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X THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA X
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MEETING:

The next meeting will be held in the Lecture Room of the S.A. Museum on Tuesday, 26th.September,at 8.15 p.m. We have had to alter the date so as to allow Dr. Morris Cohen, our member from Durban, to give us a talk. Dr. Cohen will be here for the Medical Congress and will be exhibiting eighty of his beautiful shell figurines at the Hobby section. He has kindly consented to tell us about them. Members should make a special effort to attend and and also to visit the Congress Hobbies section.

The shell family for display will be the Marginellidae - South African and foreign.

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JUNIOR FIELD DAY:

There will be a field day for Juniors and any others on Monday, 25th.September, at Kommetjie. Low water is at 9.44 a.m. Meet on the rocks any time after 8 a.m. Phone the Secretary for lifts. Will members with vacant seats in cars also please phone. Roll up, Juniors, this is your day !

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MEETING AT THE S.A.MUSEUM - 15.8.1961

Apologies were recived from Dr. Talbot.
The following new members were elected:-

Miss G. Jackson, 10, Latimer St., Berea, East London.
Miss J. Barrett, 3, Hampstead Heath, Pinelands.

The Secretary reported that the field day at Buffels Bay had been most disappointing, as only one car had turned up. Those who did go, however, had good shelling in perfect weather.

When Mr. E. Middlemiss, Director of the Cape of Good Hope Nature Reserve, gave permission for this excursion, he asked for the assistance and co-operation of members. For record purposes, he would like a list of all molluscs found at any time in the Reserve, or known to exist there. He also wants duplicate specimens of marine, terrestrial and freshwater species to be displayed in a case for the information of the public. The meeting elected Mrs. Connolly, 40 Third Avenue Fish Hoek to arrange this. Will members please give her all the help they can.

Dr. A. Brown gave a fascinating account of his recent work on the sense of smell in Bullia and explained how this suggested a new theory of the mechanism of smelling in all animals.

A film on the Pharaohs of Egypt was shown, arranged by Mr. Thorne.

The Chitons on display were interesting, especially some of the large foreign species.

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With this Circular we commence a series of articles for Junior Members and Beginners written by Mr. Jack Walker and his son, Christopher. When completed, the Society intend binding these in a similar way to the Check List.

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CHECK LIST:

New members who have not yet obtained their copy of the Check List of False Bay Mollusca with Index, may do so from the Secretary.
Price 50 cents. Extra maps 2 cents.

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Copies of "The Sea Shells of Dar es Salaam" have now arrived, and have been dispatched as ordered.

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The following members have resigned:-

Mrs. H. Joubert, Mrs. J. Romoff.

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Mrs. H. Jefferies of Kei Mouth writes that she has been fortunate enough to find a seven plate Dinoplax gigas, verified by the East London Museum.

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LIBRARY.

A book for Juniors, "The How and Why Wonder Book of Sea Shells" has been presented to the library by L. Kerr.

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EXCHANGE.

The following wish to exchange shells:-

Mr. P.M. Mehta, P.O. Box 366, Zanzibar.
Mr. Akibumi Teramachi, 32 Yoshida Nakaoji, Sakyoku, Kyoto, Japan.

Mr. Morris Kudatsky, 91-07, 68th Avenue, Forest Hills 75, New York, U.S.A.

Mr. Michael W. Britt, 1215 Bay S.T., Key West, Florida, U.S.A.

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GENERAL NOTES.

ARTICLE NO. 1 by J. and C. Walker.

THE BEGINNINGS OF A SHELL.

Shells have interested people, young and old, all over the world, since the beginning of history. Shells are found on land, in the sea, in rivers and in forests, so wherever you are, you can get enjoyment from them.

All shells develop from eggs. In most cases, the eggs are laid in little capsules which vary in size and shape. When the parent has laid the eggs, it shows no further interest in them. There are a few exceptions to this rule. Some species, such as the oyster, hatch the eggs inside them and the young are released from the mother in the form of larvae.

