

THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA

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MEETING

The next meeting of the Society will be held in the Lecture Hall of the S.A. Museum on Tuesday 16th June at 8.00 pm. Although there are five Tuesdays in June, we are holding it on the third one as usual, as so many will be away for the holidays if held on the following week. This will be a film evening. By special request we are showing again the Walt Disney film, "Mysteries of the Deep" so that the children may see it. To make a bit of variety, the shells for display will be those on pages 81 & 85 of Dr. Barnard's Beginners Guide. The foreign counterparts may be shown too. Please bring along any new finds and good shells for exchange.

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MEETING AT THE S.A. MUSEUM 19.5.1964

This was well attended, 40 members and friends being present. Apologies were received from Miss K. Leers, Mrs N. Prior, Miss M. Kempthorne and Mr C. Swaneveld who was ill. Dr. Talbot welcomed members and guests. Minutes of the last meeting were taken as read.

The following were proposed as new members:-

Miss M.B. Stocker	proposed	by	Mrs Pickstone	seconded	by	J. Dichmont
Mr W.E. Smylie	"	"	A.G. Richards	"	"	L. Kerr
Mr R.W. Cox	"	"	C. Connolly	"	"	D. Freeman

Dr. Talbot explained the necessity of housing our Library in the S.A. Museum. A suitable book-case would have to be made and he appealed to all members to contribute not less than R1 each to the cost. (A list appears elsewhere in this circular) The Secretary requested members in the meantime, to let her know what books they required and these would be brought to the next meeting.

Dr. Talbot informed the meeting that Mr J. Dichmont would stand down from the Council for the remainder of the year in favour of Mr P. Elston, as he, Mr Dichmont, found it difficult to attend Council meetings at present.

During the tea interval, the five exhibits of bivalves on display were judged. The First Prize was awarded to Mrs C.H. Connolly and the second to Mrs Max Ackermann. Congratulations to both.

Mrs Ackermann donated her prize to the Library cupboard. After tea three films were shown, which were much appreciated. The meeting closed at 10.00pm. with a vote of thanks to Dr. Talbot for his conduct of the meeting and the work he has put in on behalf of the Society.

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FIELD DAY

There will be a field day on Sunday June 28th at Kommetjie. Low water is at 11.11 am. Get there as early as you like. We expect a good turn-out of Juniors as it will be in the holidays. Shell at the rocks in front of the new car-park.

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THE LIBRARY

All books posted to country members are registered. Will you please register them when they are returned as our insurance policy does not cover books that are not registered. Already two books have been lost in the post last year. Dr. K.H. Barnard has kindly presented his paper - "Two New Genera of Erycinacea (Bivalvia) from South Africa" to the library. (No.144)

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WANTED

If any member has a spare copy of Dr. Barnard's "Contributions" Part 1, June 1959 and wishes to dispose of same, will they please contact Mr B.L. Cock, P.O. Manaba Beach, South Coast, Natal.

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EXCHANGE WANTED

Mrs H. Morgan, Golf Links Road, Queensbeach, Eobeen, Queensland, Australia.
Mr J.F. Bender, 2540 Glenwood Drive, Port Arthur, Texas, 77642
Mrs D. Lewis, Box 168, Bowes, North Queensland, Australia

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DONATIONS FOR LIBRARY CUPBOARD

Dr. F.H. Talbot	R 4	
Mrs Pickstone	R 1	
Mr J. Dichmont	R 1	
Mrs M. Ackermann		.50 cents (Prize)
Tea money over	R 1	
Mr & Mrs B. Cock	R 2	
Mrs H. Boswell	R 2	
Mrs L. Kerr	R 1	

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NATAL GROUP

If this circular reaches you in time, remember your meeting on Saturday June 13th at 2.30 pm. at the Natal Museum, Maritzburg. Hope you have a happy get-together.

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GENERAL NOTESA Deceptive Little Mollusc.

K.H. Barnard

Some while ago Prof. Day and his students while studying the marine fauna of Saldanha Bay, found a little white mollusc, about 8mm. long, crawling among the branching root-like bases of kelp attached to rocks in the sublittoral zone. Its mode of progression was that of a Gastropod, and its speed was quite fast - - for a mollusc. On closer examination the animal was seen to have a bivalve shell. A bivalve Gastropod! Such molluscs are known, but this was not one; it was a gastropodous Bivalve. Nevertheless an exceedingly interesting find.

