

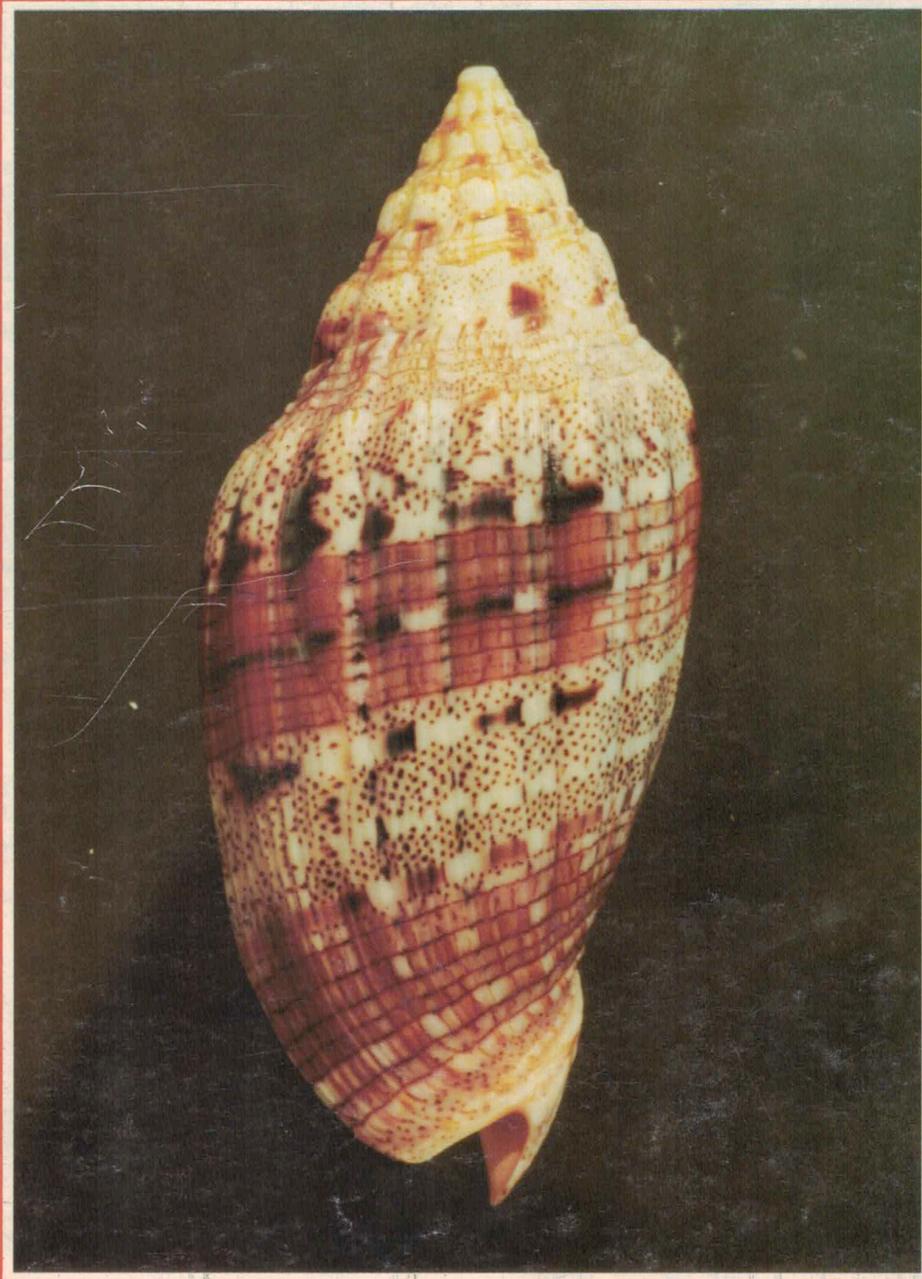
# La Conchiglia

## The Shell

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## OVERCASTING IN SOME COWRIES

Felix Lorenz Jr.

The melanism cum rostration typical of New Caledonia is not the only case of malformation among cowries. In fact, specimens from several localities around the world present a phenomenon that I find useful and appropriate to refer to as one of "overcasting". Their dorsal patterns are covered and obscured by a greenish, brownish, whitish, or in any other way unusual addition of callous matter. And this goes as far as distorting the shells themselves or even provoking rostrations of some importance.

Such freaks, of course, have long been known to malacologists, and many authors of the past created for them an array of varietal names, some of which are still kept alive by dealers in search of higher prices. What was never explained, however, is why the overcasting actually happens. Could its origin be traced back to changes in the biotop caused by man? The aim of the present article is to relate of some occasions on which the question seems likely to receive an affirmative answer.

