

# The Strandloper

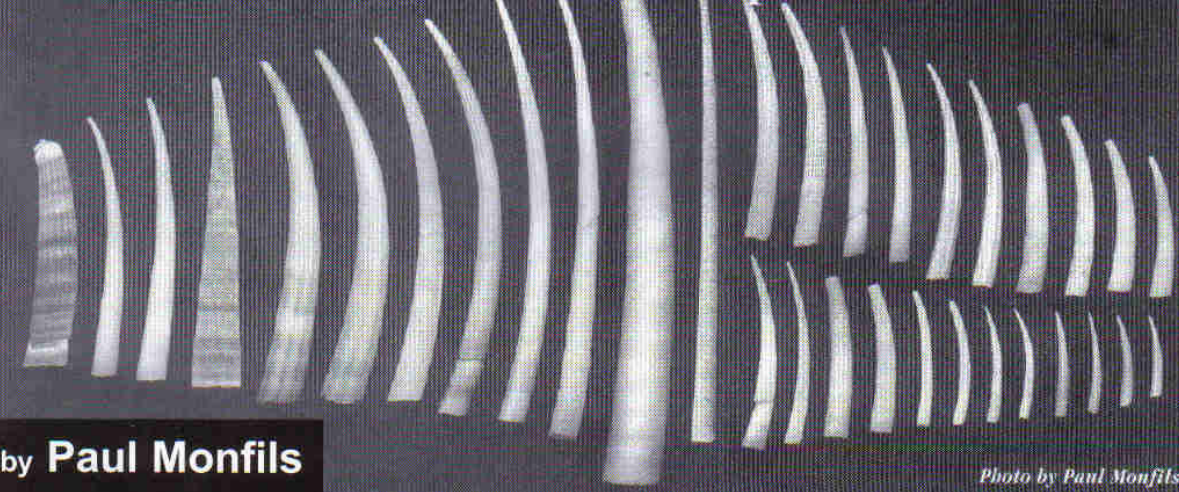


Strandloper 266

December 2001

Page 1

## TUSK SHELLS: An unusual and unique class of mollusks

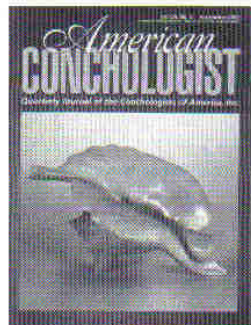


by Paul Monfils

Photo by Paul Monfils

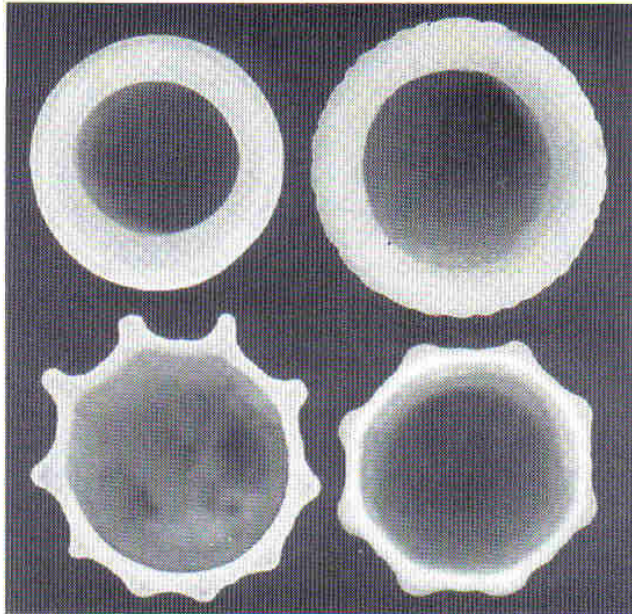
When early French explorers reached the northwest ern regions of what was to become the United States of America, they found a diverse culture of native peoples living largely along the banks of major rivers and their principle tributaries, and on the shores of sheltered Pacific bays. Their food was largely of aquatic origin - salmon and shellfish - and so was their money. The form of currency most widely employed in both local and intertribal transactions consisted of the smooth, cylindrical shells of a local marine mollusk. Sturdy and tubular in shape, and open at both ends, they could easily be threaded onto strands of sinew or fine rawhide, like natural beads. Strings of five, ten, twenty, fifty, and other specific counts were utilized, not unlike the various denominations of modern metal and paper money. Standard values were assigned to specific commodities - a dog, a canoe, a horse ... or a wife. The small, inconspicuous creatures that provided this exchange medium were not bivalves (like the clams which furnished the wampum beads of eastern tribes) nor gastropods (like the money cowries which served as currency among the South Sea Islanders). Rather, they were members of a small but distinctive class of mollusks known taxonomically as Scaphopoda - and colloquially as tusk shells or tooth shells.

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Cross-sectional views of tusk shells (clockwise, from upper left): *Antalis weinkauffi*, *Fissidentalium verneidei*, *Dentalium octangulatum*, *Dentalium elephantinum*. Photo by Paul Monfils

The specific species used was *Dentalium pretiosum*, still known to conchologists by the common name "money tusk". It is not entirely clear how tribal members managed to collect so many shells of a species that typically inhabits moderately deep water. Off Vancouver Island in Western Canada the species is found in somewhat shallower habitat. There the Nootka used long poles with bundles of small sticks lashed to the end, to probe the bottom, capturing the occasional tusk shell that became wedged among the twigs. Additional poles were lashed together to allow tusk fishing in deeper water. The considerable amount of time and labor involved, and the inevitably small return was, of course, the basis for the value ascribed to the shells.

Tusk shells served as currency well into the 19th century, at which time enterprising Europeans, recognizing their value in barter, imported vast numbers of common, similar-appearing European tusk shells (*Dentalium vulgare* and *D. entalis*). The inevitable effect - scaphopod inflation - quickly ensued. The pecuniary value of tusks plummeted, and the natives abandoned them in favor of other items of trade. Still, the former role

of this little animal in early American culture is forever recorded in its scientific name - "pretiosum" means "valuable," "precious," or "costly." Scaphopods are a comparatively uniform group of exclusively marine mollusks, their most obvious distinguishing feature a cylindrical, tapered, tube-like shell, open at both ends, and usually curved to a greater or lesser degree, such that the concave side of the shell is dorsal. The larger of the two apertures is functionally anterior, and through this opening emerge both the "anterior" head and the "ventral" foot. The soft inner parts are suspended from the dorsal wall of the shell, into which the animal can rapidly and fully withdraw by muscular contraction. There is no operculum.

