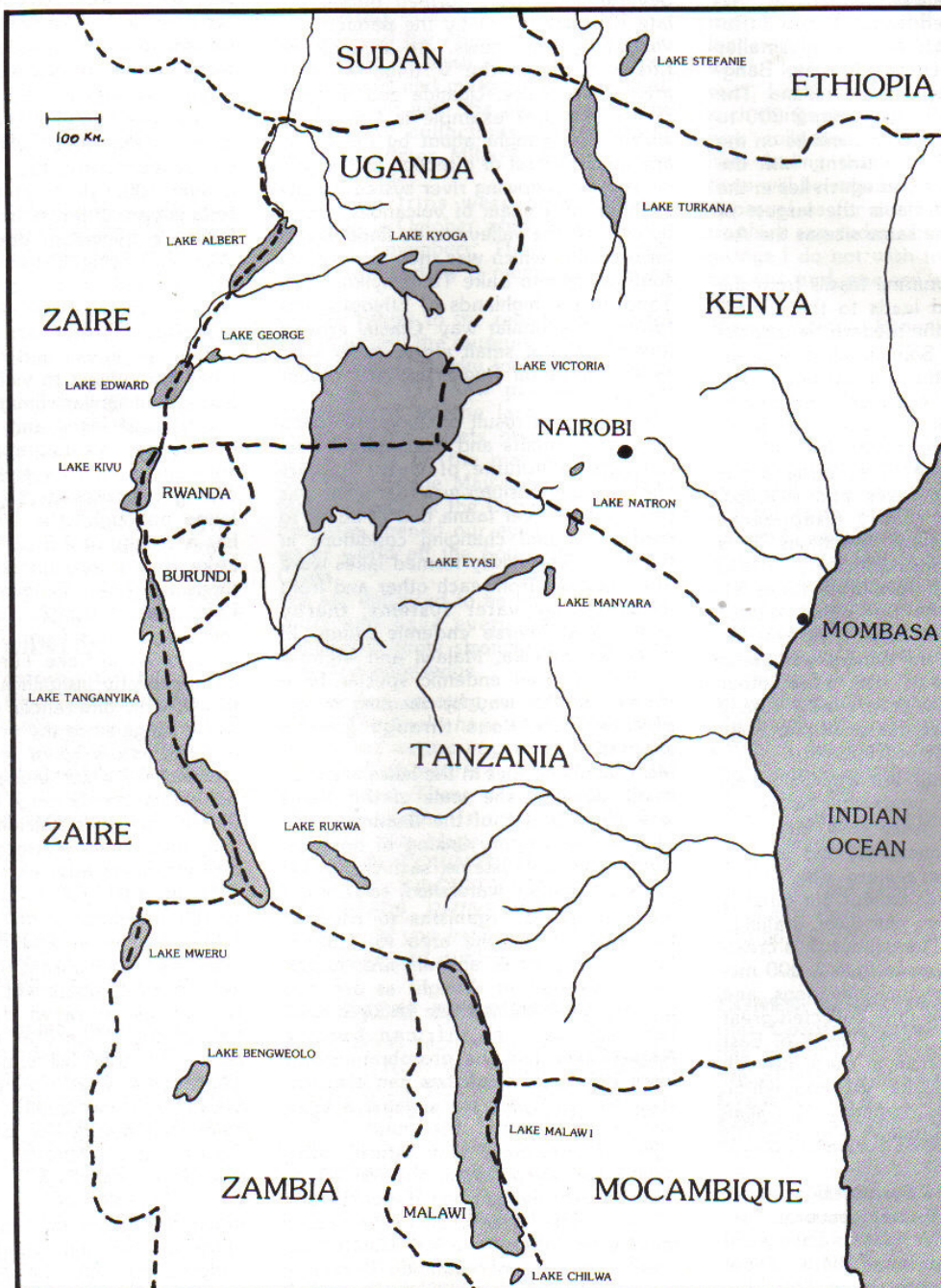


THE AFRICAN GREAT LAKES



THE MOLLUSCAN FAUNA OF AFRICA'S GREAT LAKES

Part 1: An overall perspective of the Great Lakes.

by Kenneth Brown, Johannesburg.

Introduction

This article is intended as a short introduction to the African Great Lakes. It will briefly look at the history, climate and chemistry of the lakes. Following articles will deal with various of the lakes specifically.

There are eight great lakes in tropical Africa, namely Malawi, Tanganyika, Victoria, Chad, Kivu, Edward, Turkana (Rudolph) and Albert, and many smaller lakes such as George, Mweru, Bangweolo, Kyoga, Stephanie and Tana. The great lakes range in size from 2 300 to 75 000 square kilometres, and lie on the eastern side of the continent, with the exception of Lake Chad which lies in the centre. Lake Victoria is the largest of the lakes and is the same size as the Aegean Sea.

The existence of marine fossils from the Cretaceous period leads to the conclusion that most of the modern Sahara desert, Ethiopia and Somalia were once areas occupied by the sea. However, the remainder of the continent appears to have remained above sea level for more than 600 million years, although geological history indicates that large areas were occupied by lakes and swamps, which have now mostly disappeared with changing climatic conditions. It is also clear that approximately 7 000 years ago the western and southern Sahara experienced a far higher rainfall than present. Thus, Lake Chad, on the southern fringe of the Sahara was about five times its present size, whilst other lakes existed in what are now totally arid areas, such as, for example, Lake Araoune northwest of Timbuktu.

During the Miocene era approximately twenty-five million years ago two enormous rift valleys were torn into existence by earth movements and faulting which cracked the eastern side of the continent. These rift valleys cut directly across the previous east-west drainage system of Africa. The valleys thus created were in places more than 1 000 metres below their original elevations, and with the passage of time collected great volumes of water. All the lakes of East Africa had their origin in these rift valleys except for Lake Victoria which came about by the damming of a shallow depression between the two rift valleys.

Many smaller lakes were brought about by volcanic activity, and several hundred extinct volcanic craters have filled with water to form small lakes. These lakes, often no larger than two kilo-

metres in diameter are found mostly along the western rift valley on the Zaire-Uganda border. They have small catchments and only rarely have outlets. Their isolation and chemical composition often means that they can only support a poor faunal population. The western rift also contains large shallow depressions brought about by violent volcanic eruptions of short duration which in some cases have been flooded by underground or surface waters to form lakes or extensions to existing lakes whose waters have entered and filled them, as has happened with Lakes Edward and George.

Several lakes were formed during the late Pleistocene era by the damming of valleys by lava flows. An example of this is found in the Virunga volcanic area where Zaire, Uganda and Rwanda meet. The best example is Lake Kivu which was brought about by the blockage and reversal of direction of the previously north-flowing river system by the eruption of a chain of volcanoes, thereby causing the valleys to be flooded and form a lake, which was then to overflow southwards into Lake Tanganyika. Lake Tana, in the highlands of Ethiopia, was formed in a similar way. Glacial erosion formed several small alpine lakes such as the lakes on Ruwenzori and Mount Kenya.

The ecological result of these continued earth movements and concomitant fluctuations in volume of water and its chemical composition was that what was previously a river fauna had to adapt to many new and changing conditions in the lakes. The newly formed lakes were often isolated from each other and from neighbouring water systems, thereby evolving a diverse endemic fauna. In lakes Tanganyika, Malawi and Victoria several hundred endemic species have evolved in this way by reacting to the physical conditions through genetic adaptations.

Most faunal species in the lakes are very small, down to the scale of the plants and invertebrates of the floating plankton, and temporary linking of normally separate water systems, such as, for example, a flooded watershed, could allow many of these organisms to transmit themselves from one area to another. Most of the small animals are, furthermore, resistant to drought as are also the algae which produce drought-resistant spores. The African bivalve *Aspatharia* and the prosobranch molluscs *Pila* and *Lanistes* can also survive without water for at least a year, and can aestivate in dried mud.

Apart from rainfall, temperature, illumination and evaporation, the life of the lakes largely depends on the circulation of water. The lower levels of the deeper lakes which often have accumulated nutrient salts, are permanently devoid of oxygen. As the trench-like western Rift

Valley of Lakes Tanganyika and Malawi lies in the northwest-southeast orientation, this enhances the effect of the southeast trade winds which are funneled down the valley, often with great force. The result is wind-induced internal waves which play a vital part in the circulation of nutrients from the anoxic zone to the upper layers of the lakes and sudden violent wind storms have been known to cause 'fish kills' by massive upwelling of anoxic water. Seasonal variations in the nutrient levels of the lakes are characteristic, with the only exception being Lake George. This is due to the lake's shallowness and exposure to the wind, which coupled with a constant source of water from the Ruwenzori Mountains ensures seasonal in-wash of nutrient-rich water.

