

The Strandloper

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Deep-water molluscs of South Africa : The Natal Museum Dredging Programme

by R.N.Kilburn and D.G.Herbert

*Hurrah for the dredge, with its iron edge,
And its mystical triangle,
And its hided net with meshes set
Odd [shell]fishes to entangle!
The ship may move through the waves
above,*

*Mid scenes exciting wonder,
But braver sights the dredge delights
As it roveth the waters under.
Then a-dredging we will go, wise boys!
Then a-dredging we will go."*

(from "The Dredging Song" by
E.Forbes, read at a meeting of the
British Association ca 1839.)

collection-orientated, being dependent for its raw data on actual specimens and their associated information. For this reason, taxonomy is practiced primarily in institutes such as museums and herbaria, which are the only suitable repositories for archival collections. The only institute in Africa, or among the countries of the western Indian Ocean seaboard, which is currently undertaking and publishing taxonomic research on marine molluscs (other than cephalopods), is the Natal Museum.

The association of the Natal Museum with the phylum Mollusca dates back over a hundred years, when the Natal Society - on whose collection the Natal Museum was founded - added to its exhibits a small display of shells. They were identified by a man who was to become the pioneer of malacology in Natal, Henry Burnup (1852-1928), a dedicated amateur who served as a honorary curator of molluscs in the Museum from about 1897 until his death. We regard 1897 as the beginning of the scientific study of molluscs at the Natal Museum, and indeed within South Africa as a

Introduction

The year 1993 saw the last cruise in the Natal Museum Dredging Programme. This highly successful project has provided a massive stimulus to South African malacology and will contribute greatly to the understanding of the wealth of mollusc species on the continental shelf and upper slope. We take this opportunity to provide a brief summary of the programme and its history.

Background

Taxonomy is the discovery and scientific description of species, and analysis of their relationships. By nature, taxonomic research is



Figure 1. The R.V. *Meiring Naudé* in Durban Harbour.

whole. Burnup published nine papers on pulmonates, and assembled for the Museum an extensive research collection, much of it identified by the foremost authorities of the day (such as Sowerby III, E.A. Smith and Tomlin), together with the nucleus of a malacological library.

On the foundation built by Burnup we have established not only the largest collection of molluscs in Africa (and at least the 4th or 5th largest in the southern hemisphere), but one that is used internationally by malacologists as the primary source of information concerning the molluscs of southern Africa and Mozambique. Indicative of this is the amount of type material (actual specimens upon which new species are founded) in the collection (currently about 2500 lots), and the number of malacological publications in which Natal Museum material has been cited (over 300 to date). Growth in the collection has derived from various sources (for example, institutional specialization enabled us to acquire the historically important shell collections of the Transvaal and Albany Museums in exchange for collections of other animal groups), but mostly through field-work. Additionally, some of our more appreciative collectors, in return for assistance rendered, have donated many scientifically important specimens to the collection.

Until relatively recently, existing collections of South African marine molluscs consisted predominantly of shore-collected material, which has heavily biased our knowledge of the fauna. In contrast, very much less is known about the equally diverse molluscan faunas of the continental shelf and slope. Indeed, almost all published information concerning these was derived from the dredge hauls made by the *S.S. Pieter Faure* in 1897-1901 and the *Deutsche Tiefsee Expedition (the Valdivia)* in 1898-99. It has long been obvious that an in-depth understanding of our marine molluscan diversity would never be gained without comprehensive

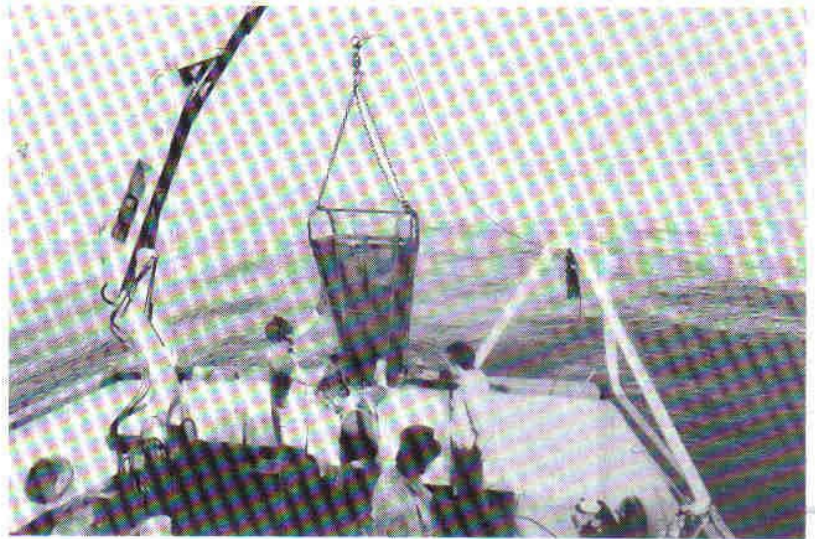


Figure 2. Hoisting the dredge, ready to lower it over the stern of the ship.



Figure 3. Hosing a sample through the graded series of sieves in the sorting table.

sampling of the shelf and slope fauna.

In 1981, the senior author realized a long-standing dream by successfully initiating the first cruise in an open-ended series which was called the Natal Museum Dredging Programme (NMDP). This was originally rendered possible through the block-funding of sea-time on the Durban-based CSIR research ship, the *R.V. Meiring Naudé* (Figure 1). Our broad aim was to sample the benthos (bottom fauna) of selected areas of the continental shelf and upper slope, primarily to secure comprehensive samples of molluscs for study. Initially, it was decided to concentrate our attentions on two of the most poorly-investigated areas, Transkei and Zululand, par-

ticularly as this would enable us to dredge off Natal *en route*.