The young larvae swim about freely, showing at first no sign of the shell home they are going to occupy in later life. These minute creatures are soft, fragile animals as transparent as glass. They swim about by vibrating hairs on their bodies. For some time they are invisible to the eye, but by the time you can see them, a thin shell has formed. The baby oyster as well as many other bivalves, form their two shells within 24 hours, quickly settling down under the conditions that suit them.

In/.....

In the case of univalves, the single young shell does not always bear a resemblance to what it is going to look like when fully grown. This first growth is the basis of the adult shell and will appear at the apex of the spine eventually

Shells are produced by soft bodied animals known as molluscs. Each mollusc is attached to its shell by a strong muscle and has a powerful foot which is used for crawling or burrowing. Some have an operculum, like a trap-door, attached to the foot, with which they may close up the aperture of the shell in time of danger. On the back of the mollusc is a skin called the mantle, about which more will be said in the next article.

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SOME SOUTH AFRICAN MARGINELLAS. by Christopher Walker.

Looking back in the Circulars, I have noticed that very little mention has been made of the Marginellidae, so I have decided to write something about them.

Marginella biannulata is common from intertidal waters to 7 fms. on rock, shale and sand. There has been some confusion about names, for it has been called M.bilineata, M. biannulata (its present name), M. zonata and M. zonata kraussi. All these different names have been given to one shell because it has a number of different patterns.

1. M. biannulata has two spiral chestnut lines on the body whorl.
2. M. zonata has just one band, as if the gap between the lines of a biannulata had been coloured in.
3. M. zonata kraussi with two spiral bands of chestnut brown, the upper being slightly thicker than a biannulata's, and the lower being much broader so as to extend to the anterior canal.

M. biannulata has been found in False Bay and on the Atlantic side of the Peninsula while M. zonata has been found alive at Melkbos and M. zonata kraussi, a dead specimen, at Port Alfred. Now all these froms are incorporated under one name - M. biannulata, because they only vary in the breadth and position of the spiral bands.

Marginella capensis (also recorded as M. peulla) has been recorded from $1\frac{1}{2}$ - 21 fms. on sand and mud. It is fairly common in False Bay and as many as 300 have been caught in a shell trap overnight in shallow water just off the shore. The colour varies from cream to light bluish and even white. It attains a length of approximately $\frac{1}{4}$ inch and has a thick outer lip and four pleats (or folds) on the columella.

Marginella musica is a very attractive shell being found from intertidal waters to 22 fms. in False Bay and on the Agulhas Bank. It is characterised by its black spiral lines against a brownish-grey base. This species confines itself to sand and mud.

Marginella nebulosa is one of the prettiest and largest South African species and may be found in False Bay and on the Agulhas Bank on sand at depths of 8 - 22 fms. The shell has three prominent pleats on the columella and a thick outer lip when fully developed. The colour is grey markings against a cream background.

Marginella rosea is a rose coloured shell with blotches. Specimens can be found beach-washed and in perfect condition at Buffels Bay (Cape Point) and Millers Point. Live specimens have been found by the University of Cape Town at 7 fms on sand.

Marginella bairstowi is probably merely another variety of rosea. It is found on sand, shale and rock from intertidal to 13 fms. It is grey in colour, attaining a length of $1\frac{1}{8}$ ins. and has axial markings. The columella is thick when fully grown and has four pleats. This is one of the species most easily obtained in the Cape Peninsula.

Marginella lucida has been found at Port Alfred. The shell resembles a large grain of rice, white in colour, with three or four pleats on the columella and no spine at all, this being covered up by the body whorl. It attains a length of $\frac{3}{8}$ inch.

Marginella/.....

Marginella alfredensis is a white to light bluish-white shell, which is semitranslucent. The whorls are arranged in such a manner as to overlap partly at the apex, which gives it a broad rounded appearance. There are eight pleats on the columella.

