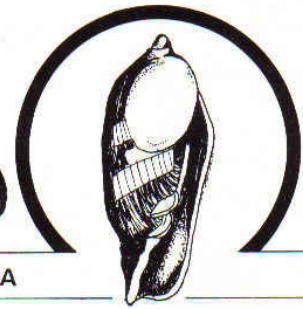


The Strandloper

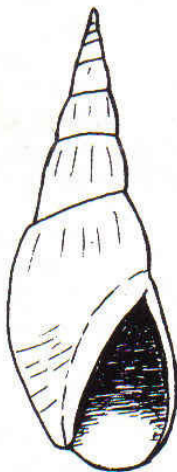
BULLETIN OF THE CONCHOLOGICAL SOCIETY OF SOUTHERN AFRICA



No. 198

OCTOBER/NOVEMBER 1979

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Bullia digitalis



Bullia pura



Bullia rhodostoma

MOLLUSCS ON EAST CAPE SANDY BEACHES

by Dr A McLACHLAN,
Zoology Dept., University of Port Elizabeth

Most of the shorelines of Algoa and St. Francis Bays consist of long stretches of exposed sandy beaches backed by dune systems. Wave action is very heavy, resulting in a dynamic and unstable habitat for any species attempting to colonise these beaches. Consequently the beach fauna is made up of a few tough species capable of fairly rapid movement. Although the beach fauna is thus poor in species, numbers of individuals can be very high, attesting to the high inputs of food onto some beaches.

Typically the fauna is dominated by filter feeding bivalves of the genus *Donax* and scavenging plough shells of the genus *Bullia*. *Donax* species feed on the large concentrations of phytoplankton and particles in the surf water while *Bullia* species subsist mainly on stranded jellyfish, bluebottles and other organisms.

Donax serra, the sand mussel, is the largest species in the genus and occurs often in extremely high numbers. The

small *D. sordidus* is quite common around the low tide level. It migrates up and down the shore with the tides in order to stay in the swash zone where conditions are optimal for filter feeding. *D. serra* does not normally move up and down the shore with the tides but occupies a position around the middle of the shore during spring tides and gradually moves down to occupy a slightly lower position near the low tide level of neap tides.

Both species spawn twice per year, in summer and winter. *D. sordidus* has a short life cycle of about one and a half years, and grows very rapidly. *D. serra* lives somewhat longer, probably three to five years on average.

These mussels are preyed on extensively and form the main food source of birds and fishes feeding on sandy beaches. Oystercatchers and gulls consume whole animals, oystercatchers prising the shells open and gulls dropping them onto the sand from a height of about 5m to break

them. Sanderlings, summer migrants to our shores, nip the tips of projecting siphons of *D. serra*. In this way they efficiently crop the *Donax* without causing mortality. Large duckbill rays easily crush adult sand mussels in their powerful jaws and the daintier sandsharks eat mainly the tiny mussels.

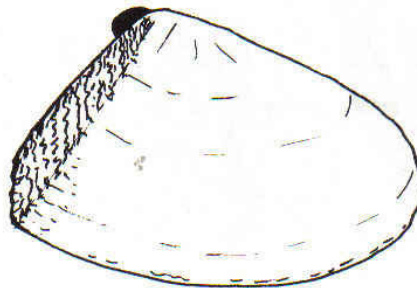
Three species of *Bullia* occur intertidally. *B. rhodostoma* is the common intertidal species while *B. pura* and *B. digitalis* are more typical of the surf zone and tend to move onto the beaches only during autumn and summer respectively. When they occur on the shore all three species exhibit intertidal movements, riding the swash up and down the shore with the tides. This movement is greatest in *B. rhodostoma* where the population moves from the lower shore at low tide almost to the top of the swash zone during high tide, following in stranded food. During this tidal movement the large foot, bloated by the intake of sea

(Continued on page 2)

(Continued from page 1)



Donax sordidus



Donax serra

water, is expanded and used as a sail to ride the swash currents and then to bury rapidly at the end of each movement.

