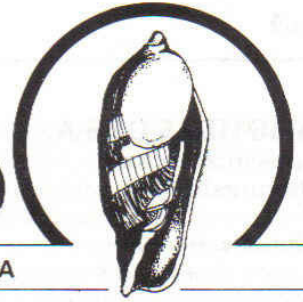


The Strandloper

BULLETIN OF THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA



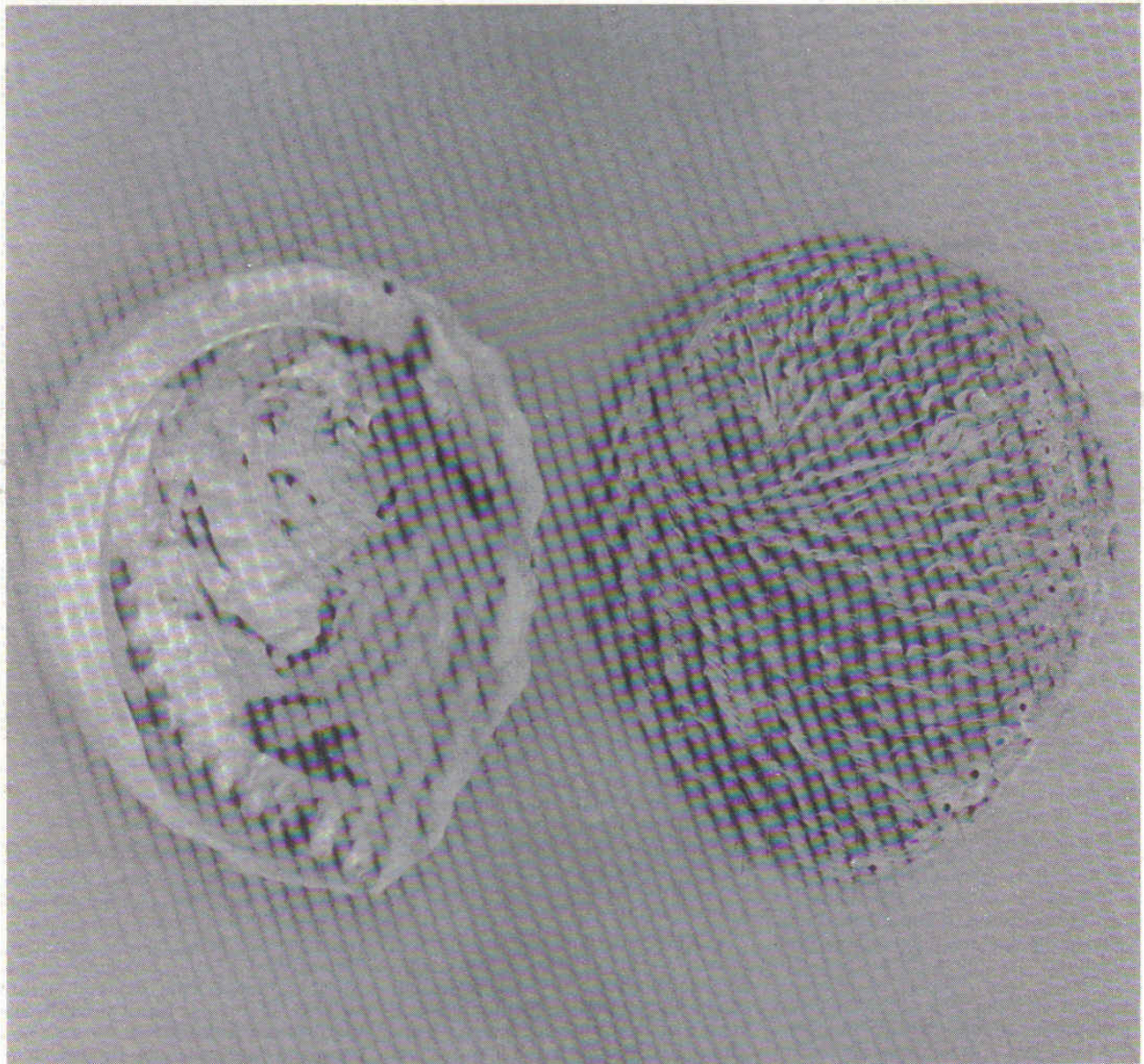
No. 211

OCTOBER, 1983

Page 1

HALIOTIDAE OF SOUTH AFRICA

by JESSICA JACKS



Haliotis midae Linnaeus, 1758.

HALIOTIDAE OF S.A. by Jessica Jacks Johannesburg

1. Introduction

Belonging to the class Gastropoda and superfamily Pleurotomariaceae, the **Haliotidae** are commonly known as abalones, perlemoens or ormers. They are nacreous shells with small spires and large bowl-shaped body whorls, displaying a single row of perforations on the shoulder. They do not have operculums. The abalones are well known for their nacreous interior; the "mother of pearl" of **Haliotis fulgens** having recently become popular in the jewellery industry. Their flesh is an important food source especially in Japan and the tonnes of perlemoen canned annually are considered good eating but if not properly prepared can only be described as fishy india rubber. For those collectors who might wish to prepare fresh abalone, (in South Africa, **Haliotis midae**), S.J.A. de Villiers in her book "Cook and Enjoy It", deals quite extensively with the subject (7). The recipe includes soaking the **midae** in slaked lime, pressure cooking it and then pounding it with a mallet!

Interestingly enough, at no stage of the year is **midae** poisonous because they are not filter feeders and therefore do not accumulate the toxins that are associated with the red tides (9).

The **Haliotidae** are herbivores, the radula of **midae** being fully illustrated in the Annals of the South African Museum (4). They feed by lifting their shells and part of their feet in order to trap vegetation that is swept under their shells by wave action.

Living in zones where they are subjected to strong wave action, the **Haliotidae** have had to adapt to their environment. This they have done by, firstly, increasing the flatness of the shell in order to reduce resistance to waves and secondly by developing a broad and very strong muscular foot in order to anchor themselves on the rocks.

As the shell grows the hole nearest the spire closes as another forms at the growing edge. These perforations act as an outlet for waste material ensuring that it passes away from, rather than polluting the gills. Oxygen is supplied to the gills by water flowing under the shell (9).

Natural enemies of the abalones include the sponge **Cliona**, that bores between the shell and the mantle. Injuries sustained by these intrusions are commonly seen repaired as nacreous pustules in the interior of the shell (4).

Another enemy is the octopus, described by Lane as extremely patient creatures seen determinedly pulling on an abalone until the muscle of the animal finally tires and the vise-like hold on the rock is broken (8).

