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X THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA X
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MEETING:

As there is no suitable tide in February the next meeting will be a Field Day at Mouille Point on Sunday, 5th March. Low tide is at 10.56 a.m. Meet on the beach opposite bus stop No. 13 at 9.30 a.m.

There will be no evening meeting in February because of the Zoological Society Conversazione. The usual meeting on the third tuesday will be held at the S.A. Museum on 21st March. The shell families for display and discussion will be the Turbinidae and Trochidae. We also hope to show a film.

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ABOUT MEMBERS:

At the meeting held at the S.A. Museum on 17th January, the following were elected:-

Mrs L.E. Green, P.O. Box 1242, Johannesburg, Tvl.
Mr E. Dee, 312, Florida Road, Durban, Natal.

<u>Proposed Members:-</u>	<u>Proposed by:-</u>	<u>Seconded by:-</u>
Mrs J.B. Watters	D.W. Ackerman	L. Kerr
Mrs E. Nuttall-Smith	J. Walker	L. Kerr
Mr B.E. Brown	L. Kerr	F. Talbot
Mr H. Portnoi	H. Ackert	L. Kerr
Miss H. Simpson	L. Kerr	J. Grindley

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MEETING HELD AT THE S.A. MUSEUM. 17.1.1961.

The minutes of the previous meeting were taken as read. The Chairman, Dr Talbot, said that it was a pity that the excursions were so poorly supported, and hoped that more members would make an effort to attend the next meeting. It was agreed that this would be a field day at Mouille Point, date to be arranged to suit the tides. Dr Talbot gave a brief talk on the Conversazione and hoped that as many members as possible would be present on the Societies' evening, 14th February. An excellent film on Water Birds by Walt Disney was shown by courtesy of the Caltex Film Library. After tea in the Museum, the shells for the Conversazione were examined.

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ATTENTION JUNIORS !

Mr John Hutt of Port Alfred has kindly donated a prize to be given to a Junior Member for the best General Collection of shells. This competition will be held on a Saturday afternoon at the Museum. To give you plenty of time to assemble and name your shells, we are holding it in April. More about this later.

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RESIGNATIONS:-

The following Junior Members have resigned owing to pressure of school work:-
Priscilla Whitehead and Vicki Klarwill.

We hope that they will rejoin the Society at a later date.

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Congratulations to Prof J.H. Day, past President and member of Council on receiving a Nuffield Grant to do research overseas. We wish him Bon Voyage and good luck with his research work.

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Our congratulations too go to Dr Frank Talbot who obtained his Ph.D. degree at the Graduation Ceremony at the U.C.T. at the end of last year. A further cause for rejoicing in the Talbot family is the birth of Jonothan Charles who arrived in January. Best wishes, Sue and Frank !

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Mrs M.M. Pinkham, the rectory, Durbanville, has a few trawled shells for sale. *Fusus ocelliferus* and *Fusitriton murrayi*, in aid of Red Cross funds.

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As we endeavour to publish the Circulars during the first week of the month, your Secretary asks that all contributions be in by the end of the previous month. It is to be hoped that more members will send in articles and news items.

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THE CONVERSAZIONE: - PROGRAMME. (For February, 1961)

This will be held in the new Zoology block at the U.C.T. Last building on the right on the top terrace - Town end.

- Monday 13th - Opening. Invitation only
- Tuesday 14th - at 8.15 p.m. Societies night. All members are invited. Prof du Toit will give a brief talk. Exhibits. Tea.
- Wednesday 15th - 8.15 p.m. Bird films by Dr Broekhuysen. Exhibits. Tea.
- Thursday 16th - 2 - 5 p.m. Exhibits.
8.15 p.m. Films, tea, exhibits
- Friday 17th - 2 - 5 p.m. Exhibits.
8.15 p.m. Talk by Dr Singer on the Hopefield fossils. Tea. Exhibits.
- Saturday 18th - 9 a.m. - 1 p.m. Exhibits.

Entrance will be by Brochures sold at the door (1/6, R.O.15).

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GENERAL NOTES:

EAST LONDON DISCOVERY.

Members are probably aware that Dr Barnard has mentioned "Scotus unguis", Linn., as occurring in Natal.

News has now been received of the finding of this species alive at East London, by our keen Student member - Chris Walker of St. James - who visited the locality during the June holidays.

This is an important discovery, as it adds a new locality to the known range of "S. unguis".

We all congratulate Chris on being such a "Live wire", and hope to hear more finds of importance in the near future.

(D.H. Kennelly)

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FAMILY AMPHIPERATINAE.

