The Strandloper

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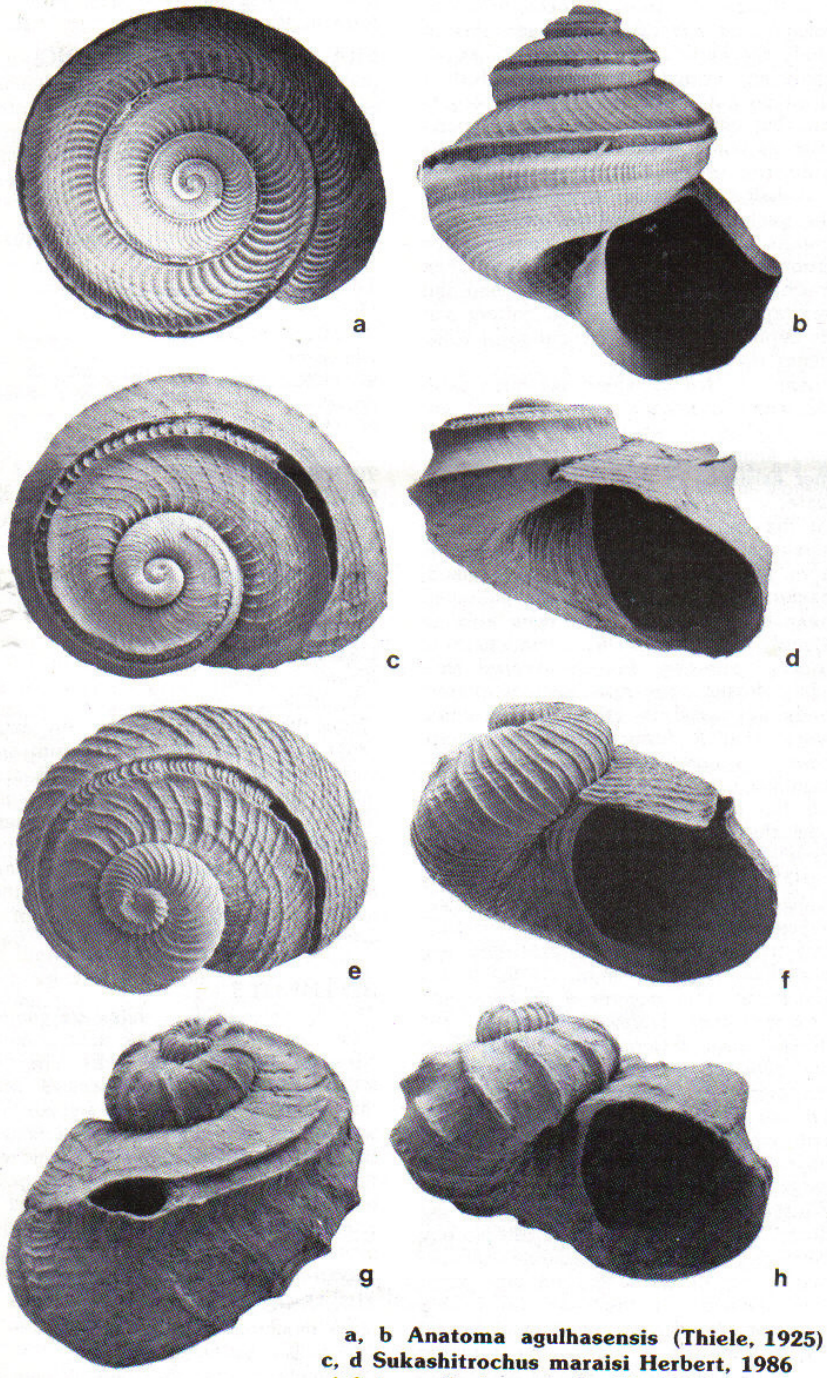
SCISSURELLIDS — TINY TREASURES

by D G Herbert, Natal Museum, Pietermaritzburg.



a, b Anatoma agulhasensis (Thiele, 1925)
c, d Sukashitrochus maraisi Herbert, 1986
e, f Scissurella jucunda Smith, 1890
g, h Sinezona insignis (Smith, 1910)

Scissurellids are minute to microscopic gastropods related to the beautiful pleurotomariids (slit shells), such as our local **Perotrochus africanus** (Tomlin, 1948). They are very delicate, almost always white or nearly white and all possess a slit or hole in the outer lip. In southern Africa we have a fairly rich scissurellid fauna with a total of nine species belonging to the genera **Anatoma, Scissurella, Sinezona** and **Sukashitrochus.** Members of the first, Anatoma, occur largely in deep water and the four local species belonging to that genus are unlikely ever to be encountered except by dredging. They are typically conical and have the slit band more or less at the periphery. I give illustrations (Figs a, b) of **Anatoma agulhasensis** (Thiele, 1925) to show the features of the genus. Our most common scissurellids are **Scissurella jucunda** Smith, 1890 (= **S. smithi** Thiele, 1912), and **Sinezona insignis** (Smith, 1910). The first is relatively weakly sculptured and has an open slit (Figs e, f), while the second has very coarse axial ribs and has the slit closed to form a foramen (Figs g, h). They are most likely to be found in the beach drift, but living specimens of both species have been found intertidally amongst the bases of algae such as **Caulerpa** and **Laurencia** and in the holdfasts of kelp **(Ecklonia). Scissurella jucunda** occurs from Zululand to False Bay and as far afield as St Helena and Ascension Island, to which they are carried on drifting algae. **Sinezona insignis** is distributed from Natal south coast to False Bay

Another species, relatively common near the Natal/Transkei border, is **Sukashitrochus maraisi** Herbert, 1986. This species has an elongate foramen and pronounced keels on the body whorl (Figs c, d). Although it has not been collected alive, it can be found in relatively large numbers in beach drift at Mzamba. The species is named after Dr Johan Marais, a micromollusc enthusiast, who has found much of the material currently available. It was previously recorded as the Japanese **S. carinatus** (Adams, 1862). Two additional species, **Sinezona doliolum** Herbert, 1986, and **Scissurella rota** Yaron, 1983, occur in our region, both are rare. The first has only

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been dredged on the Transkei continental shelf and the second is known locally only from a few specimens collected mostly on the Zululand coast.

Scisurellids pose interesting problems and challenges for collectors. Few are larger than 2,0mm in diameter, most nearer 1,0mm and will only be found by very careful sorting of the finest beach drift fractions, using a lens or microscope. In view of their fragility all species are best handled with a fine paint brush, moistened with water: even the finest of forceps can easily cause damage. Photography is also a problem as ordinary optical systems do not give sufficient definition to reveal much in the way of sculptural detail. All the photographs given here were taken using a scanning electron microscope.

An additional challenge is to collect them alive. Possibly the best method is to rinse the holdfasts of lower shore algae, such as those mentioned previously, in a bucket containing a very weak solution of formalin. Many of the inhabitants will then relax their hold and fall to the bottom of the bucket for examination at a later stage. Quite a large amount of algae can be processed in this way and with luck you may collect some scissurellids and one or two other interesting finds as well. If so, you might like to repeat the process, this time rinsing different species of algae in different buckets to see if you can pin-point habitats more precisely. I would be interested to hear of any successes.

There is an additional, as yet undescribed, species probably belonging to an unnamed genus, which I am particularly keen to hear about. This very small shell (about 0,6mm in diameter), has a hole in the outer lip and weak axial ribs. Its most striking feature is that it lacks a slit band running around the body whorl from the hole towards the apex. It is not simply a juvenile. Specimens have been found in False Bay, but their condition is too poor to allow description. Please let me know if you find anything which matches this.

The procedures needed in order to collect scissurellids may all sound very laborious for shells not much over 1,0mm in diameter, but their delicate beauty and sculpture certainly merit a little extra trouble.

EXCHANGE WANTED.

Adam Galganski, Chrobrego-2/4, 85-047 Bydgoszcz, Poland would like to exchange shells with other collectors. There are however problems and no money can be sent out of his country. He has limited freshwater and land snails from his country. Anyone that would like to help him can contact him at the above address.

THE ORDER OF THE GEOLOGICAL ERAS

by Olive Peel

Geological eras have been divided up for convenience sake as a book is divided into chapters. This makes for easy reading and as most readers of this article are conchologists and not geologists I have tried to write this article so that it also makes easy reading, for after all, I too am not a geologist but an amateur conchologist! There are many books on the subject for learned scholars who wish to futher their knowledge on the subject of fossils and time scales, and the bibliography gives some indication of them.

It is through the study of fossils (Palaeontology) that scientists have been able to study the earth's history. Fossils may include any evidence of past life. Most of them do not consist of the whole organism, but only of the more resistant parts such as bones, shells and in many cases only the impression is preserved. A knowledge of fossils is indispensible to the geologist because they give him the means of establishing a conservative chronology of the earth and teach him much concerning the changes of land and sea, appearances of the sea bottom and its depth, and of the distribution of living things upon the globe.