1.1 The Archaeological Evidence of **H. midae**

Of the 65 or so valid species of **Haliotidae**, 5 can be found off the South African coast. The Annals of the South African Museum report fossils from Algoa Bay dating to the Pleistocene and large specimens found in kitchen middens at Cape Hangklip (4).

Archaeological excavations all along the Cape coast have yielded specimens of **midae** in middens dating to the Holocene, related to seasonal occupation sites. For example, the results of excavations at a site called "Die Kelders" (Walker Bay coast) showed **midae** to be a fairly important food source. A statistical analysis of the shell remains showed that of the 20 754 shells retrieved by the archaeologists, 165 were **midae**. The assemblage can be expressed as follows (5):

Bullia	0,2%
Turbo	2,1%
Donax	0,3%
Haliotis	0,8%
Choromytilus and Perna	66,9%
Burnupena	17,3%
Chiton	0,04%
Oxystele	6,1%
Patella	6,3%

Represented as a percentage the **midae** may not appear as a substantial part of the diet. However considered by mass, the flesh of a **Choromytilus** (size 5-7mm) weighs around 6,9 grams as compared to the 280 grams of the average size mature **midae**. Therefore for the equivalent calorific intake the ratio of **Choromytilus** to **midae** that must be eaten is 40:1. This 0,8% appears to be representative of the whole Cape coast where archaeological sites are common (T.M. Taylor, Archaeology, University of the Witwatersrand, personal communication, 1982).

What is even more interesting is that the abalones were used for other purposes during the Late Stone Age. Die Kelders yielded a large **midae** with a hole drilled through it, found in association with oval shaped beads made from sea shells as well as ostrich egg shell. This has been interpreted as a pendant as this sort of jewellery is not uncommon from this period (5).

In addition 15 unbroken specimens of **midae** were found to contain semi-articulated fish bones. It had been suggested that in spite of their perforations **midae** could have been used as containers (6). Although this has not yet been proven, I find the theory quite plausible knowing just how commonly **Haliotis midae** are used as ashtrays in modern day South African homes!

1.2 The **spadicea**/**sanguinea** debate

Recently the validity of the use of the name **spadicea** has given rise to a certain amount of debate. I can expand on this and perhaps answer any questions that may have resulted.

For many years the shell I have illustrated as **Haliotis spadicea** Donovan 1808 was known as **Haliotis sanguinea** Hanley 1841 (4). In a discussion of the Cape Town Group of the Conchological Society, Dr R.N. Kilburn pointed out that the earlier name of the shell (**spadicea** Donovan 1808) was the valid name for the species. It was argued that, seeing that the Donovan name had not been used for 50 years, it could be regarded as "nomen oblitum" (forgotten name) and dropped in terms of the international rules. However, the "nomen oblitum" rule has been repealed, and the earlier name should validly be used assuming it referred to the same shell.

Nowhere in the Strandloper has it been clearly explained where the Donovan reference could be found; where Donovan's type material or illustration is; or whether Donovan and Hanley were in fact describing the same shell.

I put this to Dr Kilburn who provided a copy of the type figure from E. Donovan's article on "Conchology" which was published in 1808 in Rees' "The New Cyclopaedia". No description or locality was given in the publication but there is no doubt from the illustration that Hanley and Donovan were describing the same shell.

Since the repeal of the "nomen oblitum" rule, the only way of re-instating the name **sanguinea** in favour of **spadicea** would be to apply to the International Commission on Zoological Nomenclature (ICZN). This would have to be done with proof that over the last 50 years **sanguinea** was more commonly used than **spadicea**. However, this does appear to be rather pointless seeing that the term **spadicea** has become firmly entrenched in the literature (Dr R.N. Kilburn, personal communication, 1982).

1.3 A Sixth South African Species?

Recently I examined a beach specimen (one of several) from Pondoland (collected by Mrs A.H. Adam) that in no way resembles any of the five South African **Haliotidae**. I have photographed the shell for identification although I feel strongly that it is possibly **Haliotis pustulata** Reeve 1846 which is a common Indo Pacific abalone. Positive identification might well prove very interesting as this is the first time, as far as I know, that the species has been reported from this area.

Before describing the abalones of South Africa, it should be added that this paper is experimental and any ideas or information that can contribute to a better understanding of the **Haliotidae** will be most appreciated. It is my intention to continue studying these shells possibly by geographical region and then to write occasional papers describing them. This would involve firstly collecting the shells from the area as well as retrieving and correlating the most possible information about them. Therefore readers contributions will be most welcome.

2. The South African Haliotidae

2.1 *Hallotis midae* Linnaeus, 1758

Synonyms: **capensis** Dunker, 1884; **elator** Pilsbry, 1890; **midae elator** Turton, 1932; **midae capensis** Turton, 1932; **midae** Linnaeus, Krauss, 1848; **midae** Turton, 1932.

Krauss showed that **capensis** was just a growth stage of the valid species. **Midae elator** is the form of **midae** that is more deeply bowl-shaped and appears to be more common at Saldanha Bay than at other localities (4).

Common Name: Perlemoen.

Size Range: This is the largest of the South African abalones, growing up to 18cm. The current **reported** world record is, in fact, 18cm housed in the American Museum of Natural History and collected in 1967 (1).

Distribution: Kensley reports the species from Saldanha Bay to Port Alfred (3), however Richards extends this range further east to Gonubie (2). To add to this, **midae** has been reported at Coffee Bay, Transkei (6).

Description: The dorsal surface is reddish but is often obscured by thick marine growth. Numerous characteristic corrugations run obliquely to the lines of growth and 7-11 deep circular perforations are slightly raised along the shoulder of the shell.

The interior of juveniles is a clear iridescent pink which becomes more turquoise or green in older specimens. Most shells have a large rough muscle scar in the centre of the interior surface although this is not apparent in juveniles.

According to Richards (2) the juvenile **midae** is sometimes mistaken for **spadicea** but as she points out **midae** is more roughened and flatter. To add to this the interior colour of **spadicea** is not as pink but a more vivid blue/green with a copper stain in the concavity of the apex.

Shelling Restrictions: Along the entire South African coast no specimen may be taken alive if it can pass through an 11,43cm diameter ring. In addition no **midae** may be disturbed along the Nature Reserves of Betty's Bay and Tsitsikama or at Buffalo Bay (Knysna area) and Robbeberg (Plettenberg Bay) (2).

Also it is forbidden to disturb a perlemoen "in any other way than by hand or by means of an implement, the blade or flat edge of which shall not exceed 3,8cm" (11).

