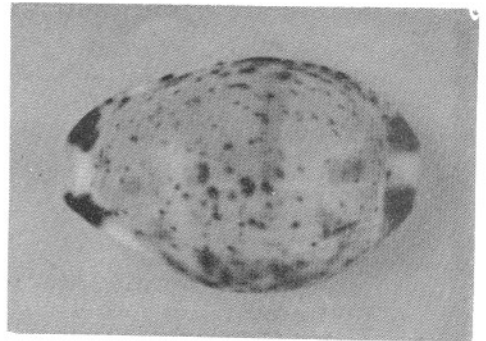
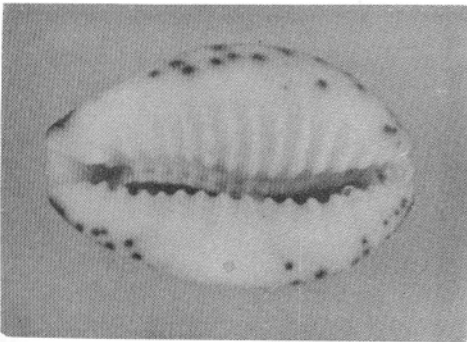


Fig. 2. Cypraea owenii, Dar es Salaam, Haywood (x3)

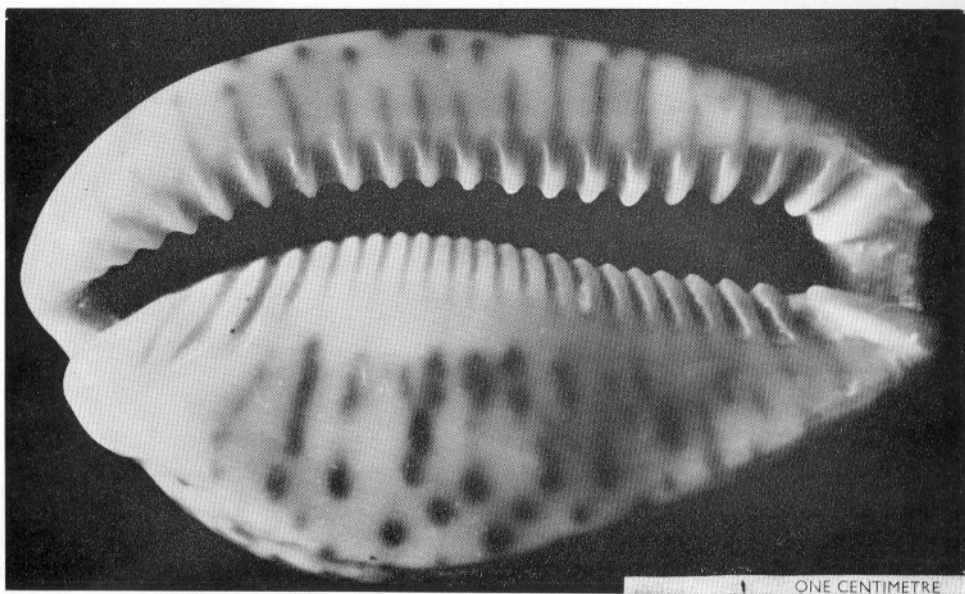


Fig. 3. Upper and lower sides of *C. marginalis*, Kenya, Diani, leg. Master M. J. H. Liversidge (photo. by T. V. Price, Esq.)