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X THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA X
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CIRCULAR NO. 111. SEPTEMBER, 1969. PAGE 1.
Edited by Richard Carlsson.

MEETING:

The next meeting of the Society will be held on Tuesday, 30th September, 1969 in the Lecture Hall of the S.A. Museum at 8.15 p.m. The shells for display and discussion will be numbers 1 to 23 of the "Check List of Mollusca recorded from False Bay" and cover the following families: Chitonidae, Cryptoplacidae, Ischnochitonidae, Lepidochitonidae, Neomeniidae, Fissurellidae, Haliotidae, and Acmaeidae.

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Minutes of the Meeting held in the S.A. Museum - 26.8.1969:

Members, friends and visitors were welcomed by Mr. Freeman. Apologies were recorded from Mr. L. Kapp, Prof. and Mrs. Mallory, Mrs. and Miss Lewis, Mr. G. Ivy and Mr. P. Elston, who is again in hospital.

The minutes of the meeting of 29th July, having been published in Circular No. 110 were taken as read and adopted.

The following were elected as Members:

Mrs. S.C. Vowles, 36 Chapman Road, Klippoortjie, Germiston, Transvaal.
Mrs. B. Hooper, 1 Queens Place, Queens Square, Glenhazel, Johannesburg.
Mr. E. Caponnetto, 20 Viale Camaggio 20, 80055 Portici, Naples, Italy.
Mr. M. Franco, P.O. Box 1490, Beira, Mocambique.
Mrs. E. Lewis, 63 Salisbury Street, Bellville, Cape.
S Miss V. Leis, 63 Salisbury Street, Bellville, Cape.

The following were proposed as New Members:

Mrs. R.E. Hoogenhout,	proposed by	R. Kilburn,	seconded by	D.H. Kennelly.
Mr. H. Mulder,	"	" E. Doe,	"	" E.K. Giles.
Mrs. G. Hurry,	"	" P. Ogilvie,	"	" A.B. Jenner.
Mrs. N.L. Walter,	"	" P. Ogilvie,	"	" A.B. Jenner.

There being no further business, Mr. Freeman formally closed the Meeting.

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Minutes of the Eleventh Annual General Meeting - 26.8.1969:

The minutes of the Tenth Annual General Meeting were read. Mrs. Kerr proposed the adoption of those minutes, this was seconded by Mrs. Kinloch. There were no matters arising. The reports of the Secretary, Treasurer and Librarian were considered, there being no comments these reports were formally adopted. The Vice-President, Mr. Freeman, then gave his address. This is published below. The proposed Council was re-elected, the only change being Mrs. Carlsson as Secretary and Mrs. Giles as an Ordinary Council Member.

Mrs. Kinloch told the meeting that after nine months' battle she had at last had some response to her complaint about unfair dealing. After threatening legal action, with backing from Jock Dichmont, her shells had been returned to her. She told the meeting that she would be leaving shortly for Malawi and in saying goodbye to her friends wished the Society every success in the future. This wish was reciprocated by all present.

Mrs. Kerr proposed a vote of thanks to the Chairman, the Secretary and the Treasurer for all their hard work during the past year. This was unanimously accepted by long and loud applause.

The Mitridae on display were examined and discussed over tea and cake. We saw a film on Oceanography loaned to us by the U.C.T. In passing a vote of thanks to the University Mr. Freeman also thanked Messrs. BP for the loan of a special projector.

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VICE-PRESIDENT'S ADDRESS - 26th August, 1969:

Once again the reports of the Secretary and Treasurer show a pattern of growth and financial stability that seems to have become a habit. But in case there is anyone who thinks that this state of affairs just happens every year I must say, here and now, that it takes hard work and that we dare not become too complacent. I will come back to this aspect in a moment.

As I said last year the A.G.M. symbolises the fellowship of all our members everywhere. It has been most gratifying during the past year to note how several of our overseas members have contributed to the Society's activities. Many of you will remember the very beautiful colour slides that were shown at

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the September, 1968 meeting. These came from Mr. Carlo Tripodi in Italy. We have also had articles from Dr. van Bruggen in Holland and from Prof. Dr. Schilder in East Germany and from Mr. Phillip Clover who has recently moved from America to Spain. In addition there was an interesting parcel of shells from the Torres Straits, sent by Mr. Low Choy, and I can inform you that we have just received another parcel of shells from Australia from Mr. Rossack, which we will be auctioning at a coming meeting.

I am pleased to be able to thank all these people, who have by their efforts and generosity contributed to the Society's proceedings. They have set an example that many of our South African members might well follow.