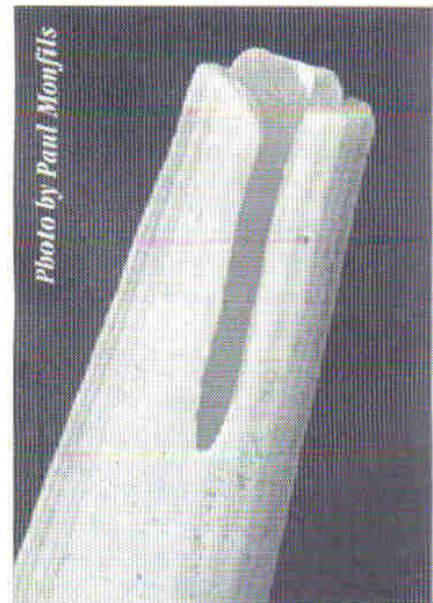
Approximately 400-450 living species have been described, plus a comparable number of fossil forms. Most species live offshore, in moderate to extreme depths. None frequent the intertidal zone, and only a small number of species live shallow enough to appear in the beach drift. Dead tusk shells may be carried into shallower water by hermit crabs, and in some areas where tusk shells are abundant, hermit crab spe-

cies are found with straight, rather than coiled abdomens, a specific adaptation for inhabiting the available shells. A few scaphopod species have been collected at depths exceeding 5,000 meters. A particularly interesting deep-water form is *Fissidentalium actiniophorum* (the name means "bearer of anemone"), found off the southwestern United States, which nearly always has a sea anemone growing on the dorsal surface of its shell. Living scaphopods range in size from the minute Caribbean *Cadulus (Gadila) mayori*, less than 4 mm in length, to *Fissidentalium verneidei*, a hefty Pacific form measuring 140 mm by 15 mm maximum diameter (or roughly half the size of the largest known fossil species).

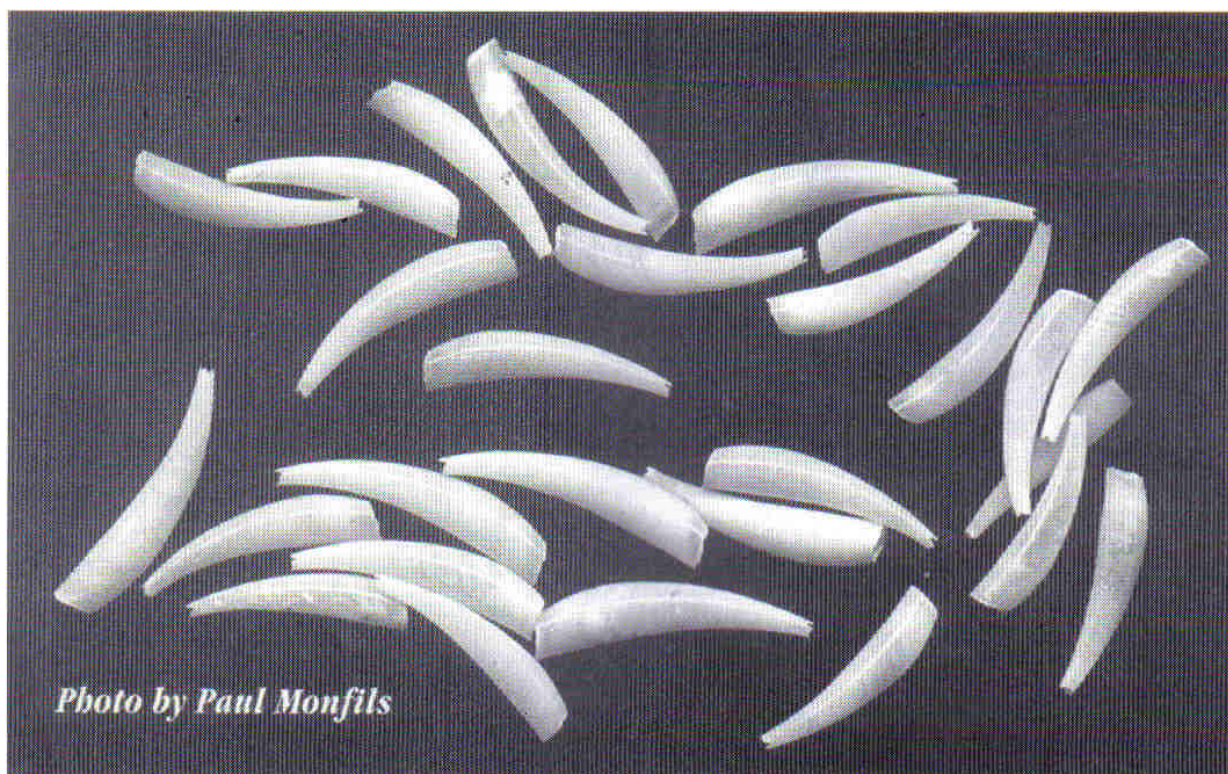
Some older publications erroneously depicted scaphopods embedded in the sea bottom with the wide anterior end protruding from the sediment, supposedly in "feeding position." Later works state that they live their adult lives lying obliquely buried in sand or mud, with the anterior end down, and the narrow posterior tip of the shell extending above the surface of the sediment. This would seem to be the usual orientation

for many species, but recent research has revealed that at least some species may also actively burrow into the sediment to depths of 30 cm or more.

Scaphopod anatomy is relatively simple. The head is rudimentary, with a small mouth at the anterior end, but without eyes, tentacles, or other sen-



Ventral view of the posterior end of *Fissidentalium verneidei*, showing the apical slit



*Cadulus (Polyschides) californicus* (Pilsbry & Sharp, 1898), dredged off Washington state in the U.S. at 300-350 meters. This is a representative of the family Siphonodentaliidae

sory features usually associated with a head. There is no heart. Gills are lacking, and the mantle does double duty, not only producing the shell but also extracting oxygen from the water. Special transverse folds or ridges in the mantle tissue increase its surface area for this purpose. Cilia slowly move water into the mantle cavity, through the small posterior aperture. Several times an hour, a violent contraction of the foot forces the water rapidly out through the same opening. The cycle consists essentially of a long, slow (up to 10 minutes) inhalation, followed by an instantaneous exhalation.

Scaphopods create a "feeding chamber" around the buried anterior end of the shell by pushing back the sediment with their muscular foot. Long, threadlike, club-tipped sensory and feeding organs called *captacula*, quite unlike anything else seen in the mollusca, then probe the walls of the chamber in search of detritus, diatoms, foraminifera (shelled proto-

zoans), and other micro-invertebrates, including the larvae of other mollusks. Some tusks are rather general feeders, but many have highly specialized dietary requirements, accepting only specific species of forams. The *captacula*, equipped with cilia and mucus-secreting glands, capture the prey and transport it to the mouth, where a radula with strong, blunt teeth breaks it apart and draws it into the gullet.

