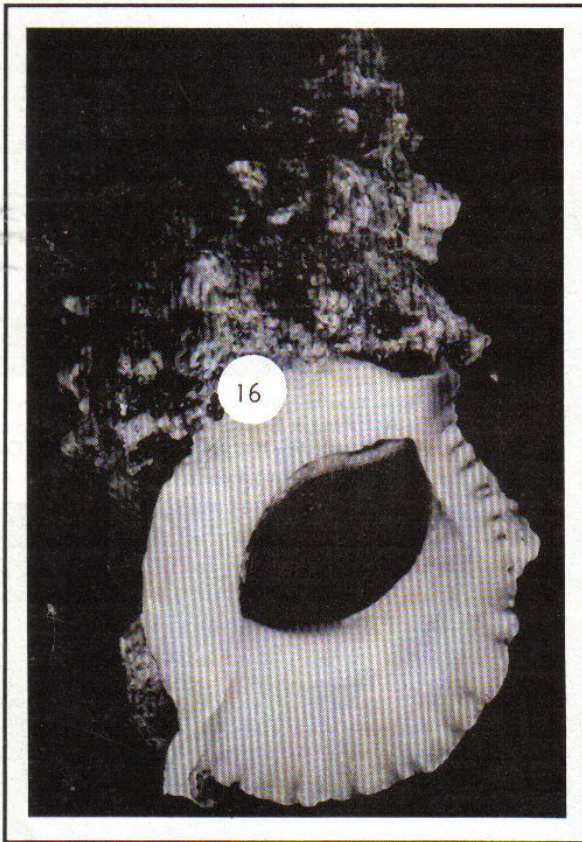




BURSIDAE OF THE S.W. INDIAN OCEAN

by Dawn Brink

Shells and captions supplied by Dawn Brink
unless otherwise indicated.
Photography is by Werner Massier.



16. *Tutufa (Tutufa) bubo* (Linné, 1758)
21.0 mm specimen Southern Natal.
Range: Indo-Pacific to Natal South Coast.

BURSIDAE Thiele, 1929

Of this family, the following three genera are found in the S.W. Indian Ocean, which includes South Africa, Mozambique, Madagascar and the Mascarene Islands.

Bursa Röding, 1798
Bufo Schumacher, 1817
Tutufa Jousseaume, 1881

Five sub genera are seen bracketed on the captions.

This is a small family living in tropical or warm seas. Shells are thick and heavy with strong varices. They are distinguished by a deep posterior canal with a short anterior canal. Most are of a rugged appearance with either granulate, nodulose or spinose sculpture. They have a horny operculum and the periostracum if any, is indistinct.

These shells live amongst rocks and coral and are often found on mud and sand, many in shallow water. They are carnivorous, feeding on other molluscs, worms or sea urchins. Sexes are separate, the female is usually larger than the male. Egg capsules are attached to rocks, coral or bivalve shells, which the female broods with her foot for about two weeks. Free-swimming larvae are known to cover vast distances.

E R R A T A Issue No 230 July 1991

Please note the following crucial errors - after all to err is human and to forgive divine. Errata in full will be given in the Dec Strandloper.

PAGE 1 - caption to photograph should read 210 mm

PAGE 2 - place a 7. next to the correct caption

PAGE 4 - interchange the photographs

PAGE 6 - The gremlins really did it this time. Because the figure was placed the incorrect way up on the back of the original photograph, the photograph and captions don't tally!
The caption should read:

FIG 1 : Top row: *Magilus antiquus*, *Martesia striata*,
Spengleria mytiloides and *Gastrochaena cuneiformis*
2nd row: *Petricolor bicolor* and *Diplodonta* sp.
3rd row: *Lithophaga obesa* left and *L. malaccana* right.

PAGE 9 - Honorary Life Membership should read Honorary Membership

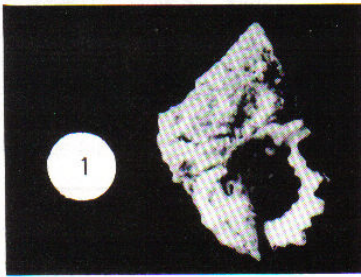
PAGE 10 - Honorary Life Membership should read Life Membership.

One day I will get these right! OP

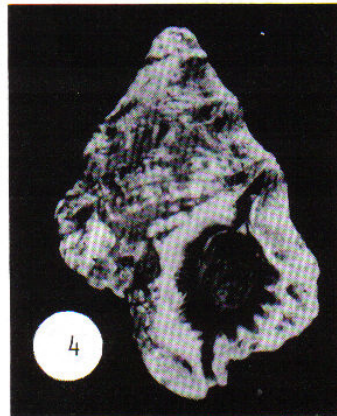
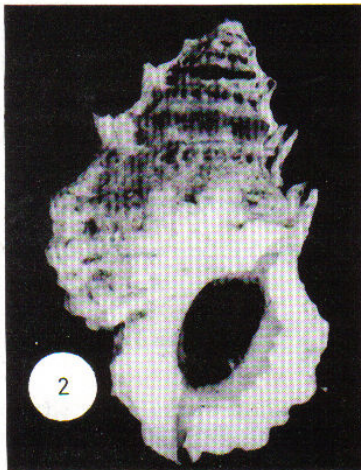
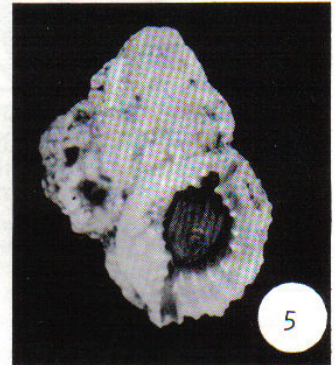
OLIVE

S. Coesx Group

BURSA



1. *Bursa (Bursa) bergerti* (Tapparone-Canefri, 1880) 21.8 mm specimen from Reunion Island, Indian Ocean. Range: Indian Ocean - Mascarene Islands.
5. *Bursa (Bursa) rhodostoma rhodostoma* (Beck in G.B. Sowerby, 1835) 25.7 mm specimen live-taken from Reunion Rocks, Natal. (Rare in this locality). Range: Tropical Indo-Pacific to Natal South Coast.

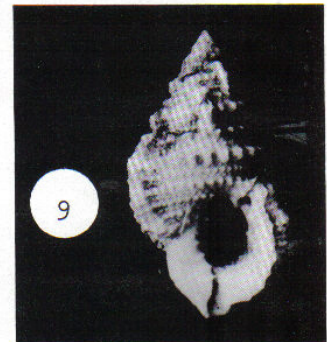
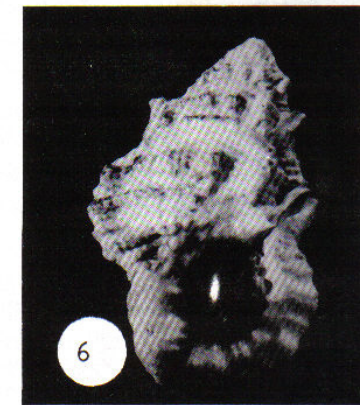
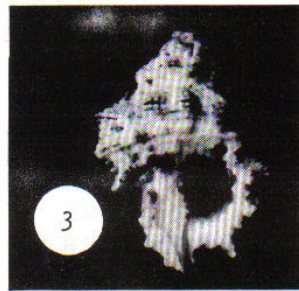


Bursa (Bursa) venustula (Reeve, 1844) 36.1 mm specimen in the British Museum (N.H.) (Extra rare). Range: Indo-Pacific - Mascarene Islands, one authenticated specimen from the Phillipines. (Photo: A.G. Beu - Shells of the Phillipines, F.J. Springsteen & E.M. Leobrera).