According to Kensley, a **midae** measuring in the order of 11cm is approximately 14 years old (3). Further, **midae** only starts reproducing at around an age of 8 years and therefore the species could easily be subject to over exploitation (9). *Current Market Value:* \$3.00-\$8.00 (1). The former value is for imperfect beach specimens while the latter is for "gem" shells plus full locality data.

2.2 *Haliotis spadicea* Donovan, 1808

Synonyms: **sanguinea** Hanley, 1841; **ficiformis** Menke, 1845; **pertusa** (non Reeve) Bartsch, 1915; Turton, 1932; **nebulata** (non Reeve) Turton, 1932 (4).

Common Names: Venus ear, Siffie.

Size Range: Up to 8,5cm. However, a specimen taken live at Haga Haga measured 9,5cm which is possibly a world record (6).

Distribution: South Africa: Table Bay and False Bay to Durban and Tongaat, Natal. Also known from Mauritius and Western Australia (33 degrees 53 minutes south). Macpherson compared specimens from all three geographical areas but found no differences (4).

Description: The dorsal surface does not show the corrugations that are so characteristic of **midae** but rather minor ridges radiating from the spire oblique to the growth lines. Specimens average between 6 and 8 circular perforations situated almost flush with the shell surface. The predominant colour is a reddish brown with intermittent and random white/green mottling. The spire is bronze and most specimens are free of marine growths.

The interior cavity has a characteristic copper stain on the inside of the spire or the "ear" and juveniles tend to be a more iridescent turquoise than larger shells.

Collecting Restrictions: Throughout the entire coast **spadicea** may not be collected if the shell is smaller than a 3,175cm diameter ring. In addition to this no more than 10 specimens may be taken live on any one day by any one person (2).

Current Market Value: \$0.75-\$1.50 (1).

2.3 *Hallotis parva* Linnaeus, 1758

Synonyms: **parvum** Krauss, 1848; Smith, 1910; Turton, 1932; **kraussi** Turton, 1932. Wagner and Abbott also include **canaliculata** Lamarck, 1822; **carinata** Swainson, 1822 and **cingulata** Roding, 1798 (1).

Common Names: —

Size Range: Up to 4,5cm.

Distribution: South Africa: Table Bay, False Bay (live at 4-6 fathoms (4)), Still Bay through Port Elizabeth, Port Alfred to Gonubie, Natal.

Description: The dorsal surface is sculptured with numerous fine lirae running parallel to the line of growth. The most distinguishing characteristic is the prominent fold lying parallel to the shoulder. This ridge more often than not extends beyond the growing edge of the shell. In beach worn specimens or large shells, the ridge can become indistinct (4). The spire is high and is located approximately one third along the length of the shell (2).

The colour of the dorsal surface varies from a beige or green and maroon mottling to a uniform brick red or in beach specimens a pumpkin orange. From 68 beach specimens collected from a limited range (100-200m) at Cape St Francis, the ratio of orange shells to beige/maroon mottling was 1:4. The perforations, ranging from 5-7, are usually ovate or slightly irregular and are marginally raised along the shoulder.

The interior of **parva** varies from a delicate nacreous pink in juveniles to a more turquoise/pink in larger specimens. The parallel fold on the dorsal surface corresponds to a deeply incised groove on the inside of the shell continuing into the fairly deep concave ear.

Shelling Restrictions: Although **parva** is not specifically mentioned in the definitions of what may or may not be collected, I would assume that any restrictions imposed on the collecting of **spadicea** would apply to **parva**.

I come to this conclusion because the restrictions define a siffie as "any siffie, other than perlemoen or abalone and includes Venus Ear" (11). This is very ambiguous but one must bear in mind that the terms perlemoen and abalone are used very loosely in the literature (just as I have been guilty of in this article!) and therefore one must expect the term "siffie" to be used with a similar broad definition.

Current Market Value: \$0.50-\$0.70 (1).

Continued on page 6

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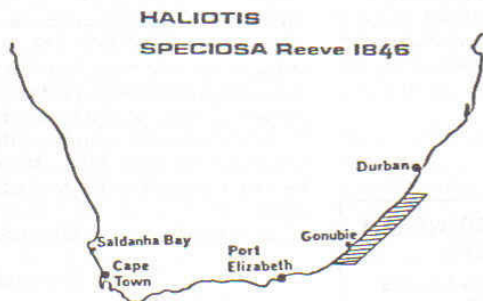
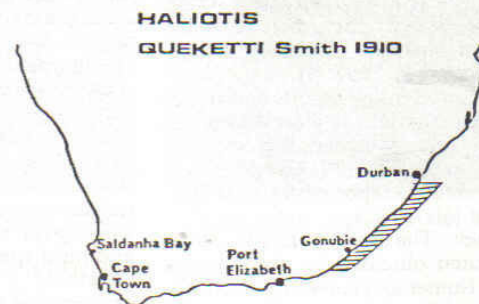
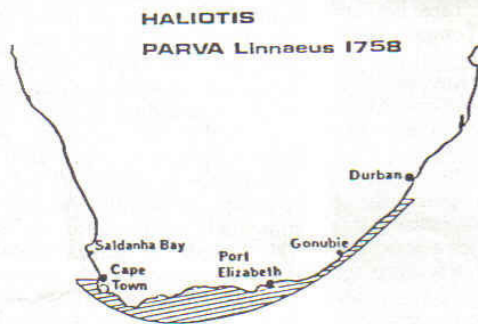
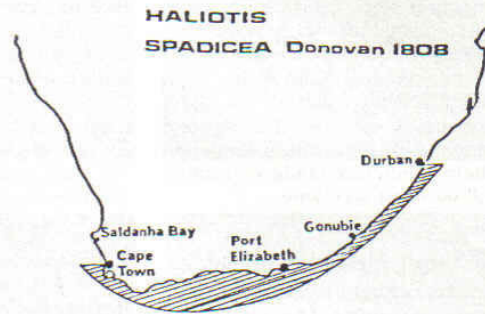
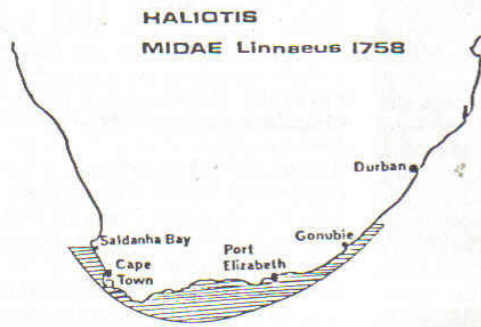
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**LOCALITY MAPS OF
HALIOTIS SPECIES**



1. *Haliotis parva*

2. *Haliotis spadicea*

3. *Haliotis queketti*

4. *Haliotis pustulata*

5. *Haliotis speciosa*

6. *Haliotis pertusa*

Continued from page 3

2.4 **Haliotis queketti** Smith 1910
Synonyms: **queketti** Turton, 1932; Macnae and Kalk, 1958.