The first specimen was found in March 1948; but being a singleton its description was deferred in the hope of obtaining more material. Not until April 1962 were further specimens found, at the same locality. Three were found in 1962 and another one

in 1963. I am told that since then further specimens have been found.

These molluscs evidently belonged to the Galeommatidae, or a nearby family, of which Galeomma is a well-known genus. One expected of course that all five specimens would be the same, although there were slight differences in external appearance. When, however, there were dissected, the 1962 specimens proved to belong to the above mentioned family, whereas the 1948 singleton belonged to a different family; the Montacutidae. The former has two pairs of gills on each side, the latter only one pair.

So much for the respective families. After carefully considering all the available characters shown by the specimens, a new genus and a new species for each of the forms were instituted: Coleoconcha (sheathed shell) opalina for the Galeommatid and Conchentopyx (shell in a box) granulata for the Montacutid. Both generic names allude to the internal shell.

The shell in both forms is completely internal, but can be faintly seen through the mantle on the back. The mantle is fleshy and hangs down over the narrow foot. In fact the animal looks very like a little Nudibranch, e.g. Doris.

When hatched the two valves of the shell close together as in an ordinary bivalve; but as the animal grows they diverge more and more, until the adult they are spread out almost horizontally. They cannot then be closed because the adductor muscle has atrophied. The shell, being internal, is very delicate as in many other molluscs, e.g. Aplysia and Lamellaria.

There are several anatomical features which can not be determined by ordinary dissection, but only by microtome sections. For this purpose more material is required. That so few of these little molluscs have been collected is due probably to their cryptic habitat more than to their actual rarity.

Quite recently our energetic member Mrs C.M. Connolly obtained one specimen of Coleoconcha opalina at Kommetjie on the west coast of the Cape Peninsula; thus showing that Saldanha Bay is not the only possible locality.

Mention was made above that bivalve Gastropods do indeed exist. They are known from Japan, Australia, California and Madagascar and also as Tertiary fossils in Australia and the Paris basin. They have been classified among the Nudi branches. The shell is external and the two valves are not symmetrical, the left valve having a spiral apex.

These bivalve Gastropods live on the green Alga Caulerpa, and consequently are green in colour. Their occurrence at Nossi Be, Madagascar, rouses hopes that sooner or later they will be found on South African shores.

References:

- Baba, K. 1961 On the identification. . . of Tamanovalva limax a bivalved Saccoglossan mollusc in Japan.
 Publ. Seto Mar. Bio. Laborat. 9
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- Barnard, K.H. 1964. Two new genera of Erycinacea from South Africa. Proc. Malac. Soc. Lond. 36
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- Thiele, J. 1964. Handbuch der systematischen Weichtierkunde.
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Terrestrial Snails - continued

D. van Z. Engelbrecht

Three factors seem to have an influence on the distribution of terrestrial snails, the climatic conditions, conditions in the soil on which they live and lay their eggs and the presence of parasites.

In order to study the effect of climatic condition on the chances of becoming established of snails transported from one locality to another the obvious method is to transport them to their chosen locality and to see what happens to them. This is, however, impractical for various reasons.

The alternative is to make use of a climatic chamber. This is basically a cabinet in which can be reproduced the climatic conditions such as humidity, temperature, solar illumination, rainfall etc. of any locality provided you have a record of these. An apparatus of this type is, however, very expensive and not within the reach of most investigators.

It is possible that snails can be transported from one locality to another and not succumb to the effects of the climatic changes but that the substratum is unsuitable for them or that conditions in the soil are unsuitable for the hatching of their eggs. It has been observed in the laboratory that Helix and Theba as well as Achatina zebra ingest large quantities of soil. Examination of fixed specimens of Helix, Theba, and slugs from localities all over the country showed the alimentary canal to contain sand in every case. It was also found that young individuals of Helix when deprived of sand grew at a slower rate than those that had access to it, and which were fed on the same diet of lettuce. It is possible that some factor in the soil, probably calcium or some trace elements are responsible for normal growth. A few crude experiments showed that the eggs of Theba, Helix and two species of slugs available, required different conditions for hatching.