Fossils can tell us where sea once existed, where coastlines were joined but are now broken up, whereas the existence of land animals may demonstrate the former existence of land now separated by water.

At the end of the 18th century a land surveyor named William Smith who was born in 1769 near Oxford in England, became interested in fossils collected near his home. Soon he was able to identify the different clay formations from fossils collected. He discovered that whilst fossils from one layer of certain beds appeared in other layers, some were definitely distinctive and did not appear in other layers. The principle of identifying the ages of strata by their fossils has now been firmly established all over the world.

Fossils (=dug up or extracted from the earth) are the remains of living organisms which have been preserved through geological time. When marine shells die they fall to the sea floor where they are buried by sand and mud. As the layers accumulate they become compressed and turn into rock. During this process, the original shell material may be dissolved and replaced with other minerals. Thus, the principle means of formation of fossils are mineralization, carbonization, encrustation and distillation; it is on these physical events that much of our knowledge of the past relies.

Fossils are not only preserved on the sea floor, but also in freshwater areas, e.g. lakes and rivers and in subaerial environments, e.g. desert sands and swamps.

The sea-bed has the most favourable conditions for the preservation of fossils. Away from the action of the surf the shells are buried in sediments and whilst the soft parts are decomposed, the hard parts are preserved. In many cases the external form of the shell is reproduced by the sediments and the percolating waters dissolve away the organism entirely leaving only the cavity which is in fact the mould.

In the USA fossil hunting is much a part of a conchologist's life as is ordinary shell hunting and field trips to the fossil pits are a part of the club's programmes for the year.

The shell collector will thus find plenty of scope if he wishes to add fossils to his collection as there are many conchologists overseas who would be willing to exchange fossils for endemic shells.

"Come tell me how it is you live and what it is you do."
Alice in Wonderland.

ERA: CAINOZOIC (CENOZOIC)
(kainos or cenos = recent)

PERIOD/SYSTEM:
QUATERNARY
Recent or Holocene
Glacial or Pleistocene
2-3 Million years ago

TERTIARY
Pliocene
12 Million years ago
Miocene
25 Million years ago
Oligocene
40 Million years ago
Eocene
60 Million years ago
Paleocene
70 Million years ago
Marine shells in abundance. Modern day corals, crabs, lobsters and shrimps. Molluscs very little difference from today

ERA: MESOZOIC
(Mesos = middle)

PERIOD/SYSTEMS:
CRETACEOUS
(Creta = chalk)
135 Milliom years ago
Ammonites became extinct. An extinct order of cephalopods which in turn are a class of mollusc. They have shells coiled into a plane spiral and are ornamented. Their living chambers have been studied in great detail in relation to their evolution. Some ammonites grew to a diameter of two feet and 6-8 inches in thickness. Became extinct at the end of the Cretaceous period (135 Million years ago.)

BELEMNITES
The cigar-shaped belemnites are common fossils accompanying the ammonoids in Jurassic and Cretacous rocks. The fossil is an internal skeleton (enclosed within the body) of a squid-like animal, in a way comparable with the cuttle bone of the living cuttle-fish. The solid calcite of this internal skeleton makes the belemnites a resistant fossil, and fragments are common survivors of erosion, often picked up on modern beaches. They disappeared at the end of this period

JURASSIC
(Jura mountains)
180 million years ago
Ammonites were abundant during this period.

TRIASSIC
(threefold division in Germany)
225 million years ago
Corals

ERA: PALAEOZOIC
(palaios = ancient life)

PERIOD/SYSTEM: UPPER PALAEOZOIC
Permian
270 million years ago
Carboniferous
350 million years ago
Modern echinoderms appeared. Corals in abundance. The presence of corals or of other shells in a limestone indicates that it was deposited on the sea floor, and what now is land once lay beneath the waves.

Devonian
400 million years ago
(Named after Devonshire in England where the rocks in question were first studied. Proposed by Sedgwick and Murchison in 1839) Ammonites first appeared.

LOWER PALAEOZOIC
Silurian
440 million years ago
Earliest known coral reefs.
Ordovician

500 million years ago Nautiloids appeared. The cephalopods are a very old group of highly specialized molluscs and have always been marine animals. Today's species numbering about 400 are only a fraction of those living 500 million years ago. The Nautilus of today has changed considerably. In the course of evolution there have been remarkable developments, not only in the structure of the shell but also of their way of life.

These nautiloids of bygone days grew up to 2m in length and were long and straight. Echinoderms. First appeared during this period and proved important as a fossil guide and as ecological indications for even one plate of these animals indicated marine surroundings. They became extinct during the Permian epoch when the modern echinoderms appeared.

Cambrian
600 million years ago Trigonia. There are a few species living today in Australian waters. Brachiopods — it is thought that there existed about 25 000 species. They are used as fossil guides for many geological periods. They are considered one of the oldest groups of invertebrates.

Molluscs made their first appearance. [It is highly probable that the age of the earth's crust is not far from 4 500 million years old. (Ref.: Principles of Physical Geology; Arthur Holmes, page 378.)]

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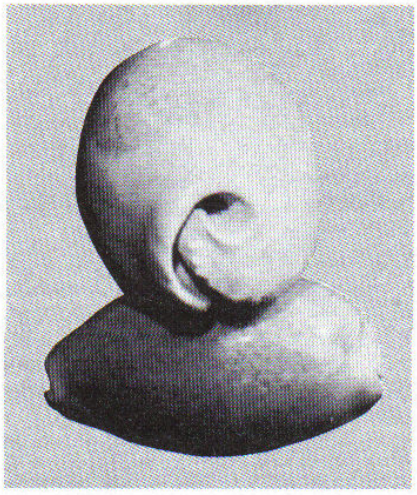
THE FASCINATION OF FOSSILS
by Olive Peel

By studying fossils scientists can learn about the history of the earth.
'These rocks, these bones,
These fossil ferns and shells
Shall yet be touched with beauty and reveal
The secrets of the book of earth to Man'.
Alfred Noyes

What a glorious sight the early naturalists must have beheld when they first sighted banks of fossils unearthed whilst workmen, oblivious of the joys they were digging up, were making canals and roads.

Whilst on a voyage of exploration in 1885 Professor Angelo Heilprin and Mr Joseph Wilcox came across these fossil banks in Florida, U.S.A. and surely must have been agog with amazement at their good fortune! I wonder if they knew where to start! And so shells which have lain hidden away for all these millions of years were lovingly cleaned and named.

To-day in North America fossil shells are still being crushed for road works — what an end after being preserved for so long! What is so fascinating is the fact that there were so many shells in such small areas, and what different types — hundreds upon hundreds, some extinct and some species still living today, and no change in the structure of the shell. Today in the U.S.A. collectors are allowed to collect fossils from the working pits, so armed with hard hats, buckets, sacks and anything in fact that they can lay their hands on, they sally forth and without even getting their toes wet, are able to carry out 200lbs of shells, if they dare! Comprising perhaps 200 different species. With luck they may even find that rarity and much sought after fossil **Ecphora quadricostata** which has lain hidden away for 25 million years, and so much resembling our South African modern-day **Nucella cingulata.**
One has to marvel when one gazes upon a shell which has survived the ravages of the elements over millions and millions of years. A few fossils still have lustre, but very few; some perfect, all lying there to be discovered and shown to the world — but alas — generally lacking in colour and lustre they do not attract many collectors who regard them as 'boring' and all looking the same.



Siphocypraea problematica Heilprin, 1887.
Found in St. Petersburg, USA and about 12 million years old.

About 1 500 species have been named to date and a few of the extinct fossil shells which can be found today in the USA fossil pits are:

Spondylus rotundatus; Pecten solarioides; Venus rugatina; Cardium floridanum; Xancus regina; Mitra heilprini; Typhis floridana; Cymatosyrinx lunata; Melongena subcoronata; Cypraea (Siphocypraea) problematica; Vasum locklini; Contraconus adversarius, the large sinistral cone.

In South Africa the lovely town of Barberton in the Eastern Transvaal is one of the few places on earth where fossils 3 500 million years old can be found.

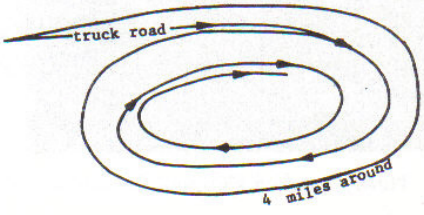
Then there are the famous Umzamba fossil cliffs in the Transkei which consist of clay, limestone and sandstone and contain such fossils as **Trigonia, Inoceramus** and the echinoid **Hemiaster, Turritella** and the ammonite **Mortoniceras.** I have found many bivalves and in fact have several rocks which I retrieved being used in a fireplace by African children. These rocks have hundreds of fossil shells embedded in them. Whilst walking along the edge of the waves one morning a rock washed up at my feet.