Common Names: —

Size Range: Up to 4.6cm.

Distribution: South Africa: Port Alfred through to Natal- Isezela, Kelso (10), and off O'Neil Peak (Zululand) at 90 fathoms (4).

Description: The dorsal surface of **queketti** shows a raised spire that is far more prominent than in **parva**. 5 ovate perforations are situated on elevated tubules about 1mm high. There is a slight groove running parallel to the line of growth between the perforations and the rim of the shell. Also parallel to the line of growth is a rib running from the spire to the growth line although this is not nearly as pronounced as in **parva**. The colour varies as it does in **parva** but from a tan with scarlet mottling to a burnt orange. To distinguish **queketti** from **parva**, the whole shell gives an overall much more wrinkled appearance with a large spire in relation to the size of the shell.

The interior is a nacreous pink to turquoise with a deeply incised ear. The trough corresponding to the dorsal ridge is not as evident in the interior as it is in **parva** and it does not extend beyond the growth line.

Shelling Restrictions: As in **parva** there is no specific mention of **queketti** in the published shelling restrictions. This is probably because **queketti** is just too rare and the need to protect them has never been evident. However of the reasons mentioned in the shelling restrictions of **parva** I would assume that the regulations laid out for **spadicea** would apply. But since **queketti** (and **speciosa**) are so rare, finding ten live specimens is simply wishful thinking and comparable to any fisherman's story.
Current Market Value: \$15.00-\$20.00 (1).

2.5 **Haliotis speciosa** Reeve, 1846
Synonyms: **alfredensis** Bartsch, 1915; **speciosum** Reeve, 1846; Talmadge, 1959; Tomlin, 1927; Turton, 1932; **pertusa** (non Reeve) Sowerby, 1900, Smith, 1903.

Common Names: —

Size Range: 4-7cm.

Distribution: South Africa: Gonubie, East London, Kowie, Port Alfred to Natal (2,4).

Description: **Haliotis speciosa** is fairly flattened shell with 3-6 oval perforations. Dorsally, numerous very fine striations

run parallel to the growth line. Maroon and beige mottling is predominant while the interior is iridescent green/pink. The midwhorl ridge so characteristic of **parva** is virtually absent in **speciosa**. The overall appearance is larger and smoother than **parva** and **queketti**.
Shelling Restrictions: As for **queketti**.
Current Market Value: \$3.00-\$5.00 (1).

3. Acknowledgements

My thanks to David Freeman, Dr R.N. Kilburn, Peter Chemaly and Victor Millard for their technical assistance.

4. References

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Additional Notes On the Haliotidae Of South Africa.

After mailing the draft of the Haliotidae of SA the author found some information on **Haliotis pustulata**.

The sources are:

a) Kilburn in his new (1982) book reported **Haliotis pustulata** Reeve, 1846 from Zululand (page 223 Appendix III) (The specimens in the plate are from Shanzu in East Africa, Ed.)

b) Jo Kolera (Florida) says the pictures sent her of **Haliotis pustulata** correspond to **Haliotis pustulata** form **alternata** found in the Indian Ocean.

Another note from the letter says that after a chat with a microbiologist friend she came to realise that the 1:4 ratio of orange to mottled **Haliotis parva** and **H. queketti** could be a result of a set of dominant and recessive genes. The recessive genes (the orange) obviously do not endanger the abalone as far as camouflage is concerned otherwise they simply would not survive.

While collecting the shells for the photographs I found another **Haliotis** which does not seem to be in the list or in any of the books that I have checked. I have photographed **Haliotis pertusa** Reeve, 1846 found at Munster on the South Coast of Natal. This shell and the label came from the collection of Hazel Jeffries. If anyone has any further information on this shell or any of the others mentioned in the article or even some that we have not mentioned it would be greatly appreciated if you would write to us.

SUPPLEMENTARY COMMENTS ON HALIOTIS PERTUSA & HALIOTIS PUSTULATA

In addition to the five species generally known from South Africa, occasional specimens of two additional species are found on beaches in Natal.

Haliotis (Sulculus) pustulata Reeve, 1846 has been recorded from Kosi Bay, while a further species, probably referable to **Haliotis pertusa** Reeve, has been found at Munster on the Natal South Coast. This latter species is not the "pertusa" referred to by Bartsch when he was actually describing **H. speciosa**, but is somewhat different.

Refer Annals Natal Museum Vol. 21 (2) pages 391/2 December 1972 and Annals S.A. Museum Vol XLVII page 306 December 1963.

Some Back numbers of the Old Circular are still available. Apply to Secretary for Details.

THE SOCIETY

During the past twelve months, business and family commitments made it impossible for members of the Society's central council to carry out their functions and, as readers will have noticed our service to members deteriorated, to say the least. Those who are attached to regional groups will at least have been able to continue to take part in local activities but the many other members especially those in the Transvaal and O.F.S., who rely on *The Strandloper* for their participation have reason to be disappointed.

We are pleased to announce that an interim committee has been formed in Cape Town to prepare for the calling of an annual general meeting, the presentation of a balance sheet, and the election of office bearers in terms of the Constitution.

Subscriptions paid have been accounted for and are at credit in the Society's bank account. Accumulated funds are sufficient to cover the cost of publishing *Strandloper* bulletins for the time being, without calling for further subscriptions, so that it appears possible to extend membership for another year, i.e. to the end of June 1984, free of charge. Members will be billed for fees in due course.

Meanwhile notices will be sent out calling for nominations for the vacancies on the Council, and to convene the annual general meeting on a date to be decided by the interim committee as soon as arrangements can be made.

A fair quantity of material for publication in *The Strandloper* is on hand and is being prepared for printing. Further contributions in this respect will of course be welcome, and may be sent to the Editor at P.O. Box 1200, Cape Town 8000.

Field Notes From The Bakoven Locality

(The molluscs observed in an aquarium were found at Bakoven (Table Bay))

Fasciolaria lugubris was seen feeding on *Burnupena papyracea papyracea*. The proboscis of the Fasciolarid was fully extended and was penetrating the body whorl of the prey. The operculum of the *Burnupena* was intact while the animal appeared to have been completely dissolved. *Fasciolaria lugubris* is often found partially buried in sand amongst rocks in shady places. The *Burnupena* species, however, has an ubiquitous habitat.

The eggs of a mollusc were found on the underside of a rock. They resembled those of a Fasciolarid species as given in a sketch by Mr Kensley in his book, "Sea-Shells of Southern Africa", page 9. There were many eggs and they were milky white in colour.