Marginella reevi is a rather elongated, golden-brown shell attaining a length of $\frac{1}{4}$ inch. There are four pleats on the columella and the spire is high and slender. This species is not common, but may be found at Olifantsbos on the Atlantic side of the Peninsula.

Marginella zeyheri is a small white shell with five pleats on the columella and attaining a length of $\frac{3}{8}$ inch. It has been recorded from the Port Alfred area.

Marginella algoensis is a white shell with four pleats on the columella, attaining a length of $\frac{1}{4}$ inch. It is unmistakably round and almost globular.

Marginella piperata has many spiral dotted lines very close together, giving the appearance of being one colour. The colour is a buff-brown base with grey lines and two dark brown bands on the body whorl. The wider of the two is found just above the posterior canal, the other just above the pleats on the columella. Length approximately $\frac{2}{3}$ inch with four pleats. Found in False Bay at 15-20 fms on coarse sand and shale. Beach specimens have also been found at Jeffery's Bay and Port Alfred.

Marginella piperata lutosa from Jeffery's Bay attains a length of approx. $\frac{3}{4}$ inch. It has a yellow base with a very dark band of brown blotches opposite the posterior canal, while dotted lines are very feint, if any, on the other part of the whorl.

Marginella punctilineata. Found in False Bay on coarse sand and shale at 15-20 fms. It is white in colour with dark axial wavy lines. The columella has four pleats. This shell could possibly have been called M. cosmia because it fits the description given by the late Mr. J.S. Hutt.

Marginella ornata has bright crimson to light reddish-brown bands. It attains a length of $1\frac{1}{4}$ inches and may be found on beaches from Natal to Jeffery's Bay.

Marginella albicincta. A white shell with a dark brown band in the centre of body whorl. Four pleats on the columella.

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NATAL NOTES by D.H. Kennelly.

Members will be interested to learn of the taking of a "live" specimen of "Ranella lampas" Linn., in Natal waters.

The information was conveyed in a letter from Mr. E. Dee of Durban, describing the specimen, and requesting confirmation of the tentative identification. This request has proved to be somewhat of a problem.

The shell was discovered by Mr. G. Byers at a depth of 20 feet on Limestone Reef, north east of the end of Vetch's Pier, Port Natal, and the measurements are:- Length 7 inches, and width of body whorl 4 inches.

Mr. Dee states that this reef is about half a mile off shore, extends for about three quarters of a mile, and the depth of water varies from 15 to 35 feet. Fine specimens of Charonia pustulata have also been taken at this locality.

Regarding the correct name for this shell, the old genus Ranella has been split into several new genera - one of which is Bursa, and this latter name covers all species similar to the one under discussion.

In 1906 the late E.A. Smith (British Museum), reported Bursa lampas taken at the Bluff, Durban, (Coll. G.W. Westcott). Later - in 1914 - Smith (Journal of Conchology, Vol. 14) contributed descriptions and illustrations of three species of Bursa. Apparently these three were closely related, and had been placed under the specific name "lampas" previously, but Smith's study warranted the separation, and in his report he mentions Bursa rubeta gigantea, Bursa rubeta, (typical species), and Bursa rubeta lissostoma.

According/....

According to descriptions and illustrations in literature available to the writer, Mr. Dee's shell seems to be Bursa rubeta gigantea - a species which varies in size for the adult from five to ten inches in length. Mr. P. Elston of Durban has a similar shell ex Mombasa, and the writer has two, one of which came from Mombasa, and the other from Dar-es-Salaam, and all three were taken alive.

In this connection it is interesting to note that no large example of Bursa has been reported from Inhaca Island (P.E.A.) by Macnae & Kalk.

The specific nomenclature of the genus Bursa is further complicated by Maxwell Smith - "Triton, Helmet & Harp Shells", 1948, who quotes Smith's three species mentioned above as synonyms.

The writer is now in communication with an authority in the U.S.A., with a view to obtaining a ruling on the specific name, and the information will be published at a later date when received.