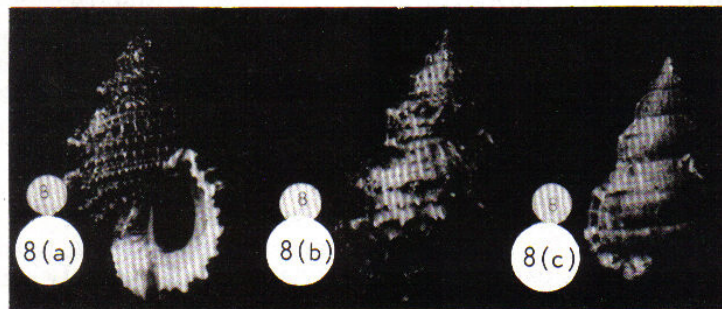


2. *Bursa (Bursa) bufonia* (Gmelin, 1791) 72.9 mm specimen from Reunion Rocks, Natal. (Rare in this locality). Range: Indo-Pacific to Natal South Coast.
3. *Bursa (Bursa) cruentata* (G.B. Sowerby II, 1835) 38.1 mm specimen Southern Natal. (Coll. V.v.d.Walt). Range: Indo-Pacific to Natal South Coast.

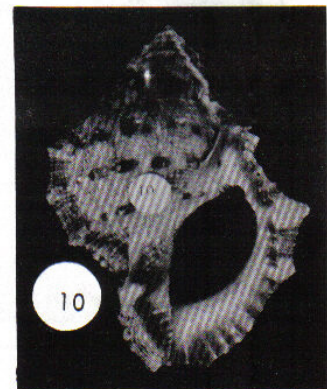
4. *Bursa (Bursa) lamarcki* (Deshayes, 1853) 56.1 mm specimen live-taken Park Rynie, Natal. (Coll. O. Meyer). Range: S.W. Pacific - only one known specimen from S. Africa (extending normal range to Indian Ocean).
6. *Bursa (Bursa) rosa* (Perry, 1811) 56.1 mm specimen from Isipingo, Natal. Range: Indo-Pacific to Natal South Coast.



9. *Bursa (Colubrellina) ranelloides* subsp. *tenusculpta* Dautzenberg & Fischser, 1906 44.3 mm specimen trawled N. Natal. Range: Off Durban and N. Coast, Natal, tropical E. and W. Atlantic.



8(c) *Bursa (Colubrellina) granularis* forma *alfredensis* Turton, 1932 47.4 mm specimen from Mzamba, Transkei. (Body whorl smooth, spiral whorls slightly granulose). Range: Indo Pacific to East London, occasionally Jeffrey's Bay.



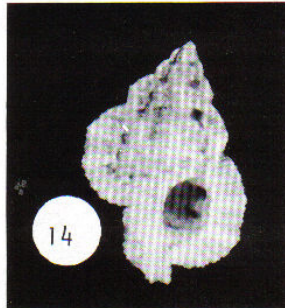
- 8(a) *Bursa (Colubrellina) granularis* (Röding, 1798) 57.7 mm specimen from Park Rynie, Natal. (Finely granulose). Range: Indo-Pacific to W. Transkei.
- 8(b) *Bursa (Colubrellina) granularis* forma *affinis* (Broderip, 1833) 57.7 mm specimen from tidal pool, N. Coast, Natal. (Coarsely nodular). Range: Indo-Pacific to W. Transkei.

10. *Bufonaria (Bufonaria) crumena* (Lamarck, 1816) 86.4 mm specimen dredged off Bluff, Durban. Range: East Africa to Natal South Coast.

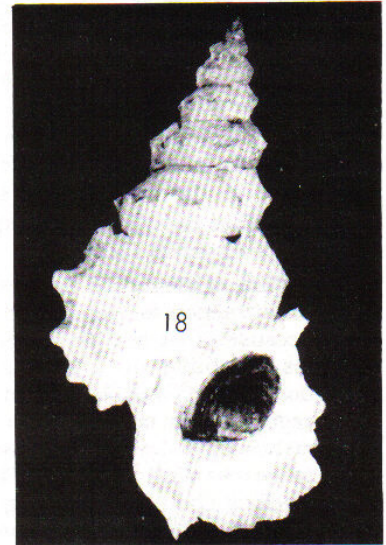
BURSA



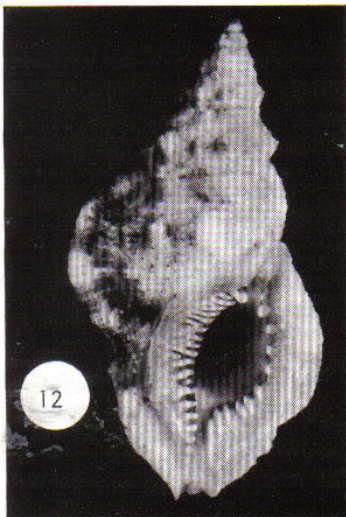
11. *Bufonaria (Bufonaria) echinata* (Link, 1807) 63.8 mm specimen from India, which is also found in the Mascarene Islands, Indian Ocean. Range: Indo-Pacific



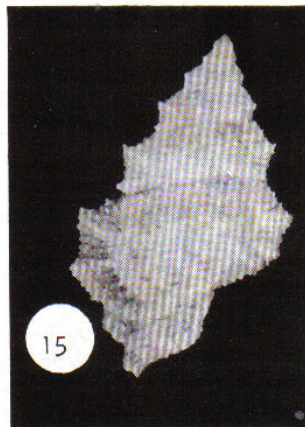
14. *Bufonaria (Bufonaria) margaritula* (Deshayes, 1832) 36.9 mm specimen S. Mozambique. (Rare in this locality). Range: Indo-Pacific to Zululand.



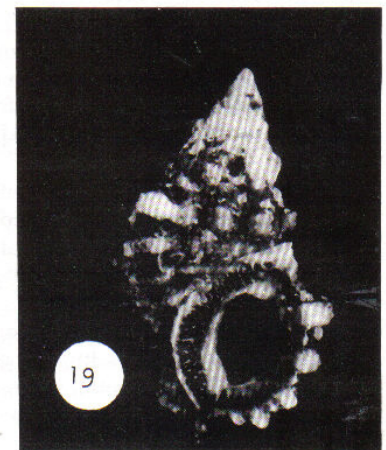
18. *Tutufa (Tutufa) tenuigranosa* (E.A. Smith, 1914) 220 mm specimen trawled N. Natal. (Coll. V.v.d.Walt). (2 other specimens in coll. M. Lussi & D. Brink). Range: Indo-Pacific.



12. *Bufonaria (Bufonaria) fernandesi* Beu, 1977 75.3 mm specimen trawled off S. Mozambique. (Rare). Range Somalia to Mozambique.

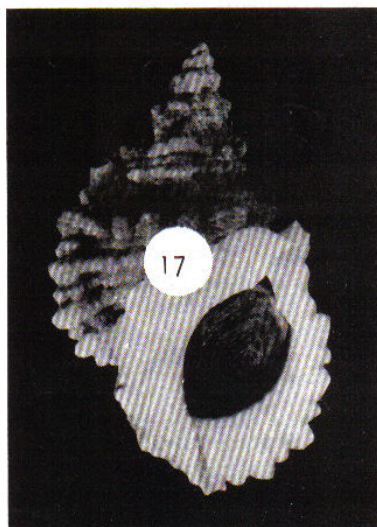
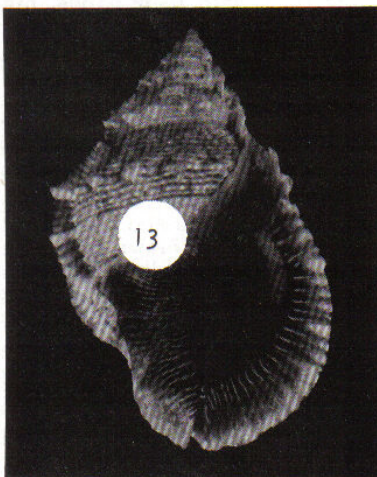


15. *Bufonaria (Bufonaria) nobilis* (Reeve, 1844) 88.4 mm specimen trawled off S. Mozambique. (Rare in this locality). Range: Indo-Pacific.