Argobuccinum pustulosum (Lightfoot 1786) (previously *argus* Krauss 1848) was observed many times on Polycheate, reef-building worms. Also, *Fasciolaria lugubris* was observed feeding on the same worms. In both cases the proboscis of the mollusc was extended into the tube-like domain of the worm. It was noted that *A. pustulosum* is almost always found in well aerated, turbulent water, clinging to the worm domains built of coarse sand and shale.

Marginella rosea was observed feeding on *Gibbula rosea* in an aquarium, (refer to the excellent photographs in Prof. Branch's book, "The Living Shores of Southern Africa", that recorded this feeding process.) The Marginellid was also observed in natural habitat, feeding on a specimen of *Helcion pruinosis*.

A nest of *Marginella zonata* (previously *biannulata*) was found in a "limpet" shell, there were about 10 or 12 specimens in it.

In an aquarium, *Conus mozambicus mozambicus* was seen to extend its slender, tapering, milky white radula in search of food. Also a live collected cone of this species was found withdrawn into its shell with a partly digested Polycheate worm in its clutches. Furthermore, Messrs. John Hoffman and Arie Jooste claim that they can feed a *Conus mozambicus mozambicus* or *Conus tinianus* on earthworms to keep them alive in aquaria.

David Strong

INTERTIDAL TALK

If you would like to advertise for exchanges in the New Caledonian shell magazine *Rossiniana* then you can write to: Association Conchyliologique De Nouvelle-Calédonie, Boite Postal 146, Noumea. You can write in French or English. Remember to Mark the envelope "Via Australia".

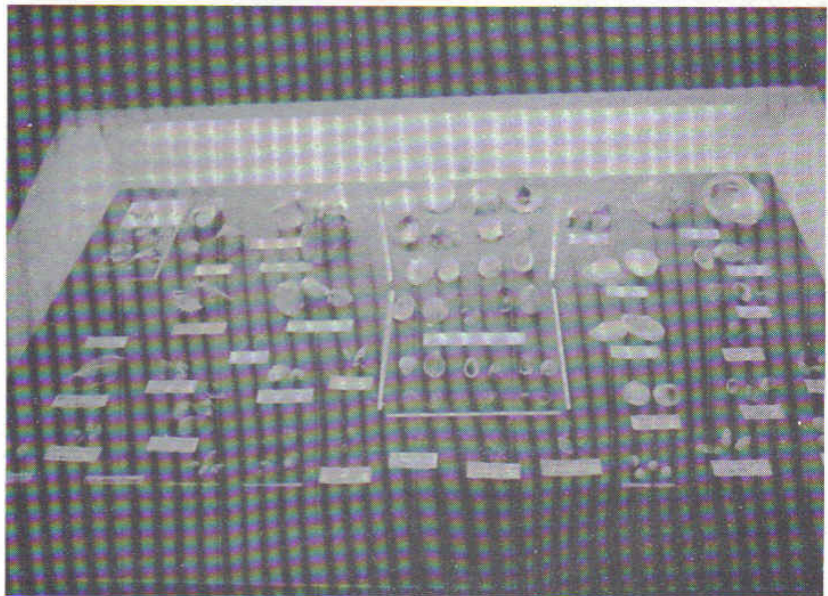
Edward Nieburger, president of the Boston Malacological Club writes that if any member visits New England, they would be happy to meet you. Their address is: P O Box 95, Shawsheen Station, Andover, Massachusetts, 01810, USA.

Unusual find — One of the Border and Transkei members, Mrs Glynne Godfrey has found a specimen of *Nautilus pompilius* on the beach at Riet River — in a remarkable state of preservation.

Mrs Joyce found a live *Littorina scabra* (Linné 1758) at Cape St Francis in the boat canal in January 1983. This is an interesting find, a scarce species appearing at Swartkops.

Some interesting ex pise finds by the Southern Natal Group are *Voluta ponsonbyi*, a growth series of *Tonna variegata*, *Cypraea lamarcki*, *Mitra sanguinolentis* and *Loripes rosaceus*.

Finds in the Port Shepstone and Southbroom pool were live *Spondylus* sp. All specimens were completely encrusted.



One of the displays at the Durban Group's April 1983 Shell Show — see Round the Groups.

Book Reviews

A Review of the Columbariinae of the Western Atlantic

by M G Harasewych

published by the Delaware Museum of Natural History, Greenville, Delaware, 19807, USA

The Society acknowledges a review copy of this paper which is number 27, dated April 29th 1983, in the series entitled **Nemouria**. The author discusses the placement of this **taxon** in the family **Turbinellidae** after many migrations, and he describes several new species. There are 42 pages of text, including 55 photographic figures. A useful paper.

Compendium of Seashells

by R Tucker Abbott & S Peter Dance
published by Dutton, New York, 1982.
Price \$52.50 including postage.

In a previous Strandloper we referred to a notice received from the publishers prior to the release of the book, It has since been released and fully lives up to expectations. There are some 4 200 (yes, really!) excellent colour photos, each with two or three lines of data on the size, locality and range of the species. The format is similar to that of the well-known Encyclopaedia of Shells which, as you will recall, covers only half as many species. As mentioned before, this reviewer was exasperated by Dr Tucker Abbott's practice of laboriously manufacturing an English language "common name" for each shell. In most cases these appellations have no general usage or acceptability at all, nor do they add to the reader's understanding of the shells. However, do not let this put you off buying this splendid book.

World Seashells of Rarity and Beauty

published by the National Science Museum, Tokyo, Japan, 1983.

This book illustrates the highlights of the **Kawamura** collection of shells which was donated to the Tokyo Museum. The publishers have selected a range of the rarer and more spectacular representatives of the main shell families from this collection which is renowned for the quality of the specimens as well as for its completeness. There are 48 plates of colour photos which must rank among the best ever produced. Some 420 species are illustrated, and the book is really very beautiful. There are 12 pages of text which merely serve to identify the numbered specimens with scientific names and localities in Latin and English, and a brief Japanese commentary alongside.

Some copies have been ordered and will be available through the editor of the Strandloper at R12 each, including postage and packing, on a first come, first served basis. An excellent Christmas present.

Annals of the South African Museum Vol 92, April 1983, Part 1. Primary Type Specimens of Marine Mollusca (excluding Cephalopoda) in the South African Museum

by Elizabeth Giles & Terrence Gosliner

The Society acknowledges receipt of a copy of this important record. At the same time we are happy to give credit to our members of long standing, Betty and the late Callum Giles, who worked on this project at the Cape Town Museum along with Terry Gosliner.