Eggs were removed from the soil immediately after oviposition washed in water and placed on damp blotting paper in Petri dishes. Those of Helix and the slugs hatched in about 12-20 days time, at room temperature. Not a single egg of Theba hatched although this experiment was repeated a few times, and a few hundred eggs used. They hatched, however, on damp blotting paper after being left in the soil for about a week. In another experiment, eggs of Theba and Helix were removed from the nests and placed in specially constructed terrarium in which the humidity of the sand was kept fairly constant at about 11%. The reaction of the sand remains fairly constant during this experiment in the region of pH. 8.5. An average of 70.41% of the eggs of Helix hatched, ranging from as low as 10.3% to 89.8% per batch. Of the 2472 eggs of Theba placed in the same sand during the same period only 12 from one batch hatched.

Soil from the Cape Flats where Theba pisana occurs in large numbers has a more neutral reaction pH 7.9. When snails were allowed to deposit their eggs directly in sand from the Terrarium at pH 8.5 and sand from the Flats at pH 7.9 apparently all of them hatched. It showed that in this case it was apparently not the chemical reaction of the soil but some other factor that determined the fertility. A few snails that dug their nests near the sides of the glass vessels in which they were kept clearly showed the difference in the nest of Helix and Theba. Helix excavates a cavity just large enough to accommodate the egg cluster so that the eggs are in actual contact with the soil and one expects them to be more liable to be influenced by the chemical contents thereof. Theba on the other hand excavates a cavity larger that will be filled up by the eggs, and the egg cluster is suspended from the roof of this cavity by a strand of hardened slime. The eggs are thus suspended in a small moisture chamber and more or less isolated from the chemicals in the soil. The eggs of Theba apparently require less moisture to hatch. Flooding of the vessels to simulate the effects of heavy rain, led to a collapse of the walls of the chamber and a failure of the

eggs to hatch. This is perhaps why Theba is found only along the coastal regions where the sandy soil makes quick drainage possible after rain.

Experiments on the annual rate of reproduction of Helix showed that the breeding season (in the laboratory) started at the beginning of May and lasted until the beginning of August. Starting with 10 pairs it was found that some of them deposited eggs only once while others did so more than once and that two individuals oviposited no less than four times giving them a total of 220 and 257 eggs each. The smallest number laid by an individual was 44 and the largest number laid at a time 128. Nineteen snails (one died accidentally) laid 2304 eggs during the breeding period. An average of 70% of these hatched under experimental conditions, and it is reasonable to assume that in nature where the animals seek out protected spots to deposit their eggs, and where they are not disturbed an even greater percentage must hatch.

If that is the case the question arises as to what happens to the young snails because they do not appear to multiply to that extent in nature. Young snails, even when they have just emerged from the eggs, are very hardy creatures. One batch were not fed until one month after they hatched, and although they were inactive and did not increase in size noticeably, seemed none the worse for the experience. It is perhaps the activities of some unknown predators or parasites which keep their numbers down and this is a point awaiting investigation.

It is very difficult to calculate the exact amount lost to the country every year as a result of the activity of these snails because they do not destroy the entire crop as is sometimes the case with other pests. The harmful activities of Helix, Theba as well as the naked forms can be summarised as follows:

They all attack most of the plants cultivated for the consumption of man and domestic animals. Except for cases of heavy infestation the damage done to fully grown plants is not significant. The most harm comes to them in the seedling stage. A well established plant can afford to lose a few leaves but a seedling with only a few receives a serious setback when half their number are removed.

They cause damage in vineyards where young buds are destroyed and by crawling over bunches of grapes leaving their slime trails. Bunches with glittering slime trails over them certainly do not appeal to the buyer, and in the case of export grapes can lead to a considerable loss. It has been reported that the presence of large quantities of snail slime on wine grapes gives difficulty in the fermentation process.

According to Joubert (1941) Theba pisana causes severe damage to veld in the Vredenburg area. Indigenous shrubs which afford excellent pasture for sheep and goats are being entirely destroyed. Animals refuse to feed on shrubs covered by the slime. According to a prominent manufacturer of snail bait Theba pisana is responsible, by destroying the natural vegetation, for the encroachment of sand dunes on valuable agricultural land in that area.

The author has been informed that this snail is a great nuisance during the harvesting season of wheat in the same region. They are negative geotropic during the day and thus crawl up the stems of the wheat to the ears where they are picked up by the harvesting machinery and their smashed up bodies clog the sieves of these implements.