Lake Tanganyika is the second deepest in the world after Lake Baikal, and is over 1 400m deep, whilst Lake Malawi comes fourth after the Caspian Sea, and is over 700m deep. However Lake Victoria is very different from the rift lakes, having a maximum depth of just over 70m, and being surrounded by low hills as opposed to the rift lakes' steep shores. In most other respects the lakes are physically similar. Almost oceanic conditions prevail and the three largest lakes are subject to violent storms. The lakes have similar climatic conditions; all are tropical lakes and water temperatures are high and appear to remain constant even to considerable depths. The great lakes harbour a freshwater fauna, although Lake Turkana (Rudolph) has a salinity of 2.5 parts per thousand; Lake Kivu approximately one part per thousand; Lake Tanganyika 0.530 and Lake Malawi 0.192. The pH range of the lakes varies from 7.1 in Lake Victoria to 9.7 in Lake Turkana.¹ There is an apparently insignificant ecological effect of ionic differences within the freshwater range since the organisms colonising the lakes have ionic regulation mechanisms which enable them to function under a wide range of chemical conditions. However, calcium levels are critical, since species disappear above and below concentrations of 5 - 10 mg/litre. Thus in lakes with calcium levels close to the minimum levels, such as Lakes Lungwe, Tumba and Nabugabo, molluscs are either absent or are present in very small numbers with fragile shells.¹ A controversy raged during the early part of this century as to whether certain of the great lakes, particularly Lake Tanganyika, were isolated relicts of an ancient sea, particularly since the lakes evidenced marine-like gastropod shells. Bourguinat used the term 'thalassoid' to refer to such shells.² This argument has been generally discounted, but it remains an interesting fact that there are twice as many gastropods in Lake Tanganyika that are thalassoid than non-thalassoid.³

Cunnington, although in a dated work, provides a valuable comparative insight into the fauna of the lakes. He states that Lake Tanganyika contains 402 faunal species of which 293 are endemic, Lake Malawi has 361 with 86 endemic, and Lake Victoria has 289 species, Lake ALbert has 67 with 9 endemic, and Lake Edward 54 with 11 endemic and Lake Kivu 23 species, 4 of which are endemic.⁴

The number of distinguishable species of molluscs in each of the Great Lakes appears, generally speaking, to be proportionate to the volume of water in the lakes, with by the far the greatest number being found in Lakes Victoria and Tanganyika. Lake Malawi, possibly because of its situation remote from the faunal centres of evolution and its unusual ecological conditions, appears to have rather fewer than its share and is more likely to acquire additional species than any other of the great African lakes.

The following articles will deal more specifically with various of Africa's great lakes. The first of these articles will be on Lake Malawi.

REFERENCES.

1. L C BEADLE 1974: 'The Inland Waters of Tropical Africa.,p. 50, Table 5.1.
2. BOURGUINAT J R 1885 : 'Notice prodromique sur les Mollusques terrestres et fluviatiles recueillis par M. Victor Giraud dans la region meridionale du lac Taganyika' Paris.
3. CUNNINGTON W A 1920: "The Fauna of the African Lakes' Proc. Zool.Soc. Lond. 507 - 622 at p.542.
4. CUNNINGTON W A op cit. p. 517.

EXCHANGES WANTED

Juan Antonio Contreras Gonzalez, Museo Insular de Ciencias Naturales de Tenerife, Apartado de Correos 853, 38080 Santa Cruz de Tenerife, Islas Canarias, Spain, is interested in the family MARGINELLIDAE. If anyone is interested in exchanging with him. (The letter was in Spanish.)

Henry Thake, 185 St Mary Street, Zejtun, MALTA G.C. is interested in making contact with local collectors. He collects both marine and terrestrial shells, few of which are endemic and wishes to swap for any families of South African shells.

Rare SA shells wanted, deep water, any species of African land and fresh water shells. Over 4 000 species available for exchange including many rarities and shells from unusual locations. Indicate your interests in first letter.

GSP Hubrecht, Armand Bourdonlaan 3, B-9820 Sint-Denijs-Western, Belgium.

Jose Hernandez Otero, Capitan Quezada 41, 35460 Galdar, Gran Canaria, Spain is interested in micro shells especially Turridae, Rissoa and Muricidae.

REPORT ON THE ACTIVITIES OF THE CAPE TOWN GROUP OF THE CONCHOLOGICAL SOCIETY 86/87

Meetings of the Cape Town Group were held in members' houses for the greater part of the year, pending completion of the restoration work at the museum.

Members who generously opened their homes to us were Mrs Connolly, Mr and Mrs Seha and Mr and Mrs Hellings. We extend our thanks to them all for helping us through a difficult time. We returned to the Museum in April.

Due to the informal nature of many meetings, few guest speakers were invited. Our activities were as follows:

We enjoyed the effect of Victor's ultra-violet light on fossil shells. Cones, cowries, volutes and marginellids were studied in depth with the aid of specimens from many collections, in particular those of Victor Millard, Claude Seha and Pat Coles.

Two field trips were held. One to Hangklip in October which was supported by 11 members. The other to Fish Hoek attended by 5 members and one guest.

On our return to the rebuilt South African Museum, the museum's marine biologist, Sheryl Ozinsky took us on a guided tour of the new premises, much appreciated by the large number of members and guests present and then spoke to us on the marine life of the Red Sea. At the May meeting, Mr Roy Melville-Smith of the Department of Sea Fisheries opened our eyes to the deep-water world off the South-West African Coast.

We are delighted to be back at the museum and have every hope that our Group will grow strongly in both numbers and knowledge.

At our last meeting we tackled the library. The books have at last been sorted out and we are at present in the process of compiling a list of the publications. These will soon be available. If anyone is interested in any books at this stage they can write to THE CAPE TOWN GROUP, CONCHOLOGICAL SOCIETY OF S.A., P O BOX 27208, RHINE ROAD. 8050. I will then let you have a list of the available books and publications.ED.

THE GREAT BARRIER REEF

The channel separating the Great Barrier Reef from the mainland is 24 to 196Km wide. This giant reef, 1920 Km long, covers 204 800 square kilometres.

Only ten major passages lead through the reef into the open ocean, so the island areas along the reef channel are difficult to reach. The bank reefs off the Florida Keys and in the Bahamas resemble barrier reefs, but also differ from them in important ways. (Q)

LETTERS TO THE EDITOR

The article by Patricia Eichbaum which you printed in the Jan/Mar issue of *Strandloper* struck a sympathetic chord within me.

10 years ago I began to doubt the existence of God. We went on holiday to Mauritius. This was the first time that I had seen such variety in shells and also realised that 'shells' were a part of a living creature. There was such perfection in the coil and ornamentation. My mother and I collected furiously and when we returned home, bought books on shells and set about identifying our specimens. The order within each species reassured me of the order of the universe. I no longer collect shells but still get a thrill when I look through my collection. However, I often have mixed feelings about such things as shell collections, all 'creature' collections, for that matter. I can't help feeling that one day such collections will be regarded with the same disapproval as fur coats and animal head trophies are today. In spite of my misgivings I do not wish to resign from the Society and enclose my membership fee.

Jennifer Sterne, Benoni.

I am a member of the Conchological Society of Great Britain and Ireland, and am currently undertaking research into land and marine molluscs in folklore and superstition, in a worldwide context. I am therefore writing in the hope that members of your society might be able to help me in this task.

I would be interested to receive any information or sources of information, which relate to this general area, especially any facts, myths or anecdotes concerning occult or religious beliefs, rituals or symbols, folk-medicine, etc. Any material will be gratefully received, and anything relating to South Africa or the neighbouring countries would be of particular interest.

I look forward to the prospect of hearing from members.

Mark Lewis
49 Beech Hall Road
Highhams Park
London E4 9NJ

CONES: A SPLITTER'S DELIGHT

that **Conus ermineus Born,1778**, has at least 23 synonyms, so beating the, at least 16 of **Conus marmoreus Linne,1758**, **Conus magus Linne,1758** and the 23 for **Conus textile Linne,1758**. But the record is without any doubt **Conus mediterraneus Hwass,1792** alias **Conus ventricosus Gmelin,1791** with its 74 synonyms!! 12 of which had been named in 1847 and 11 in 1882.

Ack. Rossiniana, July,1985

COLLOQUIAL NAMES OF JEFFREYS BAY SHELLS

by Laurie Smith

When you go shelling at Jeffreys Bay and you meet local residents and discuss your 'finds' with them, scientific names as we use them are unfortunately lost on these people. If however you show them your finds, the reaction is most encouraging because they will immediately tell you what it is known as locally.

These colloquial names given in the list are fascinating, especially after researching the origin of the names.