In the mid Seventies, when, together with my parents, I began shelling in Tanzania, my attention was caught by certain "ugly" cowries offered for sale in a small souvenir shop of Stone Town, the traditional Indian and Arabic trading center of Zanzibar Island: the *tigris* had the weight and the colour of stones, with cancer-like growths and rostration; the *testudinaria*, already rare in the area, were superficially devastated by a sort of scabies; many if not most of the *scurra* were entirely brown, with thick sandcorns included in the enamel and the dorsal pattern not at all visible.

In those days, local fishermen collected shells systematically all around Zanzibar. The catch of each crew was packed in linen clothing and deposited with the Governmental Shell Store in town. Going through these fresh findings, one could really make a



*C. arabica gibba* - Ko Sak Isl. (Thailand); to the left, a normal specimen, to the right spec. from the destroyed area of the reef.

snatch! But encountering many freak shells or none at all depended on which sack one had emptied onto the dusty floor of the store: only certain species from certain localities were regularly affected by overcasting.

Further investigation and information provided by local dealers and collectors proved that one could indeed find overcast shells all around the island, or even along the mainland coasts, but an outstanding number of them came from Kama, a locality on the west side of Zanzibar. And that was precisely the place where the Zanzibar Sugar Factory discharged its dirty liquids into the Indian Ocean: from the plane one could easily see a brown cloud of polluted water drifting up and down the

coast with the changing tides. Suspecting a connection between the pollution and the common occurrence of freak shells in that area was therefore a spontaneous and well justified reaction.

And so it was in the case of a population of *Cypraea vitellus* that I later discovered on a muddy reef at Tanga, a beautiful little town a hundred miles north of Dar-es-Salam. Normally, shells from Tanga are locally famous for being magnificent examples of their species, but my *vitellus* were pale, with a silverish knobby layer of nacre covering the dorsum. All the specimens I found, about three dozen, were more or less overcast. After cleaning and drying them, I noticed that the overcasting was made of many very thin and rela-

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tively soft layers which changed colour with the light. Just like the oil originating from the boats of the nearby jetty and spread everywhere on the surrounding muddy bottom.

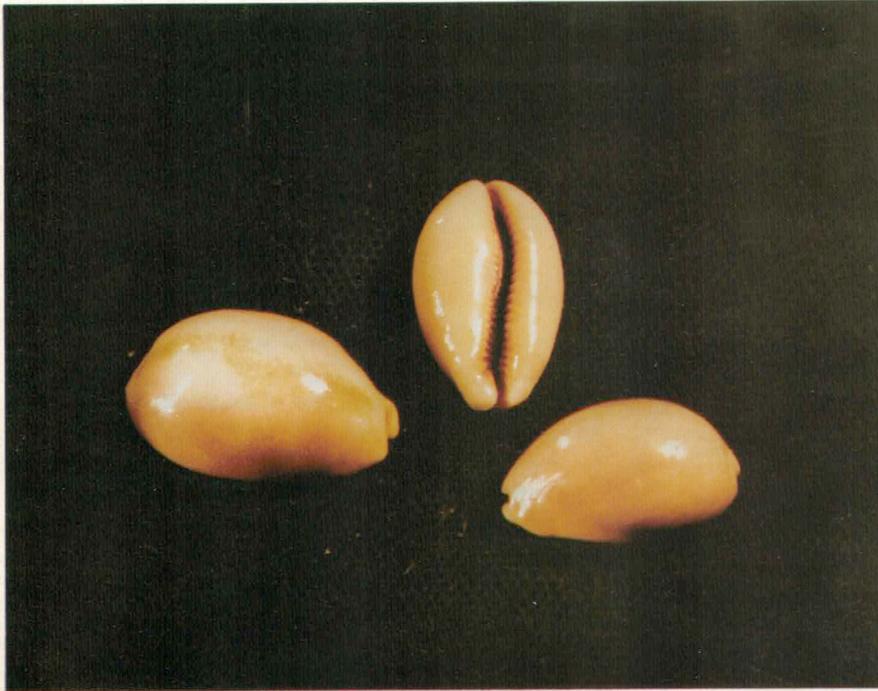
A third example of exceptionally numerous overcast cowries found in connection with a polluted or destroyed biotope was discovered by my father and me at the island of Ko Sak near Pattaya, Thailand, when we came upon a large population of *arabica gibba* Coen almost entirely formed by individuals presenting a greenish or greyish "coat" quite similar to

the Tanzanian overcasting. This population was restricted to the inner bay of the banana-shaped island, while other parts of the island bore only normal individuals. The corals of the inner bay were all dead, except for the fast growing species which had settled on the skeleton of the old reef. The native who helped us with the boat explained that five years earlier a lot of dynamite fishing had destroyed the reef and since then all shells were gone except the green ones. And indeed only where the reef was destroyed the overcast *gibba* were found.