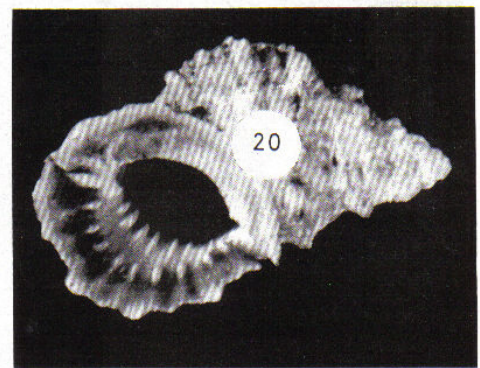
19. *Tutufa (Tutufella) nigrita* Muchlhaeusser & Blöcher, 1979 61.1 mm specimen from Nossi Bé, Madagascar. Range: Madagascar.

13. *Bufonaria (Bufonaria) foliata* (Broderip, 1826) 99.8 mm specimen dredged off Bluff, Durban. (Coll. V.v.d.Walt) Range: Indian Ocean.



17. *Tutufa (Tutufella) bufo* (Röding, 1798) Syn: *T. lisstoma* (E.A. Smith, 1914) 110.5 mm specimen from Mozambique. (2 other specimens in coll. M. Meyer & M. Lussi - trawled N. Natal). Range: Indo-Pacific.

20. *Tutufa (Tutufella) rubeta* (Linné, 1758) 103.2 mm specimen Southern Natal. (Coll. V.v.d.Walt). Range: Indo-Pacific to Natal South Coast.



BOLMAS GALORE

by Henriette Botha

The Kleinmond Coastal and Mountain Nature Reserve in the Cape has many unique characteristics. One is the bright red *Erica pillansii* on the slopes of Kleinmond's Paardeberg and it is the only place in the world where it is found. Another rarity has come up in the form of a humble shell!

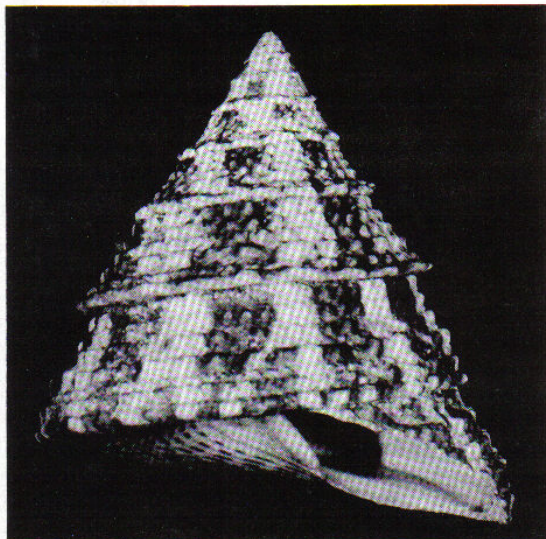
The coastline of Kleinmond has always been an attraction for young and old alike because of its sea life and shell varieties. To build up a good shell collection, shelling must be carried out on a regular basis because what the tide washes up today will be washed away tomorrow! With this in mind I did some shelling about two years ago. It was then that I found a shell which I had never seen before, namely *Bolna tayloriana* (Smith, 1880).

Of this shell Kennelly (Marine Shells of South Africa) wrote that it is not found on South African beaches. Kilburn and Rippey (Sea Shells of Southern Africa) state that it is sometimes found by trawlers.

It was said by friends in the shelling world that someone must have dropped it there! The only way to get at the truth would be to explore and observe the coastline on a regular basis.

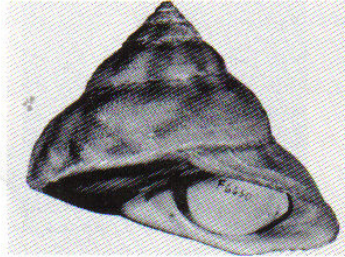
During the next 14 months I found about 20 of these shells in very good condition and numerous damaged ones, all at the same locality in our nature reserve.

It was as if our sea said: "While you conserve my coastline as a Nature Reserve, I will reward you by giving you something exclusive to Kleinmond"!



Tectus virgatus (Gmelin, 1791) in South Africa

by Dai Herbert



E.A. Smith recorded this species for the first time from South Africa in 1903 [as *Trochus (Cardinalia) virgatus*], basing the record on a specimen collected by Henry Burnup in Durban. In 1963, however, Barnard questioned this record, stating that he doubted whether the species was a true inhabitant of South African waters and noted that the species had not been found subsequently in Durban by the University of Cape Town or in Delagoa Bay (Inhaca Island) by the University of the Witwatersrand. In 1972 Kilburn pointed out that, contrary to Barnard's belief, the presence of the species in both Natal and Mozambique was well attested and cited additional locality data, but indicated that no specimens had been found in Natal for many years.

Recently, SCUBA diving expeditions to Zululand have brought to light a number of specimens confirming that the species is still present in South African waters. It appears to be an inhabitant of shallow subtidal reef environments in tropical or near tropical waters. Burnup's original specimen of *T. virgatus* is in fact still present in the Natal Museum and is

illustrated here. I see no reason to doubt the provenance of this specimen and consider it quite possible that the species could have occurred in Durban Bay or on one of Durban's inshore reefs, such as Vetch's Pier, before the area became degraded as it is today. I have not heard of the species having been found further south than Isipingo, but it is quite possible that odd stragglers from the populations to the north may reach areas such as the Aliwal Shoal and Landers Reef.

Strandlopers

by RF Lawrence

What did the Strandlopers eat?

Some anthropologists appear to think that the Strandlopers did not live permanently on the shore but were only occasional or seasonal visitors; various groups or tribes of these primitive people however must have settled on the beaches for longer periods judging by the size of the middens they have left behind; others, like the restless Bushmen of the Kalahari perhaps wandered continually up and down the long coast line from the Cape to Natal. Living conditions were extremely favourable for them; lodgings were easy to come by, with shelters, caves and overhangs almost everywhere, offering complete protection and usually had a good water supply nearby. Some of the caves, such as the Kelders near Hermanus, were very large and could provide shelter for a regiment of Strandlopers.

What an abundance of sea food there must have been, and so easy to gather. Before the era of oil pollution and bait collectors the intertidal rock pools supported a far richer fauna and flora than they do today; even during the last 30 years they have been scoured out and depleted of their natural life leaving only the bare and naked rock. For the Strandlopers it must have been all too easy to gather quantities of shellfish without much effort.

Judging by the contents of the middens the order of food preference seems to have been roughly as follows:- The black mussel and larger limpets which were also the easiest to collect and provided an inexhaustible supply of seafood at all seasons. Then there were the white sand mussels and rock oysters, the larger gastropod shells like the Turban or alikreukel and Venus Ear (Klipkous or Perlemoen).