After digestion, wastes pass through a coiled intestine, which opens into the mantle cavity, about halfway along the animal's length, and is finally expelled through the posterior shell aperture along with deoxygenated water. Once the food supply in the current feeding chamber is exhausted, the tusk shifts position in the sediment and forms another.

Scaphopods are dioecious, that is the sexes are separate. The female releases her eggs one at a time, through the posterior aperture of the

shell, and fertilization occurs subsequently, in the water. The egg hatches into a free-swimming, ciliated larva, which remains in the plankton for a few days, never venturing far from the seafloor. A simple cap-like or disc-like shell forms on the dorsal surface, followed by rapid growth along the two lateral edges, enclosing the sides of the larva.

The embryonic shell at this point resembles the mature shells of the extinct molluscan class Rostroconcha, which had the appearance of gaping clams with a fused hinge line. For this reason some researchers theorize that rostroconchs may have been the ancient ancestors of scaphopods. In scaphopods however, shell growth progresses beyond the rostroconch

#### Collection for sale

Mr Dan van Vuuren has amassed a significant collection of South African and East African shells. He is now disposing of it, family by family. Contact him on 012-803-5134 or [danvanv@mweb.co.za](mailto:danvanv@mweb.co.za) to discuss.

stage, mantle and shell curving under the body and finally fusing along the ventral margins, forming a closed tube, which soon becomes calcified, dragging the animal to the bottom to begin its infaunal existence.

Scaphopods are the last class of Mollusca to appear in the fossil record. The oldest known species, *Rhytidentalium kentuckyensis*, dates from the late Middle Ordovician (about 450 million years ago). Some other Ordovician fossils have been presented as possible scaphopods, but these might actually be pteropods (a group of pelagic gastropods) or even fossilized worm tubes. The difficulty in identification is due to the fact that early scaphopods tended to be smooth-shelled and straight. A hundred million years later, in the Devonian period, a number of obvious scaphopod species existed with curved, longitudinally ribbed shells, closely resembling modern *Dentalium*.

Scaphopods were originally classified as shelled worms. When anatomic studies revealed them to be mollusks, they were initially placed close to Fissurellidae - essentially very tall keyhole limpets! Pilsbry and Sharp raised the group to class status in 1897. Traditionally, scaphopods have simply been divided into two families, Dentaliidae and Siphonodentaliidae, based almost entirely on shell characteristics. Recent studies have shown that the taxonomy of the group is considerably more complex. Today most experts have come to most recognize two orders Dentaliidae and Gadilida (or Siphonodentaliida).

Beyond that however, differences of opinion persist regarding the number of families (anywhere from 4 to 10) and genera (16 to more than 40) into which the Scaphopoda should be divided. The two orders differ significantly in both shell and soft-part morphology. Generally, the dentaliids have a gradually tapered shell which is largest at the anterior aperture, and may be either smooth or ribbed. These are the typical "tusk shells" familiar to most collectors.

Gadilids typically lack sculpture, and have a thin, highly polished shell with the widest section some distance behind the aperture, giving them the appearance of tiny cucumbers - and they are tiny. The majority of species do not exceed a centimeter in length. The foot of dentaliids is conical and muscular, not unlike that of many burrowing bivalves. In Gadilida, the foot is slender, almost worm like, and can expand at the tip into a flat, crenulated disk. There are also significant differences in the radular teeth of the two groups. *Entalina*, the earliest known genus of the order Gadilida may represent a link between the two orders as it combines the gadilid foot with the tusk-like shell characteristic of the Dentaliida.

Other than their early use by Native Americans, tusk shells have not attracted much attention from our own species. Most modern people would not recognize them as seashells. They are too small to be of practical use as food. Even a large one would provide only a few grams of potentially edible material, in addition, many of them are relatively inaccessible due to the depths at which they live, and a dredge fine enough to catch them in quantity would likely fill quickly with mud and debris. And, even if there was a value (other than conchological) attached to tusk shells today, few modern folks would have the patience to pursue the Nootka method.

In addition to monetary use, Native American tribes also used tusk shells for personal adornment. Their natural bead shape made them easy to stitch onto leather garments. A sinew knotted on one end, with the knot drawn up inside the shell, made an attractive tassel; a series of them could be used to fringe the hem of a jacket or dress. Tusks were strung into necklaces and woven into elaborate chest pieces. Certain tribes also used them as nose adornment, passing a tusk shell through a hole in the nasal septum. Early European explorers were so impressed with this practice that they commonly referred to natives of the region as "people of the pierced nose."

Unfortunately, the white men were not greatly adept at distinguishing among the various tribes who populated the area. The term was used rather indiscriminately, and finally came to rest on the dominant people of the region, despite the fact that they practiced nose piercing infrequently, if at all. Even so, the people of the Nez Perce - French for "pierced nose" - have retained the tribal name until the present day.

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### Comments on the 'Trichotropidae' by Dr Dick Kilburn, Natal Museum

Dear Mike

The modern view is that the Trichotropidae is a synonym of the Capulidae (see Bouchet, P., & Waren, A., 1993. Revision of the northeast Atlantic bathyal and abyssal Mesogastropoda. *Bollettino Malacologico*, Suppl. 3: pp.727 on. *Separatista helicoides* must be called *Separatista separatista* Dillwyn, 1817). The name *Turbo helicoides* was used twice by Gmelin (1791) for different species, and Dillwyn (1817) renamed the second as *Turbo separatista*. In Japan, *S. separatista* is known to be a kleptoparasite on tube worms, and at Cape Vidal I collected one clinging to the leathery tube of a large solitary tube worm - the concave outer edge of the lip is adapted to accommodate the tube.

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# Update on the Trichotropidae

by Mike Cortie\*

This relatively obscure family of marine shells has been placed in the past in the superfamily Calyptraeacea<sup>1</sup> or in the superfamily Crepiduloidea<sup>2</sup>. Virtually no coverage was given to the family in the Kilburn and Rippey book<sup>1</sup>, although the related Capulidae, in which the species *Lippistes cornu* (Gmelin, 1791) and *L. helicoides* (Gmelin, 1791) have been placed, is featured in the book by Steyn and Lussi<sup>3</sup>. Hayes and Lussi discussed the South African species in a previous *Strandloper*<sup>4</sup>, and listed four: *Lippistes cornu*, *Separatista helicoides* (Gmelin, 1791), *Megalomphalus mosselensis* Barnard, 1957 and *Trichotropis zuluensis* (Barnard, 1963). *Lippistes cornu* and *Trichotropis zuluensis* are also illustrated in Kensley's book<sup>5</sup>, which remains a very useful resource for obtaining information on small, lesser-known molluscs.