On the whole, I think it would be interesting and rewarding to devote some more attention to the possible relationships between overcasting and man-caused alterations of biotopes such as the ones I have just described. Field collectors should be encouraged to note with great care anything that may seem important about the habitat of freak specimens and communities.

It remains to be explained that the additional layers causing the phenomenon in Zanzibar and elsewhere can be of two different kinds: (1) hard and translucent, not obscuring the dorsal pattern completely but giving the shell a golden or reddish hue; (2) thick and blisterly, of various and often mixed colours, capable of obscuring the dorsal pattern completely, but at the same time relatively soft, so that the rostrated parts can be chipped off like puff paste with the fingernails.

Both features may and in most cases do take place together, along with occasional melanism, additional patterns, irregular spotting, and even black blotches where there should be none. There may also be a ridge of callus, often black, crossing the dorsum longitudinally ("ridgeback"). The added weight of the shell may exceed 200%, the added length due to ro-

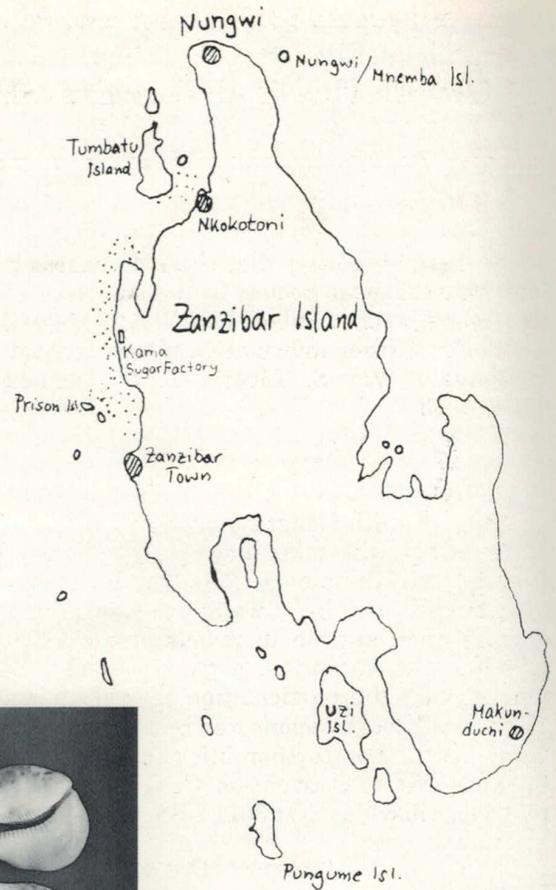


Overcasting in *C. carneola*

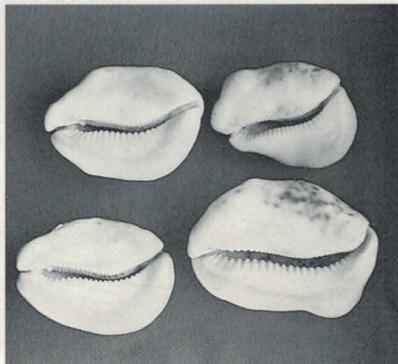
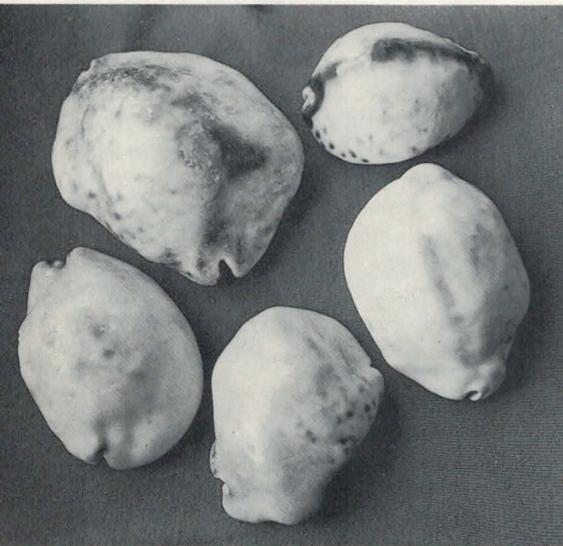


and in *C. onyx adusta*

stration reaching 40%. The number of the abnormal layers, considering that the average thickness of one of normal nacre is mm. 0.04 in *Cypraea tigris*, is estimated up to 500 in extreme cases.



Map of the Zanzibar Island: in the dotted areas overcasting is more common.



A series of *C. tigris* strongly deformed by overcasting. The largest specimen is 125 mm.

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