We used modified Agassiz-style dredges (Figure 2), which during the early years had to be progressively remodified and strengthened to withstand the rough ground that we frequently encountered. On board, each dredge sample was washed through a sorting table comprised of a set of graded sieves (Figure 3), and the specimens picked out by hand for narcotization (relaxing) and preservation. Micro-molluscs (*i.e.* species with shells smaller than 5 mm) required different treatment, and instead the finest sediment fraction was frozen and brought back for processing in the laboratory. Non-molluscs were not overlooked, and throughout the

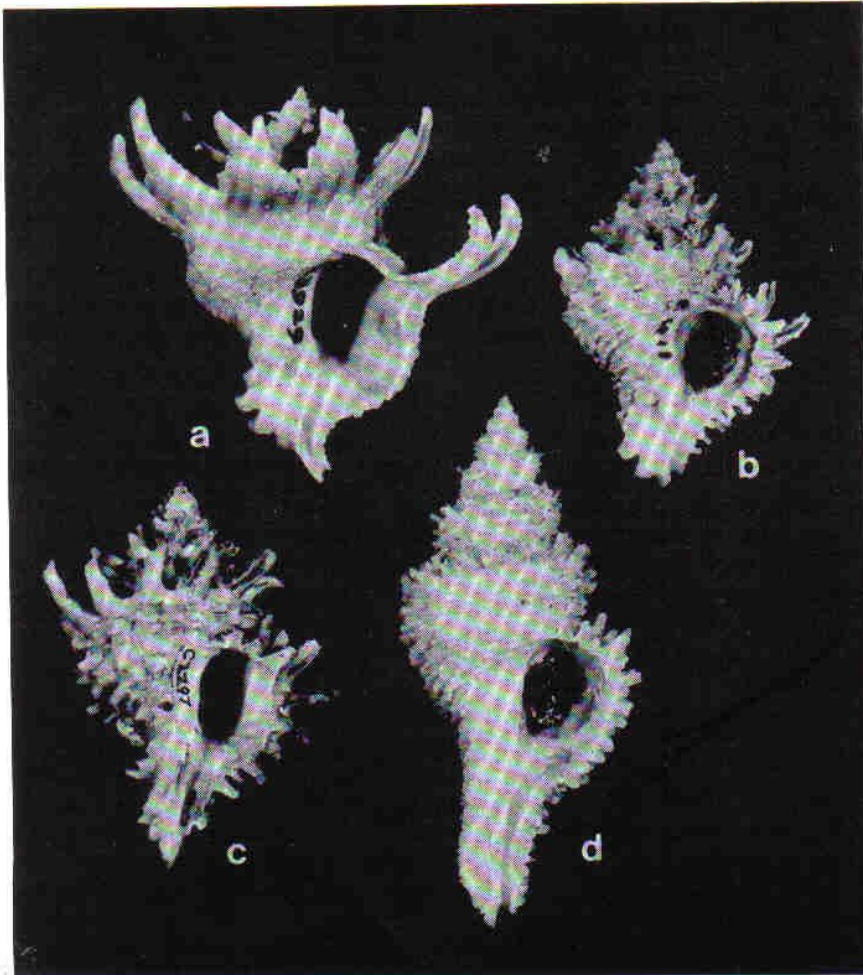


Figure 4. Four species of coral-associated gastropods (Family Coralliophilidae) dredged during NMDP, none previously recorded west of Indonesia; a) *Babelomurex deburghiae* (Reeve, 1857), dredged off Zululand (100-150 m), and b) *B. yumimarumai* Kosuge, 1985, c) *B. tosanus* (Hirase, 1908) and d) *B. filiaregis* Kurohara, 1959, all dredged off central Transkei (100-170 m).

programme material of various other groups was provided to interested institutes.

Phase 1. Transkei (1981-86)

Transkei was an ideal area for initiating the survey - not only had the region never previously been dredged, but it includes the zone of overlap between the faunas of the Agulhas Bank and the Natal shelf. In practical terms, this gave access not only to the molluscs of the two fauna regions, but the rich complexes of local endemics (*i.e.* species with a very limited range) which frequently characterize such areas of overlap.

Six years were devoted to the Transkei benthos. For logistic purposes the area of operation was divided into three geographic sectors, each of which was further split, more or less along the line of the shelf-break, into two bathymetric (depth-related) divisions. Within each sector we dredged systematically along a series of roughly equidistant transect lines drawn perpendicular to landmarks on the coast. The first three years were devoted to sampling each of the shallower sectors (*ca* 20 to 250 m) and the last three to the deeper water sectors (down to *ca* 500 m).