Jeffreys Bay shell names can be divided into three periods. The first being prior to 1945 when the farmers and their families came for a holiday to the sea from the Free State or the Karoo. The wives collected shells primarily to use them instead of beads for their crocheted doilies.

After 1945 and the arrival of Charlotte Kritzinger, who made the local people conscious of the value of shells, shell ornaments were then initiated as a home industry locally. The local names were therefore primarily created for communication among members of the same family which later also became part of the local language of the people, to facilitate the collecting of the shells for specific objects of "art".

The third period coincided with the arrival of the surfing clan and the busloads of tourists. Shells were strung as beads and the ornaments became smaller.

The coloured community at Jeffreys Bay is primarily Afrikaans speaking and although the English names are given first, the Afrikaans names of the seashells are more readily used locally.

Although I recorded most of the names personally, I have included some from Kennelly's book and also from *Sea Shells of Southern Africa* by Kilburn and Rippey.

I must also thank the ladies of Jeffreys Bay and especially Anna Blom for their assistance and the friendly way in which they gave me their valuable time.

REFERENCES:

1. KENNELLY D H — *Marine Shells of Southern Africa*, Books of Africa, 1969, p.22.
2. KILBURN AND RIPPEY : *Sea Shells of Southern Africa*, 1984. McMillan. (P)

ENGLISH	AFRIKAANS	SCIENTIFIC NAMES
False Teeth	Valstande	Segments of Amphineura
Plates	Borde	All Patellidae
Black plate	Swart borde	Patella tabularis
Pink plate	Pienk bord	Patella miniata
Spoon	Lepel	Patella cochlear
Spoon	Opskelepel	Patella compressa
Spoon	Swartpuntbakkie	Patella oculus
Hat or tortoise	Hoetjie of skilpad	Patella granularis
Venus Ear	Siffies	Haliotis spadicea
Abalone	Perlemoen	Haliotis midae
Surfer's Button	Knopie	Amblychilepas scutella
Hippie Beads		
Dolly Vardens	Hippie-krale	All Fissurellidae
Duck foot	Eendvoet	Diodora elizabethae
Top	Toppie	Trochus species
Strawberry	Aarbei	Clanculus puniceus
	Arikreukel	Turbo sarmaticus
Berries	Berrie	Tricolia kochi
Dresden	Dresden	All Epitoniums
Violet shells	Bloubottels	Janthina species
Screw	Skroef	Turritellidae
Chinese hats	Jongvrou-pram	Calyptraea chinensis
	Ouvrou-pram	Calyptraea heliconidae
Coffee bean	Koffiepit	Crepidula porcellana
Fish-eye	Visoog	Polynices didima
Purple-eye	Persogie	Natica queckettii
Brown-eyes	Bruinoogies	Natica tecta
Giant owl	Grootuil	Cypraea fuscudentata
Sweethearts		Cypraea fimbriata
Mermaids tear	Seemeid traan, traandrappel	Trivia oryza
Jam Tarts	Jemtertjies	Phenocolvolva species
Baby tart	Baba-jemtertjie	Primovula beckeri
Baby toes	Babatoontjies	Triviidae
Boxing gloves	Bokshandskoene	Tonna variegata
Hen	Hen	Phalium labiatum iredalei
Paper Nautilus	Kamskulp	Argonauta argo
	Ramshoring	Spirula spirula
Butterfly wings	Vlindervlerke	Donax sordidus
King	Koning	Nassarius speciosus
Queen	Koniging	Nassarius pyramidalis
Rice	Rys	Small Columbella and Marginella sp.
		Phalium zeylanicum
Cock	Haan	Argobuccinum pustulosum
	Lê-os	Cymatium klenei
Shoulders	Skurwejantjie	Cymatium doliarium
Jeffreys Bay's large shell	Skouers	Charonia lampas pustulosa
Stag	Jeffriesbaai se groot skulp	Pteropupura uncinarius
Coral	Takbok	Coralliophila fritschi
Guinea fowl	Koraal	Babylonia sp.
Turkeys	Tarentaal	Burnupena pubescens
	Kalkoentjies	Bullia annulata
Rosebud	Bobbejaanboud	Demoulia ventricosa
Football	Roosknoop	Demoulia abbreviata
Wheat ear	Voetbal	Nassarius capensis
	Koringaar	Vexillum sp.
Tick	Veldbosluus	Nassarius kraussianus
Wheat	Koring	Nassarius speciosus
Pupa	Papie	Latirus bairstowi
Pig	Vark	Olividae
Dates	Dadelpitte	Mitra sp.
Sandpigs	Sandvarke	Marginella sp.
Basket steps	Mandtjie-trappies	Cancellaria semidisjuncta
Steps	Trappies	Cancellaria foveolata
Carrots	Wortels	Clavatula sp.
Tassels	Osse	All Conidae
Owl	Uil	Bulla ampulla
White pig	Witvark	Pseudacteon albus
Tortoise	Skilpad	Umbraculum sinicum
Ostrich plate	Volstruisbakkie	Arca obliquata
Safety belt		Atrima squamifera
Angel wings	Engelvlere	Lima lima
Pearl oysters	Pereloester	Pinctada capensis
Fans	Waaiertjie	Single valve Pectinidae
Ghost hands	Spookhandjies	Thecalia concamerata
Fancy petal	Skoenlapper	Donax serra
Pink angelwing	Pienk-engelvlere	Tellina alfredensis
Elephant tusk	Olifanttrand	Dentaliidae

CONCHOLOGY VERSUS MALACOLOGY

by David Freeman

Mrs Harris of Anerly, on the Natal South Coast, asked me one day if the MAL- in Malacology has the same connotations as the MAL- in Malodorus.

Shellers, and their non-shelling families and long-suffering friends, can be forgiven for making the connection. She also asked what the difference is between Malacology and Conchology. These two easy-sounding questions resulted in some pleasurable exploration through dictionaries and biographies, and into unexpected side-tracks.

The first question is fairly straightforward, a matter of origins, where it is pure coincidence that MAL- just happens to be the same in both cases, but with a different meaning and origin:

MALODOROUS comes from two Latin words:

MALUS = evil

ODOR or ODOS = smell, especially a nasty one.

MALACOLOGY comes from the Greek, and is actually a contraction of MALACOOLOGY. This in turn is a combination of three words. Unfortunately, when we try to write translations from classical Greek, our alphabet forces us to use approximations of some of the specialised letters that the Greeks had for distinguishing the sounds of their language. In the process, some of the nuances are lost on us modern barbarians. So much for our 20th century Western civilization! As I was about to say, when I got side-tracked, the three Greek words are:

MALAKOS = soft

ZOON = a living (animal)

LOGOS = a word, in the sense that it is the verbal expression of an idea or concept; hence, in this context, a treatise or dissertation, or scientific study.

The subtleties of Greek are such that one could produce a whole 'logos' on the word LOGOS itself. Christian theologians and philosophers, for instance, have used it in explaining the fine distinctions within the concept of the Trinity, Logos being the "Word" of God expressed in the form or "Person" of Christ. But that is another story, requiring an understanding of the scholastic view of the nature of things. Again I am getting side-tracked.

The second question asked by Mrs Harris, about the difference between Malacology and Conchology, was going to get a quick and easy answer, but I thought it might be interesting to check when and how these terms first came to be used, and soon found myself wading through a muddy swamp of French pedantry that had been made even more

turgid by the linguistic shortcomings of the English-speaking savants who took over those terms.

The words were originally coined by Frenchmen in the 18th and 19th centuries and it is evident from the context in which they were used that they were both intended to mean the same thing, namely the study of molluscs.

Without any sound etymological basis, there seems to be a tendency for us in the English-speaking world, and certainly here in South Africa, to use Conchology to mean the study of shells only, and Malacology to mean the study of the anatomy of molluscan animals.

The term CONCHYLOGIE was coined in 1742 by French author D'Argenville, who explained that it was derived from CONCHA, or CONCHYLUM, which is a mollusc, and LOGOS, which is a discourse or treatise, or scientific study.

In 1775, Favart d'Herbigny defined CONCHYLOGIE as the science which deals in general with what he called 'testaceous animals' or those covered by a shell. In those days, that would have included some non-molluscs, of course, but let us not make things more complicated than they need to be.

Meanwhile the term had been translated into English as CONCHOLOGY and was being used as such between the 1750's and 1770's with essentially the same meaning as d'Herbigny's, i.e. the study of molluscs in the wide sense.

MALACOLOGIE was a word invented by another Frenchman, Rafinesque, in 1814, in a work on the classification of animals and plants. He introduced many new scientific terms which were not accepted by later workers, but the word MALACOLOGIE was recognised by De Blainville in 1825 when he reintroduced it as referring specifically to the study of molluscan animals, in contrast to his understanding of CONCHYLOGIE as covering only molluscan shells.