On reading through our records for the past year I see that members have continued to do a fair amount of travelling, collecting and, in some cases, useful study which they have shared with us through the medium of our Circulars.

At the same time, I wonder whether many of you are not often impatient at the slow progress we are making?

I am disappointed that we have not managed to do more things together and organise more instructive events. Unfortunately, most of us are working people and the demands of our jobs, and of our homes and families must take first place. I hope that members realise this and make allowances for your Council's shortcomings. I hope also that many of you will come forward to help the Council, not only with ideas for projects that we can undertake, but with labour as well. The Council is here to co-ordinate your efforts, but we cannot do all the work for you, as much as we would like to.

We seem to have reached an awkward stage - adolescence -- where we can no longer excuse ourselves by a state of infancy and yet, we have not yet the strength and maturity to do bold and ambitious things.

Of course we must have long and short term aims. I would like to see the day when we can sponsor students in University courses on Marine Biology, majoring in Conchology or Malacology, and so help to provide qualified staff at our Museums. I would like to see us being involved in professional research into, say, land molluscs that are such a pest to agriculture. (When I ramble on like this at Council meetings the Treasurer gets a far away look in his eye and the Secretary firmly hands me a cup of tea!)

But seriously I believe that we must <u>want</u> to do these things some time in the future. The saying "asking for the moon" has suddenly taken on a new meaning during the past few weeks, precisely because enough people worked for it hard enough and long enough. I hope we are closer to my metaphorical moon than Jules Verne was to Apollo XI.

The big thing is, we must go forward and not back, neither can we afford to stand still.

This evening we are passing one important milestone with the end of the term of office of our Secretary, Mrs. Giles.

It has been my great privilege, and my very good fortune, to have been Vice-President and local Chairman throughout Mrs. Giles' term of office. The secretary's job has never been easy but if our members have not realised how demanding it has become in the past few years, this is probably because Betty Giles has taken it all in her stride. The Society owes her, and Callum, a great deal, and I can convey this very inadequately when I say : thank you, Betty.

Fortunately Mrs. Giles is able to remain on the Council as an ordinary member for the time being and this helps to preserve continuity in our day to day operations.

Our new Secretary, who will take over tomorrow, is Mrs. Carlsson. Most of you know her well and I know all of you will welcome her appointment.

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<u>EXCHANGE WANTED:</u>

Mrs. B. Saul, Ironpot Creek, Kyogle 2474, N.S.W. Australia.
Good live specimens only.

Mr. P. Piani, Via Delle Fragole 23, Bologna 40137, Italy.
Murex, Cypraea and Spondylus preferably.

Mr. G. Emerson, P.O. Box 64, Torquay, P.O. Victoria, Australia, 3228.

Mrs. M. Neale, Malcolm Terrace, Balclutha, South Island, New Zealand.

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CHANGE OF ADDRESS/...

CHANGE OF ADDRESS:

Mr. R.N. Kilburn, Pietermaritzburg Museum, Pietermaritzburg, Natal.
Mr. J. Drijver, van Hoffenlaan 5, Bennekom, Holland.

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GENERAL NOTES:

Winter Season Collecting on the Border. by D.H. Kennelly.

Reports of successful collecting by various members during July have been received. The most interesting of the shells found are detailed below, together with the names of the lucky collectors.

Hickmans River: Two specimens of Cypraea marginalis Dillwyn found by Miss G. Jackson.

Gonubie: One specimen of Cypraea arabica Linné. A small adult shell of 40 mm. collected by Miss G. Jackson.

Haliotis queketti Smith, Haliotis speciosa Reeve, (three specimens) Nerita polita Linné (live). Volva volva Linné. Volva sowerbyana Weinkauff. Volva aurantia Sowerby. Volva birostris Linné. Primovula beckeri Sowerby, and Euthria queketti Smith. All collected by Mrs. C. Connolly.

Bulugha: Strombus mutabilis Swainson. One sub-adult shell collected by Mrs. Armstrong.

Cypraea lamarcki Gray, found by Mrs. P. Ogilvie.

This is the third example of the genus Strombus collected on the Ciskei Coast. (Vide Gr. 100 page 9 and Cir. 103 page 4).

While these notes are being compiled, three Border members, Mrs. Lentz, Mrs. Gillmer and Mrs. Faulkner, are away on a collecting trip on the Transkei Coast. We are looking forward to their report and feel sure there will be more items of interest to be recorded.

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The Radula. by D.W. Aiken.

The only real way to classify and identify gastropod mulluscs has, for a long time, been to examine the animal, including the radula, and the shell itself.

