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X THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA X
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Edited by Leila Kerr.

A very happy and prosperous New Year to all members, with good shelling !

Our next meeting will be on 18th February, so please keep it in mind.

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CORRECTION.

In Circular No. 48, page 8, Hydatina circulata. The author is Martyn, 1784. The name Kawe refers to the locality (J.F. Spry). My apologies to Mr. Kennelly, who asked me to locate the author. Dr. Barnard confirms that it is Martyn.

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Fourth Meeting of the Natal Group of the Society held at the Headquarters of the Durban Undersea Club on Saturday, 14th December, 1963.

The meeting took the form of an informal gathering of Society members and those of the Marine group of the Club, all present bringing shells for exchange and discussion.

Our enthusiastic member Dr. A.C. van Bruggen, recently returned from a field expedition to the Victoria Falls and parts of Southern Rhodesia, gave a short talk on the adaptation of Marine Mollusca to environment, most interesting and informative.

Our thanks to Mr. Dee and the committee of the Durban Undersea Club for the use of their Headquarters.

The next meeting of the Group will be held at the Natal Museum, Pietermaritzburg commencing at 2.30 pm. on Saturday 8th February 1964.

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WORLD WILDLIFE FUND.

Dr. R.J. Boscott, Sunnycroft, 14 Southwall Road, Deal, Kent, England, is making up starter collections of shells for the above fund and would welcome boxes of common shells in good condition. He would pay for postage, if desired. We hope members will respond generously to this appeal.

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GENERAL NOTES.

Marine Molluscs and their Environment.

Summary of a short talk delivered to the Natal Group of the Conchological Society in Durban on 14.12.1963 by A.C. van Bruggen.

The sea offers a variety of environments, such as brackish estuaries, tidal zone, continental shelf, deepsea and so on. Various factors combine to make up this variety of environments: temperature, depth, salinity, currents, dissolved chemicals, availability of food, etc. Every combination of circumstances has its molluscan inhabitants, of course dependent on these circumstances which all can be limiting factors. For example, it is quite clear that there can be no inhabitants in an environment which is ideal in all requirements, but which lacks an adequate food supply.

The various environments call for adaptations which enable the species to survive and flourish; species not adapted to their environment have either to adapt themselves or disappear.

The litoral environment of the tidal zone calls for special adaptations. Disadvantages are turbulent, sometimes murky, water and the tides (exposure to drought and heat as opposed to periods of submersion); an obvious advantage is that the water contains plenty of dissolved oxygen because of the wave action. Adaptations are thick and strong shells, few adornments, presence of an operculum, tolerance of drought and rapid changes of temperature, strong foot to counteract wave action, byssus and so on. Typical examples are Littorina and patelliform molluscs (i.e. univalves with limpet-like shells); the limpet shape is a typical adaptation which is also found in fresh water where there is a strong current such as in mountain streams. It is obvious that in this case an operculum would be superfluous. Many limpet-like shells strongly resemble each other, although the soft anatomy shows them to belong to widely separated groups. This phenomenon, resulting in superficial similarity, occurs throughout the animal and plant kingdoms, and is call. 'convergence'. The classical examples are of course fish and whales; they look alike, but belong to entirely different groups of vertebrates.

The coral reef is an utterly different environment. Although corals occur throughout the world's seas (even in arctic and antarctic surroundings), reef-building corals have their own special requirements, which consist of a high temperature (about 75°F.), shallow water (not over 120 ft.= 20 fathoms deep), clear and quiet water (no river mouths in the neighbourhood) and a high salinity (do.). Coral reefs consist of the skeletons of both animal (reef-building corals) and plant species (calcareous algae). This combination of requirements makes that suitable sites for coral reefs are only found on the east coast of the world's great continents, for example the Great Barrier Reef (east coast of Australia), African reefs (East Africa as far as Inhaca Island and northern Zululand), American reefs (Bermuda's, West Indian Islands, Brazil). The western coasts of the continents are usually exposed to cold currents (Benguella current!) and turbulent waters.

On the coral reef all conditions of life for molluscs are optimal, particularly because of the availability of liberal quantities of calcium. All this has resulted in a wealth of sp..., usually with massive shells, growing to large sizes and full of adornments and striking colour patterns. The number of species directly dependent on the coral is, however, limited; they mostly consist of coral feeders. One of the interesting features of the molluscan fauna of the coral reef is the occurrence of luxury structures, i.e.

structures/...

structures that are not of direct importance to survival in the struggle for life: spines, ridges, cords, colour patterns. These luxury structures only occur in environments like coral reefs and tropical rain forests, where there is an abundance of food, shelter and other relevant factors.

The deepsea environment is in many respects diametrically opposed to that of the coral reef. The water is cold and stagnant, temperatures are very low. there is perpetual darkness and little food is available. Apart from that, there is a terrific water pressure, which was thought to preclude the existence of life in the depths. It appears, however, that the tissues of abyssal animals contain water under the same pressure as that outside the body, so that life can go on unhampered by this factor. The deepsea environment is reckoned to begin at a depth of 1200 ft. = 200 fathoms; perpetual darkness makes plant life impossible here. Consequently there is no scope for plant feeders. The only source of food is the rain of corpses from above; apart from the animals that prey upon the others all have to subsist on this source of food. This inter alia explains the large number of filter feeding organisms. A combination of factors makes it difficult to extract the calcium (lime) from the seawater which has resulted in thin shells for many deepsea species. There are few colours in this dark world, most shells are whitish. If one meets with colour here it is usually black and red as for instance in many cephalods. The existence of giant forms in the deepsea is thought to be caused by low temperatures delaying maturity so that growth continues for a much longer period; on the coral reef large size can of course be explained by the abundance of favourable factors.