One might at this point ask whether it is, or should be necessary to make such a distinction. I for one must regretfully concede that we are being forced to accept the difference.

Generations of shell collectors, and amateurs (i.e. lovers) of shells have happily pursued their hobbies, totally unconcerned about the animals that construct the pretty natural objects in all those cabinets and display cases. And even in the scientific field, there have always been a substantial number of workers who give preference to shell characteristics in identifying and classifying species, and who seem to be in no hurry to verify their conclusions by first examining the animals which really are the basis of the classifications.

I am not saying that one shouldn't ad-

mire and collect shells for their beauty.

One would have to be particularly insensitive not to respond to their powerful aesthetic appeal, but it shows a very restricted vision and a narrow mind to ignore or to undervalue the identity of the animals without which the shells just wouldn't have been constructed in the first place.

Maybe we do too much collecting and in the process lose our due respect for nature.

REFERENCE:

S.P.DANCE: *Shell Collecting, an Illustrated History*. published by Faber, 1966. (4)

REHABILITATION FOR MRS GRAY:

The Apocryphal Story of the Labels of the Hugh Cuming Collection.

by A.C.van Bruggen.

On page 5 of the *Strandloper No.219 (January/March 1987)* Olive Peel repeats the old story of Maria Gray causing the Hugh Cuming collection in the Natural History Museum, London, to be-

come virtually useless by having the labels blown about by the wind while crossing an open courtyard. Recently Dance in his new book *A History of Shell Collecting (E.J.Brill / Dr.W.Bachhuys, Leiden, 1986)* has exploded this myth on pp. 130-131, concluding his relevant paragraph with the words "**I have no doubt the myth will prove to be virtually indestructible.**"

Dance, obviously plagued by pangs of guilt, quotes from a review of the first edition of his book (*Shell Collecting: An Illustrated history, Faber & Faber, London, 1966*) by Dawson (1967), who supplies convincing evidence that the story in question is not true. Of course, Dance's first edition has been widely distributed and has been quoted repeatedly, so that the myth has now penetrated throughout the literature. It appears that some people have even 'improved' the story, so poor Mrs. Gray is now known to be the ogre of conchology! However, Dance handsomely apologises in his passage on Maria Gray in the second edition of his book, which, incidentally, is virtually a new treatise on the subject.

I feel that we owe it to Mrs. Gray (and to Watson and Dance) to make this as widely known as possible so that this story will not creep into print again in a reputable journal such as the *Strandloper*. (4)

PERSONAL NAMES IN SOUTH AFRICAN CONCHOLOGY

Dr K H Barnard produced one of our society's interesting early publications, identifying a number of people after whom our shells have been named.

Unfortunately, some of the available information was very sketchy and some of the entries on the list are limited to names and initials without further details that might otherwise identify the persons concerned. Consequently we were delighted to learn from our own archivist and historian, Barbara Fouche, that the person honoured by the naming of **Bolma tayloriana** (Smith, 1902) is none other than her own Great Uncle Lexy!

Mr Alexander Anderson (1844 - 1938) was one of the more colourful characters who enlivened South African society from colonial days until quite recent times. As you can see from the dates just mentioned, he lived through the Victorian era and right until just before the second World War, and died at the great age of 94.

In fact, one might speculate that he was actually one generation further back than Great Uncle, as he would have been contemporary with her Great Grandfather rather than just her Grandfather.

Barbara writes that he was author of *WINDJAMMER YARNS, Some Incidents in the Life of South African Seaman aboard the Wooden Ships and Steam Tramps of Fifty Years ago*. Printed 1923.

She adds an extract from old papers found in the library of the Oceanographic Institute, Durban:-

HISTORY OF LOCAL NAMES OF SOME SOUTH AFRICAN FISHES by Romer Robinson.

"Many of the species taken outside on the fishing boats owe their names to Mr Alex Anderson, who may be regarded as the pioneer of deep-sea fishing in our waters. He tells me that when he started this business the men were ignorant of the names of the fishes they caught. Mr Anderson made it a point never to be at a loss for a name, and whenever a new species turned up he at once christened it. The names he evolved seem to have stuck, and have become firmly established.

The **Slinger (Chrysophrys puniceus)** arose in this way. These fish are at certain times numerous, and are frequently captured three and four at a time. The fishermen haul them aboard on such occasions without ceremony, and 'sling' them on the deck. This was quite enough for Mr Anderson, who promptly called them 'slingers'.

The **Scotchman (Dentex praeorbitalis)** was so christened because it was a slippery customer and a hard fighter. If any Caledonian takes exception to the

name, he must address Mr Anderson, not the writer.

The **Soldier (Dentex miles)** is a red fish, and got its name before the days of khaki.

The **Englishman (Chrysophrys anglicus)**, my informant tells me, reminded him of John Bull, being of a bluff profile and a ruddy complexion.

The **Dane (Chrysophrys dentatus)** has no significance. It was just the first name that occurred to its sponsor.

In the same way, when Mr Anderson was called on to look at a strange fish (**Elacate nigra**) he named it, in an inspired moment, **Prodigal Son** and it is still known by that name. I have often heard it named **Portuguese Salmon** and a fisherman once referred to it as a **Portuguese Son**. This perversion is a good example of the way names occur.

No one who did not know its previous history could possibly account for the last name. The well known **Seventy-four (Dentex undulosus)** Mr Anderson states was originally named by him, this name travelling to Cape waters. He says the fish with its blue longitudinal stripes reminded him of an old-fashioned 74-gun frigate, the stripes representing the rows of guns.

A small brown fish (**Holocanthus**) is the **Old Woman**, I asked Mr Anderson if this was a term of endearment. He said he feared it was just the opposite. The men regarded the fish, which is not edible, as a "nuisance."

This gives us an insight into the character of the real human being far more definitely than a name on a list could do.

Thanks, Barbara for sharing this with us.

EDITORIAL

Firstly I must apologise to Mr Limpus for ruining his article by referring to *Conus excellus* instead of *Conus excelsus*. I will endeavour to do much better on the article on the Festilyria.

A letter from the Southern Natal group tells us that they will be having their 100th meeting of the group this October, this special meeting will be held at the home of Mrs Kay Eastwood. The group will be celebrating its 10th anniversary in July, 1988.. CONGRATULATIONS.

As one of the editors of the Strandloper I attended the AGM of the Conchological Society in Durban 25th July. It was a wonderful experience meeting all the people with whom I have only corresponded. You will notice that the new secretary of the Conch.Soc. is Olive Peel whose writing helps fill our Strandloper quota. I met Barbara Fouche who is the historian of the society and she was nagging everybody for information for her files. The society can only benefit

from her devotion. Olive Meyer whose presentation of the financial report made sense of all those figures that normally bore everybody to death. She is also doing a good job at keeping the membership cards up to date. If you have any problems she will sort them out in no time for you. Val van der Walt prepared a display of 'Kilburnalia', this was a selection of shells that were named by Dr Kilburn of the Natal Museum, or that were named after him. Dr Kilburn in his turn presented the annual report which you will find in this edition of the Strandloper. It was refreshingly different this year in that it dealt with new editions to, and corrections to our molluscan fauna. Dr Dai Herbert was there too and he has been working on a paper on the Solariella group which should be printed by the end of the year. We will keep you informed. Sandy Muller of the East London Museum was also present at the meeting. She is busy naming two new shells. Laurie Smith, education officer of the Pretoria Zoo represented the Transvaal and made a lot of suggestions. Geoff Wallace kept everybody in order. This was the first time in the 29 years of the society that there were so many regional members present at an AGM. It was an historic occasion.

As 1988 will be our 30th anniversary, we are planning a special Strandloper and would welcome any suggestions from members on what the content should be.

The photographs of the live *Cypraea capensis* in the last Strandloper were all taken by Cedric Robinson of Cape Town.

The Durban Group of the Conchological Society held its annual general meeting on Saturday 10th October, 1987 and elected the following office bearers:

Chairman	Maureen Purdon
Vice Chairman	Barbara Fouche
Secretary	Olive Peel
Treasurer	Dawn Brink
Librarian	Markus Lussi
Scientific Off.	Val van der Walt
Bring and Buy	Andy Keppie

30TH ANNIVERSARY EXHIBITION- APRIL 1988

The CSSA will be holding an exhibition in Durban in April 1988 from the 18th to 23rd April, both dates inclusive.

It is the wish of the Executive (Society) that as many exhibitors as possible take part in order to make this the biggest showing of shells yet seen in Southern Africa.