All three species spawn once per annum, in spring or summer. *B. rhodostoma* spawns in early summer and the females lay egg capsules in the sand. Tiny *Bullias* hatch and by January they are present on the shore in large numbers at 2–4mm shell length. Growth is slow, a large female reaching a length of 50mm at over 20 years. Females grow larger than males and this may be due to early death of males or sex change with age. *B. digitalis* and *B. pura* spawn in the surf zone and juveniles are never found on the beach.

These three species of *Bullia* presumably avoid competition by occupying different levels and only in summer do they overlap to any extent. Of the three, *B. rhodostoma* is the hardiest to extreme temperatures and drying out and it is well adapted to the rigours of intertidal life.

Few animals seem to prey on *Bullias* and the only known predators are swimming crabs and possibly sandling and sandsharks.

Most of these species are fairly plain in colour, their shells being white, beige or pale green. *D. Serra*, however, has an interesting colour morph with red umbones and *B. digitalis* exhibits some attractive variations including fawn, purple, white and combinations of these colours with brown axial streaks. *B. digitalis* is also distinguished by its serrated operculum. Both *Donax* species have blue to purple shading inside their valves and in *D. sordidus* this is attractively mixed with yellow.

Maximum shell lengths recorded on East Cape beaches are 65mm and 29mm for *D. serra* and *S. sordidus* and 55mm, 46mm and 30mm for *B. rhodostoma*, *B. digitalis* and *B. pura*. These species grow to different sizes in other regions; *D. serra* for example, exceeds 80mm on the West Coast.

Although the number of species on the exposed sandy beach is low in comparison with most other intertidal environments, their interesting adaptations and great success in this rigorous but exciting part of the shore make them worthy of study and admiration.

FOR SHELLS WITHOUT SMELLS

Some years ago the Hawaiian Shell News published this tip on how to remove the smells from those exasperating shells from which we all suffer sooner or later.

Get a small quantity of Ethyl acetate from your pharmacy. It is sold as Acetone or, if you want to be extravagant, ask for nail varnish remover and pay several times the price.

Rinse the shell with cold water and pour about a tablespoonful of acetone (depending on the size of the shell, of course) into the upturned aperture and leave it to soak for about ten minutes.

Rinse the shell out again with plain cold water and drain it well and then put one or two drops of the Acetone into the shell as a final fixer.

A glass medicine dropper or hypodermic syringe would be useful for handling the Acetone, but be careful about plastic equipment as it might dissolve in the fluid.

TWO MORE SHELL BOOKS REVIEWED

SEASHELLS: A Naturalist's and Collectors' Guide by Peter and Patricia Newell; published by Phaidon; R15,40 plus tax.

The authors have aimed at a reasonably comprehensive survey of the most important families of molluscs. Both the shells and the living animals are shown in full-colour photographs and there are interesting and well illustrated chapters on the habitats and habits of many species including our own Patellidae. A pleasant surprise is a very good chapter on bivalves. The illustrations in this book are particularly good and the generally favourable impression is not spoiled by two or three minor errors in the captions and two cases where the transparencies have been reversed, creating "sinistral" shells. A useful and attractive addition to your library.

THE SHELL COLLECTOR'S GUIDE: An Introduction to the World of Shells by S. Peter Dance; published by David and Charles, London; about R13.

This is a superb "how-to" book by a well known author and includes a remarkable range of background information for anyone starting to collect shells. It will also delight and inform the more experienced collector. Apart from the basics of collecting, cleaning and storing, there are chapters on dredging, the structure of shells, marine aquaria, valuing and buying shells, shell clubs and exhibitions, reproductions of plates from classical shell literature of the Sowerby's, Reeve, Kiener and Chemnitz. It is beautifully printed and has one of the most attractive dust jackets I have seen. A book to enjoy.