Journal of the Malacological Society of Australia Vol 5, August 1981, numbers 1 & 2

The Society acknowledges receipt of this publication which includes papers on **Siphonaria funiculata**; **Hemidonax**; **Katelsia**; **Ischnochiton**, and some land snails.

Nudibranchs of Southern Africa

by Terrence Gosliner

This publication has been delayed and it is now expected around December 1983. We can appreciate the concern of readers who responded to the invitation to place orders via the brochure that was included with a previous Strandloper.

New Magazines and Journals in our Library:

The CSSA is a member of a few Conchological magazines from around the world. These books or papers are in the library. I will from time to time list some of these with some of the more interesting articles or articles that would be of special interest to you. The magazine that I deal with this time is **Basteria** — Tijdschrift Van De Nederlandse Malacologische Vereniging. Most articles are in English.

Basteria Vol 44 No 5-6 pp-84

Notes on the Spanish non-marine 1.

Platygira sororcula.

A simple method of size classification of gastropod populations.

A note of some molluscs from the Caprivi Strip, South West Africa (Namibia) by A C Van Bruggen.

Basteria Vol 43 No 1-4 1979

Revision of the **Conidae 1** — **abbas adansonii** by Coomans and Wils.

Observations of the distribution of land snails in woods of the IJsselmeer polders.

Basteria Vol 43 81-105 1979

Alphabetical revision of the **Conidae 2** — **Adansoni** to **albuquerquei**.

Some articles on land snails.

Basteria Vol 44 No 1-4 pp 1-52

Limax (Limacus) flavus Linné 1795 living on the island of St Helena.

New data on 4 European **terrestrial gastropods**.

Alphabetical revision of the **Conidae 3** — **abbas** to **antillarum** with the description of **Conus algoensis agulhasi** nov. subspecies.

Basteria Vol 45 No 1-3 pp 1-64

Alphabetical revision of the **Conidae 4** — **aphrodite** to **azona** with a description of **Conus arenatus bizona** nov. subspecies.

Basteria Vol 45 No 4-5 pp 65-124

Cochlicopa lubricella and **Helix aspersa** as alien land snails in Zimbabwe/Rhodesia by A C Van Bruggen.

Achatina fulica on island of Timor.

Basteria Vol 45 No 6 pp 125-167

A Verdun — How complete are diagnoses of coiled shells of regular build? A mathematical approach.

By the same author — On taxonomy and variability of Recent European and North African species of the sub genus **Rissostomia Sars 1878**.

Basteria Vol 46 No 1-4 pp 1-84

Alphabetical revision of the conidae 5 — **baccatus** to **byssinus** including **Conus brettinghami nomen novum**.

A new operculate genus from East Africa — **Elgonocyclus**.

Basteria Vol 46 No 5-6 pp 85-136

H P Wagner — Notes on type material of the family **Pectinidae 1. Pecten limatula** Reeve 1853, a new synonym of **Chlamys irregularis** (Sowerby, 1842)

Basteria vol 47 No 1-4 pp 1-52

The **Sphaeriidae** of Australia by J G J Kuiper.

ERRATUM

The Fasciolaria Photograph on the front page of bulletin number 210 dated October 1982 was good and clear, and so was the article on page 2 of that issue, but the caption to the photo must have left our readers more confused than ever. Gremlins got into the works between the typesetting and printing, and a vital line was omitted.

The correct caption Should read as follows:

A. **Fasciolaria scholvi** Strebel, 1912

B. **Fasciolaria lugubris heyne**manni var. **strebeli** Fulton, 1930

C. & D. **Fasciolaria lugubris lugubris** Reeve, 1847

E. **Fasciolaria lugubris heyne**manni Dunker, 1871

ROUND THE GROUPS

CAPE TOWN

In September 1982 Mrs Nan Rice gave a talk on whales and dolphins with recordings of dolphin sounds. A new committee was elected (Sep 1982).

Chairman: Mrs H Busby

Secretary: Mrs G Whitehead

Treasurer: Mr J Coquillon

Members: Mrs Bootsma, Mrs P Coles

October 1982: A discussion was held on ways of mounting and displaying the reference collection.

November 1982: Professor Branch gave an interesting account of his stay on Marion Island, illustrated by slides. Mr Freeman showed photographs of shells found at Addington Beach after the dredging operations.

March 1983: Mr Nelius Britz and Miss Sandra Uttridge gave a highly enthralling talk on their recent pottery exhibition, inspired by the shapes, patterns and colours of shells. Their talk was illustrated by slides. Shells on display were *Neritidae*, *Phasianellidae*, and *Epitonidae*.

April 1983: Mr Justin Malan from the Dept. of Environment Affairs spoke about the Marine Conservation and Sandy Beach Symposium held in Port Elizabeth at the beginning of this year. He also explained the function of the various Government bodies connected with marine matters in South Africa. He showed us slides about Marine Conservation. Shells for display were ones you could normally find on a Sandy Beach.

May 1983: Mrs Connolly gave a talk on *Pectens* and brought part of her lovely collection of these scallops for display. She also explained some of the confusing terms used to describe shells in many shell books.

June 1983: Two films were shown: "Marine Animals of the Open Coast" and "Life in the Tropical Sea". Deirdre Richards gave a short talk on the two shell families of *Cerithidae* and *Architectonidae*, and about tidal rhythms.

July 1983: Mr Andrew Penney of the Marine Development Dept. spoke about mussel predation, illustrated with slides. The 3 main predators were crayfish, *Natica tecta* and starfish. Mrs Bobby Botes gave a short talk about *Xenophoridae*.

August 1983: We plan to show two films on the sea. This will also be our AGM.

EASTERN CAPE GROUP (Port Elizabeth)

The family *Patellidae* was discussed at the August meeting. The September meeting had Brian show his sea water tank with such interesting shells as *Chlamys tinctus*, many of the *Cymatidae*, *Conus mozambicus lautus* and *Conus tinianus* and quite a few others, forming a very impressive display.

At the June 1983 meeting the following members were elected to office:

Chairman: Mr F Graeves

Vice-Chairman: Mr B Hayes

Secretary: Mrs A Butler

Librarian: Mrs M Stuart

Tea Lady: Mrs R Hayes

BORDER AND TRANSKEI GROUP (East London)

November 1982: Noggs Newman read a paper on the *Neritidae*.

February 1983: Kay Erasmus showed a fine collection of trawled and shallow off-shore shells and told how trawling was done.

April 1983: Pat Palmer gave a talk on beach collecting. When and where to go etc.

May 1983: Elizabeth Rowland gave a well researched talk on the *Patellidae* and its associates in the order *Archaeogastropoda*.