Exhibits may be prepared for showing by individuals and anyone interested in taking part must please contact Markus Lussi, 15 Longwoods Drive, Durban North 4001, or telephone (031) 848057 (home) or (031) 815911 ext.1128 (office).

SOUTHERN NATAL GROUP SHELL NEWS

The AGM of the Conchological Society of Southern Africa was held on July 25 in the Durban Museum. Five members of our Southern Natal Group were privileged to attend this meeting, in the newly opened lecture hall at the museum, which is celebrating its centenary.

There was much discussion with old Durban and Pietermaritzburg friends, and we met members from Cape Town, Pretoria and Port Elizabeth. Congratulations go to our Chairman Geoff Wallace who was re-elected as the Director of the C.S.S.A. Committee.

We are urged to support the Society's magazine "Strandloper" in writing articles. We heard of yet more scientific name changes to South African shells... depressing news to collectors who must relabel their shells and exercise their brains in erasing old name memories for new!

1988 brings in the 30th Anniversary of the C.S.S.A., but the hoped-for R.S.A. stamp issue commemorating this will have to wait until 1989.

We on the coast look forward to our 9th Anniversary this week when we meet at Eric and Viva Balsan's home in Margate on Saturday, August 8 at 2.30p.m.

Recent activities of our group include three talks, two by Geoff Wallace on the family Muricidae at his home, in May and the family Naticidae at Doris Smith's home in July.

Margaret Johnson described shelling in Southern Spain and the Channel Islands with a display of finds. We also showed the film on marine life of the Living Planet series now on TV.

The outings to Oslo Beach in June and Munster in July, though not fully attended, brought many interesting new finds. We are reminded that there is a restriction on the collecting of any live shells by the public. The Natal Parks Board issues a yearly free permit which entitles the bearer to 3 of any species per year.

NO LIVING COWRIES MAY NOW BE TAKEN, HOWEVER.

At least one of our members records the habits of living specimens in a marine tank. A Natal Parks Board permit is also required for this.

Here is a summary of future events.:

Saturday, August 8 at 2.30 pm - Eric and Viva Balsan's home (9th Anniversary meeting)

Sunday, August 9. Outing- Meet at 8.30am. Riviera, Sea Park for Pumula Hotel area.

Saturday, September 12 at 2.30 pm - Port Shepstone Library Activities Room.

Talk on family Mitridae by M. Johnson. For further information telephone 0391-51100 after hours or 0391-3568.

POLITICAL SEA SHELLS.

Whilst attempting to identify the many shells collected in May from the South Coast of Spain and the Channel Islands, I paged through several books and was diverted by the beautiful shell **Thatcheria mirabilis** with the common name Miraculous Thatcheria!

Although it is exclusively Japonic, it brought back memories of the fierce election campaign we encountered in the UK this May. The shell name was just so appropriate.

Alas I looked in vain for further political shells, hoping to compile a list, but there was only the Genus *Nassa* that faintly reminded one of the long deceased Nasser of Egypt. (👉)

OOS-KAAPLAND NUUS

Ons het 9 Mei ons algemene jaarvergadering gehad en die volgende lede is vir nog 'n jaar herkies:

Fred Graeve	—	Voorsitter
Brian Hayes	—	Onder-voorsitter
Sarita Loots	—	Sekretaresse
Anne Butler	—	Tesouriere
Erica Joyce	—	Biblioteekaresse

Die Oos-Kaapse groep het 'n heel bevredigende jaar agter die rug. Ons het heelwat sukses gehad met ons 'Brighton Beach Fossil'-projek en kon ons heelwat voeëbeelde aan Dr Kilburn stuur. Op die oomblik is dit effens onveilig om nog voorbeelde te versamel, maar ons hoop dat ons weer binnekort onverstoord sal kan voortgaan.

Ons het ook aan Dr Hart van Amerikika se versoek voldoen en het ons 'n redelike volledige versameling van ons Oos-Kaapse Veneridae-familie aan haar gestuur. Verder was ons gelukkig om drie nuwe lede vir ons groep te werf. Die jongste lid, Thomas Jeffrey, het 'n baie skaars verskynsel by Schoenmakerskop opgetel, 'n linkse *Clionella* bornii.

Die uitstappies die afgelope jaar was meestal van 'n plaaslike aard. Ons het net een uitstappie na Cape St Francis onderneem maar die mis het ons baie gekortwiek. Op pad terug het ons ook by Jeffrey'sbaai 'n draai gemaak en daar, tradisioneel, heerlik versamel.

Ons ondervind moeilikheid met uitkenning. Dit word nie meer so goed bygewoon nie aangesien lede nie meer laat saans wil rondry nie. Op die oomblik gebruik ons 'n deel van ons maandelikse vergadering daarvoor. Miskien kan die Strandloper 'n voorstelkolom begin waaraan lesers kan deelneem. So mag daar goeie voorstelle te voorskyn kom wat deur die onderskeie takke beproef

kan word.

Namens ons Oos-Kaapse tak wens ons die hoofbestuur alle skes vir die volgende jaar toe. Ons weet julle het 'n geweldige taak op jul skouers en ons wil julle bedank vir die afgelope jaar se harde werk. Soms kry 'n mens darem vreugde ook uit ons stokperdjie en wanneer 'n mens so met die skulpe werk kan jy nie help om aan die woorde te dink nie:-

"And in the symmetry of their parts is found a power, like that of harmony in sound."

Wat betref die Strandloper kolom, dit was nog altyd ons beleid om lesers se briewe en vrae in die Strandloper te beantwoord. Daar kan tot fotos van skulpe aan ons gestuur word wat ons sal probeer identifiseer. RED.

It has always been the policy of Strandloper to print readers' letters and questions. Even photo queries are published and possibly identifications given. The last Strandloper had an article Juvenalia which was in reply to a reader's query. The photo was bad and I will attempt to have a better one in this issue. ED.

KAY EASTWOOD REPORTS FROM SOUTHERN NATAL.

We held our AGM on October 10th, in my home. This was also the 100th meeting of our little branch so we made it a celebration, with some wine to toast the group. The Office bearers remain the same, and the committee is very little changed, though our old friend Doris Smith asked to stand down, and we have two new committee members, namely Marina Lake and Margaret Johnson.

We are concerned that members of the public may not know of the new regulations regarding the prohibition of the collecting of live *Cypraea*, *Lambis*, *Cypraeacassis rufa* and *Ovulidae*, *Tridacna* and *Charonia tritonis* - some of these are obviously not found here, but nevertheless we will try and get the message across in our press, though whether this is adequate remains to be seen.

We also decided at our meeting to make a donation of R30 to the Natal Disaster Relief Fund, and we have also recently donated R50 to CSSA towards the publication of Strandloper, so we feel we are not doing too badly.

DID YOU KNOW...

that the biggest shell ever collected was a bivalve, a clam, **Tridacna gigas?** Coming from Sumatra it weighed 230 Kg. By the way you may see its brother in the Australian Museum in Sydney. It is more than one metre long in its biggest dimension and it weighs some 227 Kg.

Ack. *Rossiniana*, No.27.

175 YEARS ON.**FESTILYRIA FESTIVA or
FESTILYRIA DECEPTRIX.**

by Allan Limpus.

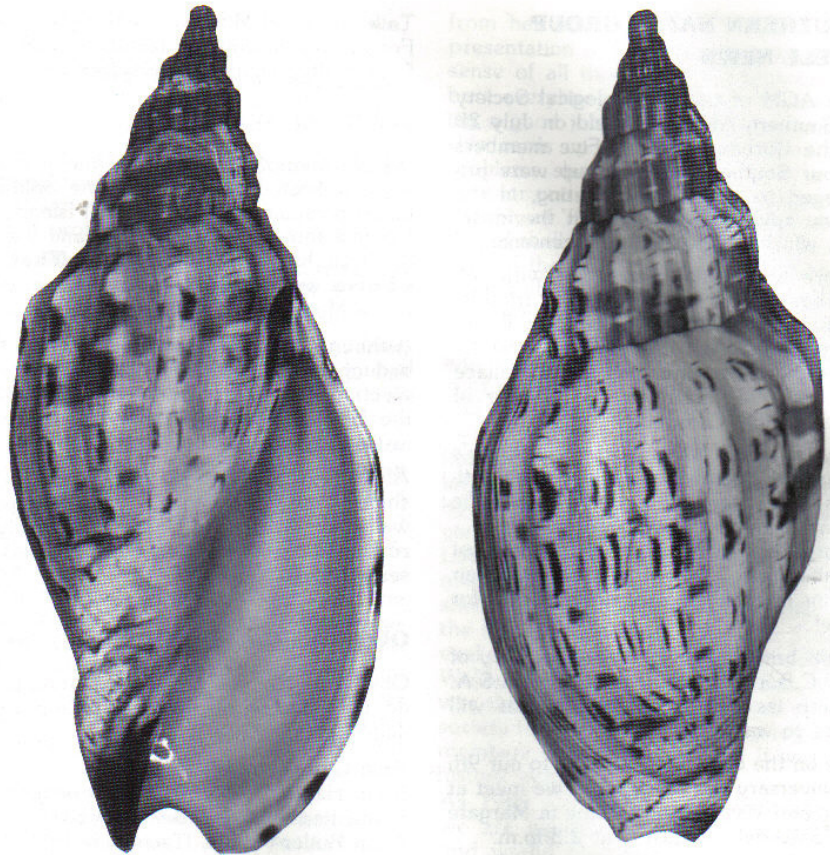
Ever since Jean Baptiste Antoine de Mo-net, Comte de Lamarck described **Fes-tilyria festiva** in 1811 there has been an aura of mystery surrounding it. For over a century the exact habitat was never certain and each given locality was questioned by many authors.