It took me quite a few years to realise that I would not progress a great deal further unless I extracted the radulae wherever possible.

What is a radula?

It is a band or ribbon beset with rows of teeth which vary from species to species, but not between members of the same species. The basal membrane to which the teeth are attached and the teeth themselves are luckily insoluble in a 5% solution of caustic potash which is used to dissolve the surrounding tissues. The teeth are composed of Chitin.

Opposing the radula in many herbivorous species is a jaw or pair of jaws also composed of Chitin and equally as distinctively sculptured as the radula teeth. In most species the jaw is difficult to find and it is absent in carnivorous molluscs.

The different types of radula fall into eight main groups and one miscellaneous group. In each group three types of tooth may or may not appear. Thus there may be a central tooth or it may be absent. The central, or the space it should occupy, may be flanked by lateral teeth which can number up to five on each side or in exceptional cases even more. Again the laterals may be absent. Finally, at the outer edges of the radula there may be marginal teeth sometimes so numerous that they are classed as indefinite, although with patience they can be counted.

This series of teeth in each row is recorded in the form of a formula consisting of five numbers, the significance of which will become apparent as the different classes are described.

The first group is the TOXOGLOSSA (Arrow Tongues) and contains three families, the best known of which is the Conidae. The others are the Terebridae and Turridae.

This group are highly specialised carnivores and have, in the main, lost both the centrals and laterals retaining single marginals. The typical formula, therefore, is 1-0-0-0-1.

The cone/...

The cone shells have sharp, barbed marginals which are not laid out as a ribbon but bunched together in a sheath. Each tooth is brought forward to the proboscis when required and is linked to the poison gland by a tube. Tropical cones catch live prey by shooting a barb into their victim and, when the poison stills the animal's struggles, it is swallowed whole by the cone shell and digested internally. Such a method of using the radula is unique.

The Lattice and Auger shells each have two rows of pointed teeth with about a hundred teeth in a row. The mechanism of use and replacement of these teeth is not known to me, as some Lattice shells do not have a radula I assume that it is becoming obsolete in this family.

The tower shells are transitional in that some genera have retained a degenerate central tooth (Clionella) and even a central and laterals (Drillia). However, the marginals are very large and are obviously the teeth mainly in use. The teeth are also in rows like the latter groups and the formula is 1-0-1-0-1 or even 1-1-1-1-1.

The Cancellaridae are in a group by themselves and have feeble branched radulae for sweeping in their food.

The third group is the RHACHIGLOSSA (Ridge Tongues). There are twelve families in the group and they display a central tooth and usually laterals but no marginals. They are carnivorous but less specialised than the first group and feed mainly on dead or decaying flesh. (Bullia are often seen clustered on a dead Jellyfish).

The more popular families in the group are the Olividae, Mitridae, Buccinidae, Pyrenidae, Muricidae, Marginellidae and Harpidae.

The first five of these have a radula with the formula 0-1-1-1-0 and the remaining two have lost their laterals and therefore are represented as 0-0-1-0-0. The central tooth is broader than it is high and has from one to fourteen cusps. The laterals usually have a large outer cusp.

The fourth group is the GYMNOGLOSSA (Tongueless) and, although they have no radula, are mentioned because they probably had one in the past. Now they are parasitic on Echinoderms and have developed a suctorial process with which they feed on the body juices of their hosts. Two families are in this group - the Eulimidae and the Pyramidellidae.

The fifth group is the TAENIOGLOSSA (Ribbon Tongues) and into this group fall most of the families, forty-six in all. The majority have a central, a lateral and two marginal teeth.

The best known families are the Cymatidae, Cassididae, Tonnidae, Cypraeidae, Strombidae, Turitellidae, Littorinidae, Capulidae, Naticidae and Cerithiidae.

This group show a variety of feeding habits and their teeth are modified accordingly. Many are detritus feeders ploughing through bottom deposits selecting either animal or vegetable matter. Cowries are carnivorous in that they browse on sessile animals such as Ascidians and Sponges. The Naticidae actively prey on bivalves drilling a hole by mechanical action. The Conch and Periwinkles are herbivorous and the Screw Shells are carnivorous trapping the plankton, which forms their food, with threads of mucus, although they do have a minute radula.

The typical formula for the group is 2-1-1-1-2. All the teeth are multi-cusped and the central is prominent.

The sixth group is the PTENOGLOSSA (Wing Tongues) and contains only two families, the Epitoniidae and the Janthinidae.