Imagine my delight upon discovering that the rock contained the impression of a large fossil **Inoceramus** shell belonging to the Cretaceous period — over 75 million years old.

In Eshowe at a museum you can see magnificent ammonites and in fact southern Africa is very rich in fossils and it is a pity that more collectors do not take an interest in this fascinating hobby.

One of the fossil pits in Florida,USA: The Warner Brothers Fossil pit, east end of 17th Street, Sarasota.

35 ft. deep		years:
	Top 10-15 ft. is sand and top soil brought in by wind and rain	5 million
	S H E L L S	10 million
	S H E L L S	15 million
	S H E L L S	20 million
	S H E L L S	25 million
	S H E L L S	30 million
	S H E L L S	35 million



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Dredging operations in the Durban Bay at Maydon Wharf caused many fossil shells to be washed up at a small beach nearby. We found many shells in fossil form hitherto not known from this local-

ECPHORA QUADRICOSTATA

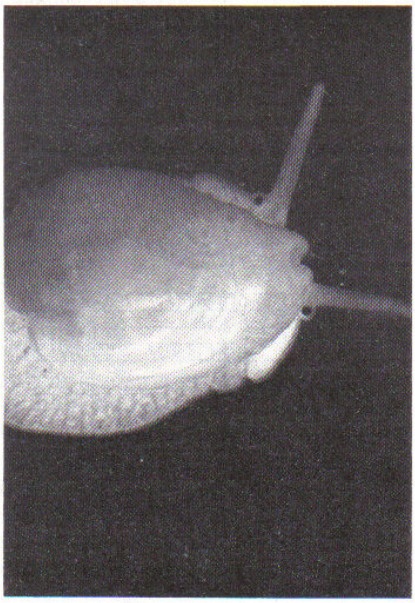
ity. Many shells found here are now *extinct.*

Some of the fossils we found are:—

Terebellum terebellum
Liotina peronii
Lophiotoma acuta
Tectus mauritianus
Pupa sulcata
Murex trigonulus
Drupella rugosa
Nassarius distortus
Nassarius horridus
Nassarius globosus
Neritopsis radula
Niotha quedrasi
Columbella scripta
Cerithium aluco
Cerithium asper
Cerithium kochi
Cypraea moneta
Placarien tiara (an extinct bivalve)

and many bivalves, cypraea, urchins, natica, conus and fossil corals in huge chunks. I think that this 'fossil bed' was a most exciting find.

So when you become bored with your fresh beautiful collection of shells, start something different and you won't regret it. Start collecting fossils.



Newly hatched Cypraea Capensis

FURTHER NOTES ON CYPRAEA CAPENSIS GRAY, 1828

by Mike Hart

Until recently live taken **Cypraea capensis** were extremely rare and the description of the living animals therefore limited. The only description of the external morphology was by Kilburn and Aiken (1972). In the specimen they described, the foot and tentacles were bright orange/yellow and the mantle was brownish with black spots and faint white lines. Gosliner and Liltved (1985) described the internal morphology from a single desiccated ex pisce specimen from Algoa Bay.

Due to increased diving activity in the Algoa Bay region a number of live taken specimens have been found and the marked colour variation of the living animal can only now be appreciated.

Like many of the Cape endemic cowries, the mantle of the **Cypraea capensis** is extremely variable ranging from black to orange with or without white streaks. The presence or absence of papillae is also variable. Some are profusely covered while in others there is a complete absence of papillae. The foot appears to mirror the mantle as a black mantled animal has a predominantly black foot and the orange animals have orange feet. The tentacles are bright yellow/orange regardless of the colouration of the foot or mantle.

In June 1986 while diving on a reef in Algoa Bay I was fortunate enough to find a **Cypraea capensis** sitting on her egg-mass. This in itself was not unusual but the capsules of the egg-mass appeared disorganised. Normally the egg-mass consists of a closely packed collection of yellow capsules easily covered by the extended foot of the brooding female. However on this occasion some of the capsules were some distance from the remainder of the egg-mass. On closer inspection these wayward "capsules" were in fact recently hatched juvenile

Cypraea capensis!

This again confirms the direct development of the Cape cowries — a characteristic they share with some Australian cowries. With direct development there is no free swimming planktonic veliger stage as is the case with tropical cowries. Gary Williams of the SA Museum was kind enough to photograph one of the newly hatched juvenile Cypraea capensis *for this article.*

Cypraea capensis is known from Jeffrey's Bay in the eastern Cape Province to Port St. Johns in the Transkei and from deep water off Natal.

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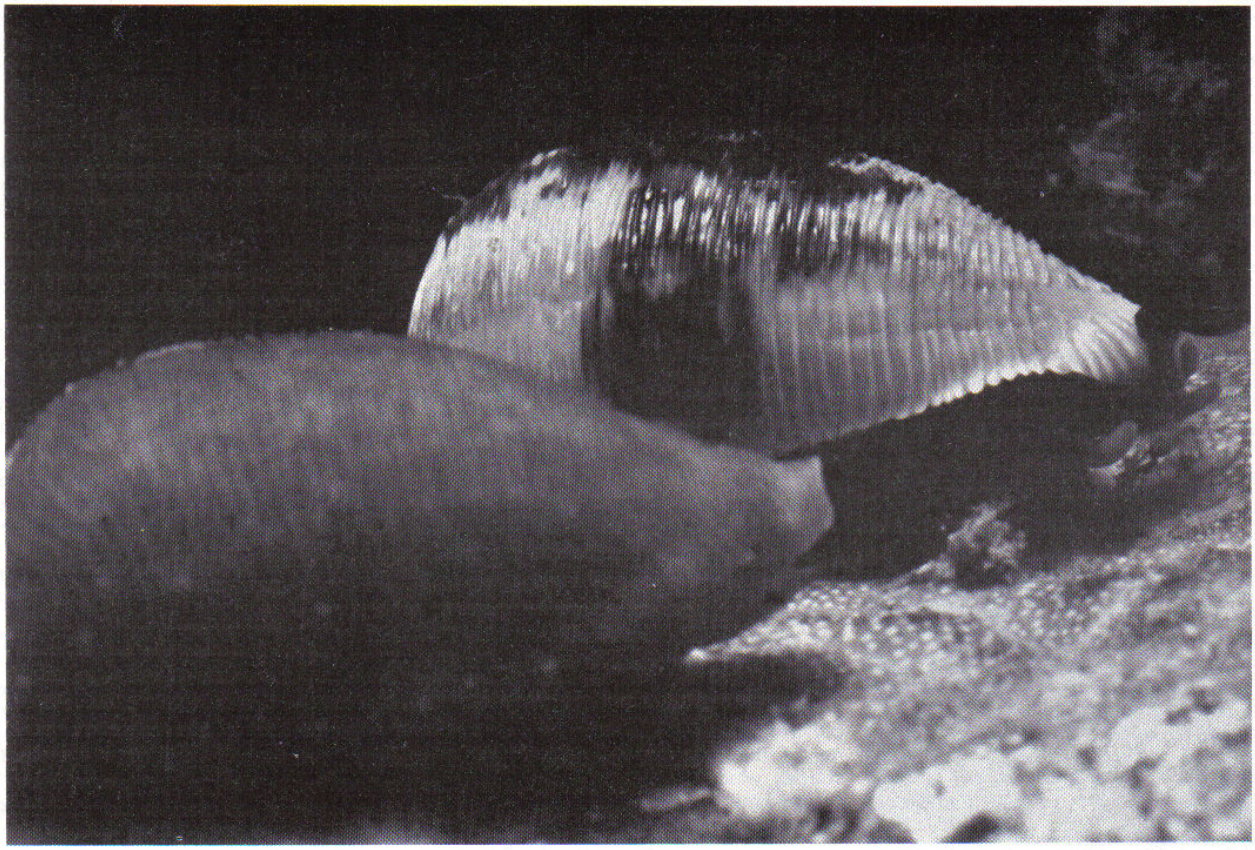
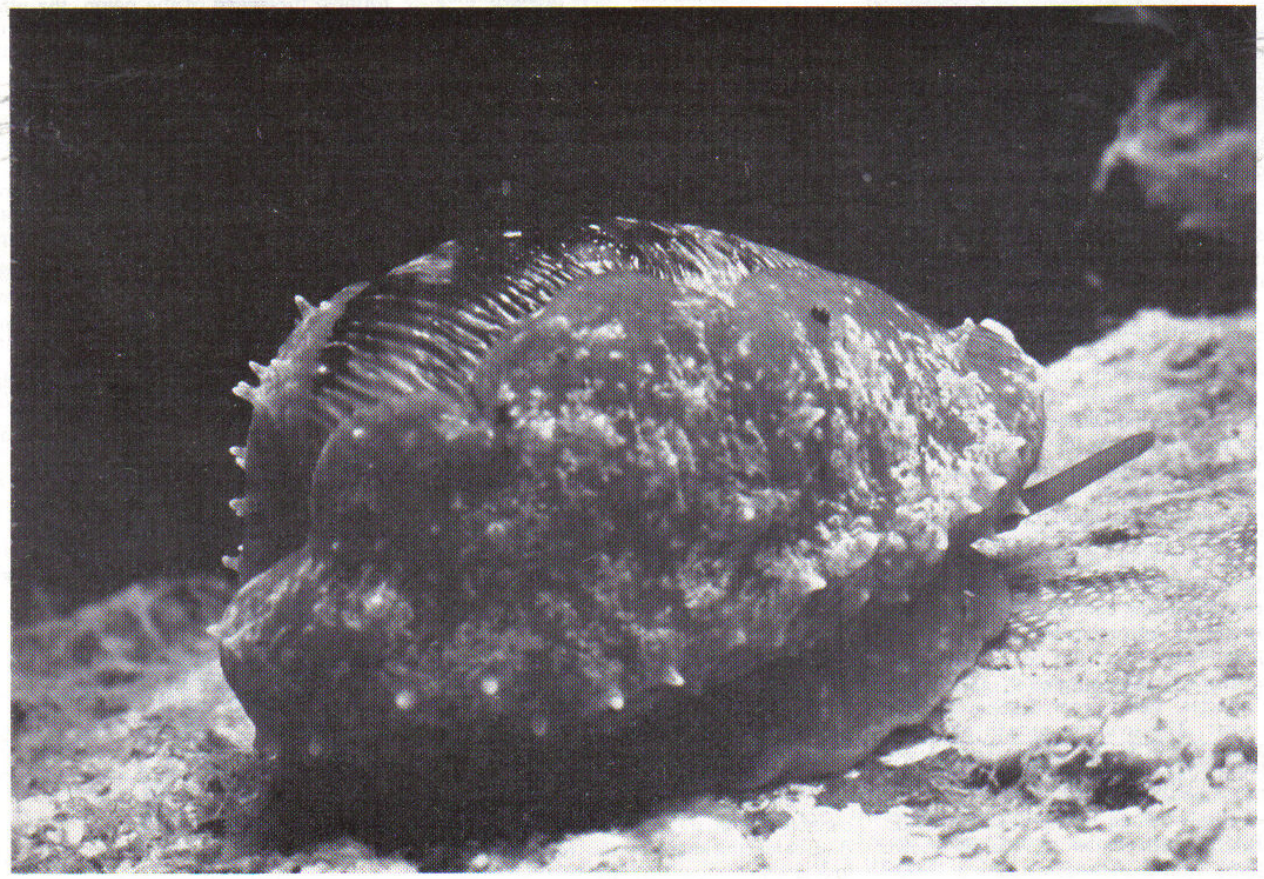