Off Transkei, as is the rule in the marine environment, clear distribution patterns are sometimes difficult to discern. For example the

ranges of a number of typical Agulhas Bank species, encountered as far north-east as Ubombo Head, were found to overlap those of Indo-Pacific ones; the latter not only included several tropical species not seen previously south of Durban, but even some coral-associated gastropods (Figure 4) not previously recorded west of Indonesia! A particularly interesting area was the Mzimvubu Bank, off the Port St Johns area (the only extensive muddy ground off Transkei), where the occurrence of a number of species thought to be restricted to Natal/Zululand, such as *Nassarius eusulcatus* (Sowerby, 1902), *Anadara africana* (Sowerby, 1904) and *Fissidentalium exasperatum* (Sowerby, 1903), was established. The outer fringe of this bank and adjacent continental slope proved unusually rich in undescribed micro-molluscs. Elsewhere off Transkei (and southern Natal) the outer edge of the continental shelf is mainly inhabited by sponge communities, tailing off in about 200-300 m. The upper continental slope usually consists of relatively barren sand and solitary-coral debris, but although it harbours a much poorer fauna than the shelf, the molluscs from slope stations included a high proportion of new species. Among the more striking new taxa so far described are *Anatoma yaroni* Herbert, 1986, *Splendrillia skambos* Kilburn, 1988, *Africotriton petiti* Beu & Maxwell, 1987, *Rutelliscala bombyx* Kilburn, 1985, and *Puncturella voraginosa* Herbert & Kilburn, 1986, to mention a very few.

Phase 2. Zululand (1987-90)

The Zululand shelf, selected for the next phase, represents another area of overlap, whose molluscs were known chiefly from a few samples dredged by the *Pieter Faure*. We divided the region into three areas of operation. The fauna of the northernmost part proved to be strictly Indo-West Pacific in origin, whereas most of southern Zululand is occupied by the wide, muddy expanse of the Tugela Bank, whose fauna includes a higher per-

centage of subtropical endemics. Tropical species were found to extend southward in shallow water nearly to Leven Point, but south of the Leven Canyon there was a marked decrease in their number (e.g. the niche occupied by the shallow-burrowing tropical *Glycymeris lividus* (Reeve, 1843) and *Limopsis multistriata* (Forsskål, 1775) is there filled by the subtropical *G. queketti* (Sowerby, 1897) and *G. connollyi* (Tomlin, 1926). The richest diversity of species encountered during the entire programme characterised the Sodwana-Kosi region of northern Zululand, necessitating two cruises to this area. Essentially a southward extension of the Mozambican fauna, the communities from sand and coral rubble at depths of 35-75 m included over a hundred previously unreported Indo-West Pacific species. Many undescribed species were also present (e.g. *Ethalia bysma* Herbert, 1992, *Inkaba tonga* Herbert, 1992, *Eucithara macteola*, *E. ubuhle* and *E. abakcheutos* Kilburn, 1992) probably reflecting the lack of previous studies on the benthos of the entire tropical Indian Ocean (one new species from northern Zululand, *Tylotiella papilio* Kilburn, 1988, has since been discovered in the Philippines).

The edge of the muddy Tugela Bank was encountered as far north as Neill Peak (Cunge). Not surprisingly, its molluscan fauna was considerably more diverse than that of the much smaller and temperate Mzimvubu Bank. Although a number of species occur in common, these all tend to be more abundant on the Tugela Bank, with a wider bathymetric range (e.g. *Macoma inclinata* (Sowerby, 1902) here lives at depths of 50 to 350 m, against 80-150 m on the Mzimvubu Bank, and *M. levior* (Sowerby, 1902) in 26-400 m, against 30-50 m). One taxon, the turrid *Tropidoturris fossata fossata* (Sowerby, 1903), appears to be endemic to the area, but the list may be extended when species still unidentified have been studied. Because of foul ground at depths below 200 m, we sampled mainly in shallower water in the

north, but like the Mzimvubu Bank the slopes in 200-350 m proved rich in undescribed micromolluscs.

Shortly prior to our last Zululand cruise the *Meiring Naudé* was sold to private enterprise. Fortunately, we were able to charter the R.V. *Sardinops* from the Sea Fisheries Research Institute.

Phase 3. The Western Cape (1991-93)

Phases 1 and 2 provided us with a usefully representative sample of the shelf and upper slope molluscs of eastern South Africa, and logically the next area to be sampled should have been the Agulhas Bank. Although the *Pieter Faure* dredged fairly extensively in this area, the vastness of this part of the continental shelf has prevented the emergence of any clear picture of its molluscan fauna. The fact that many of the species dredged on the Agulhas Bank and slope by the *Valdivia* have never been rediscovered is an indication of the incompleteness of our knowledge. Unfortunately, the *Sardinops*, the only affordable ship, is unsuitable for deep-water work (its winch, for example, is too small), and plans to sample the Agulhas Bank had to be abandoned. Nevertheless, in order to

balance the geographical spread of our taxonomic collections, we decided to devote the remainder of the funding cycle to sampling the south-western Cape shelf, the presumed area of overlap where the Agulhas Bank fauna mixes with that of the Atlantic shelf. For logistical reasons, it was arranged to store equipment at the South African Museum, which in return sent a representative on board to collect any material of interest to its staff.

For reasons beyond our control, we were able to complete only two cruises off the western Cape. The first cruise (1991) was intended to cover the extreme western Agulhas Bank, from Cape Point to Cape Agulhas, but problems with weather and facilities forced us to work mainly at depths of less than 100 m, and disappointingly few samples of the more interesting outer shelf fauna were obtained. The final cruise, off the St Helena Bay - Cape Columbine area, was perhaps the least productive of all, species richness on the shelf (where the substratum consists predominantly of green-black mud) being very low. Nevertheless, good samples of some very poorly studied species such as *Lucinoma saldanhae* (Barnard, 1964), *Tellina analogica* (Sowerby, 1904) and *Comitas saldanhae* (Barnard, 1958) were obtained.