The radula is small in the first family and large in the second and consists of numerous hooked laterals with a simple central tooth in the Epitoniidae and no central in the Janthinidae. Thus the formula is either 0-oo-1-oo-0 or 0-oo-0-oo-0.

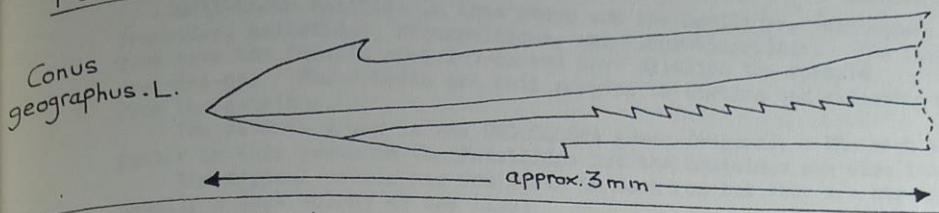
Both families are carnivorous, the Ladder Shells or Wentletraps rasp sea anemones and corals and the Violet or Foam Shells float freely on the surface of the oceans and eat pelagic coelenterates such as the Portuguese-Man-O'War.

The seventh group is the RHIPIDOGLOSSA (Fan Tongues) with seventeen families included. They all have a broad radula with a prominent central, up to five (occasionally more) laterals and an extremely large number of marginals. The teeth are generally long, hooked at the top and cusped. The whole group are herbivorous deposit feeders.

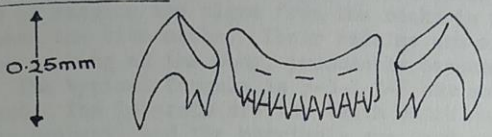
Well-known/...

EXAMPLES OF THE VARIOUS GROUPS.

TOXOGLOSSA

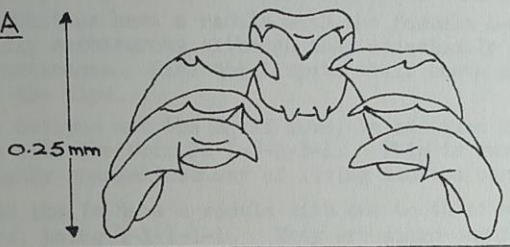


RHACHIGLOSSA



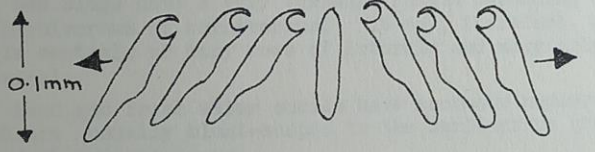
Bullia natalensis. KRAUSS.

TAENIOGLOSSA



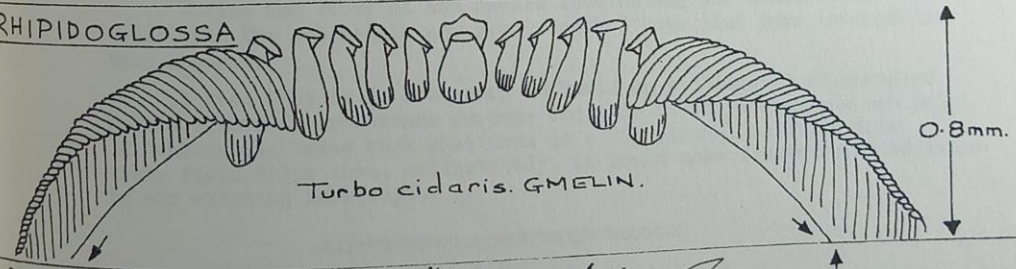
Cypraea felina. L.

PTENOGLOSSA

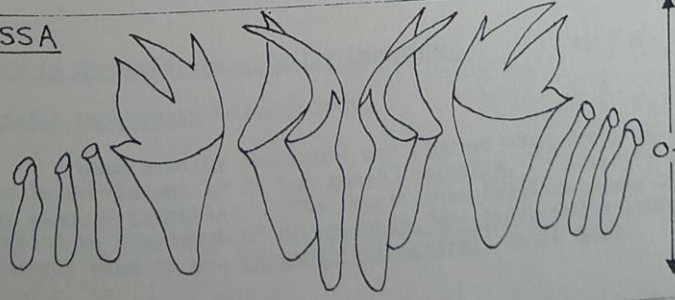


Scala
bullata. SOW.

RHIPIDOGLOSSA



DOCOGLOSSA



Helcion
dunkeri. KRAUSS.