Cypraea Capensis — foreground animal has an orange mantle and the back animal is black



Cypraea capensis with orange mantle extended

CORAL REEFS by Olive Peel.

How fortunate those privileged mortals who explore the depths of the sea and join the fish darting hither and thither among swaying plant life, through caves — colour, serenity and peace all around; another life — another world — everything mortal oblivious beneath the waves. What a sight to behold; all those colourful gardens of the deep, only accessible to a few who dare to venture down into the unknown of Neptune's Kingdom.

To investigate a coral reef with its many species of molluscs and other sea life must indeed be a most wondrous experience and adventure, but beware the waving tentacles of the minute polyp, the major reef builder, in readiness to sting any predator that dares to threaten its existence.

Corals first appeared on the scene about 500 million years ago and have scarcely changed since then.

There are three main classes of reefs:

1. FRINGING REEFS consisting of a platform of coral which at low tide appears to be a continuation of the shore. The sea bed here often has a different type of rock such as basalt. The width of a fringing reef is determined by the slope of the sea bottom.

2. BARRIER REEFS are built on a continental shelf at varying distances from the shore.

They are separated from the shore by a deep channel, although sometimes this reef does fringe in parts and forms a barrier in other parts. A great barrier reef runs parallel to nearly the whole north shore of Cuba whilst the Great Barrier Reef of Australia, the largest in the world, runs for about 1 200 miles along the northeast coast — its breadth varying from 10 to 90 miles with very little of this reef exposed above water.

3. ATOLLS are coral islands which enclose a central lagoon and may be 120 feet in depth. These islands are different shapes, due partly to the original shape of the land, with the currents and tides also affecting coral growth. Coral growth is greatest in strong current, therefore the most developed part of the reef will be facing the current. When strong currents exist a horseshoe shape will develop with a gap on the lee side which is almost devoid of corals and in quiet waters a circular atoll may be formed.

Whenever suitable conditions prevail, the coral will continue to grow outwards forming a fringe reef on to the atoll. Once the water around the atoll or the lagoon becomes contaminated or if the temperature is too cold, the coral will stop growing.

The average rate of growth varies with the species, being from 1.25cm to 5cm per year. The average growth of a reef is about 30cm in 20 years. The growth of coral ceases when the reef extends up a little above low-water mark.

True corals belong to the order MADREPORARIA and contain the corals known to most people. There are about 2 500 species of true corals. In life they are soft and covered by a thin layer of tissue which may be any colour including yellow, brown, green, blue, pink, depending upon the species and environment. The algae plants that live on the coral add to the splendour with their own hues. At night when the polyps awaken and expand their tentacles to find food, the colour of the coral changes. The iron salts in the water also contribute to create the different colour of the coral.

The water around the coral reef must be uncontaminated, clear and have full salinity. Opposite the mouths of rivers, where the diluted sea water carries silt and mud, corals cannot live and no reefs exist. They flourish best on the seaward side of the shore where splashing waves, rising tides and warm currents bring them constantly renewed supplies of oxygen and food. They cannot survive exposure above water for long and dead reefs have been found above sea level. The surface temperature of the water should be about 23 to 25 degrees Celcius, so coral reefs exist mostly in warm currents.

Corals require abundant sunlight and do not grow freely at depths greater than 30m. This is because the polyps feed on plankton which depend on sunlight. The plankton absorb waste nitrogen and supply oxygen to the polyps. The main enemy of the coral is the crown of thorns starfish which feeds on the polyps. The polyps however are able to reproduce by a method called 'budding' — in other words the polyp separates into two and throws out a branch.

Before the corals can form a reef, they must be packed with filling material, provided chiefly by other reef organisms and bound together by lime-secreting marine plants, indispensible as reef builders. This filling is created by shells and skeletons of dead animals; some animals swallow sand and reduce it to a fine sediment; algae such as lithothamnion creates plant 'mortar' that seals the gaps left by the polyps. Single-celled algae known as zooanthellae exist in vast numbers in the tissues of polyps. As many as 6 000 were counted in one experiment in one polyp. And so with all these animals and plants creating the filling, it is left to the polyp to carry on its important function of actually building the major part of the coral reef.

Corals absorb calcium from the water and this combined with carbon dioxide and water form calcium bicarbonate and being insoluble, forms the 'skeleton' of the coral. Thus the whole assemblage forms a white porous limestome spectacle comparable to any man-made creation.

All corals are, unfortunately, home for a multitude of boring organisms and become weakened or broken by them. They also provide shelter for other molluscs and fish. Some of the fish act as gardeners and prune the tips of the corals.

Coral reefs often give proof of depression, for most of the reef-building corals cannot live in more than 30m of water. A greater thickness of the reef than this indicates a slow sinking of the ocean floor according to botanist Charles Darwin (1842). There are those persons, however, who believe that what actually happens is that the sea rises. This rising would be due to the melting of large ice bodies.

THE POLYPS

Strange little creatures the polyps, which in appearance are like tiny anemones, emerald green in colour. Because of their size they do not need much food.

In sexual reproduction fertilization generally takes place within the female polyp. Polyps produce both male sperm and female egg cells but not at the same time. When the sperm cells are ready they are released into the water. Other female polyps pull the sperm cells into their bodies via their mouths. In some colonies only one sex may exist.