It is not clear to me why *Lippistes* and *Trichotropis* are placed by most recent sources in the same family eg.<sup>2,4,5</sup>. Certainly, the shell of *Trichotropis* (Figure 1) is completely unlike that of the typical *Lippistes* (Figure 2). Either way, the shells of these species are small (less than 15 mm), dull-coloured and easily overlooked. Steyn and Lussi list *Lippistes* as 'rare' on South African east coast beaches, and as absent from the western coastline.

The true Trichotropidae have a horny operculum and a very fibrous periostracum, which has caused them to bear the common name 'hairy shells'. They frequently inhabit deep water, for example *Trichotropis zuluensis* has been dredged in sponge and rubble off Park Rynie at -150 m depth<sup>4</sup>. The hairy periostracum is not surprisingly worn off when such shells eventually roll up onto the beach. However, *Separatista helicoides* (actually *S. separatista*, see page 4) and *Mega-*

*lophalus mosselensis* have been reported live-taken from intertidal situations and -18 m respectively<sup>4</sup>, so there is evidently no certain rule of bathymetric distribution for the family as a whole.

For many years very little was known about the biology of these molluscs. Their habitat and apparent affinity to *Crepidula* was interpreted as suggesting that they might feed on detritus and silt, perhaps by filtration. Recently, however, more information became available on the species *Trichotropis cancellata*, which inhabits the coast line of Alaska and British Columbia<sup>6</sup>. It was found that *T. cancellata* can certainly suspension feed. However, what it prefers is to steal food from tube-dwelling polychaete worms, a phenomenon known as 'kleptoparasitism'. To do this, the snail extends its 'pseudoproboscis' through the feeding tentacles of the worm and into its mouth. Cilia on its pseudoproboscis transfer the worm's food straight back to the hungry snail! This is of course good for the snail and bad for the worm. Unusually for a parasite, *T. cancellata* is not too fussy about what species of polychaete worm it steals from. In fact, it will apparently even steal from a holothurian ('sea cucumber'), a completely different animal!

I do not know whether all our South African species are opportunistic kleptoparasites or not. At least one other North American species, *T. in-*

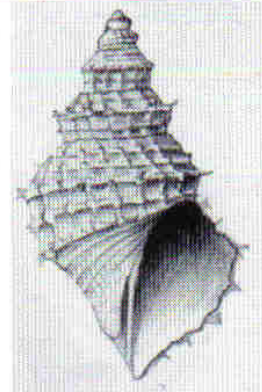


Fig. 1. Shell of *Trichotropis zuluensis*, Barnard 1957, size 11 mm, illustration from reference 5.

*signia* is apparently quite honest in its habits, being a normal suspension feeder<sup>6</sup>. However, any members who are ever lucky enough to observe live Trichotropidae are urged to make careful notes of where and what it was living on, and in this way contribute to the study of this little-known family.

## References

1. Kilburn, R. and Rippey, E., *Sea Shells of Southern Africa*, Macmillan South Africa, Johannesburg, 1982.
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3. Steyn, D.G. and Lussi, M., *Marine Shells of South Africa*, Ecogilde, Hartebeespoort, South Africa, 1998.
4. Hayes, B. and Lussi, M., Some notes on the family Trichotropidae in South Africa, *Strandloper* 239, Sept. 1994, p.1.
5. Kensley, B., *Sea-Shell of Southern Africa. Gastropods*, Maskew Miller, Cape Town, 1973.
6. Iyengar, E.V., The evolutionary ecology of kleptoparasitism and suspension feeding in *Trichotropis cancellata* (Gastropoda), *Bull. of the Malacological Soc. of London*, No.37, August 2001, p.1 & p.14.

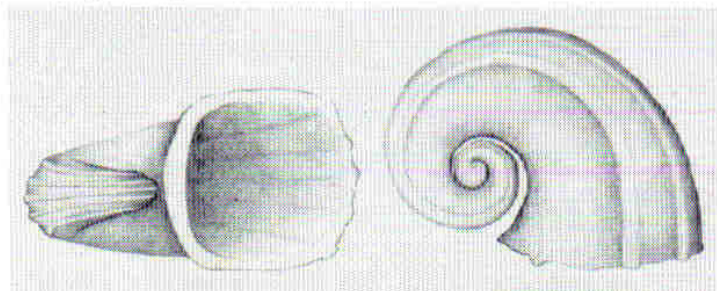


Fig.2. Shell of *Lippistes cornu* (Gmelin, 1791), size 15 mm, illustration ref. 5.

\*PO Box 1664, Ferndale 2160, South Africa



An international project to clean-up beaches around the world is held each year in September. We are members of the Land Rover Owners Club of South Africa, which participates each year. I had to book well in advance, as only a few members are permitted to go and we have about 600 members... The 4x4 owners usually get the beaches that are used by them (WAS, with the new legislation..).

We departed on the 15<sup>th</sup> September just after work to arrive late evening at Sodwana. The weather forecast for the weekend wasn't very promising, and we arrived in pouring rain. We pitched camp and then attended the meeting for the arrangements of the following day. Low tide was early on Saturday and we had to get up before 05:00 to get ready to start at 06:00. All the vehicles lined up on the beach and we received plastic bags to put

all the stuff in. Each vehicle received 10 bags and I thought to myself that it would be an overkill.

Each vehicle was assigned roughly a 1.5 km stretch to clean up from the water to where ever the rubbish stretched. One's first thought is that the beach looks so *clean*, but after a few strolls one realizes that it is an illusion. It was still drizzling with an occasional light shower. Between my husband, our daughter, and me we filled 8 of the 10 bags! Some of the rubbish didn't fit into the bags, so we just put it loose in our Landy. We also picked up a boat floor net that we towed behind the vehicle. We had to be back before the tide was in to count the rubbish. We were provided with forms and had to count every single piece. We picked up an asthma pump, many, many pieces of hard plastic, plastic bags, a few glass bottles, 48

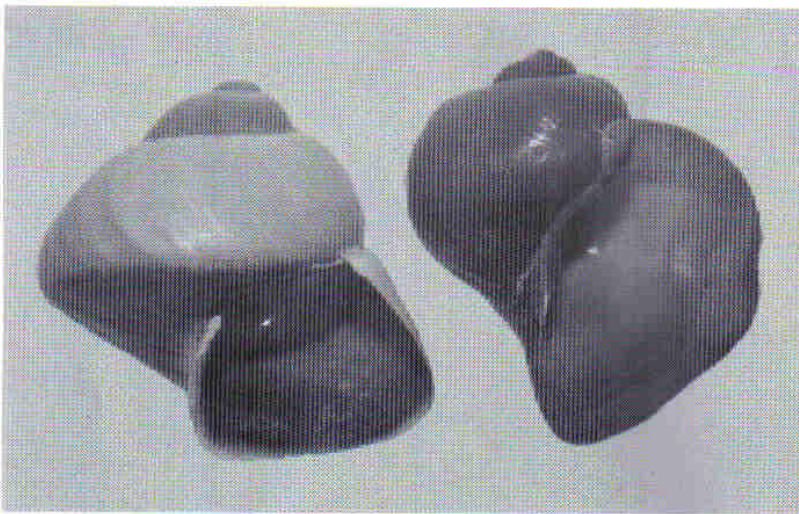
strops, tooth brushes, light-bulbs, floats, light sticks used by fishermen on long-lines (not the kind that divers use), etc. Unfortunately we haven't received the statistics yet, but between all the groups I heard the organizers mentioning something like 2000-3000 kg of rubbish deposited!!!