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SOME NOTES ON THE RANGE OF THREE SOUTH AFRICAN SPECIES OF CYPRAEA by D.H.Kennelly.

The species which form the subject of these notes, are:-
Cypraea capensis, Gray, Cypraea fusco-dentata, Gray, and Cypraea edentula, Sowery.

These species were selected as they are rated among the "common" shells occurring on South Africa's shores.

The writer has not been able to trace any notes published on the range of these three species, and investigation has proved interesting. The range of two of the species is not so extensive as generally believed.

C. edentula appears to have the widest range. It is found all round our coast from Buffels Bay, Cape Point, in the West, to East London, and along the Transkei coast as far as Port St.Johns in the East.

About ten years ago the writer identified two shells at the Port Elizabeth Museum as edentula. These specimens had been recovered from the stomach of a large fish trawled off Cape Infanta, and portion of the animals were still adhering to the interior of the shells. These were the nearest approach to "live" specimens seen by the writer.

C. fusco-dentata is more restricted in range. The "headquarters" for this species seems to be Jeffreys Bay, where it may be collected all the year round, and the best "fresh dead" examples are found at this locality.

Specimens occur at Cape Receife (Port Elizabeth), but are scarce and poor in quality.

At Port Alfred fusco-dentata is certainly rare. The writer found one many years ago, and though the late Col. W.H. Turton collected extensively at this locality, he failed to find even a single specimen.

The late Mr. J.S. Hutt of Port Alfred reported (in litt.) finding some three or four examples - all poor quality - over a period of about ten years.

Westwards from Jeffreys Bay this species occurs at Mossel Bay, but at the time of writing no information is available about other localities on the South coast.

The range of C. capensis seems to be even more restricted, and the centre of distribution appears to be Port Alfred, where the best "fresh dead" specimens are found. It occurs north to East London, and beyond along the Transkei coast. To the South this species extends to Cape Receife (Port Elizabeth), where it seems to come to a stop. It has not been found at Jeffrey's Bay, and in the opinion of the writer, does not occur there.

The writer gratefully acknowledges information supplied by R.N. Kilburn (P.E.) Chris Walker (St.James, False Bay), Mrs. A.G. Richards (Mossel Bay), and the Director of the East London Museum, regarding the species dealt with. This has materially assisted the compiling of these notes.

Members in possession of further information about these species, are requested to communicate the details for purposes of record.

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THE DEVELOPMENT OF THE COWRY SHELL by M.J.H. Liversidge (Nairobi)

Throughout the period of a cowrie's life spent in attaining maturity, the shell undergoes a series of wonderful changes. I have attempted to describe these changes in this article, and I will add here that all species of cowry, and probably the majority of the superfamily Cypraeacea, must go through the stages before being fully mature. This is not a scientific paper in any sense, but just an article for the general interest of cowry collectors.

The first two stages of growth through which a cowry must pass are the egg stage and the veliger stage.

The eggs are laid in small cylindrical cases made of a jelly-like substance, in which the eggs are protected. The eggs are minute - usually a yellow colour, though J.F. Spry, in his paper "The Seashells of Dar es Salaam" states that the eggs of Staphylaea limacina are a pinkish colour. I have only found the eggs of three species, and the notes below have only been added for general interest. The notes were made directly after the specimens were found, so that the notes referring to the colouring of the specimens are absolutely correct.

1) Cypraea vitellus: a greyish yellow, rather dirty looking colour. The cases vary in shape, but the majority are cylindrical, about 1.25 mm. long.
2) Luria isabella: eggs a creamy colour. The cases are much smaller than those of the preceding.
3) Blasicrura kieneri: the eggs and cases are much smaller than those of the preceding. The eggs are bright yellow, resembling pollen grains.

The veliger larva of a cowry, once it has hatched swims around for a period before settling down in a sheltered place to begin the development process at the end of which the adult specimen emerges. During this period the shell is laid down, and it gradually changes in form as the animal develops.