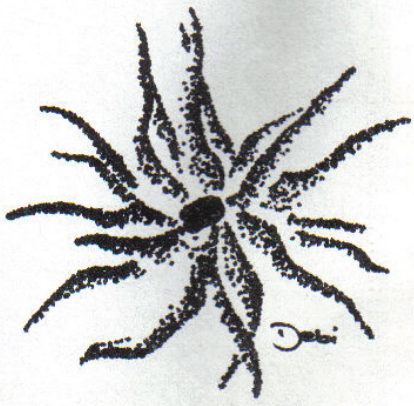
Once fertilized, the egg develops into a larva called the 'planula'. This planula is round, pear-shaped or cylindrical and may be up to 3mm in length and is almost transparent. The larvae are ejected through the mouth singly or in groups and may occur throughout the year or be tied to the phases of the moon. The larvae establish new colonies either by swimming or drifting for long distances with plankton or crawl away from the parent a short distance and become attached to coral or rocks by means of a sticky liquid. As soon as the polyp is firmly anchored it starts to grow its skeleton, the first function being to form a limestone base.

The polyp has two sets of cells, one set forming the inside of the polyp, the other forming the outside hollow cup-like structure called the corallite. One end of the corallite is closed, the other open to form the mouth which is fringed with tiny tentacles to aid its feeding. The polyp extracts lime from the sea water and transforms it into the magnificent coral. If you look closely at dead (hard) coral, you will see a mass of tiny pores. These were once the homes of the tiny polyps.

If you cut through the coral you will see the division of the dead polyp.

A coral reef can take between 10 000 and 30 000 years to build.

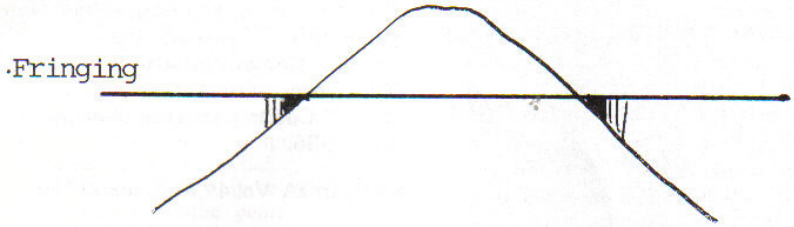
And so — it takes man but a few minutes to destroy what polyps have taken centuries to build!



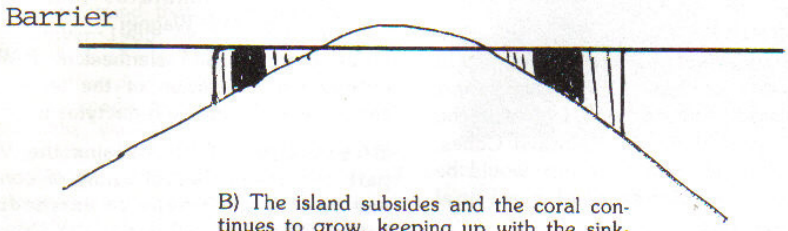
A polyp with its tentacles extended. Tentacles are in multiples of six.

FRINGING BARRIER ATOLL

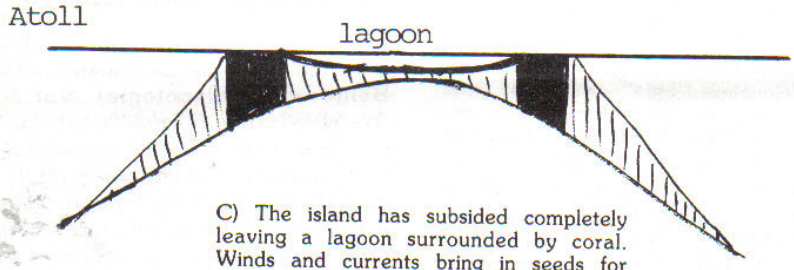
LAGOON FORMATION OF AN ATOLL



A) Fringing coral reef forms around a volcanic island.

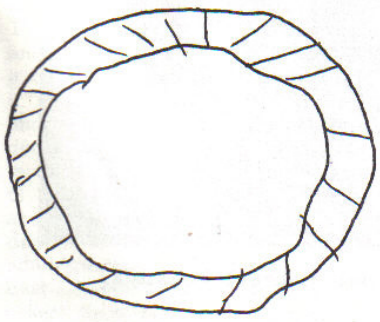


B) The island subsides and the coral continues to grow, keeping up with the sinking island and near to the surface of the water, forming a BARRIER REEF.



C) The island has subsided completely leaving a lagoon surrounded by coral. Winds and currents bring in seeds for growth on the ATOLL which has now been formed. (Note: The dark area is the coral, the lines indicate the 'fill'.)

AERIAL VIEW OF AN ATOLL, subsided volcanic island, now a lagoon fringing reef now forms as currents push the growth of the coral out.
The outer rim is coral which is just below the water level and the top of the coral is filled with debris, sand, shells, broken coral and all this forms the 'land'. The waves especially in storms, break up the masses of coral, which are much weakened by the borings of many kinds of marine animals, and the surf grinds them down to fragments right down to the finest sand.



ACKNOWLEDGEMENTS

My grateful thanks to my dear friend Helena Margeot B.Sc., who patiently answered my many questions.

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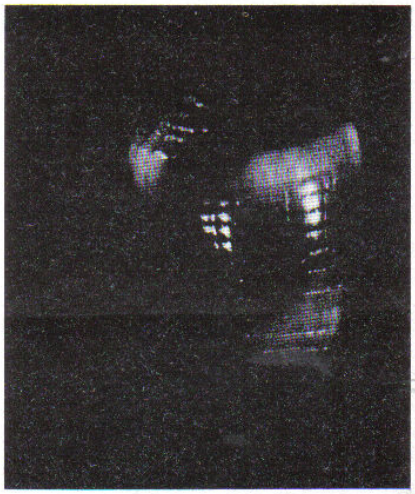
JUVENILIA

How often doesn't one pick up a small shell and find yourself totally mystified about its possible identity?
Mr Albert Strauss of Pretoria recently sent us a photo of a beautiful small (5mm long) apricot pink cone that he found on the beach at Sodwana Bay. It is prominently spotted with black and has precise and regular spiral all over the body whorl.
Frantic and frustrated paging through all the available reference books failed to produce an answer to the question of what it might possibly be so, as it is a Natal shell, the sensible thing to do was obviously to ask for help from there.
Back came the answer from Dick Kilburn: It is a juvenile **Conus ebraeus Linne,1758.**



Juvenile cones often look very unlike the adult shells, in both colour and pattern, and one needs to be familiar with all the growth stages to regonize the immature shells one finds.
This is of cource a problem with many genera and species besides the Conidae: The initial stages of Turbo sarmaticus resemble the shape of a Solariella or Heliacus combined with a beautiful irridesence; immature Cerithiidae look like Turrids; juvenile Strombidae can be confused with all sorts of things.
Having a vivid imagination is sometimes a help and sometimes a hinderance to a collector in these circumstances, but conchology is full of these small enigmas that charm and facinate and entertain and educate us all the time.
One can learn something new every day.

If you would like to trade for common to rare Cape shells, I am looking for common to rare shells from other parts of South Africa-.Please write to Roy Marlow, 103a Nelson Road, Fish Hoek 7975 or telephone (021) 832768.

Book Reviews

APEX VOL 2(2)

REVISION OF THE SUBFAMILY TROPHONINAE (MOLLUSCA: GASTROPODA: MURICIDAE) IN SOUTHERN AFRICA, WITH DESCRIPTIONS OF FOUR NEW SPECIES.

Available from Informations Scientifique de la Societe Belge de Malacologie,Avenue Mozart,52, B1190 Bruxelles (Belguim).

This monograph is the work of Roland Houart. He reviews all the Southern African Trophoninae and all are illustrated. There are three genera that are used **(Trophon Montfort,1810; Apixystus Iredale,1919; Afritrophon Tomlin,1947)**. There are 4 new species described (these listed in the editorial) but there are 4 single specimens that remain undetermined owing to the lack of material. He illustrates the protoconchs and the geographical distribution of each species. It appears that the four new speecies that were named by Turton should fall into other families. This paper is essential for all those who are interested in this family. If you would like to acquire a copy you can write to the author at the above address. The cost is 250 Belgium Francs.

In Cape Town the editors do get magazines from other clubs around the world. Some of these now go to Durban first and are then sent to us in Cape Town. I will list some of the magazines that have arrived and you can write to the editors for the loan of them. We will pay the REGISTERED post to you and then the onus rests upon you to REGISTER the parcel back to us after you have enjoyed reading them.

Some of the mags received are the following:

NATIONAL CAPITAL SHELL CLUB Washington D.C. No.s 84(1986), 85(1986), 87(1986), 88(1987).

1987 SHORT-TITLE CATALOGUE compiled by E.J.Brill.- This is a catalogue of nearly 5000 titles in a large variety of academic diciples. Published in Netherlands.

SAGITTARIUS-Magazine of the South African Museum. The June,1987 issue has arrived, we do, however have all the numbers printed before.

ROSSINIANA- No.34 Jan.1987 contains such articles as: the second part of the Cones of New Caledonia, the list continues from cone 76 to 144.- also the second part of the Tent-Marked Cones. (of interest to local collectors would be the notes on **Conus cholmondeleyi Melvill,1900** which is found in Mozambique.