In 1849 Reeve (Conchologia Iconica 6) gives the locality as 'Africa? east coast'; then in 1855 Gray wrote 'East Coast of Africa'. Sowerby in 1897 in his 'Marine shells of South Africa' gives us 'Natal Coast', but in 1901 E.A. Smith, in an article in Malac. Society London gives the locality just as 'South east Africa'.

By this time, no doubt, shell collectors, both amateur and professional, student or professor, were becoming quite confused. But hope was on the way, and to help confusion reign supreme, in 1954 Pilsbry and Olsson wrote in an American journal 'Africa — exact locality unknown'. Now to really help, Barnard wrote 'the locality data by Sowerby (1897): 'Natal Coast' — is probably incorrect'.

However in 1960 a dead beach specimen was found on the south east coast of the Arabian Peninsula and was deposited in the American Museum of Natural History, New York. In 'THE LIVING VOLUTES' by Weaver and duPont, 1970, it is stated 'because of this confusion we have based our type locality on data accompanying a recently collected beach shell in the American Museum of Natural History, New York'. HURRAH! It now appears that something positive has at last been written as to the locality of this beautiful and mysterious shell.

Now for years it was known that several different shaped **festiva** were to be found, some broad and knobbed, and some slender with tubicles on the shoulder. Wise men of the day were of the opinion that this difference was due to the sex of the animal; boy-girl and all that sort of. However in 1981 Stefano Palazzi again started the debate by describing the slender form (in a rather abridged or simplified way) as **Festilyria deceptrix**. His sense of humour was at work as Deceptrix is Latin for de-



Festilyria deceptrix, Palazzi, 1981 Photographed by Allan Limpus.

ceptive, and Palazzi states in his article that more research has to be done 'to ascertain with sufficient precision the limits of the variability of the single species'.

The accompanying photographs are of **Fdeceptrix** which recently came into my collection. This shell was trawled live in 125 metres of water south-west of Socotra Island off south Yemen in the North-west Indian ocean. I do not have **F.festiva** in my collection for comparison, but when I am sure of the locality of their habitat, maybe some of the keen scuba divers in my local club will come over some week-end and we can dive a couple.

The dimensions of this shell are:

length 123,6mm
width 53,2mm
height 43,6mm

Festilyria deceptrix is a very beautiful shell, creamy fawn in colour with some brown and tan markings on the body whorl and the spire an almost solid orange/tan.

The aperture is paler cream, dark blotches at each end of the columella.

REFERENCES.

Dance, S. Peter-Shell Collecting — An Illustrated History

Weaver & duPont- The Living Volutes
La Conchiglia, November-December, 1981

September-October 1982. (4)

CYPRAEA CRUICKSHANKI

Olive Peel

Cypraea cruickshanki is normally known as the 'bubble' shell by crew members of the trawlers and come in peach pink and egg white. Now and again a specimen arrives on the scene with a spot or two. These shells are found when trawling at the 'Gate' a common name given to the fishing ground about 20 miles east of Durban and come from a depth of between 200 and 300 fathoms. They are found when the nets bring up seaweed etc. from the flat sandy bottom when trawling for prawns. For this reason they may be sand dwellers. No record has yet been received of them ever being found exposed, and so for this reason they are unlikely to be reef dwellers. This shell is named after Ray Cruickshank who lives in Gordons Bay at the Cape.

PRESIDENTIAL REPORT FOR 1987

In this and future years, I shall attempt to get away from the usual style of president's reports (which often tend to be a collection of banalities and clichés), unless of course there is anything really important to be said. Reporting on the society statistics will in future be undertaken by the society director. For my part, I shall rather use this opportunity to review taxonomic contributions, bearing on South African molluscs, that have been published in the scientific literature over the past year. Even when a review has appeared in the *Strandloper*, I shall nevertheless give a condensed summary. Here goes for the 1986-87 year:

Dai Herbert published two papers in this period, 'A revision of the southern African *Scissurellidae*' (*Ann.Natal Mus.* 27 (2):601-632, 1986) and 'Taxonomic studies on the *Emarginulinae* (Mollusca: Gastropoda: *Fissurellidae*) of Southern Africa and Mozambique. *Hemitoma*, *Clypidina*, *Tugali*, *Scutus*, *Zeidora* and two species of *Emarginula*' (*S.Afr.J.Zool.* 22(1): 1-13, 1987).

Using the scanning electron microscope, Dai recognizes 9 species of *Scissurellidae* in our waters. The four species previously known from here are reviewed (*Scissurella smithi* Thiele, 1912 = *S. jucunda* Smith, 1890), two new records are added (*Scissurella rota* Yaron, 1983, *Anatoma ?japonica* Adams, 1862), and three new species (*Anatoma yaroni*, *Sinezona dolio-lum* and *Sukashitrochus maraisi*) described. In his second paper two genera, *Hemitoma* (containing the species *scutellata* (Deshayes, 1863) and *panhi* (Quoy & Gaimard, 1843) and *Clypidina brevirimata* (Deshayes, 1863), are recorded for the first time, as are *Emarginula fenestrata* and *E.costulata* Deshayes, 1863.

The next part in my turrid series ("*Turridae of southern Africa and Mozambique. Part 3. Subfamily Borsoniinae.*" *Ann.Natal Mus.* 27 (2): 633-720, 1986) appeared, covering those genera characterised by awl- or dagger-shaped radula teeth. Of the 45 species and eleven genera reported, 24 species, two subspecies and one genus are new. J.H. McLean & R.N. Kilburn ("*Propodial elaboration in southern African and Indian Ocean Fissurellidae, with descriptions of two new genera and one new species.*" *Contrib. in Sci. Los Angeles County Mus.* 379: 1-12, 1979) cover the African and Indian Ocean species previously mislocated in *Amblychilepas*. Two new genera are

described: *Medusafissurella* for species such as *dubia* (Reeve, 1849) and *chemnitzii* (Sowerby, 1835), in which the front of the foot bears a mass of radiating tentacles, and *Dendrofissurella* for *scutellum*, in which these are replaced by a trunk with side-branches.

The only true *Amblychilepas* (in which the front of the foot totally lacks tentacles) now known from Africa is *A.platyactis*, a new species found in the intertidal region from False Bay to East London. The function of these tentacles, inconveniently situated for use in feeding, is unknown. Perhaps someone with marine aquarium can throw light on the question?

Bill Liltved described a number of new triviids and one ovulid ("*Six new species of Trivia from southern Africa*" *Veliger* 29 (1): 112-122, 1986, and "*A new Trivia (Triviidae) and Primovula (Ovulidae)*" from the South Atlantic and South Western Indian Oceaen." *Veliger* 29(4): 415-418. The species concerned are *Trivia magnidentata*, *T.khanya*, *T.multicostata*, *T.eratoides*, *T.virginiae*, *T.lemaitrei* and *Primovula diaphana*.

Terrence Gosliner dealt with two South African nudibranchs, one (*Melibe liltvedii*) new in "*Review of the nudibranch genus Melibe (Opisthobranchia: Dendronotacea) with descriptions of two new species*" (*Veliger* 29(4): 400-414, 1987) Roland Houart ("*Revision of the subfamily Trophoninae (Mollusca: Gastropoda: Muricidae) in southern Africa, with descriptions of four new species.*" *Apex* 2(2): 25-58, 1987) was based largely on the Natal Museum collection and on the existing types. In this paper, described species are reviewed (*Trophon beatum* Barnard, 1969 is unrecognizable, *T.? incertus* Barnard, 1959, belongs to the Turridae, and *T. johannthielei* Barnard, 1959, may = *T. pulchellus* Schepman, 1911), and new species *Trophon barnardi*, *Apixystus kilburni*, *A. transkeiensis* and *Afri-trophon inglorius* are described.