The deepsea is thus a poor environment which is reflected in the following statistics (after Jaeckel):

Gastropoda, total of 170 families, in deepsea 6 (about 3%);
Bivalvia, total of 73 families, in deepsea 4 (5½%);
Cephalopoda, total of 40 families, in deepsea 14 (45%).

This clearly shows that proportionally the cephalopods are the most successful group of molluscs in the deepsea. The number of species is also revealing:

Loricata 32 (3% of all known species);
Scaphopoda 150 (42% of all known species);
Bivalvia 5-600 ;
Gastropoda 1200 (biggest but relatively smallest group);
Cephalopoda 150.

This makes for a total of 2032 species or about 1½% of all known species if one accepts the estimate of 128,000 recent species.

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Latirus polygonus (Linn.). By K.H. Barnard.

This species, referred to in Circular 48, p.10, was taken alive at Umzikaba (Port St. Johns area) by Dr. F.H. Talbot in 1959. Unfortunately the record was too late for inclusion in my 1959 paper (Ann.S.Afr.Mus. 45.p.83). It has also been taken in the same locality by Chris Walker.

The radula shows it to be a Latirus, not a Peristernia.

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Volva volva Linn. in South Africa. By D.H. Kennelly.

With regard to the mention in my Border Notes of the finding of a specimen of V.Volva at Bonza Bay, the records of the East London Museum reveal three more specimens held in the collections. One was found at Shelly Beach, another at Haga Haga, and unfortunately the third has no locality recorded, but it may be presumed it was found in the vicinity of East London. These shells are all beach specimens.

Dr. Barnard has recorded the occurence of this species in Natal waters, and as far south as Cape Morgan (Morgan Bay).

In view of the foregoing, collectors should be on the look out as further examples may be found on the Wild Coast.

Reference:- Annals, S.A.Museum, Vol. XLVII, Part 1, Page 56, Dr. K.H. Barnard.

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Volva volva Linn. By Les Cock.

In Border Notes Circular No. 48, Mr. Kennelly made reference to a specimen of Volva volva Linn. found at Bonza Bay by a visitor, and also the fact that as far as he was aware this was the first time that this shell had been reported from our coast.

While on holiday at Morgan Bay, (north of Bonza Bay and just south of Kei Mouth) on 9/7/63, my wife had the good fortune to find one of these shells wedged in between the rocks. There is a small chip in the outer lip, but otherwise it is in good condition including the posterior and anterior canals.

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Clavatula taxus, Chemnitz. By D.H. Kennelly.

Members will find this species in the "List of Mollusca recorded from False Bay", having been found at a depth of 14/73 metres.

The East London Museum has a specimen recovered ex pisce, Durban, and just recently Mrs. Hazel Jefferies found a smaller example on the beach at Kei Mouth.

As this shell lives in deep water, it has always been regarded as being more or less rare, but in view of the information given in this note, collectors should be on the watch for more specimens.

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South Coast Query.

While "scratching" amongst some debris at Manaba Beach after a recent storm, I made what to me was a most exciting find - a type of cup and saucer shell, a type which I do not remember having seen in any of the collections I have had the pleasure of viewing.

On consulting various books the only specimen with which it appears to be more or less identical is in "Webb" under the name Mitrularis equestris L. Unfortunately the apex of each of the three specimens found is broken, though the saucer of a horseshoe pattern is intact.

The shells/...

The shells are of a rather crinkly design, about one inch in diameter, pure white and hollow shaped like a cup.

"Webb" states that it is found on mud flats, and all I can say is that the debris was the result of having been washed up on the beach after a storm and particularly by the flooding of the rivers along this coast.

Can anyone give me any further information regarding this shell, if it has been found on the S.A. Coast before, and if so, where?

(Mrs.) Rene Cook,
P.O. Manaba Beach,
South Coast.

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BORDER NOTES. By D.H. Kennelly.

All members will be interested, and very pleased, to learn that our enthusiastic member - Helen Boswell - has recovered a new species of Mitra ex pisce. This specimen, which is large for the genus, will be described by Mrs. Jean Cate of the U.S.A., and named for our Helen. Later the shell will be deposited in the South African Museum. Our Council member for the Transvaal certainly deserves this honour, and this appears to be the second time a shell has been found which will carry her name.

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CAPE NOTES. By L. Kerr.

Max Ackermann has been spending a holiday at their beach home at Die Kelders, near Hermanus. Her granddaughter, Maureen Lowry, while looking for shells in the water, found a perfect left-handed Marginella rosea, which was presented to Max. This rare find is in perfect condition and of a beautiful colour and pattern. It is seldom, if ever that a sinistral specimen is found of this species. Lucky Max!

Mrs. Doreen Jeffes from Johannesburg has been on a short visit to the Cape and managed to fit in an early walk at Muizenberg, but there were very few shells.

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