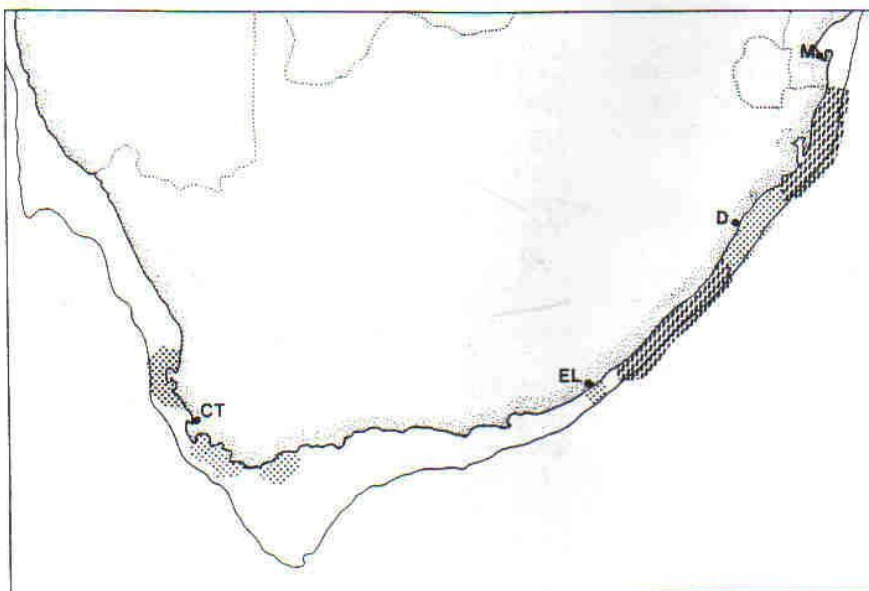


Figure 5. Map of southern Africa showing areas studied during NMDP; density of stippling reflects density of sampling. Continuous off-shore line represents approximate limit of continental shelf.

Overall results

In total the Natal Museum dredged 1011 stations (Figure 5); of these the highest component (about 372 stations) was located in Transkei waters. Because of the great quantity of molluscan material that has resulted from the programme, we ourselves can hope to document only a part of this, and we have attempted to obtain the co-operation of overseas specialists in various families. Currently, molluscs from this programme are being studied in 12 different countries by 27 other malacologists. To date, 164 new species (and 18 new supraspecific taxa) have been described from NMDP material, but

the vast proportion remains to be studied. As far as already-known taxa are concerned, in very many cases we at last have adequate series of fresh specimens, often with bodies available for anatomical investigation for the first time. Finally, all material is accompanied by accurate depth, substratum and locality data. There is no doubt that the results of the Natal Museum Dredging Programme will keep future malacologists busy for several decades to come.

(Opportunities to obtain deep-water material off our southern coast are not exhausted - through co-operation with the Sea Fisheries Research Institute, we have been able to undertake some dredging work on board the *RS Africana*,

during the course of the Institute's demersal (bottom-living) fish survey. This vessel is much larger than either of the two vessels that we have used previously, and is capable of surveying the entire Agulhas Bank and slope. We hope that more trips can be arranged in the future so that we can obtain samples from deeper, more far-flung areas.)

Acknowledgement

A slightly shorter version of this article appeared in the *S. Afr. J. Science*, vol.90, 1994, pp.446-448. The *Strandloper* thanks the SAJS for permission to use the material a second time.

A not so well-known murex

by

Laurie Smith

When you collect shells of a specific family, you reach a stage when the larger species are all in your collection and the smaller and less obvious species are missing. This is especially true of the tiny shells belonging to the genus *Murexsul*. Many collectors have *Murexsul nothokieneri* Vokes, 1978, in their collections, as good beached specimens from Still Bay to the Transkei are readily available. But the much scarcer *Murexsul kieneri* (Reeve, 1842) previously recorded as *Tritonalia kieneri* is seldom seen in collections. According to Kilburn it is a rare species restricted to the area Still Bay - Table Bay. It differs from *M. nothokieneri* in that the shell is



narrower with only eight varices per whorl and a more tapered protoconch. These differences are clearly visible in the photographs of the shells which are printed on pg. 12 of this issue.

Reference

Kilburn, R. and Rippey, E. *Sea Shells of Southern Africa*, MacMillan South Africa, 1982, p.82.

↔Close-up view of the intricate sculpture of *Murexsul kieneri* (Reeve 1842). Shown here at 40 times magnification. (Photo by Editor).

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Personal names in Southern African Conchology

The Society's Historian, Mrs Barbara Fouché has been compiling data on personal names in Southern African conchology for nearly five years. The result of this extensive labour of love is finally available, and has been published by the Society as Special Publication No. 5. The booklet, which is a rewrite of a topic last dealt with in the 60's, contains over 67 pages and makes fascinating reading. It includes a pocket biography of most of the persons named.

For example, after whom was the *filmerae* in *Pyrene flava filmerae* named? It was Mrs Agnes Filmer, who lived in Rookwood, Queens-town in the Eastern Cape in the late Nineteenth Century. Apparently she used to collect shells along the Pondoland coast and send them to Sowerby for examination. After she passed away, her collection was purchased by a Dr Becker, before eventually finding its way to the Natal Museum. This is just one of the hundreds of entries in the book-let! Incidentally, I wonder how Mrs Filmer actually travelled from Queenstown to her son, who was a farmer in Kokstad, and on down to the coast? I expect that the journey might have included sea travel (to Durban), carriage and horseback. It would have been quite an adventure! Special Publication No.5 is available from the Society (see elsewhere for address). It costs R32, including postage, to a country in Southern Africa. The inter-national price, with airmail postage, is US\$15.