SOUTHERN NATAL (Port Shepstone)

The Leisure Bay outing in April was successful and produced at least 5 different *Cypraea*s as well as a few *Patella* and *Neritas*. The outing at Mtwalume in May were finds such as *Hydatina amplustre* and *Thais tissoti*.

NATAL GROUP (Durban)

1982 saw a full programme with projects and activities including a weekend shelling trip — complete with night shelling, champagne breakfast and the great pleasure of David Freeman's company. A field trip/breakfast braai, the Addington beach collecting and listing of all the species found there, lectures, a radio talk and coverage in various magazines and the press.

The "occasional news-letter" *Bulletinus natalensis* is once again on the printing press. This local bulletin contains information of interest to Natal members.

(I am sure that for a fee the Natal group would supply you with this bulletin if you were interested. I find it interesting and informative. Try contacting them. Ed.)

Our April 1983 shell exhibition was a great success. Over a thousand visitors saw a show that offered a variety of shells from common to extremely rare, from plain to intricate and local and exotic. Also on display was an aquarium with living shells and a slide show with commentary.

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Telephone

Ray Cruickshank or Mrs Goldman at Gordon's Bay,
(024)-41555/418030/41345 or A/h 41772. Or write to Box 123,
Gordon's Bay 7150

THAT COWRIE AGAIN

Anybody who found the name *Cypraea gondwanalandensis* too much of a mouthful can now breathe a sigh of relief, or maybe a sigh of resignation, because you can now put new labels on the specimens in your collection.

The name was assigned in 1970 by Dr CM Burgess of Hawaii, when doing research for his great book, *The Living Cowries*, in an attempt to sort out the confusion with the specific names *castanea*, *similis* and *fuscrobura*.

It might be helpful to list the events in the order in which they happened:

1. *Cypraea similis* Gmelin, 1791. This is one of many synonyms applied to the different variations of *Cypraea erosa* Linnaeus, 1758. The name is therefore not available for any other shell.

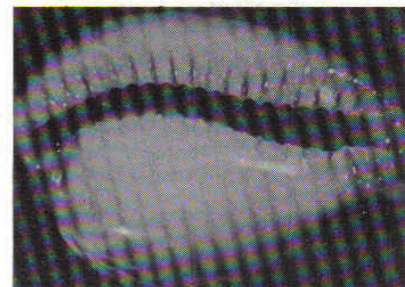
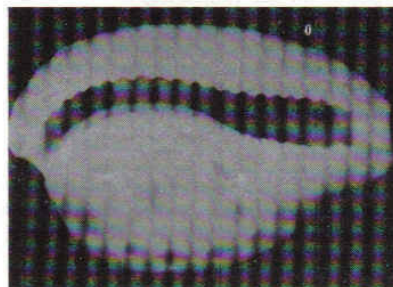
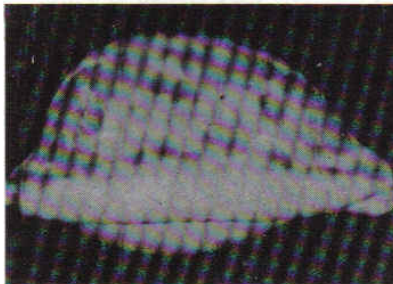
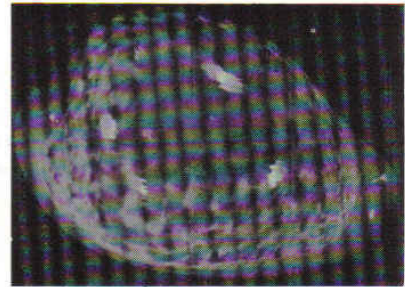
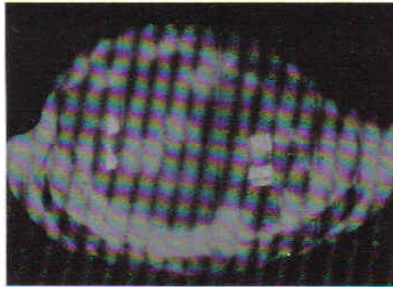
2. *Cypraea castanea* Röding, 1798. This is one of many synonyms applied to the variations of *Cypraea mauritiana* Linnaeus, 1758. The name is therefore not available for any other shell.

3. *Cypraea similis* Gray, 1831. This was a name applied by Gray to a large cowry with dorsal blotches. Obviously Gray was not aware that the name was "preoccupied" by Gmelin, 1791. The new species was genuine enough, however.

4. *Cypraea (Luponia) castanea* Higgins, 1868. This name was proposed by Higgins for a large well-preserved cowry with prominent dark dorsal blotches, which he took to be the same species to which Gray had given the preoccupied name *similis*. Higgins thereby committed a double error because Higgins's name, *castanea*, was also preoccupied by Röding, 1798 and the species he was applying it to was a separate and valid species in its own right, not Gray's *Similis*.

5. *Cypraea fuscrobura* Shaw, 1909. Believing that *similis* Gray and *castanea* Higgins were one species, and realising that the names were both preoccupied, Shaw proposed the new name *fuscrobura*. In this published description, however, Shaw explicitly stated that it was a "new name for *Cypraea similis* Gray. It therefore became a valid name for this particular species, but not for the separate species that Higgins named as *castanea*."

6. *Cypraea gondwanalandensis* Burgess, 1970. Whereas Shaw had concluded that "*similis*" and "*castanea*" were one species to which he gave the name *fuscrobura*, Burgess on the other hand concluded that there were specific differences and assigned the dreadful name *gondwanalandensis*. But he



Cypraea verhoefi Burgess, 1982.

Cypraea fuscrobura Shaw, 1909.

PHOTOS: W. R. LILIVED

assigned it to the type that was previously known as *C. Similis* Gray, instead of to the shell named *castanea*, Higgins.

Consequently, *gondwanalandensis* automatically became a synonym of *fuscrobura*, which is the valid name for "*similis*" while the "*castanea*" of Higgins remained as a valid species without a valid name.