It can be seen from these examples that the terrestrial snails are of economic importance and their importance will increase with the extension of horticulture. South Africa is shortly to embark on the vast Orange River Development Project, an undertaking that will cost an estimated R630,000,000. Large areas will come under irrigation and will

probably provide suitable conditions for the spreading of snails; terrestrial snails to damage the crops, but possibly also those aquatic forms which serve as intermediate hosts of parasites attacking man and his domestic animals. For this reason it is essential that we should know more about the biology of these animals in order to provide the necessary methods of combatting them. It is with this threat in mind that malacological research is being stepped up in various institutes in South Africa.

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- Connolly, M. 1939 A monographic survey of South African non-marine Mollusca. Ann. S. Afr. Mus., 33:1
- Dürr, H.J.R. 1946 A contribution to the morphology and bionomics of Theba pisana Müller (Gastropoda: Helicida) Science Bulletin No. 257. Department of Agriculture, Stellenbosch-Elsenburg Scientific Series No. 47.
- Joubert, C.J. 1941. Unpublished data of observations on Theba pisana in the Cape Flats and Vredenburg areas, and in the laboratory.

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Protection of our Mollusca

D.H. Kennelly

At the present time there are some regulations in force to protect a few species of Mollusca from extermination, but our members should remember that ALL species are worthy of protection and endeavour to assist in protecting them. Recently there have been reports that at least three well known localities in Natal - noted for the species of Cypraea living there - have been practically denuded of all Cowries. It is said that one collector has about forty specimens of one particular species, and further that immature Cowries have been taken.

Should these reports prove to be correct, they constitute a terrible indictment of the collecting methods practised by collectors who should know better. Surely a collector could be satisfied with three or four examples of a species and also leave the immature shells to grow up and perpetuate the species.

As matters stand now, there is enough damage being done in the overfishing of our unique Molluscan fauna of the Transkei and Pondoland by the native inhabitants.

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This appeal applies to all areas. We cannot stress too strongly that members must not be greedy. We have had reports that the Knysna Lagoon is being denuded of Cassis. Please leave some to breed so that others may benefit in the years to come.
Editor.

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Conchosis.

Enid P. Donahue

Forgive me, my dear, for not writing,
I fear a most tragical end:
My head is bent low, my footsteps are slow,
I've come down with the Sanibel Bend.

Each morning I follow the ebb tide,
I'm aimlessly searching the sand,
I've a crick in my neck, my elbow's a wreck
From balancing shells on my hand.

My eyeballs are glazed from the sun glare.
An incoming tide I must scan;
Tho' balance I can't, I walk on a slant,
And my skin is like leather with tan.

My shoes are quite worn to a frazzle,
I'll be glad when my holiday's done:
I've lost thirty pounds while doing the rounds,
I'll soon fade away to a tan.

I've a curve in my neck like a heron,
My nostrils the sea smell offend;
I stick out at the back from this vicious attack
Of the malady, Sanibel Bend.

But ah! what a ghastly psychosis,
For the worst of its is, so they say,
Once you've had an attack, it always come back
And you come to the island to stay.

It isn't the miles you walk that count,
Nor the fish you catch and proudly mount,
Nor the shells you find of various hue,
It's just that Here is the place for You!

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A poem from Sanibel Island taken from her scrap-book by kind
permission of Joan Weakley.

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CAPE NOTES.

L. Kerr

We have recently had the pleasure of a visit from Mr & Mrs
B.L. Cock from Natal. While here they were able to do some
shelling and attend a meeting. Mrs M. Helm of Great Brak is
also doing the rounds before proceeding to Natal.

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Further additions to the reference collection. C.M. Connolly

A parcel of shells has arrived from Kei Mouth from our very
enthusiastic member Mrs Jefferies. This included a very
rare Thaumastochiton isipingoensis Sykes and a Haliotis
speciosum Reeve. These two shells are now in our reference
collection - thank you Hazel.
Also must mention a Xenogalea labiata (Perry) preserved with
animal which has been presented to the S.A. Museum.
From Durban South Coast we now have a very lovely Haliotis
queketti Smith and a Thais echimulata (Lamarck). These two
rare shells were presented by Mrs. R. Cock. The latter is
even rare north of Natal. Rene tells us she has taken very
few alive and only at Park Ryne.
Mrs Cock received a box of Cape shells for her donation of R2
for the reference collection cupboard. Mr Freeman received
shells for his donation of R5.

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