ROSSINIANA- No.35 Apr.1987 describes a new cone, Conus swainsoni, from New Caledonia, it continues with the Tent Marked Cones.

GLORIA MARIS-Belgische Vereeniging voor Conchyliologie.

Vol.25(2):29-66. The Recent Cancellariidae of Indonesia.Of interest in this volume is the shell that Barnard (1959) referred to as **Scalptia lamellosa Hinds,1843,** Verhecken in this paper says that this was doubtful because **S.lamellosa,** now a synonym of **Scalptia nassa (Gmelin,1791)** is found as far south as Dar-es-Salaam and the Philippines and to Gulf of Oman and Ceylon.

But **Scalptia crossei (Semper,1961)** is found in N.E.South Africa to Philippines and N. and E. Australia.

Vol.25(5)(6) Part III of Red Sea Malacology- The revision of the Conidae of the Red Sea. Of particular interest to local collectors would be **Conus coronatus-,flavidus,generalis,geographus, sanguinolentus, virgo** and the ever problematical **Conus parvatus Walls,1979** with a new subspecies (would you believe it!) **Conus parvatus sharmiensis Wils,1986.**

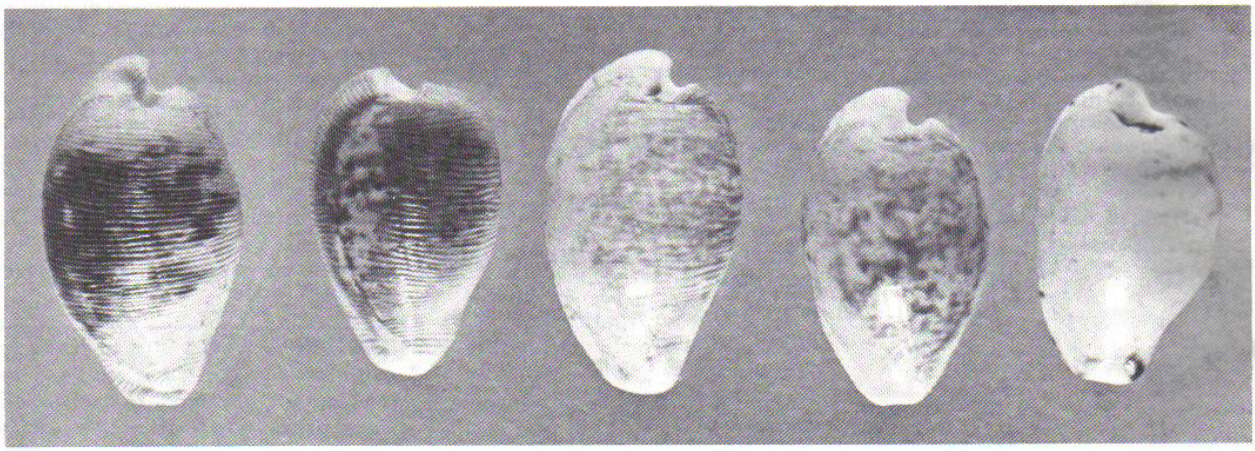
BASTERIA Vol.49,no.4-6pp69-196.

Notes on type material of the family Pectinidae (Mollusca:Bivalvia)3.On the identity of Pecten solidulus Reeve,1853 and Pecten commutatus Monterosato,1875, by H.P.Wagner.

H.E.Coomans,R.G.Moolenbeek & E.Wils:Alphabetical revision of the (sub)species in recent Conidae 8.dactylos to dux.

BASTERIA Vol.50 contains the 9th part of the alphabetical listing of cones and deals with **ebraeus to extraodinarius.** Of special interest is the **Conus elongatus** which no longer has status for any South African cones. But a mention was made of the **Conus mozambicus-Conus guineensis** controversy.

I have just received my copy of APEX (Informations scientifiques de la Societe Belge de Malacologie) Vol.2(2) April,1987, from Roland Houart. In this particular issue he has done a **Revision of the family Trophoninae (Mollusca:Gastropoda: Muricidae) in Southern Africa, with description of four new species.** The new species added to our list are **Afritrophon inglorius Houart,1987 (Transkei), Trophon barnardi Houart,1987 (Off Cape St.Blaize), Apixystus kilburni Hourt,1987 (Transkei), Apixystus transkeiensis Houart,1987 (Transkei). (see also under Book Review.)**



Can you see the difference? Cypraea capensis, Cypraea amphitales, Cypraea edentula. Your comments will be welcome.

FOR THE RECORD

by Sandy Muller
East London Museum
PO Box 11021
5213 SOUTHERNWOOD

The largest tidal pool in Southern Africa may be found on the West Bank of the East London coast. This pool is serviced every three years and it was my good fortune to be invited along when this operation was started in August, 1986. The pool is drained during a spring tide and all debris removed, including large tonnages of sand which have accumulated during the past three years. I was told on good authority, that the pool had in the past yielded amazing shells, not only in size and density, but also in number of species and specimens. The thought did cross my mind that during October and November 1985 we had experienced a flood and all the coastal environments had suffered. However I went along, bucket, spade and all and other paraphernalia, with hopes high !

Although I was not dissappointed, the number of specimens and the diversity of species was very low.

Two adult **Stombus decorus** (Fig. 1) were found in amongst the seaweed fringing the rocky pools within the tidal pool. A number of dead juvenile shells as well as two crabbed adults of the above species, were also found.

The sand pockets were the most rewarding especially as the sun broke through the clouds and started baking down on the sand.

Hydatina physis (Fig. 2) and **Hydatina zonata** were abundant and came crawling out of the baking sand pockets heading for the nearest pool. A few of the largest specimens were collected for the Museum's wet collection and the remainder were taken to a nearby natural pool and released.

The first exciting find was a large **Polinices tumidus** buried in amongst some shell grit and clean sand. This however is not the first time this species has been collected alive from this area. In 1976 Mike Els found two live specimens of this species. His reticence and reluctance to draw attention to himself prevented him from writing to Strandloper. Fortunately he has an excellent collection and shares his gems with me. I thought that my next find a live **Bullina lineata** (Fig. 3) would have everyone sitting up and taking notice but once again Mike Els had beaten me. He had found a lovely live specimen of **B. lineata** in 1976 at Bonza Bay. His shell still contains the dried out remains of the animal.

The animal of **B. lineata** is pure white and very shy. It was impossible to coax it out of its shell to try and photograph it. However we will keep a good lookout and may find another before the next decade passes.

In the tidal pool we also found a number of specimens of 2 rare species. I stared at the **Conus ebraeus** and **Conus lividus** in total disbelief. There they were, adult specimens all well and alive, but in East London! Imagine my dilemma! Do I collect them and set up a new distribution record? Do I leave them to spread further south? How did they get here? Why was there such an enormous jump in their distribution?

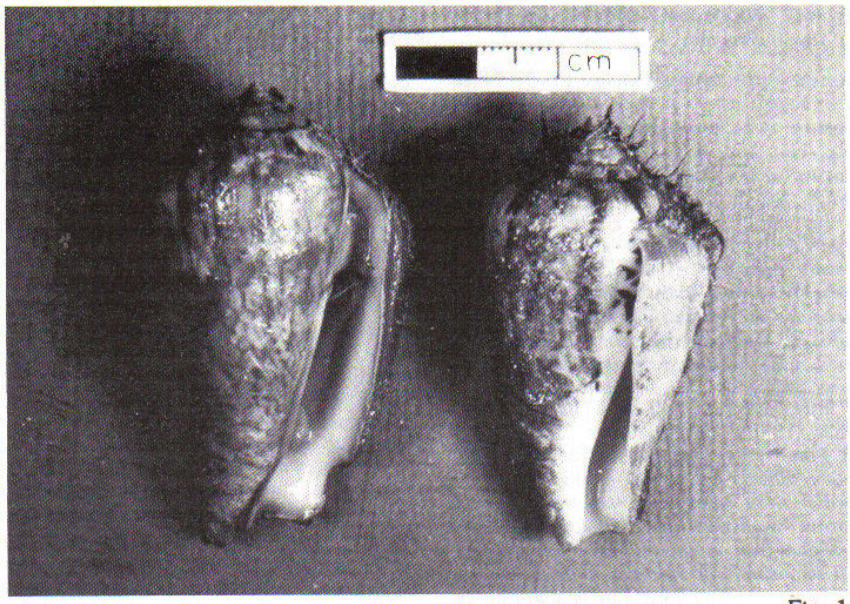


Fig. 1

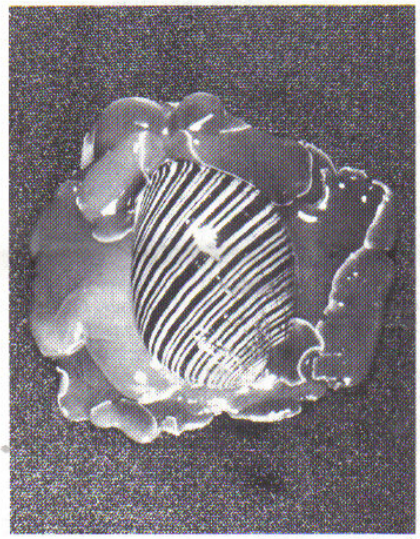


Fig. 2

Well the story ends as follows. These cones originally came from Durban and had been kept in a marine tank in East London. When the tank became too crowded they were released in this pool about 3 months earlier.