We need not suppose that the Strandlopers were incapable of making crude traps to snare crayfish or of catching them with their hands, but although they probably caught many small fish in the pools they do not seem to have been ardent fishermen. What of the Octopus which would have been a shame to waste, and for a snack the occasional red bait or sea urchin eaten raw, as they are today by the inhabitants of Transkei?

In those times sharks and other dead fish must have been thrown up on the beach and, as they do today, whales sometimes lay stranded on the shore to provide steaks for everyone by way of a change.

Altogether, one wonders how any people could give up such a bountiful environment.

(Ack: The Kowie Announcer, Port Alfred, S.A., Nov 1974)

What you should know about:
THE SEA AND SEA-SHORE ACT

by Olive Peel

"The sea within the territorial waters of the Republic, including the water and bed of tidal rivers and lagoons, and the sea-shore up to the high-water, is the property of the State President".¹

It has never been truly established why the strip of land known as 'Admiralty Reserve' came into existence. In about 1840 the administrators of Natal ruled that 45m above the high-water mark was to be reserved and become the property of the Government, whilst in the Cape a strip of land measuring 38m from the high-water mark was reserved for the same purpose, whatever that was!

North of the Tugela River privately-owned land is separated from the high-water mark by a strip of 76m Forest Reserve and many of the beaches in that area have been declared Nature Reserves protected by the Natal Parks Board on behalf of the Government. There is no documentary record of why the 76m was reserved for that purpose.

If the high-water mark is altered by the building of sea walls, bridges, jetties, groynes or by reclamation, then the boundary will remain where the high-water mark was **originally**.

Along some stretches of northern Natal the Government has abandoned its claim to the reserve and in 1916 the Durban Corporation was given freehold title by the Government to the beach front from Bell Street to the Umgeni River.

The Government has rights to the sea twelve nautical miles from the low-water mark and also has the right to dictate as to what can be removed from the sea or sea-shore such as fish, minerals, shells, aquatic plants, natural oil, etc. It also has the right to sell, rent or donate any portion of the sea shore to any local authority eg for erecting bathing booths and tidal pools. Private individuals whose properties abound the "Admiralty Reserve" for instance may apply to the Department of Community Development - which Department is custodian in this regard

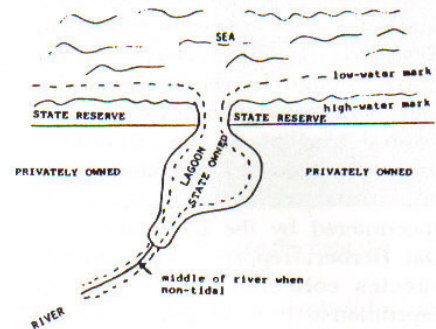
on behalf of the Government, to caretake this area. If this is granted they may not prevent the public access to the beach or reserve and they may not erect fences on this land, or allow trees to be cut.

The public has certain rights to the foreshore such as to bathe, go onto it, fish, draw up boats, dry nets, and no one is entitled to interfere with this right, unless notices are displayed such as 'Dogs prohibited'.

No dredging may be carried out in the sea or on the sea-shore without prior consent from the Minister of Agriculture. This was laid down in The Sea-Shore Act of 1935 (Act 21 of 1935) section 10(3) (d).

As far as rivers are concerned, included with the sea-shore are navigable rivers, and although there are no navigable rivers in South Africa except a few river mouths and lagoons, all tidal waters and their beds are regarded as part of the sea in the Sea Shore Act, No 21 of 1935. The boundary of non-tidal rivers is taken as the middle of the river and if the river is re-routed by man or floods, then the fluid boundary is still where it was originally, namely the middle of the river or stream.

If the river is tidal then the high-water mark is the boundary, but this boundary changes to the middle of the river where the tidal action is no longer noticeable, that is, where the level ceases to rise and fall as a result of the action of the tides.



REFERENCES:

1. The Sea and Sea-Shore Acts, Government Printer, Pretoria.
2. The Land Surveyor and the Law, Simpson and Sweeney, University of Natal Press, 1973.
3. Lecture Notes, R Hepburn, University of Natal, Durban.

GLOSSARY:

'Sea shore' means the water and the land between the low-water mark and the high-water mark;

'Sea' means the water and the bed of the sea below the low-water mark and within the territorial waters of the Republic including the water and bed of any tidal river and of any tidal lagoon;

'Low-water mark' means the lowest line to which the water of the sea recedes during periods of ordinary spring tides; 'High-water mark' means the highest line reached by the water of the sea during ordinary storms occurring during the most stormy period of the year, excluding exceptional or abnormal floods.



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BORERS INTO CORAL, WOOD AND SEEDS

by D.G. Steyn

The coral reefs along the Zululand coast are among the most beautiful in the world. This beauty is enjoyed by thousands of SCUBA divers who are brave enough to venture into this underwater world with its wide range of animal and plant life. Common, uncommon and very rare shells living on, under or among coral are encountered by the observant diver. Dai Herbert reported on numerous species collected on a scientific expedition to the coral reefs of Sodwana Bay and Kosi Bay. The area between Cape Vidal and Kosi Bay is, however, a marine reserve and no shells may be collected without a permit.

Coral, and particularly dead coral, is weakened by borers and pieces are broken off by currents and wave action. These pieces, which vary from small to fairly large, are washed up on the beach or can be found in rock pools at low tide. A variety of shells can occur in the coral pieces, some of which actively bore into the coral and some invade the boreholes vacated by other shells. The young molluscs bore into the coral, sandstone or wood by mechanically abrading the surface with its file-like shell sculpture or with the aid of the modified shell which serves as a cutting tool to drill tunnels into wood. In the genus *Lithophaga* the mantle secretes an acid that dissolves the limestone or coral resulting in a smooth walled tunnel.

Fig. 1. Top row: *Lithophaga malaccana* left and *L. obesa* right. Second row: *Diplodonta* sp. and *Petricola bicolor*. Third row: *Gastrochaena cuneiformis*, *Spengleria mytiloides*, *Martesia striata* and *Magilus antiquus*.



When a piece of coral is examined, it is not always obvious that it harbours any shells. On close inspection the opening of a tunnel may be seen. It is, however, only when the coral is broken into smaller pieces that the tunnels are evident. Breaking up the coral should be done with care because the shells living in the shelter of the tunnels are mostly thin-walled and brittle. They are protected against wave action and outside influences. It is with disappointment that one realises that the fragments falling out of an exposed tunnel are the remains of a shattered shell.

Two bivalves belonging to the family Gastrochaenidae have been collected from beach coral at Sodwana Bay.

The animal has a large foot that makes the valves gape. *Gastrochaena cuneiformis* Spengler, 1783, and *Spengleria mytiloides* (Lamarck, 1818), bore into coral mechanically, abrading the coral to occupy a hole slightly bigger than the shell. The animal in both species is a suspension feeder and the burrow must, therefore, be connected with the outside so that water can

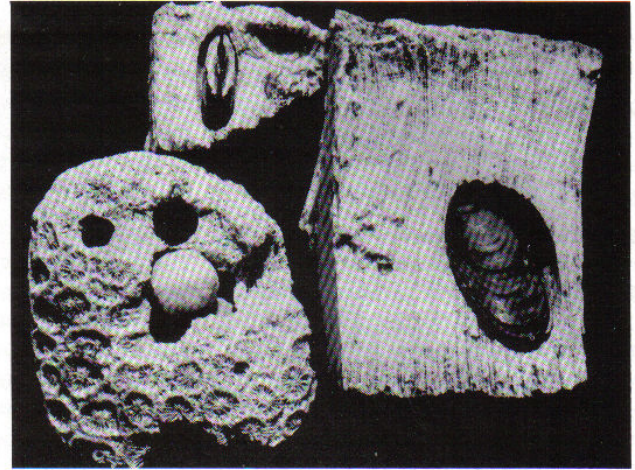


Fig. 2. *Lithophaga malaccana* in its burrow (top) *Lithophaga obesa* (±80mm) at right and two shells of *Magilus antiquus* visible within a burrow.

be drawn in and expelled. The burrows are not very extensive and are limited to an area close to the surface of the coral. The shells are light and without distinct colour patterns.