Subsequently, during the past five or six years, a sufficient number of specimens of both species have been found to substantiate the conclusion that they are two valid species. Writing in *Venus*, the Japanese journal of malacology, Dr Burgess has now (Vol 41, No 1 of 1982) clarified the confused taxonomy of these species, and the result is:

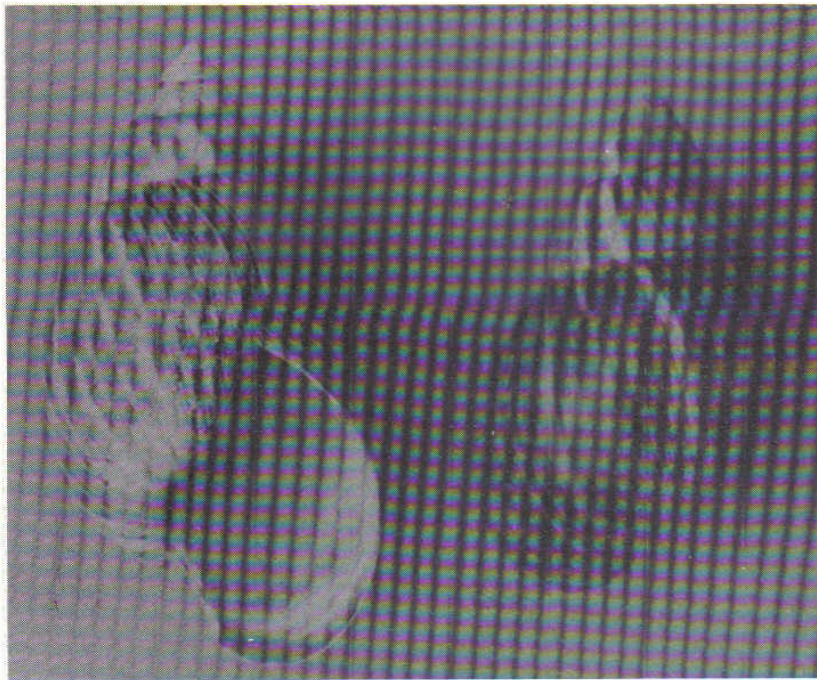
7. *Cypraea verhoefi* Burgess, 1982. This is the new and valid name for *Luponia castanea* Higgins, 1868. The name honours Gordon Verhoef of Cape Town who helped in the search and collection of specimens.

The two species can be distinguished as follows:

Cypraea fuscrobura is smaller, heavier, more calloused and with a narrower aperture. There are prominent anterior and posterior columellar teeth extending across half the base.

Cypraea verhoefi is consistently larger, and the posterior columellar teeth are often absent but otherwise shorter and confined to the aperture, not extending onto the base of the shell.

Further discussion will be found in Dr Burgess' forthcoming book, *Cowry Shells of the World*, which is the revised edition of his *The Living Cowries* and which we hope will be available in 1983.



Achatina Immaculata Lamarck, 1822

MISCELLANEOUS NOTES ON THE LAND SNAIL

Achatina immaculata Lamarck, 1822

INTRODUCTION:- The genus *Achatina* in Southern Africa is widespread and generally known as the 'Giant African Snail'. One of the better known species, because of its distinctive colouration, is *A. immaculata*. It has red-brown flames on a buff background and is the only member of the genus that has a pink to purple columella. *Achatina panthera* Ferussac, seems to differ only in the length to major diameter ratio and is now considered to be a synonym of *A. immaculata*. The species under consideration grows to about 150mm x 75mm and is distributed throughout Mozambique, west through Zimbabwe and into Botswana and south into northern Transvaal and Natal as far as the Tugela River.

BACKGROUND:- On December 16th, 1974 several live specimens were collected by Dr. H.E. Van Hoepen at Lalapanzi, near Louis Trichardt. Two of these were given to the authors for observation and were kept in a terrarium at Johannesburg ambient temperatures throughout 1975. The snails

fed voraciously on lettuce and aestivated during the winter so that it was only late in 1975 that signs of activity were shown.

OBSERVATIONS:- The onset of summer aroused one of the snails and the other was found to be dead. On January 14th, 1976 several newly hatched snails were seen and, in the course of the following five days, a total of one hundred and forty had hatched. Later we found many unhatched eggs in the soil so the total laid would have been about two hundred.

After ten days it was noticed that there was a high mortality rate among the tiny shells, possibly because the very large parent was crushing them. In view of this, the remaining one hundred and four were transferred to their own terrarium where they developed in the following manner:-

Shell length after 1 week - 9mm, after 2 weeks - 18mm, after 3 weeks - 20mm, after 4 weeks - 22mm, after 5 weeks - 24,5mm and after 6 weeks - 25mm. The original size of the eggs was 7,5mm.

Very few grew larger than 25mm during the two months before the advent of the Transvaal winter when, unfortunately, they all died.

The above are the measurements of the largest shells and many had not grown so large but it was difficult to mark and measure all the individuals.

Another interesting observation was made when the top of the terrarium containing the juveniles had inadvertently been left off. We were concerned when Ian noticed this because previous experience indicated that snails tend to make off in all directions when allowed their freedom. However, the amazing thing was that all these tiny snails had homed-in on the tank containing the parent snail, had found the air gap, and were very much at home. Three of them were crawling on the parent.

DISCUSSION:- More questions emerge from our observations than conclusions:-

1. The growth rate levelled off after about five weeks. Would it have been different if the snails had unlimited space and food?

2. What attracted the small snails to return to the parent's terrarium? Was alternation of sexes operating? The parent was obviously in a female phase and we know that juveniles go through a male phase.

3. Was the parent fertilised by the other snail before it died, or was it a case of self-fertilisation?

4. How long do fertile eggs remain viable? In the Transvaal it seems that the time span may be only one summer season for a temperate species.

5. The genital opening of the parent was swollen and protruding for about six weeks during Nov./Dec. 1975 but, at this stage, the original partner had been dead for several months. Why this obvious sign of sexual activity?

The publication of these inconclusive notes has been delayed in the hope that more live specimens would be found but these have not materialised. A few specimens of *A. smithi* Craven, have been collected by Roland Zurich in Pretoria but these have not survived long enough to breed in Johannesburg. This may explain why the genus *Achatina* is not usually found living in this area.

Don and Ian Aiken, Germiston,
July 1981.

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(Founded 1958)

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Shells at Addington Beach, Durban, Natal

Addington beach stretches north of the harbour and normally has very little in the way of shells — with the exception of Vetch's Pier which sometimes has such treasures as *Cypraea citrina*. The beach was starting to disappear as a result of being washed away, so it was decided to pump sand onto the beach. The dredges took thousands of tons of sand from south of the South Pier and opposite the Bluff. The reclaiming took place from 16/8/82 till 14/9/82.

Many shells were consequently washed up on the beach. Some very uncommon species and some that have not been named, and some that have never been seen in Durban before.



Dawn and Val Van Der Walt with their 260 different Species from Addington beach.



Some un-named shells from Addington beach. 1. Semele sp. 2&3 Coralliophila sp. 4&10 Nassarius sp. 5. Clionella sp. 6. Marginella sp. 7. Epitonium sp. 8. Temopleura sp. 9. Bullia sp.