At first the shell is tiny and colourless covering the animal only incompletely, but as it develops it acquires a characteristic form which is known as the "Bulla Stage" so called because a cowry in this state looks for all the world like a member of the Bulla genus. (Bulla is a shell which is roundish in the middle from side to side while being an oval shape from end to end, and has a very wide aperture.)

A cowry in the Bulla Stage resembles a specimen of Bulla and is characterised by a spire (in a young one this is usually prominent, but becomes sunken later on, except in a few specimens where it is only covered over at the very last moment by a nacreous deposit), a smooth columella which gives the impression of having been twisted at the anterior end, and a thin, sharp-edged outer, or labial, lip. There is also a very wide aperture because the outer lip has not yet started to turn inwards in the direction of the columella. The shell is at this stage thin and brittle, thus easily broken, and because of this one can very rarely find a specimen in which the outer lip is not damaged.

At this stage most species have their markings in blotches, which seldom even vaguely resemble the adult markings, and these gradually assume an adult form as the shell develops. Exceptions to this are:-
(a) Luria isabella, which has adult markings from the start, and
(b) Monetaria annulus and M. moneta, both of which are a plain bluey-grey, evenly laid on all over the shell, M. annulus lacking the orange ring which gives it its name.

There are most probably other exceptions, but the above are the only ones I have met with in East Africa.

As it develops further the shell is thickened and the outer lip starts to grow in towards the columella. It is always apparent when this is going to happen for the base of the lip thickens very slightly. As the outer lip grows in, so the aperture narrows. While all this is happening the columella teeth begin to appear in the form of small white pustules which do not resemble the teeth (the ridges bordering/....

bordering the aperture) of the adult specimen.

In time the outer lip finishes growing inwards and is ready to start the formation of teeth. This stage is denoted by a perfectly smooth edge to the inner part of the outer lip. In the meantime the columella teeth have assumed a more permanent shape, and now look quite mature. At this time too the whole shell thickens and I suspect that it is now that the margined cowries begin to form their margins.

The next move forward in the attainment of maturity is the formation of the labial teeth (i.e. the teeth along the outer lip), the first sign of the commencement of which is the appearance of little ridges on the once smooth part of the outer lip. From then on the labial teeth continue to grow steadily until they finally assume a fully adult shape. At this stage the "twisting" of the anterior end of the columella has begun to form the terminal ridge and fossula (i.e. the "inner" columella). The columella teeth have also progressed and are not far from a mature state, which they finally reach afterwards once the fossula is completed. Once the columella teeth have been completed, the animal begins to work on the ribbing, or semi-tooth-like ribs which run down from the base of the columella teeth into the "interior" columella.

As all this has been going on the shell is steadily assuming a more adult and mature shape. The markings too have changed, but they only assume a mature appearance at a late stage, and even then usually lack the richness of colouration in the adult. The rich coating of enamel is only laid on in the final stage.

In the final stage of growth the shell thickens up and assumes a completely adult shape and the markings are finally completed.

I have in my possession a specimen of Palmadusta punctata which appears to have been in this final stage of development of colouration when its life was inadvertently shortened. It appears to have been laying on the final coat of enamel, as the dorsum is a much brighter, though more washy, orange than the base and most of the margin, which is the normal rich, creamy-orange of a P. punctata.

There is a peculiar old theory instituted by Lieut. J.B. Hankey, R.N., in 1844, that states that if the dorsum of an adult shell suffers damage the animal can go away into a sheltered place and there, by means of acetose juices which it secretes, dissolve the shell wholly or partly away. He believed that it could also do this if the shell were to become too small for the animal. Nobody has seen a cowry in this state (as Hankey claimed to have done) in the one hundred and twenty odd years since, so the theory may well be discarded.

REFERENCES:

J.F. Spry, "The Sea Shells of Dar es Salaam" (Tanganyika Notes and Records, No.56)

The nomenclature used is that used by Schilders in "A Prodrome of a Monograph on Living Cypraeidae".

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