Two species from the family Mytilidae belonging to the genus *Lithophaga* Röding, 1798 have been collected from coral. *Lithophaga obesa* (Philippi, 1847) and *L. malaccana* Reeve, 1858 bore into coral leaving extensive burrows. No specimens of *L. nasuta* (Philippi, 1846) and the endemic *L. cylindrica* (Krauss, 1848) have so far been found. One specimen of *L. obesa* measured 80 mm and the largest *L. malaccana* attained a length of 40 mm. The outer surface of *L. obesa* is covered by a chalky layer whereas in *L. malaccana* the encrustations extend beyond the edge of the shell and are particularly conspicuous at the posterior end. Another member of this family *Gregariella petagna* (Scacchi, 1832) is

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frequently found in the tunnels evacuated by the bigger shells.

The members of the family Petricolidae of which only three occur in South Africa are suspension feeders. The long siphons are protected by a plug of rock or coral particles consolidated by mucus. In *Petricola bicolor* Sowerby, 1854, this plug is absent by the time the coral reaches the beach. The specimens recovered from the beached coral are usually chalky white without the colour stains or the reddish-brown posterior blotch normally seen in this species. Very dense populations may be found in some pieces of coral, where they can be seen in the coral with the posterior ends exposed.

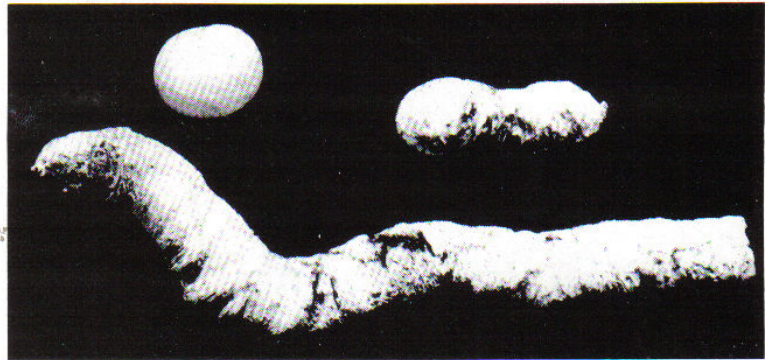
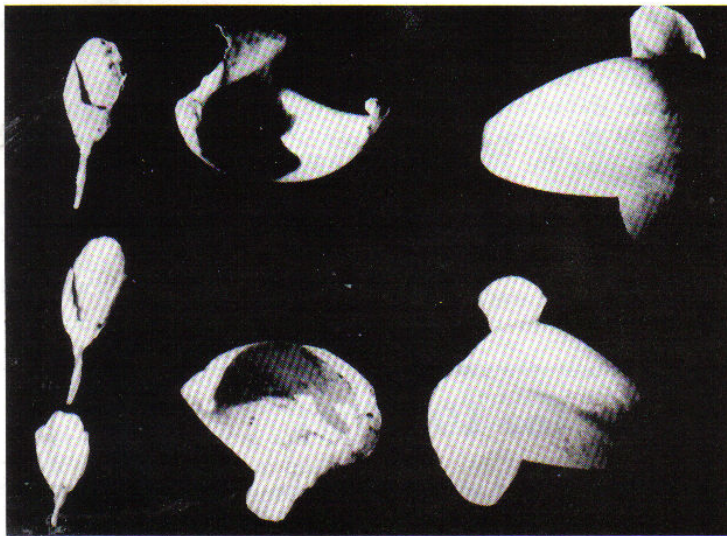


Fig 3. *Magilus antiquus* - young stage without the tube, at the top right the original shell is discernible with the long tube at bottom.



Above: Fig. 4. The shell of *Teredora princepsae* used for drilling and on the left the pallets used for identification.

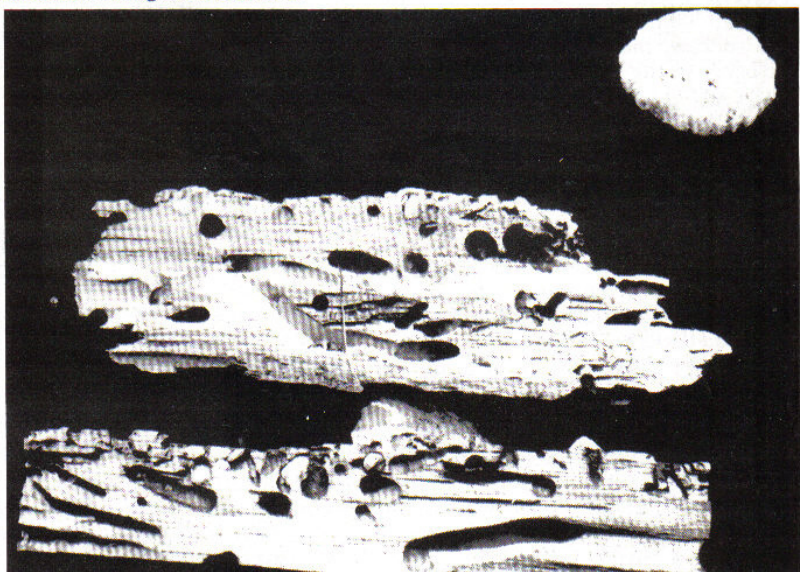
Below: Fig. 5. Pieces of drift wood with the shells of *Martesia striata* visible and the burrow of *Teredora princepsae*. Note the calcareous lining in the burrows.

A small white bivalve with round globular smooth valves possibly belonging to the genus *Diplodonta* Brown, 1831 was found in shallow burrows in the coral. At this stage further identification was not possible.

Although the family Coralliophilidae is associated with coral only a single member of this family, *Magilus antiquus* Montfort, 1810, was collected. In the early growth stage the shell has a coiled or spiral structure typical of a gastropod. The exterior of the shell is fairly smooth with very little sculpture. The shell grows as an irregular tube exhibiting growth lamellae and a strong basal keel. The body of the animal occupies only the terminal part of its shell or tube. As it grows the body shifts anteriorly and fills up the early growth stage with solid calcareous matter secreted by the body. In this way the part previously occupied is closed off. In the young stage the shell may be seen in the shallow burrow through an opening in the coral. In the more advanced stage very little is evident and the long blocked tube is only discovered deep in the solid substance of the coral when this is broken into smaller fragments.

All the members of the family Pholadidae are borers. *Martesia striata* (Linné, 1758) is a very destructive borer, penetrating drifting timber, mangrove trees, plastic and even lead pipes. It enters the wood perpendicular to the surface, making a burrow slightly deeper than the length of the shell. Further boring is stopped when the animal reaches maturity. The animal lives on a diet of plankton. This bivalve shell has a rather complicated structure consisting of the two valves plus accessory plates of which four are present.