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DIVING FOR SHELLS EAST BAY, QUEEN CHARLOTTE SOUND, NEW ZEALAND

by Debbie Walton

East Bay is one of the largest bays in Queen Charlotte Sound. We prepared to dive in search of shells near a small cove on its northern side.

As the sea bottom sloped down gradually, when we left the boat, the water was only ten feet deep. We were to follow a rocky reef out for a way and then turn and swim along parallel to the shore. The reef glowed red as we swam along it, thousands of tangled calcareous tubes of the polychaet *Pomatoceros cariniferus* had their fine red tentacles extended in search of food. These polychaets harbour many different marine organisms and shells, especially beneath ledges, because their tangled nature provides a firm anchorage. *Chlamys Zelandiae* is particularly abundant, harboured amongst the polychaets. These Fan Shells are often beautiful colours, pinks, yellows and purples, but this colour is hidden by brown sponge growths attached to their shells. Looking amongst the polychaets I could see live pairs of the small, uncommon *Cardita aoteana*, beautiful because of its deep ribbed shell.

Swimming along the reef slowly I came across some narrow channels bored in the soft sandstone. These are the homes of one of our many rock-borers *Hiatella arctica*.

Along the edge of the reef, glinting in the dappled sunlight were several of our small Paua *Haliotis virginea*, their iridescent inside glinting amongst other bleached shells gathered in little pockets of sand. At forty feet the reef began to diminish in size so we started to search among the many discarded shells covering the muddy bottom. There we found some live Scallops, *Pecten novaezelandiae*, settled in the mud with their valves slightly apart, their many blue 'eyes' showing. We collected a dozen of these for dinner and then moved on. By the time we reached fifty feet the sea bed was sloping away sharply and the water began to get murky. Then I noticed something white and fairly large not too far away. It was an

abandoned pair of *Panopea zelandica*. The valves were chalky white with one end gaping open — the gap to accommodate this burrower's siphon. We later found more *Panopea* valves, some single and some in pairs — all abandoned.

Dad and I then noted some large holes in the mud but although we tried to dig up whatever made one of the holes, it was buried too deeply. I suspect it was a live *Panopea* as they live very deeply buried. On the side of a large rock was a deep hollow filled with shells and while searching here I found a pair of the rare *Notocallista multistriata* which only came to my attention due to its unusual purplish blotches. Slowly we made our way up to shallower waters of about 25 feet and it was here that we found the most shells. There were scattered boulders covered in *Pomatoceros* which obviously harboured the File Shell *Limatula maoria*. The bottom was littered in these, their pearly whiteness glinting in the sunlit water. Here too, I found a pair of the round cream and brown *Diplodonta globus*, a rare and very fragile shell.

As in most of Queen Charlotte Sound there was an abundance of the brown zig-zagged bivalve *Venerupis largillierii*. Also abundant was one of our striking bivalves *Tawera spissa*, their always different dark patterns on lighter background giving a carpeted effect on the bottom. As we made our way up to ever shallower waters the Turret Shell *Zeacumantus subcarinatus* could be seen sluggishly making its way across scattered rocks seeking shelter. Limpets also began to appear, both discarded and live. Three varieties were found, *Cellana ornata*, *C. denticulata* and *C. radians*.

Now our dive had to end as I ran out of air, I surfaced slowly, watching the shells and rock lose definition and become a many-hued haze below me.

N.B. As in many bays in Queen Charlotte Sound, this area had a mixture of Rock and Sand/mud shore both above and below low tide zone. This provides an excellent cross section of marine fauna — from both the rocky and sandy environments.

EXCHANGES WANTED

Carmen Blanchard, 129 Rue Michel Ange, 75016 PARIS, FRANCE offers cones, cowries and murex in exchange for S.A. and Moçambique shells.

Mr J. Trondle, B.P. 1753, PAPEETE, TAHITI, offers Polynesian shells in exchange for ours.