That was the end of the official work and we had the afternoon for ourselves. The weather cleared up round about 12:00. It was still a bit cold to swim, but we had a nice time playing on the beach. With the wind blowing from the sea, a lot of *Janthina* shells beached. We couldn't pick up shells and rubbish at the same time on the Saturday but I took two beauties (floats still attached), put them in a film container and placed them neatly in front of me in the dashboard.... and then forgot about them...

Sunday morning we decided to have a nice brunch on the beach before rushing back to Gauteng. We still had beach permits and drove about 2 km south. While the others were filling up, I strolled back with a bag and picked up *Janthina*'s. I took them float and all, they break less that way. I picked up a bagfull and transported them in a Tupperware container, layered with clean beach sand. The sand and animal provide a bit of support.

Back home it was a gruesome sight (and SMELL!!!), but I had purple fever and survived the ordeal cleaning the shells. Unfortunately not many of them stayed perfect, and most were chipped... especially the *Janthina*





Left - *Janthina janthina* and right - *Janthina pallida*

*pallida*. I had only about 10 out of 50 unbroken ones left.

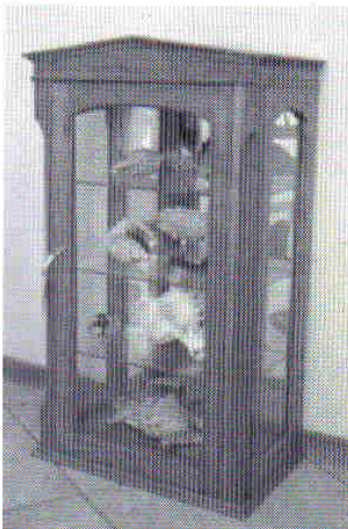
By the Wednesday, my husband was really complaining about the smell in his car. Each time he said that it was smelling, I told him that I had put the Tupperware container in the trailer and not in his brand new Landy

(< 10 000km). He parked in the sun on the Thursday, and when I got home from work I found a very grumpy hubby... The film container in the dashboard had popped .... And we all know what dead *Janthina's* smell like... He has forgiven me since, but I know that I will be reminded of it again when we go to the sea!

### Cabinet donated

Pretoria member Damien Kislig has hand made an exquisite display cabinet from American cherry wood and glass and has donated it to the Society. One can display shells, minerals, miniature cars or whatever you collect. There are 3 bevelled glass separations.

The committee has decided to auction the cabinet. (Shells in picture not included!). The reserve price is R800.00 and it will be a silent auction. To place a bid, please send a letter to The Secretary, Silent Auction, P.O. Box 32748, Glenstantia, 0010, or send an e-mail to [peabrain@global.co.za](mailto:peabrain@global.co.za), and specify your offer. Please phone the secretary (Kobie du Preez 0823726790 or 012 6602394 – ask for fax) to confirm receipt of your bid.



The bid will close on the day of our AGM (08 May 2002). Once the meeting starts, the bids are closed. The winner will be the highest bidder and will be contacted. The details will be published in the next *Strandloper*.

Dimensions: height 61 cm x width 36 cm x depths 22 cm



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### EXCHANGE WANTED

Peter Ackermans of The Netherlands collects shells and shell related objects. You can visit his homepage: <http://home.hetnet.nl/~ackermanspeter/>. Please contact him if you want to trade. His email address is [AckermansPeter@hetnet.nl](mailto:AckermansPeter@hetnet.nl).

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The editor welcomes original articles, news, shelling reports, feedback, advertisements (rates on application) and any other material likely to be of interest to members of the Society. Illustrations are especially welcome. Please send to

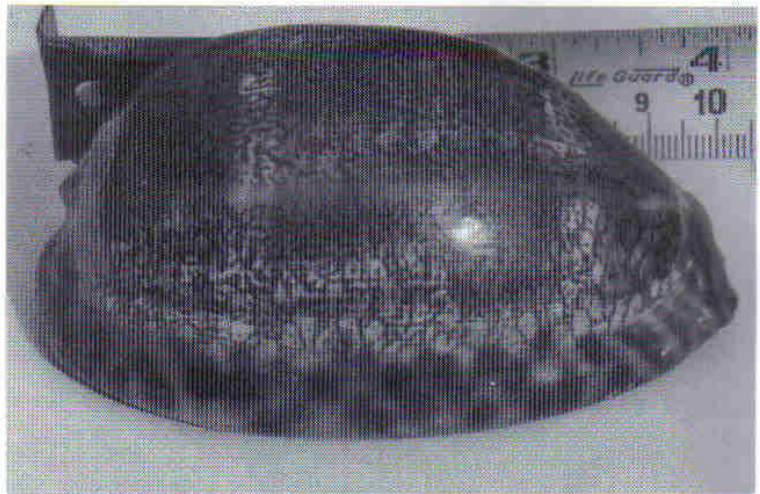
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# Letters

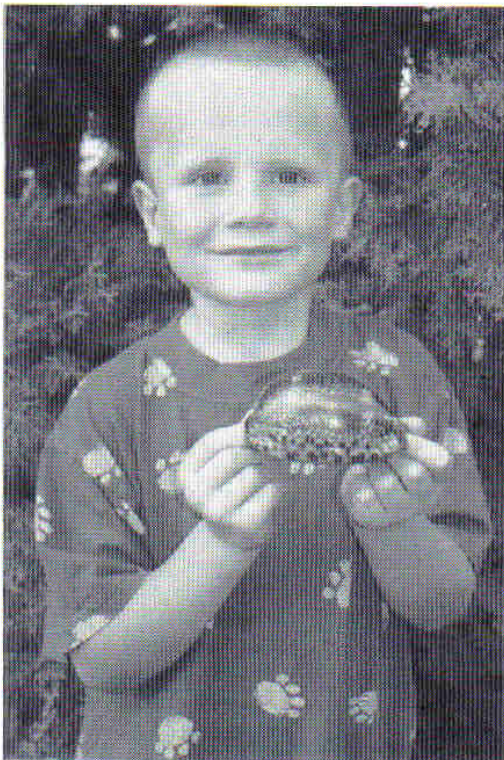
Mrs **Neelsie Skead** of Box 952, Potchefstroom 2520, recently wrote to tell us of an amazing find that her grandson had made on a busy beach at Amanzimtoti. Her story proves once again that if you want to find nice shells, just go and look (and look, and look, and look....)