Shipworms, belonging to the family Teredinidae, are among the most destructive borers and inflict enormous damage to wooden ships and boats and any submerged or floating timber. The shipworm *Teredora princepsae* (Sivickis, 1928) is washed up in floating timber on the beach at Sodwana Bay. The shell is modified to serve as a cutting tool to drill tunnels into wood. It is interesting to note that although a piece of wood may be heavily infested with shipworms they never drill into another tunnel. The burrows are lined with a calcareous layer. It is probably this calcified layer that prevents intersection and causes drilling to be



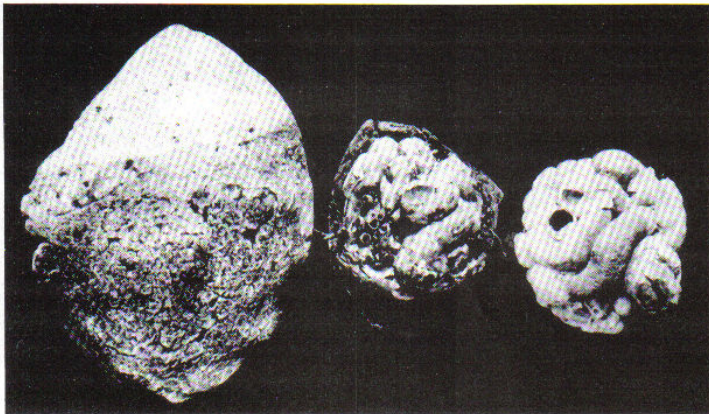


Fig. 6. Intact seed of swamp trees, seed partly removed and intertwined calcareous tubes of *Uperotus clavus* exposed.

diverted in a different direction when another tunnel is approached. Although shipworms are chiefly plankton feeders, bacteria living in the alimentary tract digest part of the wood ingested during boring making the end products available for absorption.

The entrance to the burrows is closed by a pair of calcified pallets. The pallets are attached to the base of the siphons

and close off the burrow when the siphons are retracted. The pallet is typical for the species and is used for identification. Some of the pallets may usually be recovered from the empty burrows.

Another member of the family Teredinidae *Uperotus clavus* (Gmelin, 1791) lives inside the floating seeds of swamp trees which wash up on the

beach. The seeds do not look abnormal but on closer inspection the calcified tubes can be seen through numerous small openings in the seed. When the outside layer of the seed is peeled off, the intertwined tubes are exposed. Here, as in *Teredora princessae* the pallet is used for identification.

It pays to pick up and inspect pieces of coral, sandstone or pieces of driftwood on the beach. Your curiosity may be rewarded.

REFERENCES.

- Herbert D.G., 1986 A collecting trip to the coral reefs of Sodwana Bay. *Strandloper* 216: 4 - 5.
- Kilburn R. and Rippey, Elizabeth 1982: *Sea Shells of Southern Africa*. Macmillan, South Africa.
- Abbott R.T. Dance S.P. 1986: *Compendium of Seashells*, 3rd printing. Madison Publishing Associates.
- Van der Walt, Val: Personal communication.
- Photography: D G Steyn

Presidential report for 1990/91

In this report I shall again leave the discussion of society statistics in the far more capable hands of the director and shall instead deal with some of the more important scientific papers on molluscs, relevant to southern Africa, that have been received since my last report.

BOZZETTI, L. 1990. A new *Oocorys* from South Africa. *La Conchiglia* 22 (256): 46-47.

Oocorys lussii is described from off Durban (Marcus Lussl, discoverer of the species, has kindly presented the holotype to the Natal Museum).

DRIVAS, J. & JAY, M. 1990. The Columbellidae of Reunion Island. *Annals of the Natal Museum* 31: 163-200.

Some of the species covered in this paper occur in South Africa: *Columbella amirantium* E.A. Smith, 1888, is considered a synonym of *Euplica ionida* (Duclos, 1840), and *Pyrene retiata* Tomlin, 1931, of *Zafrona isomella* (Duclos, 1840).

HERBERT, D.G. 1990. A note on *Calliostoma multiliratum* auctt. (non Sowerby, 1875) in South Africa. *Annals of the Natal Museum* 31: 201-205.

Calliostoma multiliratum is a Chinese-Japanese species, and the Natal/Transkel species that has been so called must be known as *C. crossleyae* Smith, 1910.

HOUART, R. 1990. New taxa and new records of Indo-Pacific species of *Murex* and *Haustellum* (Gastropoda, Muricidae, Muricinae) *Bull. Mus. natn. Hist. nat. Paris* (4e) 12 (A2): 329-347.

Haustellum gallinago fernandesi is described from Mozambique (Roland Houart has generously deposited a paratype in the Natal Museum). *Haustellum dolichourus* Ponder & Vokes, 1988, is recorded from off Zululand, *H. purdyae* (Radwin & D'Attilio, 1976) is recorded from Mozambique, and *H. fallax* (Smith, 1901) is shown to be a full species, not a subspecies of *H. haustellum*.

KILBURN, R.N. 1990. The genus *Limea* Bronn, 1831, in southern Africa (Mollusca: Bivalvia: Limidae). *Annals of the Natal Museum* 31: 223-231.

Limea is the only genus of Limidae which possesses hinge teeth, albeit feeble ones. Three deep-water species occur in South Africa, none of which washes up on the beach. One is a widely-spread species, *Limea limopsis* (Nomura & Zinbo, 1934), des-

cribed from Japan, the others are described as new. *Limea drivasi* ranges as far afield as Réunion and Mauritius, but *L. crenocostata* is known only from the muddy continental slopes off the Mgazi River.

KILBURN, R.N. 1990. The genus *Canalispira* Jousseaume, 1875, in southern Africa (Mollusca: Gastropoda: Marginellidae). *Annals of the Natal Museum* 31: 215-221.

Marginella fallax E.A. Smith, 1903, is shown to belong to the genus *Canalispira*, and *C. umuhlwa*, a new species from 200-350 m off Natal and Zululand, is described.

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PERSONALIA

Valarie van der Walt



Honorary Life Membership was awarded to Val on her 70th birthday, for her contribution to the Society in the field of identification of South African molluscs and her many other contributions to conchology.

She was born in Muizenberg in the Cape, educated in Durban and Johannesburg and worked in Johannesburg as an accountant. She moved to Durban when she married Angus Adams, then moved to Australia. From that marriage a son was born. After the death of her husband she moved to Durban once more and married John (Van) van der Walt and from that marriage Dawn arrived. When Val retired at the age of 60 she started shell collecting as a hobby. Her other hobbies are sewing, knitting, gardening, she is an excellent cook, and helps young Dawn with her shell craft. Dawn is now married to Michael Meyer and they have a lovely daughter called Stacey. Val is the scientific officer for the Durban group of the Society and in this capacity she has moved all over South Africa to help other groups identify their South African shells. She has assisted the Parks Board and Museums with the identification of shells and has given informal talks at her home to college students and school children.

As can be imagined, much research has gone into her hobby in order to help others and in the preparation of lists of shells found in South African waters. She is familiar with all the shelling 'spots' around southern Africa!

She lost her husband Van in October. We wish her good health and many many more years of happy shelling.

NEWS IN BRIEF

A very successful Conference was held on Saturday 11 May 1991 at the Natal Museum in Pietermaritzburg with talks on:

Mussel Research in Natal by Dr Georgina Lambert

Dredging off the coast of southern Africa - Dr R.N. Kilburn

The Limpet shape in molluscs by Dr Dai Herbert and Pectinidae by Mr Laurie Smith.

We had the pleasure of the company of Dr J.A. Pringle at morning tea. The Society logo, *Afrivoluta pringlei* Tomlin, 1947 was named after him. The lecture theatre in which the conference was held was also named after Dr Pringle. He was presented with an *Afrivoluta pringlei*. Diana and Allison of Type 'n Print, the Strandloper printers, also joined us for morning tea.

The Director's Trophy for his choice of the best display was won by Olive Peel for her exhibit "Colour, Texture and Design".