Complex web

It has almost become a cliché to say that the living world is a complex web of interactions. However, it is true, and I would like to draw your attention to two remarkable examples that came to light recently.

Songbirds in The Netherlands have been found to be laying defective eggs and are declining in numbers¹. Now you might not think that this has anything to do with our interest in molluscs but it has. Read on! Unlike before, when DDT or the clearing of forests was blamed, this is now thought to be due to the fact that the **landsnail** population has plummeted in several regions. Birds such as the titmouse eat snails and get much of the calcium necessary for their eggs from them. In turn, **acid rain** has been blamed for the decline in the snail population since it apparently leaches calcium out of the soil, making it more difficult for snails to grow and reproduce. And acid rain comes from coal-fired **electric power** stations which we all want so that our dishwashers and TVs can operate!

The second example also has an indirect bearing on conchology. Old timers along the Great Barrier Reef of Australia have been saying for years that the **coral reefs** are not as good anymore as they used to be. Eventually, in order to clear up the issue one way or the other, scientists in Queensland launched a

systematic search for old photos of the reef². They found several, including some dating back to 1890. Sure enough, there *has* been a very noticeable deterioration in the state of the coral on the reef flats, particularly those nearer the coast. A pair of photographs in *New Scientist* dramatically showed just how the modern flats seem to have been **trampled flat**. The culprit, however, appears not to be hordes of holiday makers wandering about on the flat at low tide with bucket and net in hand, (although as we all know they, or shell collectors, generally are the first to get the blame), rather it is the **sugar cane** industry inland. Intensive cultivation and fertilization has resulted in an increased sediment load in the water and a marked increase in algal growth. This has various negative effects on coral. The good news is that farmers and towns adjacent to the reef are, respectively, improving their farming techniques and treating their sewage, so the rate of damage is slowing down.

1. Menon, S. in *Discover*, Jan. 1995, p.58.
2. Anderson, I. in *New Scientist*, 4 March 1995, p.7.

With the current interest in special paint finishes on walls and furniture, such as sponging, dragging, marbling etc., have you ever considered stenciling a shell motif onto the doors of an old cupboard and transforming it into a stylish shell cabinet? (D.F.)

Back issues of the Strandloper for sale

Old newsletters (#1 to 170, 1958 to 1975), where available, cost R2 each. Photocopies are R3 each. "New" *Strandloper*s (#171 onwards) cost R4 each for a B&W issue, and R8 each for a colour issue, where available. Colour issue number 225, which had a beautiful *Conus milne-edwardsi* on the cover is now very rare, and the few copies still left cost R40 each. There are no supplies of the following numbers, 172, 174, 192 and 202, but photocopies can be supplied at R4 each. Overseas members please total up price in R, and divide by 2 to get US\$ price. All prices include postage.

The Strandloper

NEWSLETTER OF THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA

No. 171 APRIL 1987

THE OCTOPUS AND ITS ALLIES

Editor: Robert A. Thresher and assisted by Sue Thresher

The octopus is a creature of the sea. In the south the shell has been known to be a common sight on the beach. The octopus is a creature of the sea. In the south the shell has been known to be a common sight on the beach. The octopus is a creature of the sea. In the south the shell has been known to be a common sight on the beach.



Strange houseguests

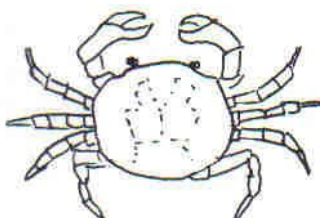
compiled by the Ed.

Some of the strangest, and most difficult to find little molluscs are those that live inside or on other animals. The Melanellidae, which live on echinoderms, are an example. It may interest readers to learn that the process is not entirely one-sided, and that molluscs themselves are home to other organisms.

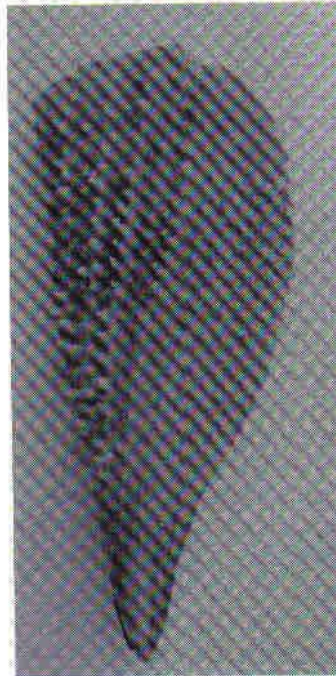
A recent article in the magazine *Vita Marina* deals with shrimps that inhabit the mantle cavities of molluscs¹. Actually, it has been known for a long time that associations between crustaceans and molluscs exist. Aristotle (384-322 B.C.), for example, reported that bivalves of the genus *Pinna* were inhabited by a small white crab, which he called *Pinnophylax*, the *Pinna*-guard. However, the relationship between shrimps and molluscs seems to have been relatively little studied, and readers desiring more information are referred to the article in *Vita Marina* for up-to-date information.

One sub-family of shrimps in particular, the Pontoniidae, seem to specialize in living in close association with other organisms such as sea-anemones, sponges, echinoderms, and molluscs.

Certain bivalves are invariably found to contain specimens of these crustaceans, but in others, such as *Tapes literatus* or *Pinna bicolor*, the occurrence is sporadic.



Sketch of *Pinnotheres doffeini* Lenz. False Bay to Delagoa Bay. (10 mm across)



A specimen of *Atrina squamifera* from Knysna Lagoon.