John Vaughan, Box 157, ALLENDALE, S.C. 29810, U.S.A. is looking for someone who can supply him with *Strombus oldi* Emerson which is understood to be a Somali shell.

Israel Yeroslavsky, 9/14 Tivoli Road, SOUTH YARRA, Victoria 3141, AUSTRALIA, asks for specimens of *Conus algoensis* and *scitulus*, *Cypraea algoensis*, and S.A. volutes.

Mr R. Platenkamp, Eikenlaan 63, BORCULO (Gld), HOLLAND offers various exotic species as exchanges.

Mr David Field, 82A, Denmark Villas, HOVE, East Sussex BN3 3TJ, ENGLAND, would like to hear from anyone interested in British shells.

Beverly Martin, 18 Aragon Road, AMPTHILL, Bedfordshire MK45 2TL, ENGLAND, would like to exchange marine shells.

Gilbert Ernst, Tour d'Ivoire C 4, Place Horace Cristol, 83000 TOULON, FRANCE, offers world-wide species in exchange for S.A. species of *cypraea*, *conus*, *marginella*, and *oliva*.

Josh Schutz, Honorary Secretary, Lions International District 410 B, P.O. Box 10998 JOHANNESBURG 2000, asks for very good specimens of each of the South African *Cymatiidae* and *Turbinidae*.

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(Founded 1958)

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ROUND THE GROUPS

DURBAN AND DISTRICTS: The September meeting was held at the home of Chairman Mr & Mrs Colin Hanneman at Amanzimtoti. Plans were made to bring the existing check list of Natal shells up to date. Talks were given by Pat Dalgarno on the cleaning of shells and by Colin Hanneman on dredging. It was agreed to exchange parcels of local shells with the Cape Town group for sale to defray the high cost of printing further colour plates in the Strandloper, and Terry Murray's offer to help with this was welcomed.

An increase in fees for the new year to cover the purchase of books and publications for the group was also agreed on.

Good wishes were extended to Bernie Young for his continued improvement in health (Council members in Cape Town also send greetings).

PRETORIA: At the September meeting Ralph Isaacs gave a talk on the Muricidae in which he first became interested while living in Ghana. Han Vandenberg reported that he had already had an invitation to stage another shell show next year, and the programmes for future meetings were discussed. The Secretary reported that the Italian magazine La Conchiglia had published an article on the show at Barelay Square. (Subscribers to the Hawaiian Shell News will have seen their report too. Congratulations! — Ed.)

PORT SHEPSTONE: This group's September meeting resolved that they would adopt the new official name of SOUTHERN NATAL GROUP.

Terebridae and Haliotidae were on display and were discussed, and procedure was proposed for compiling a check list of species from this area. A uniform data sheet would be used to facilitate this work. (How about sending specimens of this data sheet to the other groups in case they want to join in the operation? — Ed.)

PORT ELIZABETH: The September meeting was held at the University where Dr McLachlan showed members around the new Science Block. It was reported that the show case for the Museum was ready for display. Members then helped to rearrange the University's shell collection.

EAST LONDON: After the recent storms members reported finding excellent specimens of *Cypraea amphithales* and *capensis*, which gave the new members a chance to see these species.

CAPE TOWN: Here also the recent rough weather has produced good beach specimens of *Galeatrivia millardi* and *Cypraea algoensis*, and members showed their latest finds at the October meeting. The participation of junior members, David Strong and Willem Calitz, was especially welcome. The drawing for door prizes has become a popular feature of Cape Town meetings. The Committee acquires shells from dealers and elsewhere and sells them at reasonable cost to ticket holders with the proceeds going towards group funds. The new Group Chairman, Mrs Botes, organised members into working parties to repair and re-cover the Society's library books and this project will continue at future meetings. The Society's Reference Collection will also be tackled. Ideas for a shell show during the Cape Town Festival in April next year were also called for.

Duikerprint