At the Annual General Meeting held on the afternoon of the 11th, the following amendments to the Bye-Laws governing Groups were accepted:

No. 3 is changed to read: Members shall be free to join any or all Groups.

No. 5 is changed to read: The Committee members of a local Group shall be elected by those Life and Ordinary Members of the Society who belong to the Group/s in accordance with Section 3 and shall vote in the chosen Group/s, but no member shall serve on more than one committee at one time.

The committee for the coming year remains unchanged, with the exception of Maureen Purdon who has withdrawn as she is busy with her studies.

GROUP NEWS

DURBAN has hosted many visitors from Pretoria, Bloemfontein and the U.S.A. The group continues to meet every month when all members of the Group are given a chance to take a meeting.

PIETERMARITZBURG meets every second month at the Natal Museum when members are privileged to hear either Dr Kilburn or Dr Herbert speak on interesting topics.

PORT ELIZABETH This active group always manages to find something unusual on their shelling outings. The enthusiastic secretary has informed us

that there are 22 islands around South Africa. The new committee has as its chairman Brian Hayes, and Amanda van Niekerk is once more secretary. The group exhibited shells at the Environment Week at the Cilliers High School.

PRETORIA Six members went to Durban for the long weekend in May and attended the AGM and Conference in Pietermaritzburg. At their exhibition held in June, Anne Wilson and Val van der Walt were judges.

LOWER SOUTH COAST held an exhibition of shells in Margate during the Hibiscus week in July.

BLOEMFONTEIN The Chairman Ds Hugo van der Walt was in Durban to present Olive Peel with a framed certificate on the occasion of being nominated an honorary member of their Group. Hugo was also made an honorary member of the Group, which has just celebrated its second birthday.

BORDER SHELL CLUB members entertained Joel Greene of the USA and three other Americans.

A SHELL MUSEUM

A new member of the Society, Ophia Austen became so enthralled by shells that she persuaded Gold Reef City in Johannesburg where she works, to have a shell room so that she could display her 'spares'. She managed to find Olive Peel's phone number and so after a couple of telephone conversations with Olive, the idea of a properly equipped shell museum evolved. The room will be called THE STRANDLOPER MUSEUM and will house exhibits by members of the Conchological Society of Southern Africa. The museum will be opened officially on Saturday, 28 September 1991 at 3pm. Anyone interested in coming to the opening should contact Olive Peel (031-216720) before 20 September.

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THE STUFF SHELLS ARE MADE OF

by Markus Lussi

The composition of marine shells is, in the main, calcium carbonate (lime) together with the protein "conchiolin". The periostracum present on most shells is almost entirely conchiolin. Calcium carbonate is extracted from sea water and food, whilst conchiolin is derived from organic material. These elements are deposited onto the shell by specialised cells present in the mantle.

The colours and patterns on shells occur when body wastes, excreted through the mantle, impregnate the shell surface. Colours and patterns are greatly influenced by diet.

The nacreous surface (Mother of Pearl) found on some shells results from the deposition of a form of calcium known as "aragonite".

Land shells by comparison consist mainly of conchiolin due to the scarcity of calcium carbonate. This fact accounts for the thin shell wall found in land snails.

Sea water, the main source of calcium for sea shells, in addition contains the following minerals — tabled in grams per litre.

| | | | |
|-----------|-------|----------------------------|-------|
| Sodium | 10,56 | Chloride | 19,00 |
| Magnesium | 1,30 | Sulphate | 2,65 |
| Calcium | 0,40 | Carbonate & Bicarbonate | 0,14 |
| Potassium | 0,38 | Bromide | 0,06 |

HONORARY LIFE MEMBERS

We welcome two new Honorary Life Members. This status is achieved after being a member of the Society for 25 years. They are:

Dr G.C. le Roux of Pretoria and our first overseas Honorary Life Member, Mrs Thora Whitehead of Australia.

Thora was born in Chile of English parents. They moved to England in the 1940's and her first hobby was collecting Shrapnel! When she married she moved to Tanzania and her first sighting of the colour variations of *Nerita polita* started her off on her hobby of shell collecting. She started exchanging shells with member Percy Elston of South Africa and it was he who paid her first subscription to the Society and she has been a member ever since. She and Kevin Lamprell have just written a book on Australian bivalves which will be on the bookshelves later this year.

IN THE NEWS...

The following are excerpts from articles submitted by Cherita and Ernie Stark.

NYTIMES 2/3/91

in ENVIRONMENTAL UPDATE

Scientists are discussing how, in the long run, the Persian Gulf oil spill may be less than disastrous. Because the oil has been at sea for more than a week, they say, sunlight, waves and wind have already caused its most toxic chemicals to evaporate. The rest has probably become a far less sticky and poisonous mass of floating tar. Although the oil will still make an unsightly mess if it hits land, it will probably float over coral reefs and not poison marine life, scientists said, although spoken with caution because of the enormity of the spill.

The Persian Gulf, which is more than 600 miles long and 200 miles across at its widest point, is particularly vulnerable to large oil spills because it is shallow, almost closed off by the 50-mile wide Straits of Hormuz, and saltier than oceans, making it a more hostile environment for coral reefs, some species of fish, and other animals. Nevertheless, scientists said, the gulf sustains an abundance of wildlife because it is largely undeveloped. The gulf supports 180 species of molluscs, 106 species of fish, 450 species of animals that live in the chain of coral reefs stretching down the Saudi coast, five species of dolphins, at least three types of whales, and many species of sea birds.

Saudi officials were also concerned with the fate of two rare species, the green and hawksbill turtles that live on the offshore islands as well as the Socotra cormorant, a species of seabird found nowhere else. The birds have no natural defences against fresh oil and appear to

disregard it when diving for food, thus becoming drenched in a lethal black coat.

Although science has just begun to rigorously study the environmental effects of large oil spills, research that has been conducted in Panama since 1986 suggests that nature has an impressive ability to protect itself. The study, undertaken by the Smithsonian Institution under contract to the Mineral Management Service, a unit of the Dept. of Interior, began after the rupture of a storage tank at a refinery owned by a subsidiary of Texaco. Some 50,000 barrels of crude oil spilled into a sensitive coastal area near the Caribbean entrance to the Panama Canal.

The oil flowed across a coral reef killing everything in its path, according to Dr Brian D Keller, an ecologist at the Galeta Marine Laboratory near Colon, Panama. It also poured into a mangrove habitat, smothering the roots of thousands of trees and killing them. Mussels, oysters, fish, reef plants and marsh grasses died in the flood of oil in the weeks following the rupture.

Nearly five years later, he said, young trees are growing in the mangrove habitat although oil continues to seep from the sediments into the ocean. Fish, plants and other organisms have returned in their normal numbers to the coral reef. The living coral on the reef, however, has not yet recovered. Before the spill, Dr Keller said, 30 percent of the reef was composed of living coral, a tiny animal. Today, just 5% of the reef is alive and if the reef does not recover, it will not withstand the eroding action of the sea.

Ack: Irradians, USA, Vol 18, No 8, April 1991



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EDITORIAL

There are those who regard the study of shells merely as a frivolous hobby and certainly not educational at all, such as the studying of birds, butterflies, moths etc. Yet students have been awarded grants from educational bodies for the study of molluscs, so it amazes me that people still will not accept conchology as educational. School children are these days being given projects involving shells as a theme and museums overseas have school tours and lectures on molluscs. Some time ago, when I donated a collection of shells to a natural history museum in Romania, when a fire destroyed their collection, I was told by the Director that they would come in very useful in the talks given to school children! I would be happy to have comments on this subject; perhaps an article!

We have all been there!