Material of the same species of *Conus* was treated simultaneously by A.J. da Motta ("*A new cone found off Durban, South Africa.*" *Publ. Ocas. Soc. Port. malac.* 7: 5-8, 1987) and R.G. Moolenbeek & H.E. Coomans ("*The rediscovery of Conus martensi Smith, 1884.*" *La Conchilia* 19 (216-217), 1987. Da Motta describes the species *Conus alconelli*, in recognition of the well-known collector Allen Connell, while Moolenbeek and Coomans consider it to be the adult of a known species described in 1884 from north of Madagascar and not since rediscovered. As there are indications that jugulars will soon be rent on the subject, I will refrain from attempting to pass judgement on

the question of who is correct.

Alan Beu ("*Taxonomy of gastropods of the families Ranellidae (=Cymatiidae) and Bursidae. Part 2.*" *New Zealand J. Zoology* 13: 273-355, 1986, but published January 1987) describes *Distorsio euconstricta*, a small species whose description is based partly on material dredged by the Natal Museum off Transkei and the Natal south coast. He also describes *Cymatium (Septa) closeli* from the western Indian Ocean (including Mozambique); however, the given differences between this and *C.hepaticum* are so minute and inconsequent that we have been quite unable to separate the two with any certainty.

Beu reinstates *Bufonaria crumena* (Lamarck, 1816) for the species otherwise known as *B. crumenoides* (Valenciennes, 1832), and by designating a lectotype has fixed the identity of the name.

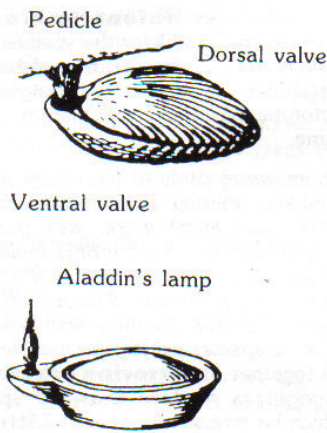
An imposing study of the mangrove periwinkles, utilizing field studies and detailed anatomical work, was published by David Reid ("*The littorinid molluscs of mangrove forests in the Indo-Pacific region, 288pp, British Museum (Natural History), 1986*). Dealing with the complex of species mostly previously lumped together as *Littorina scabra*, Reid recognizes no less than 20 species, which he refers to the genus *Littoraria* (which also contains rock-dwellers such as *kraussi*, *undulata* and *mauritaniana*). Of the mangrove-dwelling *Littoraria* species, three occur in our region, the true *scabra* (a large, broad species with white columella) and two narrower species with brown or purplish columella, *Littoraria intermedia* (Philippi, 1846) with coarser spiral ridges (17-32 on last whorl above periphery), and *L. subvittata* Reid, 1969, with finer, more even ridges, 40-60 in number. A fourth species, the highly variable *L.pallescens* (Philippi, 1846), occurs in northern Mozambique.

Finally I must mention a publication that unfortunately cannot be ignored (although most of us wished we could), *Atlas of the living olive shells of the world* by E.J. Petuch & D.M. Sargent (CERF: Charlottesville, 1986, 253 pp. 39 colour plates). The authors expand the number of recognised *Oliva* species to 300, but because of the poor illustrations and extremely superficial text most who attempt to apply this book to their olive collections are doomed to give up in dismay. Fortunately southern Africa has been largely overlooked, and only one new species is proposed for our region, namely *Oliva leonardi* from off Durban in 30 metres; this appears to be indistinguishable from variants of *Oliva paxillus* Reeve, 1850. *Oliva sairousa* is misspelled "*sairoosa*" throughout. (P)

BRACHIOPODS THROUGH THE AGES

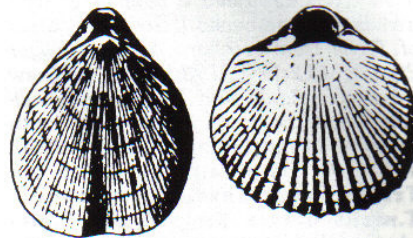
by Olive Peel

It is indeed strange that the brachiopod (lamp shell) although not a mollusc, but certainly resembling one in appearance, dating back 600 million years and managing to survive after all this time, is the least studied and the least sought after by shell collectors. Even marine predators give it a wide berth as the flesh has an unpleasant taste, and even in the absence of other food, fish reject this flesh as shown in laboratory tests.



Because the appearance of the shell is reminiscent of Aladdin's lamp, it is called "lamp shell". The brachiopod looks like a bivalve mollusc whereas it has little in common with true molluscs. The valves of the brachiopod are of unequal size and the arrangement of the internal organs differs considerably. It belongs to the phylum Brachiopoda. The animal is flat from the top to the bottom, there are some with hinges and others which are hingeless, depending upon muscles to hold the valves together. There is a stalk (pedicle) which bonds the animal to its substrate. These animals which have highly efficient digestive systems are very flexible, and are able to survive in almost any marine environment, and at any depths from about 4 000 metres to intertidal rock faces. They have been found in the icy waters of the Antarctic and in warm water. Because their metabolic rate is so slow they can survive on very little food and in fact have been known to survive for two years in seawater from which all suspended particles which they normally feed on, have been removed. Unlike bivalves, the brachiopod has no anus, but has digestive enzymes that break down the food before it enters the stomach. Whereas the bivalve has a left and right valve the brachiopod has two uneven valves, a front (ventral) and a back (dorsal) which do not open far. The dorsal

valve is usually the smaller and both valves taper to one end. The ventral valve projects over the back valve and has the opening for the pedicle which is used to attach the shell to its fixture (substrate). If the pedicle comes adrift from its moorings it can adapt to its next environment without any trouble at all. In fact if danger lurks or it becomes threatened with burial it can detach itself and take root somewhere else. Fossil species relied upon spines, weight and cement secretions if no pedicle existed. The pedicle is adaptable either for hard surfaces of soft mud and sand, but not for both. To-day's brachiopods are fairly uniform in appearance as can be seen from the illustrations.



There are two classes of brachiopods whose main differences are:

- i) **ARTICULATE** (with hinges such as, in the genus **Terebratella**) whose valves are hinged together by interlocking teeth sockets.



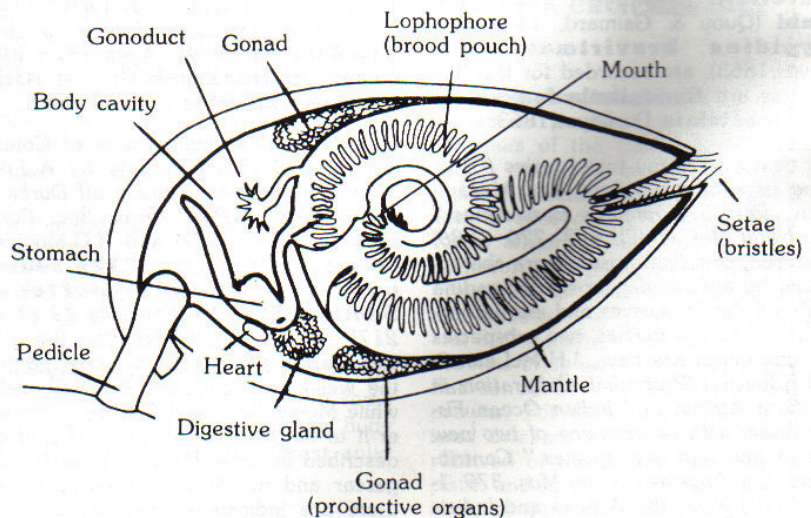
- ii) **INARTICULATE** (hingeless, such as **Lingula**) have valves which are held together by means of muscles. This genus has not changed in 400 million years. It burrows into sandbanks whereas the other genera of brachiopods cling onto some form of substratum. This hingeless brachiopod lacks teeth and has no internal support structures. The internal organs can be seen through the transparent shells.