CALPURNUS VERRUCOSUS, LINN.

Our untiring and enthusiastic member Percy Elston - advises the discovery of the abovementioned species at Munster, Natal, which is possibly the first recorded of its occurrence on our coast.

Joyce Allan (Cowry Shells of World Seas) gives the range of this shell as from Madagascar through to the Pacific, and as far as Queensland, Australia.

We are looking forward to reports of further discoveries by Percy, who is fortunate in having the assistance of skin divers to further his investigations.

(D.H. Kennelly)

THE GENUS "VOLUTA" IN SOUTH AFRICA.

by D. H. Kennelly

Recently the writer heard of further good fortune, which has befallen our well known and enthusiastic member, Mrs Helen Boswell.

This time the specimen is from deep water off the coast of Natal, and was submitted to Dr Barnard for identification. Dr Barnard advised that in all probability this shell is the adult of a species new to science, named:- "Voluta (Fulgoraria) blaisei". It seems that originally four (apparently juvenile) shells were taken in deep water off Cape St. Blaize, so if Mrs Boswell's specimen later is proved to be the same, we have an important contribution to the known range of one of our South African Shells. Further discoveries are awaited with interest.

Reference: Annals of the South African Museum, Vol. XLV, Part 1, June 1959, (South African Marine Mollusca, Part 2) by Dr K.H. Barnard.

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CYPRAEA TABESCENS, Dillwyn, 1817. by D.H. Kennelly.

For the benefit of those members who may possess specimens of this species, I have ascertained that Joyce Allan lists it as a synonym of "Cypraea teres" Gmelin, 1791. It is also noted that Turton quoted Solander, 1765 as the author of "C.tabescens", presumably in error.

Descriptions and illustrations by various authors confirm that "teres" and "Tabescens" are one and the same, the former being the correct name.

Reference:- Marine Shells of Port Alfred, W.H. Turton, 1932.
Cowry Shells of World Seas, Joyce Allan, 1956.
Journal of the East African Natural History Society, Vol. XXII, No. 4, June 1954, and Vol. XXIII, No. 3, January 1959, B. Verdcourt.

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CONUS AURORA, Lam. by D.H. Kennelly.

Some months ago while spending a day at Jeffreys Bay, and doing a little collecting in the limited time available, I was fortunate in obtaining a large specimen of this species.

The shell was in perfect condition, with the lip intact.

Measurements:- Two and one half inches in length, and one and one quarter inches in greatest height at the body whorl.

It would be interesting to know if any of our members have found a specimen as large - or larger - and the locality thereof.

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THE QUICK AND THE DEAD. by K.H. Barnard.

Prof J.H. Day (Conchological Soc. S.Afr. Circular 15 p. 6, Nov.1960) in introducing the Fauna-list of Mollusca of False Bay, stated the basic principle on which he and his team worked in collecting the material for its compilation. Only living specimens were collected. A pronouncement very simple and axiomatic, but timely and necessary.

This list (Conchol.Soc.S.Afr.Memorandum No.1, 1960) is the first

true fauna list of South African Marine Mollusca, and is a milestone in the history of S. African Molluscolology. As the years roll by, it will no doubt acquire additions and corrections.

When G.B. Sowerby (3rd of that name) wrote his papers on South African Marine shells, he started what later became known as the "Official List" of S. African Mollusca. E.A. Smith and J.R. de B. Tomlin added to it in a series of papers. From all these papers the student could compile a list of the names of all marine mollusca described or recorded from S. Africa. Such a complete list was never published.

Fortunately! Firstly, because later research has not only added many species to the list, but has queried some of the earlier identifications, and deleted many of the names as being synonyms. Secondly, the "official" list was compiled by specialists, admittedly high authorities, and with all the literature at hand and vast collections for comparison, but who had no field knowledge of the S.A. Fauna.

Sowerby, Smith and Tomlin relied on collections sent to them for identification from S. African collectors. These collectors did useful work, but doubts have been expressed as to the exact provenance of some of the shells which they submitted to the specialists. This applies particularly to Indo-Pacific species which are commonly obtained as curios farther up the East coast of Africa and at Mauritius.

Unfortunately the sources from which the earlier collectors obtained their shells cannot now be checked. Probably these collectors were "Open" collectors, as opposed to one more recent collector who was a "closed" collector: the late Lt. Col. W.H. Turton, who confined his collection to the shells he himself found in one limited area. He included no shells from Natal or the Cape. His collection, qua collection, is a most valuable one.