MISCELLANEOUS GROUP NOT ILLUSTRATED

Well-known families in this group are the Neritidae, Turbinidae, Trochidae, Haliotidae, Fissurellidae, and Pleurotomariidae. The first five have the formula oo-5-1-5-oo and the Slitlips the formula oo-4-1-4-oo. Their teeth are well adapted to sorting and selecting food from the detritus.

The seventh group is the DOCOGLOSSA (Beam Tongues). The best known family in this group is the Patellidae but the Acmaeidae are also included.

The typical radula has few teeth in each row but they are strong and usually a dark colour at the tips.

Both families are herbivorous and their teeth are suitable for the task of rasping the algae from the rocks in their immediate vicinity between the tide marks. Their radulae are extremely long, sometimes twice as long as the body, presumably because the rate of wear is great.

The typical formula is 3-3-1-3-3 but sometimes the central is absent. The laterals are the teeth which do the work, as the central (when present) and the marginals are very small and insignificant by comparison.

The eighth and miscellaneous group contains the Polyplacophora, Cephalopoda, Scaphopoda, Tectibranchia, and land and freshwater snails.

The Chitons have a radula with the formula 4-3-3-3-4 and are essentially herbivorous although they occasionaly vary their diet with small crustaceans. Like the Limpets their teeth are strong and dark brown at the tips.

The Octopus and the Squid have, in addition to their strong jaws, a radula with the formula 1-3-1-3-1. This is remarkable in view of their highly specialised way of living and the carnivorous diet.

Tusk shells have a radula with one tooth of each type, the formula, therefore, being 1-1-1-1-1. They are micro-carnivorous, searching for small animals in the sand around their burrows and the radula is large in relation to the size of the mollusc itself.

Sea Slugs have a very variable radula depending upon whether they are herbivorous or carnivorous. It may, therefore, be a few rows of single centrals or many rows of laterals and marginals, with or without a central.

Land and fresh water snails have enormous numbers of similar teeth which are usually blunt-cusped in the herbivorous general and sharply cusped when carnivorous.

I find the study of the radula fascinating and whilst I have not dealt with the subject in any great depth I hope that some interest has been aroused.

I feel that it is necessary to build up a "Library" of standard radula slides for reference purpose and this is where everyone can help. If Members can bring back specimens in a 70% alcohol solution from their field trips then, collectively, we could make a worthwhile addition to our existing knowledge.

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Changes in Nomenclature - Family Muricidae. by D.H. Kennelly.

Tritonalia punctura Sowerby 1886.

When Sowerby described and figured this shell in 1886, he placed it provisionally in the genus Cominella. Later it was placed in the genus Tritonalia. The latest investigation shows this species to be a synonum of Peristernia fenestrata Gould 1862, and the correct name is now Tritonalia fenestrata Gould 1862.

An editorial/...

An editorial footnote to the above states that the generic name Tritonalia Fleming 1828, may be a 'Nomen dubium', in which case it must be replaced by Ocinebra Gray 1847. It is possible a ruling on this question will be issued by the I.C.Z.N. at some future date.

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Conus milne-edwardsii Jousseaume 1894. by E. Dee.

In reply to the notes on page 3 of Circular No. 109 regarding Conus milne-edwardsii it must be pointed out that the number of known specimens from Porto Amalia is :- No. 1, Mr. J. Walker of Cape Town, Nos. 2 - 5, Mr. Darrol Smith, and No. 6, Mr. J. Dench of Johannesburg - the biggest and best specimen and still in his possession.

From the structure of the shell it is apparent that this is a deep water species and it is therefore never found live in shallow water. The area of the Zululand coast where this rare cone has been found can only be reached by land rover and the water on the seaward side of the reef abounds with sharks and great care must be exercised whilst skindiving. As the coast is dangerous and as at least one skindiver has already lost his life the exact location is not revealed.

I am not at liberty to divulge the names of the owners of the Natal specimens, but the whereabouts are as follows :-

Three specimens are still in Zululand, one was sold to an American and the fifth is a badly broken specimen.

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Editors Note: Due to lack of space this article has been condensed.

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It is with deep regret that we record the passing of Percy Elston on 8th September, 1969. We extend our sincere sympathy to Mrs. Elston and family in their loss. Mr. Elston joined the Society in 1958 and served on the Council for many years.

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SECRETARY	TREASURER	LIBRARIAN
Mrs. R.O. Carlsson, 18, Tecoma Way, Pinelands, Cape.	Mr. M.C. Giles, 2, Flora Park, Flower Street, Gardens, Cape Town.	Mr. R.O. Carlsson, 18, Tecoma Way, Pinelands, Cape.
Phone: 53-1536.	Phone: 45-3070.	Phone: 53-1536.