Ed.



*'Gedurende Maart 2001 het ons seun en sy gesin wat tans in Kanada woon, in Suid Afrika kom kuier. Hulle het vir twee weke by Inyoni Rocks Cabanas tuisgegaan. In ons familie is daar 'n geen wat van geslag tot geslag sy kop uitsteek. Algemeen word daarna verwys as "Dit is in sy/haar adenoïde". Dit is 'n geen wat 'n allesomvattende liefde vir die natuur oordra. Vandat Leslie jnr. kon praat het ek besef daardie geen wat vanaf oupagrootjie kom, toe via sy ourna. na sy pa, het ook by hom uitgekom. Alles wat asemhaal, of wat versteen is en nie meer asemhaal nie is vir hom wonderlik. Maar die keer het hy my voete skoon onder my uitgeslaan. Dit is met hartseer dat ons ouer garde sien hoe geliefkoosde skulpstrande so met die jare al kaaler word. Amanzimtoti het dit ook nie vrygespring nie. Van my beste fondse op die strand het A in die vyftiger en sestiger jare op Suid Natalse strande gekry maar vandag is daardie strande kaal. Groot was my verbasing toe hy aan my 'n skulp wys wat hy op Dinsdag 27 Maart op die strand naby die rotse gevind het. Tussen die vakansiegangers het die vyfjarige knapie 'n pragtige vleklose *Cypraea arabica* gevind. My mond*

*het oopgehang van verstomming, Die skulp se lengte is 102 mm, breedte 60 mm en die hoogte, 46mm. Behalwe sy fonds so tussen die mense was daar geen ander skulpe teenwoordig Me. Waar sou die skulp vandaan gekom het? Die 21ste Maart was dit dag-en-nagewening en die 25ste Maart was dit donkermaan. Al wat ek kan dink is dat die see rof was en die sterk gety die skulp uitgespoel het. Leslie wou met alle geweld die skulp aan ouma skenk maar ons het hom oortuig om dit saam te neem huistoe. Soos hy ouer word sal hy besef dat dit 'n groot fonds vir 'n klein seuntjie was.'*



## English summary:

When Mrs. Nielsie Skead spent a week at a busy beach in Amanzimtoti with her Canadian-based son and his family, she certainly did not anticipate much in the way of decent shelling. However, her five year old grandson, who appears to have inherited the family's great love of nature, found this beauty of a *Cypraea arabica* while playing on the beach. The shell was fresh, nearly perfect and an impressive 102 mm long. He offered it to his granny, but she decided it would be better for him to take it home to Canada, to grace his bedroom with a memento of that exciting day.





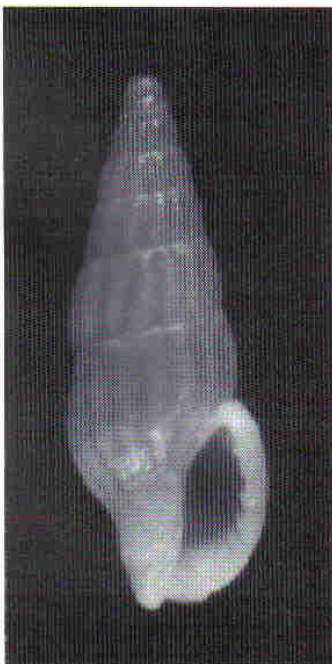
Sketchbook drawings 1995  
Broken shells from Port Macquarie, N.S.W.

# Flotsam

## New Species!

A new species of Columbellidae was described by member Markus Lussi in *Malacologia* no. 35. – *Aesopus geraldsmithi* Lussi, 2001

Picture taken by Gerald Smith, provided by Markus Lussi.



## THE MALACOARCHAEOLOGY GROUP NEWSLETTER

Malacoarchaeology is the study of mollusc shells found in sites of ancient human habitation. Informed examination of such remains can provide insights into the lives of the long-dead inhabitants - what they ate, whether they traded with others, their level of cultural development, and even the climate prevailing at the time that the site was inhabited. A newsletter dedicated to this topic has recently been started in the United Kingdom. The coordinator is Janet Ridout Sharpe, BSc ARCS, of 66 Radnor Road, Wallingford, Oxfordshire OX10 0PH, UK. Her email address is [j.ridout-sharpe@cabi.org](mailto:j.ridout-sharpe@cabi.org). Please contact her if you have something to contribute.

Readers interested in this topic can also find the odd article in back-issues of the *Strandloper*, of which the following #256 (strandloper necklace), #257 (cowrie decorations and the ndoro), and #265 (Mapungubwe) are more recent examples.

## Next AGM

The 2002 AGM of the Society will be held in May, 2002. According to the Constitution, no office bearers need be elected since this was done at the 2001 AGM, and will be done again for the 2003 AGM.

## 2001 New Members - Welcome

Bateman, J, Neptune City (N.J.) U.S.A  
Dankaert, W, Springs, South Africa  
Diederichs, J, Annlin, South Africa  
Du Plessis, F, Pretoria North, S. Africa  
Gobey, M, Elarduspark, South Africa  
Human, A, Mossel Bay, South Africa  
Kislig, D, Lone Hill, South Africa  
Lotter, C, Wonderboom, South Africa  
Marais, A, Southdale, South Africa  
Postumus-Meyjes, E, Hartbeespoort  
Tietze, G, Ifafi, South Africa  
Wilkenson, R, Bluff, South Africa

## Newly described species

(sent in by Kobie du Preez)

The following new species have been described from Southern African waters or have been named after members of the Conchological Society of Southern Africa. The information came from *Of Sea and Shore* magazine Volume 24, No. 1 (Spring 2001), the editor of which is Tom Rice.

*Aclyvolva nicolamassierae*  
Fehse, 1999, Ile de la Réunion up to Tanzania, 40-50 m on whip gorgonian Size: to nearly 17 mm.

*Cymbovula massierorum*  
Fehse, 1999, Along eastern coast of South Africa as far as Pemba, N. Mozambique and Tanzania, living on large grey gorgonians between 4 and 2 m Size: to nearly 112 mm.