The phenomenon seems somewhat less common for gastropods, although the mantle cavity of the *Strombus galeatus*, for example, may contain the little shrimp *Pontonia chimaera*. Curiously, it seems that in many cases a male and female shrimp live together inside a mollusc shell. The female shrimp lays her eggs within the mantle cavity of the host and the pair generally seem to set up home there, even adopting the colour scheme of their host's tissues as their own. These strange little animals are also noticeably more cylindrical and less spiky in shape than their free-swimming relatives, an adaptation no doubt that minimizes harm to their living homes.

Returning to crabs that live in the Pinnidae, Barbara Fouché of the Durban Group brought to my attention recently that their local occurrence has been discussed previously in the pages of the *Strandloper*². In that article, written in 1963, Joan Weakley reported that the live *Pinna* (now *Atrina*) *squamifera* that

she had collected in Knysna lagoon each had a small "pea" crab in them. She also quoted from a letter sent to her by an unnamed correspondent in Malta:

"..The cuttlefish is the enemy of the *Pinna*; but she has a friend in a little crab which lives in her shell, and, as an old writer says, 'pays her a good price for his lodging'. The crab has red eyes and sees sharply. When he observes a foe at hand, he gives a warning which is attended to at once .."

Reference to Prof. Day's fine book on South African shore life³ suggested that the crabs found by Joan Weakley were probably *Pinnotheres doffeini* Lenz.

References

1. Fransen, C.H.J.M. Shrimps and molluscs, *Vita Marina*, vol. 42(4), pp. 105-113, 1994. [available on subscription; write to P.O.Box 64628, 2506 CA, The Hague, The Netherlands]
2. Weakley, J. The *Pinna* and his pal, *Strandloper*, No.39, 1963, pp.3-4.
3. Day, J.H. *A Guide to Marine Life on South African Shores*, A.A.Balkema, Cape Town, 1969, p.30.

Strandloper

The editor welcomes original articles, news, shelling reports, feedback, advertisements (rates on application) and any other material likely to be of interest to members of the Society. If possible, send articles on a MS-DOS diskette in Word for Windows, WordPerfect, Wordstar, or ASCII formats. Photographs and line drawings are especially welcome. Please address correspondence and submissions to

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South Africa**

A special find

by

R.Méheut, New Caledonia

Reprinted from *Rossiniana*, the journal of the Conchological Society of New Caledonia, no.61, December 1994, p.8. A subscription is available for around US\$50 per year. Fax 09687-27-7969 for more information. This is a bilingual publication, and I have left the language as I found it.. Ed.

This area being one of my favourite sites for diving, I took the opportunity of a few days vacation to enjoy my favourite activity there.

This fabulous place makes diving so magic, that even if nothing is gathered, the pleasure to evolve in a wonderful world is always like a reward so much the scene is unique.

Early in the morning, I rush of my tent, it's five o'clock and in spite of this very early hour, the air is mild and pleasant. The sun spreads its first beams on an oil looking sea. Except a few morning clouds the sky is clear and wind seems to be still asleep. All this environment has such a strong effect on me that I feel like my feet are turning into webbed feet. Starting the day in such conditions is a promise for all the best, everything makes me believe that this will be more than an ordinary day.

Slowly, with method, I get my equipment ready. I can feel all the sensations of the nature surrounding me. Once definitely ready, I reach, after a short walk, "the bay of my hopes". As usual I hope to find the unique piece, why not a beautiful *argus* or a spectacular *talpa*? I know that these kinds of *Cypraea* are sometimes encountered in those waters.

Now, time has come to enter the water, I always do appreciate this moment because of the strange sensation provided by the penetration into the liquid world. It's impressing to swim over the shelf

and to reach the reef that really looks like a border between two worlds. The down slope leading to the deep blue is full of life: animals, plants and corals; this place seems perfectly wild and virgin. As I will need all my attention for the next minutes I have to put an end to these dreaming moments. Apnea after apnea [*holding breath*] it's quite half an hour I'm scraping the sandy bottom and except coming across the way of some [*Conus*] *arenatus* all standard size, nothing is particularly surprising, no monster at all. A few moments later I meet a colony of [*Conus*] *generalis*, I take the opportunity to choose amongst this population some interesting specimens especially an orange coloured one, the first one of this form I find. Those cones come in such a large variety of colours and shapes that it's always a pleasure to compare them each other.

It's now about one hour I swim in this water and clear water and excepted the *generalis* and some cadavers of mitres and turbos nothing more interesting is given to my observation. I begin to disappointed when, attracted by a small cavity a few meters away from me, I decide to explore it before quitting. I dive to this place. I don't know what makes me feel like something is about to arrive. Trying to get the best observation I can in spite of the pale light I duly identify a round shape covered with sediment. My shaking hand takes the mysterious thing and now its possible to say I've "got it". While I observe the thing I feel an immense proudness. An enormous *Cypraea argus* is here, in front of my eyes. Surely it's now time to stop this diving session. I feel like being completely satisfied. Once out of the water, my capture size is more reasonable but in fact sizing an honourable 103.1 mm it's quite big to be exceptional.



Back home and after cleaning, my *Cypraea argus* stands proudly in my shell window among its little sisters.

In France we often used to say: "Everything can happen to whom takes time to wait".

Invitation to all our members!!