What do readers feel about translocation? Should one "seed" areas with species rare or even absent in those areas? Should foreign or introduced species be destroyed?

If you were to find these shells what would you have done with them?

ACKNOWLEDGEMENTS

I wish to thank G Bramfield and Colin Broomhead for allowing me access to the tidal pool, Mike Els for allowing me access to his collection. Janet Lambie for typing the document, and Deon Smit for photography.

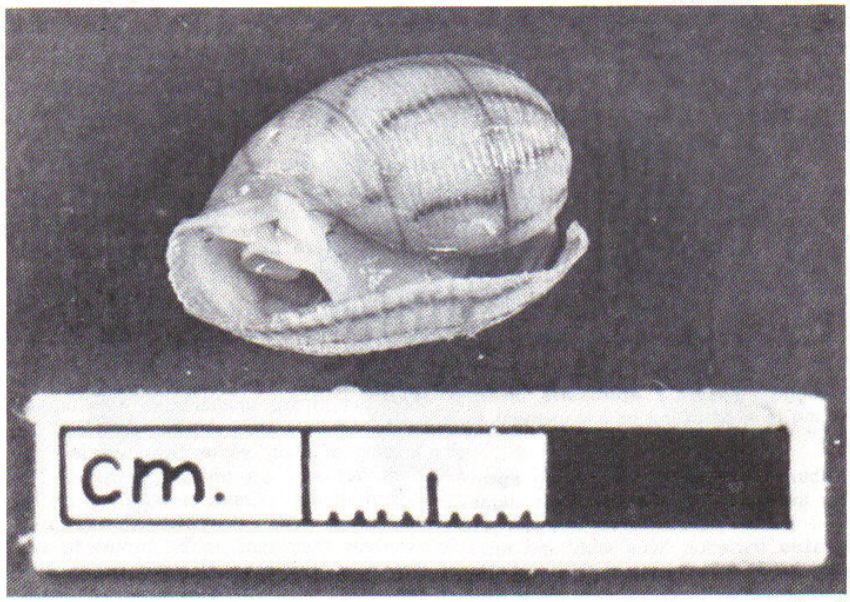


Fig. 3

IS THE WEDDING ON OR OFF?

by David Freeman

Conus sponsalis Hwass, 1792; Plate 322, Fig. 1.
Conus musicus Hwass, 1792; Plate 322, Fig. 4.
Conus parvatus Walls, 1979b; The Pariah No. 5 1-6.

In his book on CONE SHELLS, Walls (1979a) treats **Conus sponsalis** and **Conus musicus** as separate species because he argues that, although each one can vary somewhat in pattern and proportions, they can be found living in the same areas while retaining distinct features and with no intermediate forms.

A little later, writing in THE PARIAH, Walls (1979b) published his opinion that the Natal representatives of what he had called **Conus musicus** ought to be regarded as a subspecies which he named **Conus musicus parvatus.** You might consider this as a sort of "eine kleine Conusmusiek" or variations on a theme of Hwass. At any rate, our readers living in Natal will recognise the tune.

Our Natal shells are dealt with in the book SEA SHELLS OF SOUTHERN AFRICA by Kilburn & Rippey (1982) where Walls's subspecies **parvatus** is treated as a synonym, NOT of **musicus** but of **sponsalis.**

A careful examination of Walls's illustrations of the East African **musicus** (page 485, bottom left) will indeed make you wonder why he didn't rather place it with **sponsalis** (page 616 upper). Kilburn further points out that the typical **sponsalis** with its brown blotches on the body whorl is not well represented in South Africa where most specimens are either blue-grey with no markings, or else have spiral rows of spots, but they do live together AND THERE ARE INTERMEDIATE FORMS.

It should be noted that Kilburn has not said that **musicus** is a synonym of **sponsalis,** but that the particular species on our shores is actually **sponsalis** and **not musicus,** although the spiral rows of spots on our local shells do roughly resemble similar rows of spots on **musicus.** Kilburn points out (Taxonomic notes, page 215) that **musicus** has distinct spiral ridges WHICH ARE LACKING in our shells, and that there are other differences in shape, all of which would tend to identify our shells with **sponsalis** rather than with **musicus.**

A question that one could introduce at this point is: If one is justified in treating **parvatus** as a valid subspecies, should it be a subspecies of **musicus** or of **sponsalis?**

Incidentally, the word **sponsalis** means "relating to a betrothal or engagement to marry".

If Kilburn is correct in preferring **sponsalis** as the appropriate species name, and if he is correct in noting that the **parvatus** variation lives with and intergrades with other forms of **sponsalis,** then it shouldn't be treated as a subspecies at all but merely a variation within that species.

Unfortunately the matter hasn't ended there, although in one sense the problem has been "removed" by being changed.

The Belgian Society for Malacology has an impressive bulletin called GLORIA MARIS to which various authors of considerable prestige contribute articles. In a series on molluscs of the Red Sea, they have just published a Revision of the Conidae of the Red Sea by E Wils (November 1986). This revision is based on material collected during seven expeditions to the Red Sea by the Belgian society between 1971 and 1986. A total of 38 species and subspecies are listed as occuring there.

In dealing with valid and invalid locality records in the existing literature, Wils points out that when Walls created his subspecies **Conus musicus parvatus** in THE PARIAH in 1979, he gave the range as Natal, the Lemurian Islands, northwards to the Red Sea, India and Sri Lanka. Wils points out that **Conus musicus** is absent from most of the area mentioned by Walls, but he adds that in Sri Lanka and in the Andaman Islands both **musicus** and **parvatus** occur together AND WITH NO INTERMEDIATE FORMS. As they are both sympatric and distinct in certain areas, he concludes that **parvatus** deserves to be classed as a separate species altogether, therefore: **Conus parvatus** Walls, 1979 (new status) with type locality as Natal, South Africa.

We are of course left with the uneasy thought that Wils has not addressed the question of whether the cone might actually rather be a form or subspecies of **sponsalis,** which would also account for its not intergrading with **musicus** in Sri Lanka and Anadamans.

With regard to the shells of the Red Sea, interesting observations were made. **Conus parvatus** does not occur there in the form in which we know it in Natal. It has features that are sufficiently distinct to warrant the establishment of a separate subspecies, so there is now also **Conus parvatus sharmiensis** Wils, 1986.

The new subspecies is named after the type locality which is Sharm el Sheik in the Gulf of Aqaba. It occurs throughout the Red Sea area, or at least in all the places visited during the expeditions.

The distinguishing features, which appear to be very consistent, are: the general form of the shell is more stout than in **parvatus** *sensu stricto.* The spots on the body whorl are smaller and more numerous, and they stop short of the shoulder, leaving a plain white band around the shoulder and an unspotted spire. The colour of the spots is also distinctive, being blood red on **parvatus sharmiensis** whereas they tend to be brown to red-brown in the case of **parvatus parvatus.** The base (anterior end) of **sharmiensis** is bright purple.

As the identities of **Conus sponsalis** and **musicus,** in all their various forms, have been based only on shell features so far, the differences of opinion can only be cleared up by a detailed examination of live material representing the whole range of both species. As this is only one of many similar problems exercising the minds of taxonomists, we are still a long way from a betrothal, let alone wedding music, for these two species.

We hope to publish further comments on this interesting problem in later issues of the STRANDLOPER.

ANOTHER PUZZLE:

Now here are some names of molluscan genera. For example: "The riot squad was extremely busy controlling the street mob".