*Crenavolva (Crenavolva) martini*  
Fehse, 1999, Only from type locality, Boucon Canot, Ile de Réunion, dredged 40 m in rubble Size: to nearly 11 mm.

*Fusinus transkeiensis*  
Hadorn, 2000, Off Transkei coast of South Africa Size: 10-20 mm.

*Niveria (Cleotrivia) colettae*  
Fehse, 1999, Ile de la Réunion and Port Alfred, South Africa Size: to nearly 4 mm.

*Triviella franziskae*  
Fehse & Massier, 2000, South Africa at Kommetjie (type locality); and East London.

*Merica lussii*, Petit & Harasewych, 2000, KwaZulu-Natal coast of South Africa Size: to 35 mm.

*Pseudoraphitoma kilburni*  
Morassi & Bonfitto, 2001, Red Sea, offshore Yemen Size: to just over 6 mm.

*Loxotaphus rosadoi*  
Deu & Verhecken, 2000, Off southern Mozambique 120-300 m Size: to 31 mm.

# Snaily tales

## - From the kitchen of an Alien Snailien\*

### *Opeas lineare*

We have a lot of *Opeas lineare* in parts of the garden of our house in Centurion, Gauteng.. I always refer to them as 'The Yellows'. A few of them were put in a transparent container so that I could study their behaviour. I keep my snails in containers in my kitchen! When I found them, I took some soil and detritus from their own home for the container. Nothing interesting was observed while they were alone in their container. They ate, they mate (not observed), they laid eggs, the babies grew up...

### *Gulella infans*

About two years ago my husband found a *Gulella infans* shell in our garden. Although I think he hates all the time I spent with my shells and not with him, he always brings me little shell presents and books. He clearly knows the way to my heart!



One day in November 1999 Roelf came to me with a sparkle in his eyes, holding his closed hand out towards me. I had to guess what he had for me... Seeing his hand had soil on, I immediately knew it must have been some sort of shell or snail. It was a live *Gulella* crawling with its brilliant orange and yellow body on his hand! What a nice surprise! I immediately wanted to know where he found it, etc. He, however said in a Verimark-like manner... 'But wait... there is more....!' In the hand behind his back were three more very alive little critters! He was trimming a huge palm tree in the garden, and found the snails under the dead leave stems. Some palm trees tend to accumulate dust and soil on the trunks underneath the leave stems, where some people

grow ferns. I found two more *Gulella*'s, but left them just there. There were also various slugs.

Immediately another container was filled with soil, detritus and Yellows for the *Gulella*'s to eat. And do they eat.... At first I noticed only the empty shells of the Yellows, but one morning before work I actually saw a *Gulella* approaching its breakfast.. I immediately took the container to my microscope. It must have ejected some sort of chemical, as the Yellow was 'foaming' a lot, and didn't even try to escape. The *Gulella* then put his little proboscis inside the Yellow. I frantically ran for my camera... (I had to open the safe, take out the equipment, secure it on the microscope...) I took a spoon and scooped the *Gulella* into a more photogenic container. He was not very pleased with me, and ran off! By then I was completely late for work... I was positive that I would get another chance and left all the

equipment mounted. After a few days I had another opportunity. But I did learn that it is quite difficult to take pictures of moving subjects under the microscope!

By mid-December I noticed a little baby *Gulella*! It was named *Goliath*. About 4 weeks later there was another one... and another one! The *Gulella*'s are clearly happy in their 'cage'. However, the mortality rate of the hatchlings is high and most of the babies perish. I don't know whether they eat each other, or if the adults are feeding on them. I just find the empty shells. They also suck out all the juice of *Opeas lineare* eggs, leaving the empty horny egg. I have also fed them an alien snail species found in a pot plant, identified by Dai Herbert of the Natal Museum as *Zonitoides arboreus* (Say), an orchid snail, and I have fed them raw or cooked beef.

\*by Mrs Kobie du Preez, PO Box 51694, Wierda Park, 0149, South Africa

### ***Pupilla fontana***

Every now and then I take out the empty shells of the Yellows, and put in some fresh 'meat' and detritus from the garden. One day I noticed a suspiciously moving sand grain, and ran for the microscope. It was a juvenile *Pupilla fontana* and named there and then *Petit*. Afraid that the *Gulella*'s might eat it for supper, it was put into its own container. That was the only specimen that I have ever found of *Pupilla fontana* in my garden.

By winter the *Gulella*'s were completely inactive and hiding in the soil. The *Yellows* and *Petit* stayed active. I haven't seen what is on the menu for *Petit*, but he was generally hanging around on the decaying leaves.

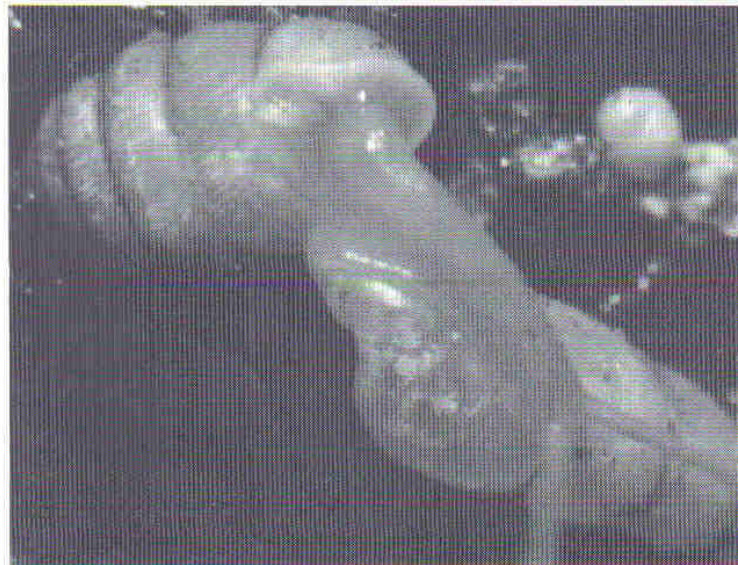
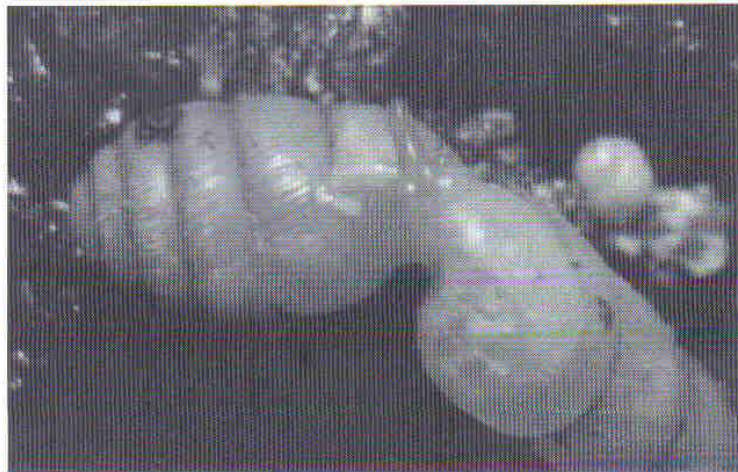
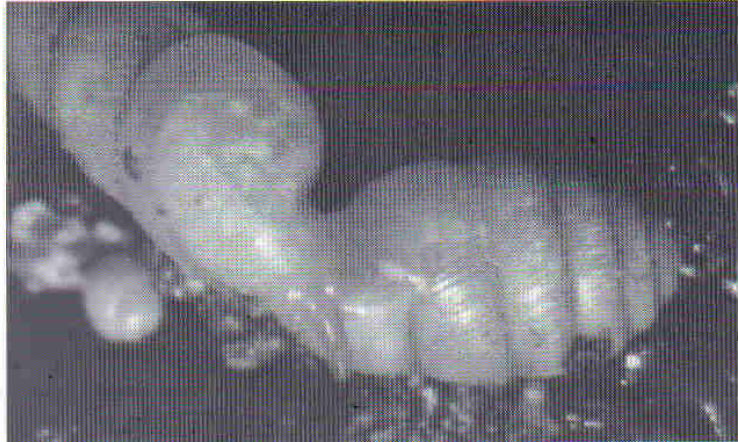
After a few days away in July, I immediately looked on arrival to see if my pets were well. When I opened the third container I nearly had a heart attack... I saw cat hair! On closer inspection I found evidence of carpet matter, half a wheat grain and a rice grain. I couldn't find *Petit*... The cleaning lady admitted that she had accidentally dropped the container, but knew she had to put back every sand grain she could find. My nephew and his girlfriend were looking after our house, and they had bought whole-wheat bread. Something positive came from the accident, the *Yellows* love wheat, but less so the rice. I have put half a pumpkin pip in too, and they love it! Poor *Petit* were found more than a week later. He must have ended up in the bottom part of the container!