Another criticism of the "official" list is that, apart from the species dredged by scientific expeditions which were duly included, the identifications were based largely on beach material. Arm-chair specialists seem to have little appreciation of the vagaries which Nature can produce by rolling shells about on the beach. In fact, a collection of the shells of one species in various stages of wear might be quite interesting. Traces, for example, the changes from Mitra capensis Reeve to Mitra ime Bartsch.

Returning from this antithesis to Prof Day's principle we may quote examples of the results of modern research by trained biologists in S. Africa. The list of S. African "species" of Patella used to contain (including Turton's fantastic identifications and "new Species") nearly one hundred names. Field collecting and study of the animals showed that only about a dozen species could be recognised. Miss Virginia Orr (Academy of Natural Sciences, Philadelphia) by ecological studies in the field demonstrated that Burnupena in warm shallow pools developed spiral ridges (cineta), but in deeper colder water eschewed such ornamentation (papyracea). How many species? Quot homines tot sententiae.

To give another example of the firm base on which Prof Day stands. The animals of some of the small Marginellas in his collection were examined and found to have a radula different from those of other species, or genera, in the family. The shell looked as if it might be identified as Marginella bensoni. But bensoni was a name given to a shell secreted by a mollusc whose anatomy was not known. Science is Knowledge, not assumption; we do not know -- we never can know -- what sort of animal secreted the bensoni shell. We may assume that because the shells look alike, the original bensoni had a radula necessitating its removal from Marginella into another genus.

Scrap the name? It may be used conchologically; but bensoni has no status as a species and should not be included in the fauna-list.

This may be considered rather drastic. Prof Day admitted that some interesting shells were disregarded because no living examples were obtained; but "one must be consistent".

Conchologists, without exception, would surely pronounce Marginella rosea to be a Marginella. But is it? We don't know. Can anyone produce a rosea radula?

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THE OLFACTORY SENSE IN BULLIA (GASTROPODA) - Plough Shells

For many, many years, in fact since the study of animal physiology first began, zoologists have speculated as to the function of the osphradium. This tiny organ, which is present in all marine gastropods, lies near the gill on the floor of the pallium, has its own nerve to the "brain" and consists of cells arranged in a definite pattern. Often some of these cells are ciliated. This formation suggests a sense-organ of some kind and the further fact that the osphradium lies directly in the path of the water entering the mantle cavity has caused physiologists to suppose that this organ is concerned with sampling the sea-water in some way. It might be an olfactory organ, or it might test the salinity of the water or even the turbidity. However, all attempts to ascertain its exact function experimentally have failed, for one reason or another, until recently when it was felt that the sandy-beach snail, Bullia, might repay further study in this direction.

As anyone who enjoys walking along beaches will know, one of the most striking features of Bullia is its sense of smell. A piece of fish, red-bait or coelenterate medusa placed on a seemingly deserted foreshore is swarming with Bullia in next to no time, while more and more snails can be seen leaving the water and crawling towards the food. Tests in the laboratory have shown that really minute quantities of the volatile substances which emanate from the food are sufficient to attract these snails over long distances. In order to discover whether the osphradium was the organ concerned in this distance-chemoreception, we decided to immobilise the snails by means of the "water-rigour technique" invented by Krygsman and Brown (1960), then cut a window in the shell and using a tiny eye-surgeon's scalpel sever the osphradial nerve. We could then allow the snails to recover and find out if their reactions were different from those of intact snails. Unfortunately this procedure was by no means as easy as it sounds. Any damage to the pallium results in the death of the snail, so the incision has to be made very low down where there is a danger of damaging other nerves or one of the arteries. In fact we operated on 124 snails, each operation taking about 1½ hours, but in only twelve cases were we completely successful. These twelve snails lived in the laboratory for some weeks and were observed constantly. Their behaviour did not differ in any way from that of the normal snails except in one respect; food no longer caused them to emerge from the sand, nor attracted them if they were already on the surface. Yet they fed readily enough when placed touching the food, showing that they were, in fact, hungry. We can only conclude that the gastropod osphradium is indeed an organ of chemoreception (see Brown and Noble, 1960). These results, though they may be regarded as conclusive, by no means bring this research to an end; because it is quite possible that the osphradium has more than one function!

A.C. Brown
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University of Cape Town.

References:

- Brown, A.C. and Noble, R.G., 1960 "Function of the Osphradium in Bullia". Nature (London) 188
Krijgsman, B.J. and Brown, A.C., 1960 "Water-rigour as an aid when operating on marine Gastropoda" Nature (London) 187

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