1. The tourists enjoyed at Suva sumptuous dining and entertainment.
2. The guy's disrespect entailed disobedience and insubordination.
3. All of the High Inca's sisters perished at Machu Picchu.
4. That horrible noise will disturb one and all and keep baby awake.
5. The conquering hordes overran Napoli, Nice, Salamanca and N. Africa.
6. While in Egypt at the great pyramid, Ella Fitzgerald fell off her camel.
7. The buzz, hum and murmur excluded the whisper of the pines.
8. In Peru, near Cuzco, live llamas, vicunas, and alpacas.
9. Before you file it, card it, and assign it a code number.
10. From Havana, Fidel Castro phoned his mentor in Moscow.
11. In the rain we dodge cars, puddle-jump, run umbrellas up and race home.
12. Burgomeister E Brandt changed his name to E Brent.
13. Joan I like, but her husband Nat I cannot tolerate.
14. Dona Francesca's Maria Victoria married Don Pedro's son Antonio.
15. Maria Callas sang aria after aria during her encore.
16. Jonathan is okay but what a sap his brother is!
17. The crowds from London's Soho streamed into Hyde Park.
18. As a baby, Loni Anderson was not very pretty and was quite plump.
19. Students in the advanced class were both sharp and accurate.
20. When caught in the maelstrom, busboys failed to fill the water glasses.
21. In early New York, the Dutch amasssed fortunes.
22. Michael's sister-in-law Martha is a real sexy beauty.
23. Amidst charging rhino, oryx and hippo, Nixon berated his gun bearer.
24. The sorority Phi Sigma is an American student institution.

(THE ANSWERS CAN BE FOUND ELSEWHERE IN THIS ISSUE.)

WANTED! DEAD OR ALIVE
(Have dead — now want live)
by Allan Limpus.

Conus excelsus Sowerby,1908

A lone specimen of this shell was washed ashore on a beach at Tanna in the New Hebrides after an under-water eruption in 1878. This shell came into the Kenyon collection and is now in the South Australian Museum, the Holotype of **Conus tannaensis Cotton,1945,** No.D.6172.

Although previously described by Brazier as **Conus pulcherrimus** in 1894, Edward Cotton described it as **'tannaensis'** in 'A Catalog of Cone Shells (Conidae) in the South Australian Museum'.(Records of S.A.Museum Vol.VII No.2, June 30, 1945) Brazier's label on the above shell bore the locality but no name, thus Cotton's work.

However, in 1908 Sowerby III published the decription of **'excellus'** giving it the now accepted title, but with the doubtful location of New Caledonia. Other specimens have been recorded from various locations in the China Sea — Nakayasui, Shikama & Habe,1968, from off Japan; off Taiwan — north-eastern Indian Ocean and from the vicinity of Solomon Islands.

Now I have 3 specimens taken by deep-water trawls off the Queensland coast near the southern extremity of the Great Barrier Reef. The first to appear, which fits Cotton's description of **'tannaensis'**,came from 110 fathoms to the north of Lady Elliot Islands, which is the most southerly coral island of the Great Barrier Reef, and lies 42 miles (67 km) off the coast, 14 degrees from the city of Bundaberg on a lattitude of approximately 24 degrees south. This shell was trawled in December 1984 in the same area that many new exciting shells were being found, eg **V.garderi Darragh,1983, Conus queenslandis da Motta and Conus whiteheadae da Motta and Galeodia mccamleyi Ponder,1983** and many others.

Since the discovery of **Cypraea porteri** and **Mitra hilli** in the vicinity of the Swain Reefs which lie 150 miles (240km) to the north of this area, the next exciting shells to come up were 2 more **Conus excellus.** And so in June 1986 two more dead specimens were added to my collection.
These 2 shells came from a depth of 120 fthms to the south-south-east of Lady Elliot Islands, approximately 25 miles (40km) from where the first one was found. Although more heavily coral encrusted than the first, there was no mistaking the shape, and upon cleaning the patterning verified my identification. Unfortunately all 3 shells have been dead collected, but their presence extends the known range of **Conus excellus** to within Australian waters.

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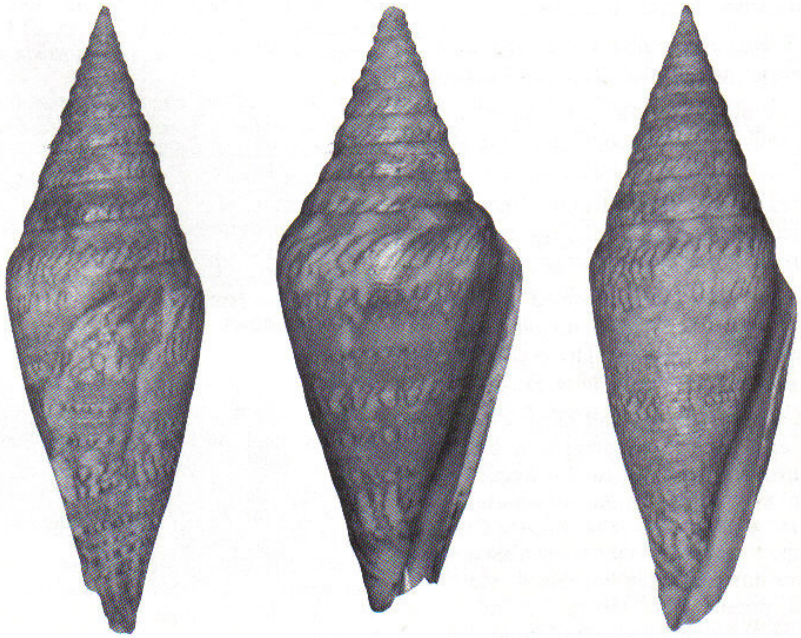
Estival,J.C.,1981-Cone Shells of New Caledonia and Vanuatu.

Conus excellus, trawled 120 fthms off Lady Elliot Islands. Length 71.8mm

ANSWERS TO HIDDEN NAMES WORD PUZZLE.

GENUS NAMES: 1, Vasum. 2, Pecten. 3, Cassis. 4, Turbo. 5, Polinices. 6, Pyramidella. 7, Murex. 8, Olivella. 9, Cardita. 10, Trophon. 11, Prunum. 12, Terebra. 13, Natica. 14, Casmaria. 15, Angaria. 16, Niso. 17, Ostrea. 18, Babylonia. 19, Harpa. 20, Strombus. 21, Chama. 22, Thais. 23, Hipponix. 24, Typhis.

Conus excellus, trawled 110 fthms north of Lady Elliot Islands. Length 90.5mm.



Conus excellus Sowerby,1908

TWENTY-NINTH ANNUAL GENERAL MEETING OF THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA will take place on Saturday, 25th July, 1987 at 14h30 in the lecture room of the Durban Museum, Smith Street, Durban.

AGENDA.

1. Notice of meeting.
2. Welcome
3. Attendance register and apologies
4. Minutes of the previous A.G.M.
5. Matters arising
6. Financial Report.
7. Presidents Report.
8. Discussion on Financial Report and Presidents Report.
9. General.
10. Entertainment.
11. Close.

EDITORIAL

Mistakes are often made in the Strandloper, there are many reasons for this, which I will not elaborate. It is not easy to get a Strandloper without any problems. All those that work on it to bring it to you have other jobs and do all the work in their spare time. It is not often that we are told of any mistakes that occur in the magazine either. People seem to be afraid to tell the editors what they saw wrong or of something they did not like. We welcome comment of any kind.

It would be interesting to get some feedback. I received a letter this week telling me of some errors in the last Strandloper. These I pass on to you.

Mrs I Bartsch's name should not have appeared under the Deceased notice.

We are pleased to tell that she is alive and well. We must apologise for this error.

The exchanges wanted notice that was in bold at the bottom of page two was incorrect. It will be correct in this issue.

We have also been informed that the secretary of the Pietermaritzburg group is now Mrs E.Coetzee. The secretary of the Durban group is Miss A Latigan.

This was not as a result of an error by the editors but an ommision by the groups. We have had no communication from any group in approximately 3 years, apart from the South Coast group. I do realise that the Strandloper comes out erratically but this should not deter people from letting us know of sharing their knowledge and information picked up at meetings or while shelling.

The society has sent Strandloper to many people on the asumption that they would pay. Many of these people have as yet not paid their subs and will thus not be on the distribution list for this Strandloper. If any of your friends are not getting their magazine it may be because of this or because there has been an address change of which we have not been notified. If in doubt you can contact the society via the DURBAN address, which you will find on the back page. You may have noticed that on all the labels of the the previous Strandloper there were numbers on the right-hand side. These will henceforth be your membership number. It will be easier to trace you in the records if you use this number. The date will soon indicate to which year your subs have been paid.

Thank you to the members who wrote or phoned to say they enjoyed the last Strandloper, one member went as far as to say it was the first time that she sat down and read the magazine from cover to cover without putting it down.

A very special thank you to a very special member- Pat Dalgarno of Scottburgh.Pat sent us a donation for the club with a note saying it was for all the pleasure that she derived from Strandloper over the years. Pat does not collect anymore but enjoys a good shell chat. Pat I must thank you for all those telegrams and letters of congratulations on all the Strandlopers that you enjoyed, it made all the hard work worthwhile.

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R30 per half column
R1 per column line

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c/o Durban Museum
P.O. Box 4085
Durban
4000

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