### **What else did I see?**

Whenever a *Gulella* died, the other *Gulella* and *Opeas* snails ate the shell, but none have ever eaten the shells of *Opeas*.

### **The spider**

The most interesting observation comes from a different animal. A little spider has decided that the corner of the snail container is a nice home. It doesn't spin a neat web, rather an untidy mass. I found an empty baby *Opeas lineare* shell in the web one day and it immediately set my mind racing... Could it be possible that the spider ATE the snail? I took an adult snail and put it in the web. The spider ate it during the night.. Unfortunately the spider isn't the best photo-



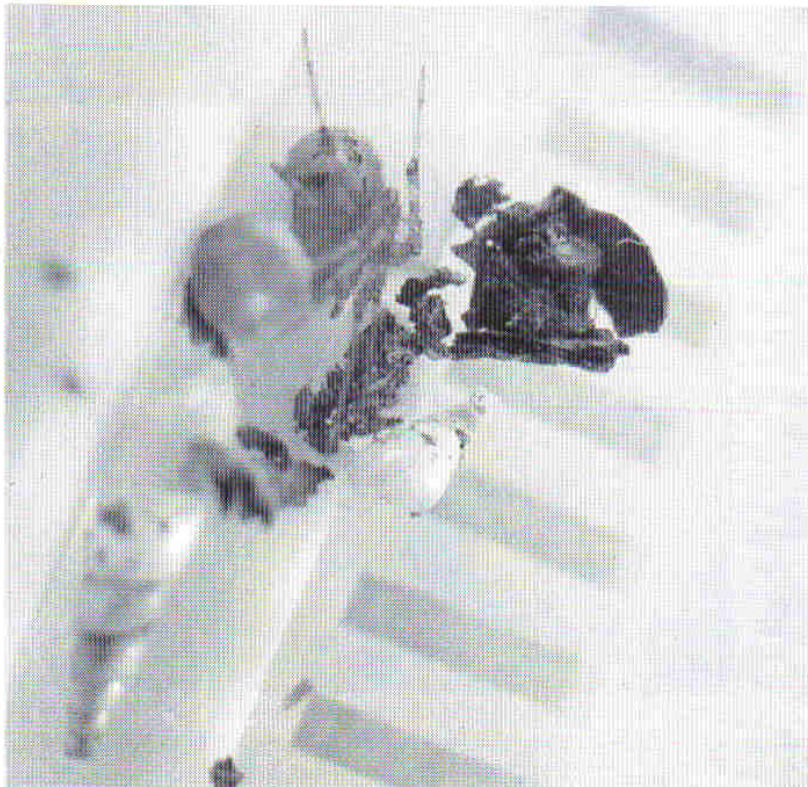
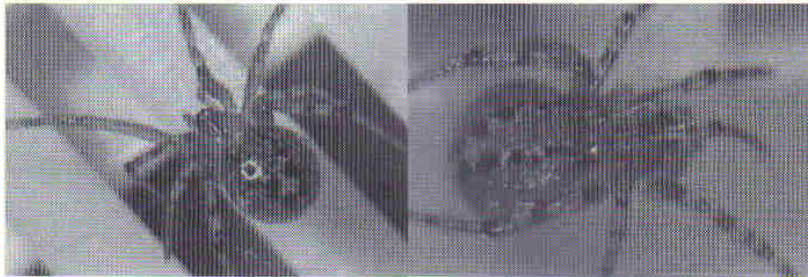
Sequence, showing a *Gulella infans* feasting on an unfortunate *Opeas lineare*, top- head is entirely within shell of *Opeas*, bottom, meal over, the *Gulella* is on the move again.

graphic subject, so please take it into consideration when looking at the pictures and it is only 5-7 mm in length! It has been identified by Dr. Ansie Dippenaar-Schoeman as *Theridion* sp., a member of the family Theridiidae (cobweb spiders).

I also observed the spider 'eating' or 'licking' or however it is, feeding on a piece of cucumber. I think spiders have sucking mouthpieces, but there was a small hole where the spider had been.

#### In a nutshell:

1. *Gulella infans* eat snails, raw and cooked meat, eggs of *Opeas lineare*
2. They are cannibals
3. They will not eat the shells of *Opeas lineare*, but they will eat from their own species' dead shells
4. *Opeas lineare* eat the shells of *Gulella infans*
5. There is a spider that eats snails



Topleft, snail-eating spider, probably *Theridion* sp.: top right, spider in defensive posture with legs held over its head, bottom, spider in web, with empty shell of *Opeas lineare*.

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Founded 1958

Patron : Dr R. Kilburn

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