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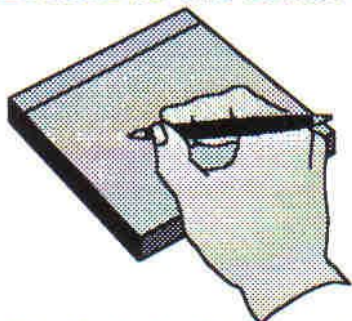
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Letters to the editor-



Olive Peel, the *Strandloper's* previous editor, writes about swaps and shell sales by post:

Perhaps there is someone who can tell me what can be done about the people who never return parcels or who do not pay for the goods they receive from you. Surely this is stealing or being dishonest?

I have had a number of unfortunate experiences lately with, among others, a man in Poland, a man in Puerto Rico, a man in Malta, and, closer to home, certain "gentlemen" in Boksburg and Cape Town. Acknowledgement of parcels received from the overseas people mentioned was never received, while numerous letters and requests to the last two persons reminding them that they should pay for shells sent to them have been ignored. And then there was the person in Cape Town who actually asked me what shells I wanted in return and then forgot that I existed. Not only is the postage expensive but what about all the hours and hours spent on labels, wrapping and then getting the parcel to the post office? Perhaps it is time that these people were mentioned by name to stop this racket!

One of our members on the south coast sent off a very expensive *Cypraea* to a collector in Germany who claimed that he never received the parcel. When our member went overseas he visited this guy and guess what he saw in the defaulter's collection? - the cowry he said he never received. Now I would not have known that that was my shell but some collectors are fanatic about their shells and know each one personally.

Who should send a parcel first? Who can you trust? Should one ask for references first? But then the guy might well get his pal in Pofadder to send in a glowing testimonial. And of course do not forget the collector who exchanges your gem specimens with his grotty ones! So **you** out there, if the cap fits..... return those parcels!!!!

Editor's reply

As far as the *Strandloper* is concerned, we print the swap requests in good faith. Olive has supplied some names of recalcitrant people to me and I invite other members who might have had unfortunate experiences to write to me too, with details. If we receive sufficient "bad publicity" about any particular person or organisation then we might consider printing further information so that you can be forewarned. This is your newsletter... use it to share your experiences, good or bad.

As far as swapping goes, I found that it is safest to write to the other party first and establish ground rules, such as whether the material to be swapped must be self-collected, or live-taken, the families that are acceptable, and the type of postal delivery to be used (the cheapest rates can take three months to reach the destination).

Mrs Thora Whitehead, a Society member of many years standing, writes from Australia on *Umbraculum* :

Rob Tarr's article on *Umbraculum* reminded me of my own encounters with this unusual mollusc. In 32 years of collecting, I have found only four specimens. All have been littoral. I suspect that they are not so uncommon as we might think, but are perhaps overlooked, due to their nondescript shell and warty animal.

However, my first specimen could hardly have been missed! Walking a sandy tidal flat at Sudi Bay, north

of Mtwara, Tanzania, I spotted a bright orange "blob" in the middle distance. I hastened on to investigate. At the time, I too was unaware of this creature's existence, but the presence of a shell convinced me that it was likely to be a mollusc.

Some 11 years elapsed before my next encounter, at North Stradbroke Island, Moreton Bay, Australia. Two animals, side by side, much larger than my earlier find, and very much like the animal Robb Tarr figured, though somewhat darker grey in colour. In fact they were very well camouflaged sitting amongst low soft corals of the same colour.

This find led me to write to Robert Burn, to ask if the animals would be of use for his opisthobranch studies. He replied that they were not needed at that time, but with his thanks for my offer he provided the following information in his letter of 21/10/75:

"By the way, its proper name is *Umbraculum umbraculum* [Lightfoot, 1786], the square brackets signifying that the name was published anonymously by an author who was later shown to be the Rev'd John Lightfoot. I think that there is only one circumglobal species, others don't agree, but there are so few characters to go by."

My most recent find of *Umbraculum* was at Hastings Point, north New South Wales. I had found nothing of interest all day, in spite of diligent efforts (we all have such days I think) and the rising tide was urging us upwards. At the edge of a rapidly deepening pool, I found a small *Umbraculum* climbing up to a shallower rock. The colour of the animal was a surprise - light lemon yellow!

From this very limited sample, it seems that smaller animals can be of very different colours, while larger ones are more likely to be grey. There is always the possibility that further observation and study may show that there is more than one species of *Umbraculum*.

D.L.G. Karsten, 1789.

Bi-nominal author?

by D.Freeman

Writing in the journal *APEX* of the Belgian Malacological Society, Messrs R. Duchamps and B. Tursch of the faculty of sciences at the Free University of Brussels, have revealed some interesting facts about the availability of malacological names published in the *Museum Leskeanum* of D.L.G. Karsten (1789)¹.

These names have generally been dismissed as "non-binominal", but a re-examination has shown that this opinion should be reversed. To be available, *i.e.* complying with the conditions of the International Code of Zoological Nomenclature (ICZN), a work:

- must have been published after 1757;
- must not have been suppressed by the International Commission;
- must consistently apply the principle of binominal nomenclature

So, what have we got?

- ◇ The *Museum Leskeanum* describes the collections of Nathanel Gottfried Leske, and was published in 1789;
- ◇ It is not found in the official index of rejected and invalid books;
- ◇ All the descriptions of Karsten have been checked. By and large, the text is consistently binominal. The acceptable level of deviation from strict binominality is comparable with that found in other acceptable works, such as for example Röding's *Museum Boltenianum* of 1798.

The conclusions seem obvious.

One result of the re-examination of Karsten's work was the discovery that at least two well known species in the genus *Oliva* had been given

published names prior to the generally accepted ones. (see the *Strandloper* no.239, Sept. 1994, p.7).