REPRODUCTION

Sperm released by the male into the water is carried to the female in the currents. The larvae are then carried in the brood pouch (lophophore) to be released later into the water. The larva is only able to survive on its own for a few weeks and should it not find a substrate in this time on which to fix itself it then dies. Because the free swimming stage lasts such a short time the larva cannot be carried too far by the currents. Consequently the brachiopods are found in closely packed groups. The shell is secreted by the mantle enclosing the body. They bond themselves onto rocks, anything lying on the sea floor such as cans, logs, bottles, but the 'bottom dwellers' fix their pedicles onto gravel or shell fragments in the sand. The pedicle is not free moving but rather the shell rotates about it. If the substrate grain is large then the pedicle acts as a pivot but if the substrate is small, the pedicle can move with the substrate. Brachiopods were the most abundant form of life in prehistoric times. More than 30 000 species have been recorded whereas only 300 species exist today. (Q)

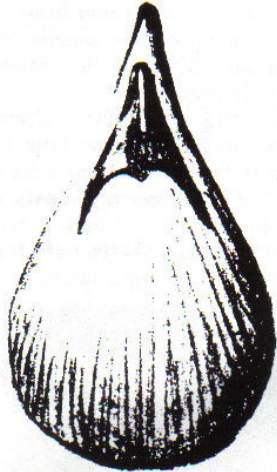
ANATOMY OF A BRACHIOPOD



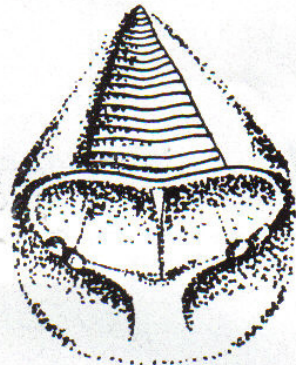
(ack: Anne Allardice after Joyce R Richardson)

A few examples of by-gone day brachiopods are given for interest:

1. Lingulepis pinniformis Differ little from to-days brachiopods: they were hingeless, although hinged brachiopods were more common during this period. The brachiopods were among the most abundant of fossils during this period.

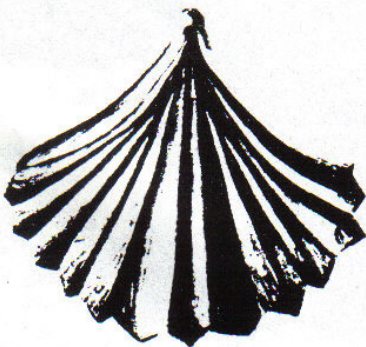


2a. Monomerella noveboracum Clark and Rued.



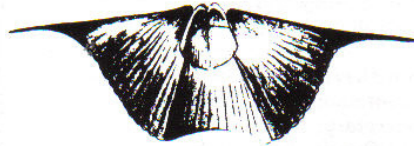
A hingeless brachiopod of the Silurian period - 400 million years ago. This period saw distinct change in genera.

2b. Rhynchotretra americana Hall.



3. Spirifer disjunctus Sowerby. Devonian period 350 million years. The internal case of ventral valve shown. This was the culminating period

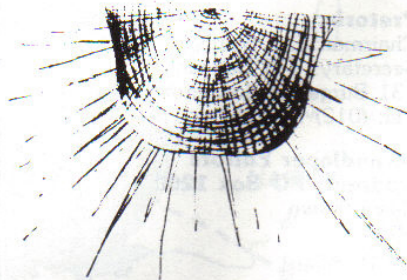
of brachiopod abundance and variety. Many of the Silurian genera have died out. The family **Terebratulidae** which still exists today had its beginnings in this period.



4a. Productus magnus Meek and Worthen.

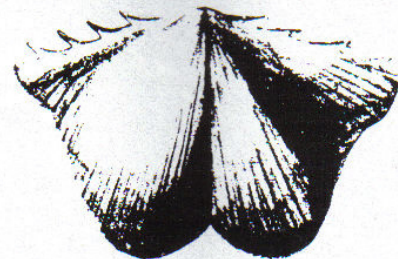
Carboniferous 270 million years. Most important genus of this period was the **Productus** which had a large number of species, among them the largest known brachiopod **Productus giganteus**.

The long spines helped to stabilize the shell on the seabed in fast moving currents. It was found in Europe and Asia. The spines and cementing secretion were endowments bestowed upon the brachiopods without a pedicle

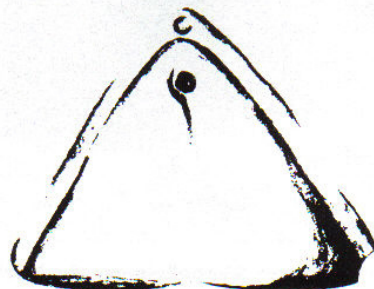


4b. Chonetes veneuiliana Norwood and Pratten.

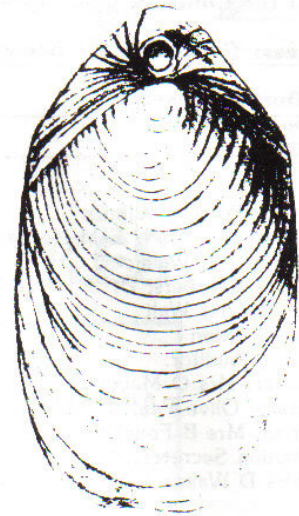
belong to the same group as **Productus**. Has short obliquely directed spines. This species died out at the end of the Permian (225 million years)



5. Anitnomia catulli Pictet. Jurassic period 135 million years belonging to the family **Terebratulidae**.



6a. Terebratula harlani Whitf. Cretaceous period 125-70 million years.



6b. Terebratella plicata Say. The most common of this period.



BIBLIOGRAPHY
 BARNARD KH: A beginners guide to South African shells.
 BRANCH MARGO AND GEORGE: The living shores of Southern Africa.
 IRRADIANS: Long Island Bulletin 1983/4 USA.
 RICHARDSON JOYCE R.: Brachiopods. Scientific American, Sept. 1986.
 SCOTT WB: Introduction to Geology. 2nd Edition.
 Fossil Drawings by Ms Debi Gallery (after Bruce Horsfall; An introduction to Geology by WB Scott, 1897)

GLOSSARY
Lophophore - organ of respiration, used as a brood pouch for larvae and as a fat storage organ. The tentacles are used to generate water currents inside the two valves, thus sweeping food particles toward the mouth whilst directing waste products out of the mantle cavity as there is no anus.
Pedicle - Stalk used to bond the animal onto a surface.
Dorsal Valve - back valve - smaller of the two valves
Ventral Valve - front valve - larger of the two valves. (Q)

The Office Bearers of the Committee of the Conchological Society of SA:

Address: Conchological Society of SA
c/o Durban Museum
PO Box 4085
Durban
4000

President: Dr R N Kilburn
 Vice President: Mr N E M Newman
 Director: Mr G Wallace
 Executive Members: Dr D Herbert
 Mrs V van der Walt
 Ms M J Purdon
 Honorary Auditor:
 Treasurer: Mrs O Meyer
 Secretary: Olive Peel
 Historian: Mrs B Fouche
 Distribution Secretary:
 Mrs D Wakus Lussi

Johannesburg Members write to:
 Kenneth Brown
 c/o 1 Arend Avenue
 Windsor Glen
 Randburg 2174

Cape Town:
 Chairman: Mr V Millard
 Secretary: Deirdre Richards,
 7 Sunningdale Road, Kenilworth 7700
 Telephone: (021) 71 4760

Eastern Cape:
 Chairman: Mr F Graeve
 Secretary: Ms M Stuart,
 30 Mill Park Road, Mill Park,
 Port Elizabeth 6001
 Telephone: (041) 33 5032

Border and Transkei:

Chairman: Mr G Kirchoff
 Secretary: Mr N Newman,
 42 Irvine Road, Bonnie Doone,
 East London 5421
 Telephone: (0431) 5 6274

Southern Natal:

Chairman: Mr G Wallace
 Secretary: Mrs K Eastwood
 PO Box 9, Anerley 4230
 Tel: (0391) 3568

Durban:

Chairman: Ms M Purdon
 Secretary: Olive Peel,
 21 Clark Road,
 Flat 4, Coral Haven
 Durban, 4001

Pietermaritzburg:

Chairman: Dr R N Kilburn
 Secretary: Mrs E Coetzee
 PO Box 12014, Oribi, Pietermaritzburg
 Tel: (0331) 6 1179

Pretoria:

Chairman: L J Smith
 Secretary: T R Duncan
 131 Burger St, Lyttelton 0140
 Tel: (012) 62 1548

Strandloper Editors
Address: PO Box 1200
Cape Town
8000

Mr V Millard
 Mr D Freeman
 Editorial consultants: Dr R N Kilburn
 Dr Herbert

CREEPING CREPIDULA

Creeping around looking for a free ride can sometimes be a dangerous occupation. A **Crepidula porcelana** was found having a piggy-back ride on a 'porcelaine'.

('Porcelli' = pig. It is interesting to note that the word porcelaine was given to the shiny pottery that came from China because it reminded the people of the shiny Cypraea. These in turn reminded them of little pigs)

There is many a slip twixt Crepidula and lip as an unsuspecting little fellow found out to his cost. He was embedded in the lip of a **Conus algoensis simplex**. Even lying on you back is no protection from a **Marginella nebulosa** in the process of building a house.



Crepidula embedded on the back of Marginella nebulosa.



Crepidula embedded in the lip of a Conus algoensis simplex.



Crepidula on the back of a Cypraea fuscorubra