Two very elderly beginners in shelling turned up at a Durban Group meeting and announced how meticulous they had been in spending hours sorting through all their limpets that they had collected over twenty years and thrown out all the ones with holes in them. A little later someone brought out a keyhole limpet - 'Oh no' they said, almost in unison 'now we have to start all over again!'

What causes the Tides?

The tides are caused by the Moon's gravity tugging at the earth and pulling the sea towards it. In each 24 hour cycle there are two high tides and two low tides. Every sea animal responds to this tidal rhythm.

Oysters for example open their shells to feed at high tide and close them again as the water recedes.

(Ref: Secrets of the Sea - Piccolo Explorer Books, 1979).

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A PURPLE NIGHTMARE

A dream was just about to come true for a Free State visitor coming from a dorp where no beaches exist hundreds of purple *Janthinas* lying on the Addington beach. So, 100 backbends later, he arose smiling, and doing the proverbial somersaults wended his way to a friend in the hope that she would help him clean the smelly shells, which had by then been lying on the beach for a couple of days, in itself an amazing occurrence what with all the comings and goings of visitors, dogs, etc etc. Alas, no sooner had they cleaned most of them than tragedy struck in the form of a crease in the carpet. Our 'Vrystaater' stood boggle-eyed with horror as our generous 'cleaning' lady tripped with all dear sheller's bucket of joy, strewing purple *Janthinas* all over her lovely carpet, and breaking 70 *Janthinas* into the bargain! She was traumatic over her now-purple carpet which did not go with the rest of her furnishings, and he even more traumatic over his tragic loss, for after back-bending 100 times, he only had 30 shells to show for all his suffering! How can you do that to a visitor!?

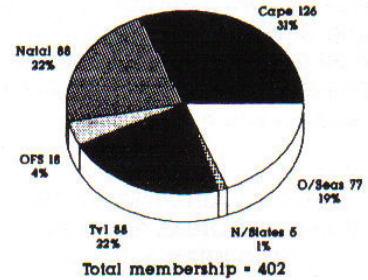
NEPTUNE'S FLOWERS

Earth has her blossoms and the Sea his shells,
 Wrought with as fine a workmanship and fair
 As they had been some god's peculiar care;
 And in the heart of each a spirit dwells
 Whose voice, in flowers (for they on earth belong)
 Is but a perfume, evanescent, sweet;
 While in the seaborn shell, as seemeth meet,
 It is the echo faint of an unending song.
 (Dr J. J. Versfeld, Stellenbosch, 24 October 1909)

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DR HUGO WESSELS 1926-1991

We mourn the loss of a well-known member, Dr Hugo Wessels, who died suddenly at his home in Harrismith. The shell *Fusivoluta wesselsi* Kilburn, 1980 was named after him. Hugo was not only a medical practitioner, but a farmer, big game hunter and shell collector.

Our sympathies go to his wife and family in their loss.

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BACK ISSUES OF STRANDLOPER

are available from Mr Markus Lussi, 15 Longwoods Drive, Durban North, 4051, South Africa. Black and white copies are R2.50 each and colour issues are R5 each. The Society will pay the postage for South Africa only.

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THIS WORLD OF OURS

On the west coast of Australia in Deham you are likely to be mystified by the bricks used on some buildings. In fact along what is known as the Shell Beach a wall of shells between 10 - 20 metres thick has developed as a result of the millions of bivalves being washed up onto this beach. Because they are so tightly compressed, builders are cutting sections with a chain saw and using them as bricks.

(Ref: 'A shell quarry in W. Australia' by J Guillon - Rossiana No 49 Oct 1990).

ACKNOWLEDGEMENT

Strandloper No 229, page 7

Last paragraph should read (Ack: Bull. Mus. natn. Hist. Nat., Paris 4e ser., 10, 1988 section A, no2:277-300; Rossiniana, No 48, July 1990).

ERRATA

Strandloper No 229 page 4
Interchange Nos. 6 & 7 on the captions.

What we do for love

Olive Peel

I asked a friend in the Cape to find a few oysters from her area for me and imagine my surprise when back came her reply some time later: 'We don't get oysters here but I am sending you one Oyster. And this oyster is 5 million years old. No kidding. Perhaps you, as such an experienced expert of long standing will have one but it won't be one that has been personally collected by me for you!

This is the oyster story: This past Easter weekend I had to go on a Gemboree (organized by the Mineralogical Society of SA). Six of the twelve cars got stuck in the desert sand and everybody had to help pushing everyone out. We all were one big ball of sand and the bath at the end of the day looked like mud! Although my husband is the member, I had to do all the climbing, digging and collecting and what an interesting time we had. Because I did not want to drive back on Easter Monday, a friend suggested he take us to see how they mined diamonds. He showed us a wall of one old mine with shells in it. And I was allowed to dig some out myself. I found only one oyster with a lid on, but the lid broke in pieces. I only managed to get one other shell intact.

NEW MEMBERS

We welcome the following new members and wish them a long and happy stay.

Mrs S Austen, Pte Bag 1890, Gold Reef City, 2159

Mr & Mrs J E M Barnes, 3 Underwood Mews, 20 Underwood Road, Durban North, 4051

Mr & Mrs Jack Becker, 7084 Esquire Court, Fort Meyers Florida 33191, U.S.A.

Mr P Di Lullo, via Delle Sperange No 70, 66026 ORTONA (Chieti), Italy

Miss A Edgson & Miss L Smith, P O Box 42, Park Rynie, 4182

Mrs F A Hollins, 27 Ashwin Avenue, Westville 3630

Dr G Lambert, 54 Berendene, Union Lane, Pinetown, 3610

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Pollution spoiling sex life of whelks

London Bureau

Whelks along the West Cumbrian Coast are changing sex and are enjoying a less successful sex life as a result, a marine biologist has found.

Female dog whelks are developing male characteristics in a phenomenon call 'impo-sex' (imposed sex), according to a report by Dr Eric Perkins, who studies the effects of pollution for the Cumbrian Sea Fisheries Committee.

The sex changes have been shown to be caused by tributyl tin (TBT) from anti-fouling paints used to protect boats, by the Natural Environment Research Council's Plymouth Marine Laboratory.

Though legislation to control the use of the paints was introduced last year, TBT is still evident in surface waters and exerting its effects on the gender of the dog whelk, said Dr Phil Williamson, assistant to the director of the laboratory.

As a result a female dog whelk may have to suffer such indignities as the development of a penis and reduced reproductive success.

He said sex changes were not uncommon in the murky world of the mollusc. Some close relatives of the whelk undergo regular sex changes throughout their lives.

EXCHANGES

ANTONIO FERNANDES DE SOUSA, Rue Commandante Nunes, da Silva 3-10 ESQ, Lisboa, 1300, Portugal, would like to exchange shells with someone from S.Africa.

LUIGI BOZZETTI, via Devoto 3, 20133 Milano, Italy, would like to exchange uncommon and rare shells. He has a large supply of shells from Somalia and the Mediterranean for exchange.

Dr MIKE HART, 32 Oakland Ave, Papatoetoe, Auckland, New Zealand, would like rare/uncommon cowries, cones, marginellas, *Trivia* and ovulids from RSA. For exchange he can offer rare New Zealand volutes and *Chlamys* plus worldwide cowries and cones. Will also buy shells.

EDUARDO H. VASENA, Larrea 1273 - P. 1-"A", 1117 - Capital - Bs.As. Republic of Argentina, would like SA shells.

MRS CLARICE CONNOLLY, 45 Monton Road, Kenwyn, 7764, S. Africa, would like to hear from anyone doing field studies on the SA *Thais*, especially on *dubia* feeding habits.