Does this mean that we are obliged to change our labels? Apart from the fact that there is nothing to prevent you calling your shells anything you like [Ed's contribution: I once had a live *Oxystele tigrina* called Fred !], it would be useful to at least add Karsten's names to your existing labels. However, there is a provision in the rules of the ICZN to preserve stability in names. This allows for an application to be made to suppress a senior synonym (*i.e.* an older name) so that the junior name may continue in use as a valid name. For such an application to be considered, it must be proved that

- ◇ the senior name has not been used as a valid name during the immediately preceding fifty years, and
- ◇ the junior name has been applied as an assumedly valid name by at least five authors in at least ten publications during the same period.

One can accept that in many cases a change of a species name would not cause serious inconvenience or confusion. On the other hand, the sudden introduction of, say, a genus name to displace a commonly accepted genus name with an existing world-wide distribution, would cause a serious nuisance to a lot of people. In such a case, the suppression of the senior (older) name would make sense. It is possible that somebody might yet apply to the ICZN for the suppression of Karsten's *Museum Leskeanum*.



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Dietrich Ludwig Gustav Karsten (1768-1810).

Born into a family of eminent scientific achievers, D.L.G. Karsten first studied mathematics and physics and then enrolled in the Freyberg school of mines. He was given the job in 1788 of classifying the diverse collection of N.G. Leske, a naturalist. The *Museum Leskeanum* consists of two volumes, the first of which was concerned with animals, and the second with minerals. Karsten went on to become an authority on mineralogy.

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Sea Shell Museum of Shelly Beach

Dawn and Michael Meyer

On 1st December 1994 the Sea Shell Museum celebrated its first birthday, having completed a successful year which has now firmly established the museum as a tourist attraction for both local and international visitors to the Natal South Coast. The museum is based on our shell collection, which has been built up by a combined 30 years of collecting, exchanging and purchasing.

Much is being said nowadays about dwindling shell populations and often the blame is laid at the shell collector's door for such declines. But in our experience what the scientific collector actually takes is an insignificant fraction of what is lost due to changing environments caused by advancement of civilization and what is taken daily by the general public, who collect for food purposes or who take live shells home as mementos of their holiday. One cannot blame the general public for this as nothing has been done to educate them about our shell fauna.

With this in mind the Sea Shell Museum was established with the mission to introduce the public to

the fascinating world of shells. Until the general public appreciates that populations can be affected by overcollecting, we can not hope for them to think twice before collecting those living shells on our shores.

Some of our museums have vast collections of shells for research but these are not on display to the general public. It was our aim to display a large shell collection under glass so that the general public can fully appreciate the vastness and diversity in shape and colour of mollusc shells.

The museum comprises a fully identified collection of about 20 000 different species of mollusc, including such rarities as *Cypraea valentia*, *C. langfordi*, *C. broderipi*, *C. aurantium* etc. New species and better specimens are added regularly.

In addition, there are educational displays on molluscs, fossils, and a fun display of shell work including a huge castle covered in shells. Most popular is the section on shells and man dating back to a 1684 edition of the first book written entirely on shells by Philippo Buonanni entitled (translated) "Recreation for the



Cabinet with African cowry masks, giant wood carvings and flowers made out of shells.

eyes and mind through the study of shells". This section includes fantastic wood carvings of shells, cameos, mother of pearl and other artifacts where man has used shells.

From the response of the many thousands of visitors who have passed through our doors, we are achieving our mission and our visitors leave with a greater respect for the shell world. Most didn't even realise that shells are inhabited with an animal. A small entrance fee and a gift shop help to finance the museum, which is more a labour of love than a financial proposition. It is only by a concerted effort by all that we can ensure that there is a future for generations of shell collectors who will follow us.

The museum is situated at 995 Marine Drive, Shelly Beach, and the hours are in season (school holidays) 9 am-5 pm 7 days a week, and out of season 10 am-4 pm Wednesday to Sunday.

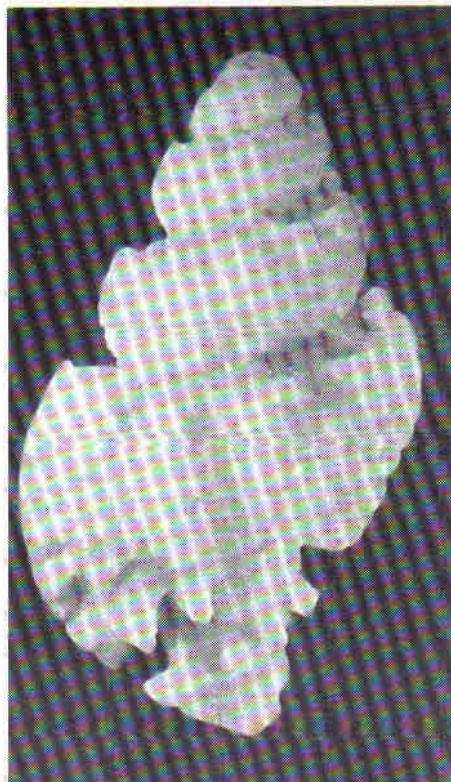


Part of the popular *Voluta/Melo* display.

A not so well known murex - continued from pg.5



A live-taken specimen of *Murexsul kieneri* (Reeve, 1842), 9 mm long



Beach specimens of the more familiar *Murexsul nothokieneri* Vokes 1978, 11 mm long.

Conchological Society of Southern Africa

Founded 1958

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